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Note.—Throughout this *Gazette* the names in Italics within parentheses are those of Communicators of Inventions.

Complete Specifications.

Patent Office, Perth,
15th December, 1899.

NOTICE is hereby given that the undermentioned Applications for the Grant of Letters Patent, and the complete Specifications annexed thereto, have been *accepted*, and are now open to public inspection at this Office.

Any person or persons intending to oppose any of such applications must leave particulars, in writing, in duplicate (on Form D), of his or their objections thereto, within two calendar months from the first appearance of this advertisement in the Western Australian *Government Gazette*. A fee of Ten shillings (10s.) is payable with such notice.

Application No. 2693.—WRIGHT'S TAPER ROLLER BEARINGS SYNDICATE, LIMITED, of 1 and 2 Great Winchester Street, London, England (Assignee of WILLIAM HAMILTON WRIGHT), "*Improvements in or relating to Roller Bearings.*" —Dated 25th September, 1899.

Claims:—

1. In a roller bearing the combination with a sleeve such as C carrying two cones such as D each cone forming the inner wall of a roller race and a casing having two taper surfaces such as A1 each surface forming the outer wall of the same of two full series of taper rollers each series having a free way in its race and the rollers being in continuous line contact with the walls of the race, substantially as described.

2. In a roller bearing a sleeve such as C which carries the roller cones D whereby the bearing is rendered self-contained and can be removed from the shafting without disturbance of its parts.

3. In a roller bearing the combination with the shaft of a sleeve such as C which carries the various parts of the bearing and is capable of slight longitudinal movement along the shaft.

4. A roller bearing comprising a sleeve C adjustable cones D with bearing surfaces D1 lock nuts F, feathered washers F1 a casing with taper surfaces A1 and caps G2 washers G G1, two full series of rollers E and retaining devices E1 E2 E3 or H H1 H2, substantially as described.

5. In a roller bearing the combination with a series of rollers adapted to receive the axial load of another series of rollers adapted to receive the end thrust.

6. The complete roller bearing, substantially as described or illustrated in Figure 1 of the accompanying drawings.

7. The complete thrust bearing, substantially as described or illustrated in Figure 2 of the accompanying drawings.

8. The complete car journal box, substantially as described or illustrated in Figure 3 of the accompanying drawings.

9. In a roller bearing for vehicles the combination with an adjustable cone such as Dx forming one bearing surface of a roller race of a locking device comprising an adjustment ring D2 locking ring D3 both screwed within the cone and a feathered washer between D2 and D3, substantially as described.

10. In a roller bearing for vehicles the combination with an adjustable cone such as Dx forming one bearing surface of a roller race of a locking adjustment device D2 D3 D4 screwed in one direction within the cone and a lock nut D7 screwed in the reverse direction outside the same and washer D8, substantially as described.

11. In a wooden vehicle hub having a rim-band and a bearing casing covering the wooden surface exposed between the band and the casing by a metal ring, substantially as described.

12. In a wooden vehicle hub the combination with a bearing casing inside the wood of a metal ring such as A3 having a flange such as A4 threaded externally to screw into the bearing casing and threaded internally to receive the end cap, substantially as described.

13. In a roller bearing a cage such as H H1 H2 substantially as and for the purpose described or as illustrated in figures 10, 11, and 12 of the accompanying drawings.

14. In a vehicle hub the combination with a bearing casing of an end cap substantially as described or illustrated in figures 6 or 7 of the accompanying drawings.

15. In a roller bearing for vehicles the combination with a felt or similar split washer such as G7 of a spring such as G8 for closing it, substantially as described.

16. In a roller bearing for vehicles the combination with a series of tapered rollers and a casing forming the outer bearing surface of a roller race of a sleeve such as K, substantially as described.

17. In a roller bearing for vehicles a sleeve such as K which carries the various parts of the bearing whereby the bearing is rendered self-contained and can be removed from the axle without disturbance of its parts.

18. The complete vehicle hub and axle bearing, substantially as described or illustrated in figure 4 or in figure 9 of the accompanying drawings.

19. In a thrust bearing for a propeller shaft the combination with a disc secured on the shaft and having an annular race-bearing surface on each face and two adjustable discs secured in the casing one face of each adjustable disc forming one of the outer bearing surfaces of the said races of two series of tapered rollers, substantially as described.

20. A thrust bearing having two series of rollers to take the thrust one in each direction.

21. In a thrust bearing the combination with two series of rollers of a disc or collar rotating between them with the shaft.

22. In a thrust bearing the combination with two outer adjustable races such as E10 E11 and two series of rollers such as Dy of a disc or collar such as Cy secured upon the shaft and rotating therewith between the two series of rollers.

23. A thrust bearing for a propeller shaft comprising a casing By a central disc Cy secured on the shaft two adjustable discs E10 E11 secured in the casing washers G10 G11 locking rings F10 F11 and caps J J1 packing Hy two full series of tapered rollers Dy and retaining flanges D30 D40, substantially as described.

24. The complete thrust bearing, substantially as described or illustrated in Figures 13 and 14 or in Figure 15 of the accompanying drawings.

25. In a stern tube bearing for a propeller shaft the combination with a series of tapered rollers of a sleeve secured on the shaft and forming one bearing surface for the rollers and an adjustable casing forming the other bearing surface, substantially as described.

26. In a stern tube bearing for a propeller shaft the combination with tapered rollers of a casing comprising a bearing chamber and a packing chamber and adjustable longitudinally relative to the rollers, substantially as and for the purpose described.

27. A stern tube bearing for a propeller shaft comprising a sleeve secured on the shaft a full series of tapered rollers L retaining flanges L3 L4 and a casing having a tapered bearing surface K5 a packing portion K2 adjusting and locknuts K9 K11 and end caps K4 K6, substantially as described.

28. The complete stern tube bearing, substantially as described or illustrated in Figure 16 of the accompanying drawings.

Specifications, £1 9s. Drawings on application.

Application No. 2726.—FRANK ARTHUR BLAKESLEE, of Kalgoorlie, Western Australia, Engineer, "*An improved Condenser.*"—Dated 12th October, 1899.

Claims:—

1. The peculiar construction of shallow condenser pans having an outer double rim for the forming of a water seal chamber and such pans being built over a furnace, substantially as herein described and set forth and as illustrated in the accompanying drawings.

2. Condenser pans having removable and counter-balance suspension hoods made of a conical shape and whose lower edges depend into a water seal chamber and such hoods having an upper telescopic pipe termination, substantially as herein described and set forth and as illustrated in the accompanying drawings.

3. A double-walled chamber as D which acts as the cooling and the feed supply chamber, substantially as herein described and set forth and as illustrated in the accompanying drawings.

4. The alternative employment of an auxiliary feed tank arranged with branch pipes and a float stop plug for operating in common fellowship with the condenser pans, substantially as herein set forth and explained.

5. The general arrangement and construction of a multiple of condenser pans having seal joints and removable hoods and having a furnace, a feed tank and lead-away pipes, and counter-balance and designed in such a manner that any one pan may either be fed, used, or cleansed in an independent or in a partnership manner with each other, substantially as herein described and set forth and as illustrated in the accompanying drawings.

Specification, 6s. 6d. Drawings on application.

Application No. 2772.—GEORGE GARIBALDI TURRI, of Queen Street, Melbourne, Victoria, Patent Agent (*American Lithographic Company*, Assignee of Edward Hett) "*Improvements in Transferring and Printing and Mechanisms therefor.*"—Dated 21st November, 1899.

Claims:—

1. The method of preparing a series of registering printing surfaces which consists in preparing a series of registering basic surfaces each one of which shall accurately and exactly represent in reverse the superficies of one of the proposed printing surfaces with its design upon it, the basic surfaces consisting of a non-contractible and non-extensible base which duplicates the superficies of the printing surface and a design thereon which is applied to the base accurately according to the position in reverse that it is desired that the design shall occupy on the printing surface, the entire series of designs being applied in related and identical positions on the base or series of bases, bringing each basic surface in turn into positive and positively matching contact with its printing surface whereby its design is positively communicated to the printing surface in predetermined position thereon, all the printing surfaces of the series being held for the purposes of such contact in the same identical relationship, each one as every other, with respect to the designs upon their respective basic surfaces, whereby the designs so communicated to the printing surfaces may subsequently register automatically in the printing, substantially as described.

2. The method of securing register in multicolour printing which consists in preparing a series of registering designs one for each colour to be separately printed, preparing a series of registering basic surfaces each one of which shall accurately and exactly represent in reverse the superficies of one of the proposed printing surfaces with its design upon it, the basic surfaces consisting of a non-contractible and non-extensible base which duplicates the superficies of the printing surface and a design thereon which is applied to the base accurately according to the position in reverse that it is desired that the design shall occupy on the printing surface, the entire series of designs being applied in related and identical positions on the base or series of bases, bringing each basic surface in turn into positive and positively matching contact with its printing surface whereby its design is positively communicated to the printing surface in predetermined position thereon, all the printing surfaces of the series being held for the purposes of such contact in the same identical relationship, each one as every other, with respect to the designs upon their respective basic surfaces, suitably developing such surfaces by etching or in other suitable manner into printing surfaces of the character desired, mounting such printing surfaces in a positive and predetermined relationship with respect to one another and to a suitable impression surface or surfaces and printing therefrom, whereby register is automatically obtained, substantially as described.

3. The improvement in the art of multicolour printing which consists in preparing a series of basic surfaces one for each colour to be separately printed by applying the design for that colour to a setting-up plate or other suitable surface, the design for each colour being accurately applied with reference to all the designs for all the other colours, bringing each basic surface into a definite relation with reference to certain mechanical guide or guides in such way that the design upon it shall have the same position with reference to said mechanical guide or guides that every other design of the series has, establishing suitable contact between each basic surface and a suitable printing surface, the printing surfaces being held, each one of them in the same position with reference to the aforesaid mechanical guide or guides as every other printing surface of the series, whereby the designs are communicated from the basic surfaces to the printing surfaces in accurate and related positions, suitably developing such surfaces into printing surfaces for the several colours to be separately printed; mounting said printing surfaces in series in a printing press in positions accurately fixed each with respect to every other and all with respect to the impression surface or surfaces, and printing therefrom, whereby register may be automatically obtained, substantially as set forth.

4. The method of securing register in multicolour printing which consists in preparing a basic surface by placing guiding marks upon a suitable surface and applying the design for one colour thereto accurately according to the guiding marks thereon, bringing said basic surface into a definite relation with reference to certain mechanical guides, establishing contact between the basic surface and a second surface held in definite relation to the basic surface whereby the design is communicated from the basic surface to said second surface, suitably developing the second surface into a printing surface for that colour, preparing a second basic surface by applying the design for a second colour to the same marked surface or a duplicate thereof accurately according to the same guiding marks thereon, bringing the second basic surface into the same relation with reference to the mechanical guide or guides as was had by the first basic surface, establishing contact between the second basic surface and a third surface held in the same relation to the basic surface as was had by the printing surface for the first colour, whereby the design is communicated from the basic surface to said third surface, suitably developing the third surface into a printing surface for the second colour, and so on for each printing surface for each colour to be separately printed, mounting said printing surfaces in series in a printing press in positions accurately fixed each with respect to every other and all with respect to the impression surface or surfaces, whereby register may be continuously obtained, and printing from said printing surfaces in series, substantially as described.

5. The improvement in the art of multicolour printing which consists in preparing a series of registering designs or drawings one for each colour to be separately printed, the designs being so prepared with reference to one another as that the colours will in the printing be more or less overlaid upon one another but no more at any given point than will dry approximately instantaneously, preparing a series of registering basic surfaces from said designs each one of which shall accurately and exactly represent in reverse the superficies of one of the proposed printing surfaces with its designs upon it, the basic surfaces consisting of a non-contractible and non-extensible base which duplicate the superficies of the printing surface and a design thereon which is applied to the base accurately according to the position in reverse that it is desired that the designs shall occupy on the printing surface, the entire series of designs being applied in related and identical positions on the base or series of bases, bringing each basic surface in turn into positive and positively matching contact with its printing surface whereby its design is positively communicated to the printing surface in predetermined position thereon, all the printing surfaces of the series being held for the purposes of such contact in the same identical relationship, each one as every other, with respect to the designs upon their respective basic surfaces, suitably developing such surfaces by etching or in other suitable manner into printing surfaces of the character desired, mounting such printing surfaces in a positive and predetermined relationship with respect to one another and to a suitable impression surface or surfaces and printing therefrom in approximately instantaneous succession, whereby register is automatically obtained, substantially as described.

6. The combination of a series of registering basic surfaces, a series of printing surfaces, a machine designed and constructed to support said surfaces in pairs, a basic surface and a printing surface together, guiding means with reference to which each pair of surfaces may be brought into operative contact in said machine accurately and positively in the same identical relation in reference to register as every other pair, whereby from the series of registering basic surfaces a series of registering printing surfaces may be made.

7. The combination of a series of registering basic surfaces, a series of curved printing surfaces, a machine designed and constructed to support said surfaces in pairs, a basic surface and a printing surface together, guiding means with reference to which each pair of surfaces may be brought into operative rolling contact in said machine accurately and positively in the same identical relation in reference to register as every other pair, whereby from the series of registering basic surfaces a series of curved registering printing surfaces may be made.

8. The combination of a series of registering basic surfaces, each comprising a rigid transfer base, having a removable transfer sheet or sheets thereon, bearing a design or designs in ink, a series of printing surfaces, a machine designed and constructed to support said surfaces in pairs, a basic surface and a printing surface together, guiding means with reference to which each pair of surfaces may be brought into operative contact in said machine accurately and positively in the same identical relation with reference to register as every other pair, whereby from the series of registering basic surfaces a series of registering printing surfaces may be made.

9. The improvement in the art of making permanent registering printing surfaces for multicolour printing, which consists in preparing a series of suitable rigid basic surfaces having registering designs adapted to be imparted by contact, bringing said series of basic surfaces and a series of printing surfaces together in positive rolling contact, a basic surface and a printing surface together, at least one of which is curved, each basic surface and its co-operating printing surface being brought accurately and positively into operative contact in the same identical relation with reference to register as every other basic surface and its co-operating printing surface, whereby a series of registering impressions are imparted to said printing surfaces, and then suitably developing said printing surfaces to make their designs permanent and capable of being used for printing in accurate register.

10. In a machine for making printing surfaces, the combination with a suitable basic surface having a design adapted to be imparted by contact, of a suitable printing surface adapted to receive said design and to be thereafter developed into a permanent printing surface for said design, one at least of said surfaces being curved in form, a support for said printing surface and successive printing surfaces from which support the printing surfaces are removable, said support being provided with guiding means with reference to which the printing surfaces may always be located on said support in identically the same place, and means for bringing said surfaces together in positive and rolling contact so that at least one of them rolls in progressive contact upon the other, whereby the design of the basic surface is positively and at once accurately, according to the position of the design and all its parts upon the basic surface, imparted to the printing surface.

11. In a machine for making printing surfaces, the combination with a suitable basic surface having a design adapted to be imparted by contact, of a suitable printing surface adapted to receive said design and to be thereafter developed into a permanent printing surface for said design, one at least of said surfaces being curved in form, a support for said printing surface and successive printing surfaces from which support the printing surfaces are removable, a support for said basic surface and for successive basic surfaces from which support the basic surfaces are removable, and guiding means with reference to which said surfaces may always be located on their respective supports in identically the same place, and means for bringing said surfaces together in positive and rolling contact so that at least one of them rolls in progressive contact upon the other, whereby the design of the basic surface is positively and at once accurately, according to the position of the design and all its parts upon the basic surface, imparted to the printing surface.

12. In a machine for making printing surfaces, the combination with a suitable basic surface having a design adapted to be imparted by contact, of a suitable printing surface adapted to receive said design, and to be thereafter developed into a permanent printing surface for said design, one at least of said surfaces being curved in form, a support for said printing surface and successive printing surfaces from which support the printing surfaces are removable, guiding means with reference to which the printing surfaces may always be located on said support in identically the same place, and means for bringing said surfaces together in positive and rolling contact so that at least one of them rolls in progressive contact with the other, whereby the design of the basic surface is positively and at once accurately, according to the position of the design and all its parts upon the basic surface, imparted to the printing surfaces and guiding means with reference to which the printing surfaces and the basic surfaces may be always brought accurately and positively into the same predetermined relation.

13. In a machine for making printing surfaces, the combination with a suitable basic surface having a design adapted to be imparted by contact, of a suitable printing surface adapted to receive said design and to be thereafter developed into a permanent printing surface for said design, one at least of said surfaces being curved in form, a support for said printing surface and successive printing surfaces from which support the printing surfaces are removable, a support for said basic surface and for successive basic surfaces from which support the basic surfaces are removable, guiding means with reference to which said surfaces may always be located on their respective supports in identically the same place, and means for bringing said surfaces together in positive and rolling contact so that at least one of them rolls in progressive contact upon the other, whereby the design of the basic surface is positively and at once accurately, according to the position of the design and all its parts upon the basic surface, imparted to the printing surface, and guiding means with reference to which the printing surfaces and the basic surfaces may be always brought accurately and positively into the same predetermined relation.

14. In a machine for making printing surfaces, the combination of a flat basic surface of the character described, and comprising a rigid transfer base having a removable transfer sheet or sheets thereon bearing a design or designs, a curved rotating printing surface of the character described, guiding means with reference to which said surfaces may be brought accurately into a predetermined co-operating relation, and means for bringing said surfaces together in rolling contact whereby the transfer sheet may be turned over upon the printing surface and the design of the basic surface may be imparted to the printing surface.

15. In a machine for making rigid, permanent printing surfaces, the combination of a basic surface, a support therefor from which said basic surface and successive basic surfaces are removable, guiding means with reference to which the basic surfaces may be accurately and positively located on the support in the same predetermined position, a rigid printing surface, guiding means with reference to which said surfaces may be accurately and positively brought into a predetermined co-operating relation, and means for bringing said surfaces together in positive contact, whereby the design of the basic surface may be imparted to the printing surface in a predetermined lateral and peripheral position thereon and with reference to register.

16. In a machine for making printing surfaces, the combination of a basic surface comprising a rigid transfer base having a removable transfer sheet thereon bearing a design, a printing surface, guiding means with reference to which said surfaces may be accurately and positively brought into a predetermined co-operating relation, and means for bringing said surfaces together in positive contact, whereby the transfer sheet may be turned over upon the printing surface and the design of the basic surface may be imparted to the printing surface in a predetermined position thereon, and with reference to register.

17. In a machine for making printing surfaces, the combination of a basic surface comprising a rigid transfer base having a removable transfer sheet thereon bearing a design, a printing surface, guiding means with reference to which said surfaces may be accurately and positively brought into a predetermined co-operating relation, and means for bringing said surfaces together in positive contact, whereby the transfer sheet may be turned over upon the printing surface and the design of the basic surface may be imparted to the printing surface in a predetermined position thereon and with reference to register, and means for inking said printing surface.

18. In a machine for making printing surfaces, the combination of a basic surface, a printing surface, a support for said printing surface and successive printing surfaces from which the printing surfaces are removable, guiding means with reference to which the printing surfaces may always be located on said support accurately and positively in the same predetermined position, guiding means with reference to which said surfaces may be accurately and positively brought into a predetermined relation, and means for bringing said surfaces together in positive contact, whereby the design of the basic surface may be imparted to the printing surface in a predetermine l position thereon and with reference to register.

19. In a machine for making printing surfaces, the combination of a basic surface, a support therefor from which said basic surface and successive basic surfaces are removable, guiding means with reference to which the basic surfaces may be accurately and positively located on the support in the same predetermined position, a printing surface, a support for said printing surface and successive printing surfaces from which the printing surfaces are removable, guiding means with reference to which the printing surfaces may always be located on said support accurately and positively in the same predetermined position, guiding and moving means by which said supports may be accurately and positively brought into a predetermined relation and the said surfaces thereon brought together into positive contact in such relation, whereby the design of the basic surface may be imparted to the printing surface in a predetermined position thereon and with reference to register.

20. In a machine for making printing surfaces, the combination of a basic surface a cylindrical printing surface, guiding means with reference to which said surfaces may be accurately and positively brought into a predetermined co-operating relation, and means for bringing said surfaces together in positive rolling contact whereby the design of the basic surface may be imparted to the printing surface in a predetermined position thereon with reference to register.

21. In a machine for making printing surfaces designed to arrange and fit in an exact and predetermined operating position in a printing press, the combination of a basic surface, a continuous cylindrical printing surface, designed and arranged to fit in an exact and predetermined opera ing position in a printing press, guiding means with reference to which said surfaces may be accurately and positively brought into a predetermined co-operating relation and with reference to register, and means for bringing said surfaces together in positive contact whereby the design of the basic surface may be imparted to the printing surface in a predetermined position, and whereby said printing surface may be readily mounted in its predetermined operating position in the printing press without the usual empiric adjustment.

22. In a machine for making printing surfaces, the combination of a basic surfece, a continuous cylindrical tubular printing surface, a support for said printing surface and successive printing surfaces from which the printing surfaces are removable, guiding means with reference to which the printing surfaces may always be located on said support accurately and positively in the same predetermined position, guiding means with reference to which said surfaces may be accurately and positively brought into a predetermined co-operating relation, and means for bringing said surfaces together in positive contact, whereby the design of the basic surface may be imparted to the printing surface in a predetermined position and with reference to register.

23. The combination of a series of registering basic surfaces, a series of printing surfaces, a machine designed and constructed to support said surfaces in pairs, a basic surface and a printing surface together, guiding means with reference to which the basic surfaces may be accurately and positively located on their support in the machine in identically the same predetermine l position, guiding means with reference to which each pair of surfaces may be brought into operative contact in said machine accurately and positively in the same identical relation with reference to register as every other pair, whereby from the series of registering basic surfaces a series of registering printing surfaces may be made.

24. The combination of a series of registering basic surfaces, a series of printing surfaces, a machine designed and constructed to support said surfaces in pairs, a basic surface and a printing surface together, guiding means with reference to which each pair of surfaces may be brought into operative contact in said machine, accurately and positively in the same identical relation with reference to register as every other pair, whereby from the series of registering basic surfaces a series of registering printing surfaces may be made, and means in said machine for inking said printing surfaces.

25. The combination of a series of registering basic surfaces, a series of printing surfaces, a machine designed and constructed to support said surfaces in pairs, a basic surface and a printing surface together, guiding means with reference to which the basic surfaces may be accurately and positively located on their support in the machine in identically the same predetermined position, guiding means with reference to which each pair of surfaces may be brought into operative contact in said machine accurately and positively in the same identical relation with reference to register as every other pair, whereby from the series of registering basic surfaces a series of registering printing surfaces may be made, and means in said machine for inking said printing surfaces.

26. In a lithographic transfer press, the combination, substantially as described, of a reciprocating setting-up plate adapted to receive the transfer desired to be transferred, and a rounded or cylindrical lithographic surface adapted to become a printing surface, and to that end to receive the transfer from the setting-up plate.

27. In a lithographic transfer press, the combination, substantially as described, with suitable ink-supplying and distributing devices and with suitable water-supplying and distributing devices, of a reciprocating setting-up plate adapted to receive the transfer desired to be transferred, and a rounded or cylindrical lithographic surface adapted to become a printing surface and to that end to receive the transfer from the setting-up plate.

28. A transfer press comprising a setting-up plate, a vertically movable rounded or cylindrical lithographic surface adapted to roll or revolve on the setting-up plate, a mechanism for raising and lowering the rounded or cylindrical lithographic surface, inking and watering mechanisms for the lithographic surface, a driving mechanism to roll or revolve the lithographic surface in its lowered position and another driving mechanism to turn or revolve it in its raised position, substantially as described.

29. In a press, the combination, substantially as described, with a suitable printing surface and suitable inking and dampening mechanisms, of a mechanism for carrying the printing surface and moving it toward and from the inking and dampening mechanisms and an adjustable stop to limit such motion in the direction towards the inking and dampening mechanism, and a swinging frame carrying the inking rollers that contact with the printing surface, and an adjustable stop limiting its swinging motion in the direction towards the printing surface, and a swinging frame carrying the dampening rollers that contact with the printing surface, and an adjustable stop limiting its swinging motion in the direction toward the printing surface.

30. In a press, the combination, substantially as described, with a suitable printing surface, of a dampening mechanism including a vibrating water-supply roller or fountain and means for vibrating the same, said means including a positive driving mechanism and a spring between such positive driving mechanism and the supply roller or fountain, whereby when the supply roller or fountain meets with any positive obstruction to its vibration toward the distributing rollers the further motion of the positive driving mechanism is taken up by the spring and whereby also the contact of the supply roller or fountain is in all cases a spring pressure contact.

31. In a press, the dampening mechanism substantially as shown in Figures 1 to 15.

32. In a press, the inking mechanism substantially as shown in Figures 1 to 15.

33. In a lithographic tranfer press, the combination of a setting-up plate to carry the transfer or design and a support therefor, a surface adapted to receive the transfer or design from the setting-up plate and to be thereafter developed into a printing surface therefor of the character desired and a support for such surface, and a suitable inking mechanism and a suitable dampening mechanism, substantially as described.

34. In a planographic or other machine using a printing surface, the combination of a suitable frame, a support carried thereby adapted to receive a setting-up plate, bearing boxes adapted to support a rounded or cylindrical printing surface in proper relation to the setting-up plate, pressure arms connected with the bearing boxes, a pair of lifting arms carried by the frame and arranged to lift the printing surface from its position in the machine, substantially as set forth.

35. In a planographic or other machine working with or upon a printing surface, the combination of a suitable frame, a form cylinder supported by the frame, a pair of hoisting arms provided with threaded collars and adapted to slide up and down in the frame and to lift the form cylinder from its working position, a pair of screws passing through the threaded collars on the said arms, and mechanism for turning the screws to actuate the arms, substantially as shown in Figure 17.

36. The combination, in a transfer or turning over machine, of a suitable frame, a support carried thereby adapted to receive a setting-up plate, bearing boxes carried by the frame, a shaft journaled in said bearing boxes and adapted to receive and support a printing tube in proper relation to the setting-up plate, lifting arms carried by the frame and arranged to lift said shaft from its working position in the machine, with a stand having one or more receiving arms adapted to be held in fixed alignment with the said shaft whereby when the shaft is elevated by the lifting arms a printing tube may be slipped from the shaft to the arm or from the arm to the shaft, substantially as shown in Figs. 18 and 19.

37. The combination in a press, of a permanent shaft adapted to carry a hollow tubular printing form or tube or support therefor, a separate receiving shaft suitably mounted and arranged to be moved into and be held in fixed alignment with the permanent shaft and to be moved therefrom, and means for moving it into and holding it in such alignment and moving it therefrom, whereby a hollow cylinder on the permanent shaft of the press or any tubular covering or shell thereon may be slipped off from said shaft on to the separate receiving shaft and be removed or a hollow cylinder or tubular covering or shell may be put on to the separate receiving shaft and be then slipped off from it on to the permanent shaft, as shown in Figs. 18 and 19.

38. The combination in a press, of a permanent shaft adapted to carry a hollow tubular printing form or tube or support therefor, a separate receiving shaft and a printing tube holder carried thereon, the receiving shaft being pivotally mounted upon a suitable stand and means adapting it to be temporarily secured to, and so as to prolong, the permanent shaft at one of its ends but removable from said shaft, whereby tubular printing surfaces may be placed upon or removed from the permanent shaft, as shown in Figs. 18 and 19.

39. The method of preserving and making a prepared lithographic printing surface ready for the reception of a coloured printing ink without the necessity of additional treatment preparatory to applying said printing ink, which consists in applying to said prepared printing surface a suitable light coloured body adapted to preserve from deterioration the prepared printing surface between the time when the said printing surface is prepared and the time when said printing surface is inked for printing, said body being of such a character that when the printing ink is applied the body does not materially detract from the colour tone of said printing ink.

40. In a machine for making printing surfaces, the combination of a transfer base, with a curved rotating reciprocating surface, arranged to be brought together in firm rolling contact, whereby the design of the transfer base may be imparted to the printing surface, and inking and water rollers for rolling up or developing said printing surface, as shown in Fig. 20.

41. In a transfer press, the combination of two beds adapted to support a setting-up plate and a printing plate, and arranged to be brought together in whole surface contact and separated from each other, devices for securing said plates in position in their respective beds, and mechanism for bringing together and separating the beds, as shown in Fig. 21.

42. In a machine for making printing surfaces, the combination of a curved rotating transfer base carrying a design, with a flat printing surface arranged to be brought together in firm rolling contact, the design being turned over from the transfer base to the printing surface, and inking and water rollers for rolling up the printing surface, as shown in Fig. 22.

43. In a planographic or other mechanism using a printing surface, the combination of a curved or rounded setting-up plate, a curved or rounded printing surface or plate and mechanism for bringing them together in rolling contact, whereby a transfer may be turned over from the setting-up plate upon the printing surface or plate, as shown in Fig. 23.

44. In a machine for making printing surfaces, the combination with a stationary curved or rounded support, of a curved or cylindrical support arranged to roll over and thereby traverse the stationary support, a transfer base being mounted on one of said supports and a printing surface being mounted on the other support, and means for bringing said supports together and separating them whereby the transfer base and printing surface may be brought together under pressure as required, as shown in Fig. 24.

45. The method of transmitting to a series of printing forms adapted to register with one another in the printing, a series of registering designs in laterally and peripherally predetermined positions with reference to positive mechanical guides, so that said printing surfaces when located in printing presses in proper reference to said positive mechanical guides will automatically register in the printing without further adjustment.

46. The method of transmitting to a series of printing forms that have previously received their permanent shape and are thereby adapted to register in the printing, a series of registering designs in laterally and peripherally predetermined positions with reference to positive mechanical guides, so that the said printing surfaces when located in printing presses in proper reference to said positive mechanical guides will automatically register in the printing without further adjustment.

Specification, £3 7s. Drawings on application.

Application No. 2773.—George Garibaldi Turri of Queen Street, Melbourne, Victoria, Patent Agent (*American Lithographic Company*, Assignee of Edward Hett), "*Improvements in making Printing Surfaces, and Mechanisms therefor.*"—Dated 21st November, 1899.

Claims:—

1. The improvement in the art of making duplicate graduated printing surfaces which consists in printing and thereby imparting a design from a graduated primary surface directly or indirectly upon or to one or more suitable secondary surfaces adapted to be developed into a graduated printing surface or surfaces, the said primary surface and said secondary surfaces being arranged with reference to positive guiding means in a definite and predetermined co-operating relation, whereby the design is carried over from the primary surface and imparted to the secondary surface in an accurate and predetermined position, and developing the said surface or surfaces in a suitable manner, as by etching, into a graduated printing surface or surfaces of the character desired, each secondary surface when developed having a design thereon in duplicate of the design on the primary surface.

2. The improvement in the art of making a series of registering graduated printing surfaces adapted to co-operate in printing which consists in printing and thereby imparting a design from a series of graduated registering primary surfaces directly or indirectly upon or to a series of secondary surfaces designed and constructed for register in printing, said secondary surfaces being arranged with reference to positive guiding means in the same or equivalent definite and predetermined co-operating relation, and with reference to the subsequent position and register of said secondary surfaces as printing surfaces, whereby the designs are carried over from said primary surfaces and imparted to said secondary surfaces in accurate and predetermined positions with reference to the positions required in the ultimate use of the secondary surfaces as co-operating registering printing surfaces, and developing said secondary surfaces in suitable manner, as by etching, into graduated printing surfaces.

3. The improvement in the art of making graduated printing surfaces which consists in printing from a graduated primary surface upon a suitable conveying surface or series of successive conveying surfaces, imparting the designs so printed from said conveying surface or conveying surfaces to one or more suitable secondary surfaces adapted to be developed into a graduated printing surface or surfaces, said primary surface, said conveying surface and said secondary surface, being arranged with reference to positive guiding means in a definite and predetermined co-operating relation one to another, and with reference to the subsequent register of said secondary surfaces as printing surfaces, whereby, through the intermediation of the conveying surface, the design is carried over from the primary surface and imparted to the secondary surface in an accurate and predetermined position, and developing said secondary surface or surfaces, as by etching, into a graduated printing surface or surfaces of the character desired, whereby a plurality of graduated printing surfaces suitable for printing the same design may be obtained.

4. The improvement in the art of making a series of registering graduated printing surfaces adapted to co-operate in printing which consists in printing from a series of registering primary graduated surfaces upon a conveying surface or a series of successive conveying surfaces, imparting the designs from said conveying surface or conveying surfaces to a series of secondary surfaces designed and constructed for register in printing, each primary surface and its corresponding secondary surface being arranged with reference to positive guiding means in the same or equivalent definite and predetermined co-operating relation with respect to their conveying surface and with reference to the position and register of said secondary surface as a printing surface, whereby, through the intermediation of the conveying surface or conveying surfaces, the designs of said series of registering primary surfaces are carried over from said primary surfaces and imparted to said secondary surfaces in accurate and predetermined positions and with reference to the register and co-operation of said secondary surfaces as printing surfaces, and developing said secondary surfaces in suitable manner, as by etching into graduated printing surfaces.

5. The improvement in the art of making a plurality of series of registering printing surfaces, each series adapted to co-operate in printing, and the members of each series having identical designs placed thereon, with respect to the designs of the corresponding members of the other series, which consists in successively printing from each member of a series of registering primary surfaces upon a suitable conveying surface or successive conveying surfaces, imparting the designs of each primary surface successively from its conveying surface or conveying surfaces to a plurality of identical and interchangeable secondary surfaces, each of which is constructed and designed for register in printing, each primary surface and each of its corresponding secondary surfaces being arranged with reference to positive guiding means in the same or equivalent definite and predetermined co-operative relation with respect to their corresponding conveying surface or surfaces and with reference to the position and register of said secondary surfaces as co-operating printing surfaces, whereby, through the intermediation of the conveying surface or conveying surfaces, the designs of the series of primary surfaces are carried over from said surfaces and imparted to a plurality of series of secondary surfaces in accurate and predetermined positions with reference to the position and register desired in the ultimate use of each series of secondary surfaces as co-operating printing surfaces, and developing said secondary surfaces in a suitable manner, as by etching, into printing surfaces.

6. The improvement in the art of making graduated printing surfaces which consists in preparing a basic surface for the graduated design to be printed by applying that design to a setting up plate or other suitable surface according to the position and register desired in the printing, arranging a suitable surface adapted to be developed into a permanent graduated primary surface in a precise predetermined relationship to the said basic surface, imparting by contact with the said basic surface the design thereof to the said surface, adapted to be developed into a primary surface, developing said surface in a suitable manner, as by etching, into a permanent graduated primary surface of the character desired, printing from said primary surface upon or to one or more suitable secondary surfaces adapted to be developed into a permanent graduated printing surface or surfaces, the said primary surface and the secondary surface being held with reference to positive guiding means in a precise and predetermined relationship the one to the other, whereby the design is carried over from the primary surface and imparted to the said secondary surface in an accurate and predetermined position with reference to the position and register required in the ultimate use of the secondary surface or surfaces as registering printing surfaces and developing said secondary surface or surfaces in a suitable manner into a graduated printing surface or surfaces whereby a plurality of printing surfaces suitable for printing the same design may be obtained.

7. The improvement in the art of making printing surfaces which consists in preparing a basic surface for the design to be printed by applying that design to a setting up plate or other suitable surface according to the position and register desired in the printing, arranging a suitable surface adapted to be developed into a primary surface in a precise predetermined relation to the said basic surface and, by the use of positive guiding means, imparting by contact with the basic surface a design to said surface adapted to be developed into a primary surface, developing said surface in a suitable manner into a primary surface of the character desired, printing from such surface upon a suitable conveying surface or succession of conveying surfaces, imparting the design so printed from the said conveying surface or conveying surfaces to one or more suitable secondary surface or surfaces adapted to be developed into a secondary printing surface or surfaces, said primary surface, conveying surface and secondary surface being held with reference to positive guiding means in a precise and predetermined relationship, the one to the other, whereby, through the intermediation of the conveying surface the design is carried over from the primary surface and imparted to the secondary surface in an accurate and predetermined position thereon with reference to the position and register desired in the ultimate use of the secondary surface as a printing surface, developing the said secondary surface or surfaces by etching or in any other suitable manner into a printing surface or surfaces of the character desired, whereby a plurality of printing surfaces suitable for printing the same design may be obtained.

8. In a machine designed to be used in making graduated printing surfaces, and especially curved or cylindrical printing surfaces, the combination of a graduated primary printing surface adapted to print a design, with a secondary surface adapted and arranged to receive an imprint of the design from the primary surface and to be subsequently developed into a graduated printing surface therefor, and positive guiding means with reference to which said surfaces may be brought into a precise and predetermined co-operating relation or starting point in their operation in said machine.

9. In a machine designed to be used in making graduated printing surfaces, the combination of a graduated primary printing surface adapted to print a design, a curved or cylindrical secondary surface arranged to receive an impression from the primary surface, said secondary surface being carried on a support and removable therefrom so that successive secondary surfaces may be substituted therefor and work in the same place on said support in the machine, guiding means with reference to which the successive secondary surfaces may be supported in the same or equivalent definite and predetermined co-operating relation with respect to the primary surface, so that the starting contact point in the operation of said secondary surfaces may always be the same in said machine, whereby a plurality of interchangeable curved or cylindrical printing surfaces may be made having identical designs identically placed thereon.

10. In a machine designed to be used in making graduated printing surfaces, the combination of a graduated primary surface, a secondary surface, preferably curved or cylindrical, a conveying surface adapted and arranged to receive an impression from said primary surface and impart it to said secondary surface, the secondary surface being adapted to be developed into a graduated printing surface in duplicate of the primary surface, and positive guiding means with reference to which said primary surface, said conveying surface and said secondary surface may be brought into a precise and predetermined co-operating relation, so that said primary surface may always be brought to the same starting point in its co-operation with the secondary surface and so that the successive secondary surfaces may always be brought to the same starting point in their co-operation with the secondary surface.

11. In a machine designed to be used in making graduated printed surfaces, the combination of a graduated primary surface, a secondary surface preferably curved or cylindrical, and a conveying surface adapted and arranged to receive an impression from said primary surface and to impart it to said secondary surface, said secondary surface being carried on a support from which it is removable so that other secondary surfaces may be substituted therefor and work in the same place in the machine, and positive guiding means with reference to which said primary surface, said conveying surface, and said secondary surface may be brought into a precise and predetermined co-operating relation, so that said primary surface may always be brought to the same starting point in its co-operation with the secondary surface and so that the successive secondary surfaces may always be brought to the same starting point in their co-operation with the secondary surface.

12. In a machine designed to be used in making printing surfaces the combination of a primary surface preferably curved or cylindrical, a secondary surface preferably curved or cylindrical, and a conveying surface adapted and arranged to receive an impression from said primary surface and impart it to said secondary surface said primary surface and said secondary surface being carried on supports from which ther are removable so that successive primary and secondary surfaces may be substituted therefor and work in the same place in the machine, and positive guiding means with reference to which successive primary surfaces and successive secondary surfaces may be brought into precise and predetermined co-operating relationship with reference to the conveying surface or surfaces so that the successive primary surfaces may always be brought to the same starting point in their co-operation with the conveying surface and so that the successive secondary surfaces may always be brought to the same starting point in their co-operation with the conveying surface, whereby said machine may be employed in making a series of duplicate secondary surfaces adapted to automatically register in printing.

Specification, £2 1s. Drawings on application.

Application No. 2774.—GEORGE GARIBALDI TURRI, of Queen Street, Melbourne, Victoria, Patent Agent (*American Lithographic Company*, assignee of EDWARD HETT), "*Improvements in Printing and Mechanisms therefor.*"—Dated 21st November, 1899.

Claims:—

1. In a lithographic press, the combination of an interior form-supporting device and an inflexible exterior removable and replaceable hollow lithographic printing form having an outer surface adapted to receive a lithographic drawing or transfer, substantially as and for the purposes set forth.

2. In a lithographic press, the combination of an interior form-supporting device and an exterior removable and replaceable cylindrical lithographic printing form, substantially as and for the purposes set forth.

3. In a lithographic printing press, the combination, with suitable impression surface or surfaces, and suitable inking and dampening mechanisms, of a series of interior form-supporting devices and a series of exterior tubular lithographic printing forms, carried by and removable from and replaceable on the form-supporting devices, substantially as and for the purposes set forth.

4. In a lithographic printing press, the combination, with a main impression drum, and suitable inking and dampening mechanisms, of a series of interior form-supporting devices arranged on the impression face of the drum and removable from and replaceable on the press, and a series of exterior tubular lithographic printing forms, carried by and removable from and replaceable on the form-supporting devices, substantially as and for the purposes set forth.

5. In a lithographic press, the combination of an interior form-supporting device and an exterior removable and replaceable tubular composite lithographic printing form, the printing form having a surface of suitable lithographic material and an inner strengthening shell, substantially as and for the purposes set forth.

6. In a lithographic press, the combination of an interior form-supporting device removable from and replaceable in the press and an exterior tubular lithographic printing form, removable from and replaceable on the supporting device, the printing form having an outer rounded surface of suitable lithographic material that is continuous or unbroken, substantially as and for the purposes set forth.

7. In a lithographic printing press, the combination with a suitable impression surface or surfaces of a series of form-supporting devices removable from and replaceable in the press and a series of tubular lithographic printing forms removable from and replaceable on the supporting devices, the printing forms having an outer rounded surface of suitable lithographic material that is continuous or unbroken, substantially as and for the purposes set forth.

8. The combination of an interior form-supporting device and an exterior removable and replaceable tubular lithographic printing form, the printing form having an outer rounded surface of suitable lithographic material that is continuous or unbroken, and releasable means for accurately fixing the position of the printing form on the supporting device and holding it in such position, substantially as and for the purposes set forth.

9. In a lithographic press, the combination of an interior form-supporting device removable from and replaceable in the press, and an exterior tubular composite lithographic printing form removable from and replaceable on the supporting device, the printing form having an outer rounded surface of suitable lithographic material that is continuous or unbroken and an inner strengthening shell, substantially as and for the purposes set forth.

10. In a press, the combination of an interior form-supporting device, and an exterior removable and replaceable lithographic printing form, the printing form being of a shape and of dimensions permanently fixed so as to permanently adapt the form to the co-operating parts of the press.

11. In a press, the combination with a suitable impression surface or surfaces and a series of suitable inking or dampening devices, of a series of interior form-supporting devices and a series of exterior removable and replaceable lithographic printing forms, the printing forms being of a shape and of dimensions permanently fixed so as to permanently adapt the forms to the co-operating parts of the press.

12. The combination, as set forth, with a suitable shaft or mandril, of a hollow form-support of substantial thickness carried on the shaft and removable therefrom, the form-support having a tapering outer surface, tapering from end to end, and an exterior removable and replaceable thin hollow printing form, the printing form having a tapering inner surface adapted to fit the form-support and correspondingly tapered from end to end, and an outer non-tapering planographic surface adapted to receive a design or transfer after the lithographic manner and to be thereafter developed into a printing surface for that design, and means for securing the printing form in proper place on the form-support.

13. The combination, as set forth, with a suitable shaft or mandril, of a hollow form-support of substantial thickness carried on the shaft and removable therefrom, the form-support having a tapering outer surface, tapering from end to end, and an exterior removable and replaceable thin hollow printing form, the printing form having a tapering inner surface adapted to fit the form-support and correspondingly tapered from end to end, and an outer non-tapering planographic surface that is continuous or unbroken and is adapted to receive a design or transfer after the lithographic manner and to be thereafter developed into a printing surface for that design, and means for securing the printing form in a proper place on the form-support.

14. The combination, substantially as described, of an interior supporting device, a hollow printing form, a longitudinal sliding connection between the two, an adjustable stop or shoulder to adjust the printing form longitudinally on the supporting device, and a clamping device to hold it in such adjusted position, a supporting and driving shaft, and a circumferentially adjustable supporting connection between the supporting device and the shaft, whereby the printing form may be adjusted both longitudinally and circumferentially with respect to the shaft and will then be positively held and driven in its adjusted position.

15. The combination, substantially as described, of a shaft, a hollow supporting device adapted to be mounted upon the shaft, a hollow printing form adapted to be mounted upon the supporting device, and adjustable connecting mechanism whereby the printing form is adapted for longitudinal and circumferential adjustment with respect to the shaft, the printing form and supporting device being connected by a spline.

16. The combination, substantially as described, of a shaft, an externally tapered supporting device adapted to be mounted upon the shaft, an internally tapered hollow printing form adapted to be mounted upon the supporting device, a device for unseating the printing form, the printing form and supporting device being connected by a spline, and adjustable connecting mechanism whereby the printing form is adapted for longitudinal and circumferential adjustment on the shaft.

17. The combination, substantially as described, of a shaft, hubs carried thereby, a form cylinder supported by and bolted to said hubs, devices whereby the form cellar may be circumferentially adjusted on the hubs, and removable printing tube adapted to be carried by the form cylinder.

18. The combination, substantially as described, of a shaft, hubs carried thereby, an externally tapered form cylinder supported by and bolted to the hubs, devices whereby the form cylinder may be circumferentially adjusted on the hubs, an internally tapered printing tube or cylinder adapted to be carried by the form cylinder, means for longitudinally adjusting and locking the printing tube in place, and means for unseating the printing tube.

19. A printing form comprising a base of a shape and of dimensions permanently fixed so as to permanently adapt the form to the co-operating parts of the press, the base having a separate planographic surface thereon of predetermined thickness, which surface is substantially integral with the base, and is adapted to receive a drawing or transfer of a design and to be thereafter developed into a printing surface for that design of the character desired, and which surface can be removed from and then renewed on the base without substantially affecting the shape or dimensions of the form, substantially as and for the purposes set forth.

20. In a press, the combination, with a suitable impression surface, of a planographic printing form comprising a base of a shape and of dimensions permanently fixed so as to permanently adapt the form to the co-operating parts of the press, the base having a separate electro-deposited printing surface thereon of predetermined thickness, which printing surface is substantially integral with the base and can be removed from and then renewed on the base without substantially affecting the shape or dimensions of the form, substantially as and for the purposes set forth.

21. In a press, the combination, with a suitable impression surface, of a planographic printing form comprising a curved base of a shape and of dimensions permanently fixed so as to permanently adapt the form to the co-operating parts of the press, the base having a separate curved printing surface thereon of predetermined thickness, which printing surface is substantially integral with the base and can be removed from and then renewed on the base without substantially affecting the shape or dimensions of the form, substantially as and for the purposes set forth.

22. In a press, the combination, with a suitable impression surface, of a planographic printing form comprising a circumferentially continuous curved base of a shape and of dimensions permanently fixed so as to permanently adapt the form to the co-operating parts of the press, the base having a separate circumferentially continuous curved printing surface thereon of predetermined thickness, which printing surface is substantially integral with the base and can be removed from and then renewed on the base without substantially affecting the shape or dimensions of the form, substantially as and for the purposes set forth.

23. In a press, the combination, with a suitable impression surface, of a planographic printing form comprising a circumferentially continuous curved base of a shape and of dimensions permanently fixed so as to permanently adapt the form to the co-operating parts of the press, the base having a separate circumferentially continuous curved electro-deposited printing surface thereon of predetermined thickness, which printing surface is substantially integral with the base and can be removed from and then renewed on the base without substantially affecting the shape or dimensions of the form, substantially as and for the purposes set forth.

24. The combination of a suitable interior support and an exterior removable and replaceable hollow printing form comprising a base of a shape and of dimensions permanently fixed so as to permanently adapt the form to the co-operating parts of the press, the base having a separate planographic surface thereon of predetermined thickness, which surface is substantially integral with the base and is adapted to

receive a drawing or transfer of a design and to be thereafter developed into a printing surface for that design of the character desired, and which surface can be removed from and then renewed on the base without substantially affecting the shape or dimensions of the form, substantially as and for the purposes set forth.

25. In a printing press, the combination, with suitable impression surface or surfaces, of a series of printing forms mounted in the press in a positive relationship to the impression surface or surfaces and to one another, the printing forms comprising a base of a shape and of dimensions permanently fixed so as to permanently adapt the form to the co-operating parts of the press, the base having a separate printing surface thereon of predetermined thickness, which printing surface is substantially integral with the base and can be removed from and then renewed on the base without substantially affecting the shape or dimensions of the form, substantially as and for the purposes set forth.

26. In a printing press, the combination, with suitable impression surface or surfaces, of a series of planographic printing forms mounted in the press in a positive relationship to the impression surface or surfaces and to one another, the printing forms comprising a curved base of a shape and of dimensions permanently fixed so as to permanently adapt the form to the co-operating parts of the press, the base having a separate curved printing surface thereon of predetermined thickness, which printing surface is substantially integral with the base and can be removed from and then renewed on the base without substantially affecting the shape or dimensions of the form, substantially as and for the purposes set forth.

27. In a printing press, the combination, with suitable impression surface or surfaces, and a series of suitable form-supports carrying the printing forms, of a series of exterior removable and replaceable hollow printing forms mounted in the press in a positive relationship to the impression surface or surfaces and to one another, the printing forms comprising a hollow base of a shape and of dimensions permanently fixed so as to permanently adapt the form to the co-operating parts of the press, the base having a separate printing surface thereon of predetermined thickness, which printing surface is substantially integral with the base and can be removed from and renewed on the base without substantially affecting the shape or dimensions of the form, substantially as and for the purposes set forth.

28. In a printing press, the combination, with a suitable impression surface or surfaces, and a series of suitable form-supports carrying the printing forms, of a series of exterior removable and replaceable hollow planographic printing forms mounted in the press in a positive relationship to the impression surface or surfaces and to one another, the printing form comprising a hollow circumferentially continuous cylindrical base of a shape and of dimensions permanently fixed so as to permanently adapt the form to the co-operating parts of the press, the base having a separate circumferentially continuous cylindrical printing surface thereon of predetermined thickness, which printing surface is substantially integral with the base and can be removed from and renewed on the base without substantially affecting the shape or dimensions of the form, substantially as and for the purposes set forth.

29. In a printing press, the combination with an impression drum and a series of form cylinders arranged on the impression face of the drum and removable from and accurately replaceable in the press and carrying the printing forms, of a series of hollow composite cylindrical planographic printing forms removable from the form cylinders and accurately replaceable thereon, the printing forms comprising a hollow cylindrical strengthening base and an exterior separate electro-deposited zinc printing surface thereon, which printing surface is of uniform thickness and is substantially integral with the base and can be removed from and renewed on the base without substantially affecting the dimensions of the printing form, substantially as and for the purposes set forth.

30. The improvement in the art of multicolour printing, which consists in preparing a series of curved metallic bases for printing forms and also a series of rotary form-supports therefor, said bases and form-supports being made of a permanent predetermined size and shape to adapt them to accurately fit one upon another, and so that the form-supports are adapted to accurately fit in pre-established seats in a rotary printing press, and so that the printing forms carried on their form-supports are adapted to fit and work accurately with the co-operating parts of the printing press; revolving each base in an electrolytic bath and thereby applying to it by electro-deposition a planographic metallic coating of predetermined thickness, integral with the base and suitable to have imposed upon it, and to print, a design, said coating and its base constituting the printing form; preparing a series of registering basic surfaces bearing component designs and on a rigid base of permanent predetermined size and shape adapted to fit accurately in a pre-established seat in a transfer press; arranging each of said printing forms in turn, and supported on a rotary form support in said transfer press in an accurate predetermined relation both longitudinally and circumferentially with respect to its corresponding basic surface seated in said press, and by aid of fixed guiding means, the same for the entire series; imparting by rolling contact the designs of the basic surfaces to the printing forms; suitably developing said printing forms as by etching into printing surfaces which will thereupon become registering printing surfaces for said designs and of the character desired, whether planographic, relief or intaglio, and having their designs located thereon in predetermined position for the purpose of register in printing, arranging said printing surfaces in their predetermined positions on their form-supports, each support being mounted in its pre-established seat in the printing press, and bringing said printing surfaces into predetermined relationship with reference to the impression surface and with reference to each other, fixed guiding means being employed whereby this predetermined relationship may be at once attained both longitudinally and circumferentially and without the usual empiric adjustment; and printing from said printing surfaces in accurate register in approximately instantaneous succession.

31. The combination of a series of rotary supports for printing forms, identical in working size and shape and constructed and designed to fit in pre-established seats in a rotary printing press, a series of curved metallic bases for printing forms of predetermined equal and permanent size and shape and constructed and designed to removably and replaceably fit on said form-supports in precise predetermined positions, said bases having each a uniform coating of electro-deposited metal suitable to have imposed thereon and to print a design, the coatings for the several bases being of equal and predetermined thickness with reference to the accurate fitting and working of said printing forms with the co-operating parts of said printing press, said coatings being removable from and replaceable on their bases without affecting the permanent size and shape of the bases, a base and its coating constituting a printing form; a transfer press provided with a removable basic surface having a rigid base of predetermined permanent size and shape, said press having fixed mechanical guides whereby the basic surface may be brought always and at once into the same pre-established seat therefor, said transfer press having also a pre-established seat for the form supports carrying their printing forms and having also fixed guiding means whereby each printing form and its basic surface may be brought accurately and at once in exact predetermined co-operating relation, whereby the designs of the basic surfaces may be imposed upon the printing forms by rolling contact in exact predetermined positions with reference to the attainment of register in printing with said printing forms when developed into printing surfaces; a rotary multicolour printing press having pre-established seats therein constructed to receive the form supports carrying their printing surfaces and provided with fixed guides whereby said printing surfaces may be brought into exact predetermined positions, at once and without the usual empiric adjustments, with respect to the impression surface and to each other and with reference to register in printing.

32. The improvement in the art of printing which consists in shaping the strengthening base of a printing form so as to adapt the form to the co-operating parts of the press, integrally applying to said base a separate planographic surface of a predetermined thickness, suitably placing the picture or design on said surface and developing the surface into a printing surface for the design of the character desired, printing the desired edition therefrom in the press, removing the printing surface from the base without substantially affecting the shape or dimensions of the base, integrally applying a second planographic surface to said base of the same predetermined thickness as before, and so without substantially affecting the shape or dimensions of the printing form, suitably placing another picture or design on said second surface, and so on, whereby the proper shape and size of printing form for exact register and proper printing in the press having been once accurately attained is permanently maintained throughout the subsequent printing operations of the form and a fresh and unused planographic surface is presented by the printing form for each new picture or design to be transferred and printed, substantially as and for the purposes set forth.

33. The improvement in the art of planographic printing which consists in shaping the strengthening base of a printing form so as to adapt the form to the co-operating parts of the press, integrally applying to said base by electro-deposition a separate planographic printing surface of a predetermined thickness, suitably placing the picture or design on said surface and etching and preparing the surface for printing, printing the desired edition therefrom in the press, removing the printing surface from the base without substantially affecting the shape or dimensions of the base, integrally applying by electro-deposition a second printing surface to said base of the same predetermined thickness as before and so without substantially affecting the shape or dimensions of the printing form, suitably placing another picture or design on said second surface, and so on, whereby the proper shape and size of printing form for exact register and proper printing in the press having been once accurately attained is permanently maintained throughout the subsequent printing operations of the form and a fresh and unused electro-deposited planographic printing surface is presented by the printing form for each new picture or design to be printed, substantially as and for the purposes set forth.

34. The improvement in the art of planographic printing which consists in shaping the strengthening base of a printing form so as to adapt the form to the co-operating parts of the press, integrally applying to said base by electro-deposition a separate planographic printing surface of a different material from the base and of a predetermined thickness, suitably placing the picture or design on said surface and etching and preparing the surface for printing, printing the desired edition therefrom in the press, removing the printing surface from the base by washing with suitable acids without substantially affecting the shape or dimensions of the base, integrally applying by electro-deposition a second printing surface to said base of a different material from the base and of the same predetermined thickness as before, and so without substantially affecting the shape or dimensions of the printing form, suitably placing another picture or design on said second surface, and so on, whereby the proper shape and size of printing form for exact register and proper printing in the press having been once accurately attained is permanently maintained throughout the subsequent printing operations of the form and a fresh and unused planographic printing surface is presented by the printing form for each new picture or design to be printed, substantially as and for the purposes set forth.

35. The improvement in the art of printing, which consists in shaping the strengthening bases of a series of printing forms so as to adapt the forms to the co-operating parts of the press, integrally applying to said bases separate planographic surfaces of a predetermined thickness, suitably placing the designs for the several colours of the picture on said several surfaces in accurate and relative register, and developing the several surfaces into printing surfaces for the several designs of the character desired, printing the desired edition therefrom in accurate and relative register and in approximately instantaneous succession, removing the printing surfaces from the bases without substantially affecting the shapes or dimensions of the bases, integrally applying a second planographic surface to said bases of the same predetermined thickness as before and so without substantially affecting the shapes or dimensions of the printing forms, suitably placing the designs for the several colours of another picture on said several second surfaces, and so on, whereby the proper shapes and sizes of the printing forms for exact register and proper printing in approximately instantaneous succession in the press having been once accurately attained are permanently maintained throughout the subsequent printing operations of the forms and fresh and unused planographic surfaces are presented by the printing forms for each new picture or design to be transferred and printed, substantially as and for the purposes set forth.

36. The improvement in the art of planographic printing, which consists in shaping the strengthening bases of a series of printing forms so as to adapt the forms to the co-operating parts of the press, integrally applying to said bases separate planographic printing surfaces of a predetermined thickness, suitably placing the designs for the several colours of the picture on said several surfaces in accurate and related register, and etching and preparing the surfaces for printing, printing the desired edition therefrom in accurate and related register and in approximately instantaneous succession, removing the printing surfaces from the bases without substantially affecting the shapes or dimensions of the bases, integrally applying a second printing surface to said bases of the same predetermined thickness as before and so without substantially affecting the shapes or dimensions of the printing forms, suitably placing the designs for the several colours of another picture on said several fresh surfaces, and so on, whereby the proper shapes and sizes of the printing forms for exact register and proper printing in approximately instantaneous succession in the press having been once accurately attained are permanently maintained throughout the subsequent printing operations of the forms and fresh and unused planographic printing surfaces are presented by the printing forms for each new picture or design to be printed, substantially as and for the purposes set forth.

37. In a printing press, the combination with a main impression drum having a continuous impression surface, of a series of printing surfaces arranged on the impression face of the drum and positively driven with the drum, and mechanism for moving the same radially into or out of contact with the impression face of the drum, said mechanism being independent in its operation of the printing operation of the drum but centred with the drum and operatively connected with the printing surfaces, substantially as and for the purposes set forth.

38. In a lithographic printing press, the combination with a main impression drum having a continuous impression surface, of a series of rounded and continuous printing surfaces arranged on the impression face of the drum and positively driven with the drum, and mechanism for moving the same into or out of contact with the impression face of the drum, said mechanism including toggle devices arranged to move the printing surfaces, substantially as and for the purposes set forth.

39. In a lithographic printing press, the combination with a main impression drum having a continuous impression surface, of a series of rounded and continuous printing surfaces arranged on the impression face of the drum and positively driven with the drum, and mechanism for moving the same into or out of contact with the impression face of the drum, said mechanism including a series of radial arms connected for operation with the printing surfaces, and means for operating said arms, substantially as and for the purposes set forth.

40. In a lithographic printing press, the combination with a main impression drum having a continuous impression surface, of a series of lithographic printing surfaces, the printing surfaces being geared to the impression drum so as to work together both when they are in and out of printing contact with the drum, means for moving said surfaces into and out of contact, said means being controlled at will separately from and independently of the printing movement of the impression drum, substantially as set forth.

41. In a printing press, the combination with suitable impression surface or surfaces, of one or more printing surfaces, a printing surface and its impression surface being operatively connected through intermediate vibrating gear wheels so as to work together both when they are in and out of printing contact, means for moving said surfaces into and out of contact, said means being controlled at will separately from and independently of the printing movement of the impression surface, substantially as and for the purposes set forth.

42. In a printing press, the combination, substantially as described with a main impression drum having a continuous impression surface, of a series of rounded and continuous printing surfaces arranged on the impression face of the drum and positively driven with the drum, and mechanism for moving the same into and out of contact with the impression face of the drum, said mechanism having a revoluble shifting device controlled at will separately from and independently of the printing operation of the drum but centred with the drum and operatively connected with the printing surfaces, substantially as and for the purposes set forth.

43. In a printing press, the combination with a main impression drum having a continuous impression surface, of a printing surface and mechanism for moving the same radially into and out of contact with the impression surface of the drum, said mechanism having sliding boxes carrying the printing surfaces, direct pressure bars carrying the sliding boxes, and a shifting device controlled at will separately from and independently of the printing movement of the impression drum, and carrying the pressure bars, substantially as and for the purposes set forth.

44. In a press, the combination with a suitable impression drum having a continuous impression surface and a rounded and continuous printing surface arranged on the face thereof, of mechanism for adjustably moving the printing surface radially into and out of contact with the impression drum, said mechanism carrying the printing surface and being centred with the drum but controlled at will separately from and independently of the printing movement thereof and being adjustable to and fro radially of the drum in the direction of the motion of the printing surface, substantially as and for the purposes set forth.

45. In a press, the combination with a suitable impression surface and a printing surface arranged on the face thereof, of adjustable mechanism for moving the printing surface into and out of contact with the impression surface, said mechanism including a non-removable adjusting part and a removable part connected to the printing surface, whereby the printing surface may be removed and restored without affecting the adjustment, substantially as and for the purposes set forth.

46. In a press, the combination with an impression drum having a continuous impression surface and a series of printing surfaces arranged on the impression face of the drum, of a series of radial slide-ways supported in the frame of the machine and a series of sliding boxes therein carrying the printing surfaces, and mechanism for adjustably moving the sliding boxes in the slide-ways radially of the drum, said mechanism being adjustable to and fro in the direction of the motion of the sliding boxes and controlled at will separately from and independently of the printing movement, substantially as and for the purposes set forth.

47. In a press, the combination with a suitable impression surface and a printing surface arranged on the face thereof, of slide-ways supported in the frame of the machine and sliding boxes therein carrying the printing surface, and mechanism for moving the sliding boxes in the slide-ways, said sliding boxes with the printing surface carried by them being adjustable on the mechanism moving them in the slide-ways and being removable from said mechanism and from the slide-ways, substantially as and for the purposes set forth.

48. In a printing press, the combination with a suitable impression surface, of a series of printing surfaces and a series of inking frames carrying the inking devices for the printing surfaces, and mechanism for moving the printing surfaces and the inking frames inwardly and outwardly, substantially as and for the purposes set forth.

49. The combination with a fixed central impression surface, of a series of printing surfaces, a series of inking frames carrying the inking devices for the printing surfaces, and a common mechanism for moving both the printing surfaces and the inking frames inwardly and outwardly, substantially as and for the purposes set forth.

50. In a printing press, the combination with a main impression drum and a series of printing surfaces arranged around it and a series of inking frames carrying the inking devices for the printing surfaces, of mechanism for simultaneously inking inwardly or outwardly the frames which carry the inking devices, said mechanism being independent of the drum but centered therewith, substantially as and for the purposes set forth.

51. In a press, the combination with suitable impression and printing surfaces, of an inking mechanism including a main ink-distributing roller positively driven with the printing surface, an ink-feeding roller and a vibrating or ductor roller, both positively driven with the main ink-distributing roller, and supplementary distributing rollers, and a swinging frame, the frame carrying the feeding, the vibrating, and the supplementary distributing rollers, and being centered with the shaft of the main ink-distributing roller, substantially as and for the purposes set forth.

52. In a press, the combination with a suitable impression surface and a suitable printing surface, of a hollow water-supply roller having internal water supply and a group of water-distributing rollers, one of the water-distributing rollers revolving in contact with the printing surface, the water-supply roller being mounted on pivoted arms and having mechanism for intermittently but positively swinging it into contact with one of the water-distributing rollers, substantially as and for the purposes set forth.

53. In a multicolour lithographic press, the combination with a large impression drum having a circumferentially continuous uniformly elastic impression surface, of a series of small uniform printing forms having circumferentially continuous cylindrical lithographic printing surfaces arranged circumferentially around the impression drum, mechanism to move the printing surfaces toward and from the impression surface and to move the printing surfaces into, and hold them in, printing contact with the impression drum in accurate and permanent relationship each printing surface to all the others, a series of inking mechanisms, one for each printing surface, each inking mechanism including a group of ink-distributing rollers arranged on the outer side of the printing surface away from the drum and mechanism to move them towards and from the printing surface, and a series of dampening mechanisms, one for each printing surface, arranged between adjacent printing surfaces, each dampening mechanism including a group of water-distributing rollers and mechanism to move them toward and from the printing surface, and suitable paper supplying and delivering devices for supplying paper on the web, substantially as described.

54. In a multicolour press, the combination with an impression drum having a circumferentially continuous uniformly elastic impression surface, of a series of uniform printing forms having circumferentially continuous cylindrical printing surfaces, mechanism to move the printing surfaces toward and from the impression surface and to move the printing surfaces into, and hold them in, printing contact with the impression drum in accurate and permanent relationship each printing surface with all the others, a series of inking mechanisms, one for each printing surface, each inking mechanism including a group of ink distributing rollers arranged on the outer side of the printing surface away from the drum and mechanism to move them toward and from the printing surface, and suitable paper-supplying and delivering devices for supplying paper on the web, substantially as described.

55. In the inking mechanism of a press a swinging ink frame consisting of two side frames, a connecting shaft to which the side frames are keyed, and a tie rod, one of the side frames having a suitable segmental gear or worm-wheel, in combination with suitable ink-distributing rollers and form-inking rollers carried by the ink frame, one of said form-inking rollers being loosely mounted on the tie rod, and with suitable swinging mechanism, substantially as and for the purposes set forth.

56. The combination with the impression surface, of a printing press having two suitable gears and positive driving mechanism, of a printing surface having gear connection with one of said gears and positively driven thereby and a main ink-distributing cylinder for said printing surface having gear connection with the other of said gears and poistively driven thereby, substantially as and for the purposes set forth

57. The combination with a suitable impression surface, a suitable damping mechanism, a swinging ink frame having carrying shaft, and a ductor roller and suitable ink-distributing rollers carried by the ink frame, of a main ink-distributing cylinder loosely mounted on the shaft and carrying on its hub at one end a gear wheel having gear connection with the impression surface and driven thereby and an internal cam groove reciprocating the ductor roller, and at the other end a gear wheel having gear connection with the ink-distributing rollers and driving them, an internal cam groove reciprocating the ductor roller and a second internal cam groove reciprocating the water fountain, substantially as and for the purposes set forth.

58. The combination with the main ink-distributing cylinder having on its hub at each end a wheel carrying an internal groove reciprocating the ductor roller, of a ductor roller carried by slides reciprocated by the said internal grooves, said ductor roller being adjustable in the slides, substantially as and for the purposes set forth.

59. In the inking mechanism of a press an ink-feeding roller, a pawl and ratchet mechanism connected with same to give it a step by step rotative motion, a swinging frame carrying the ink mechanism and supported in the main frame of the machine, a reciprocating rod supported in slideways in the main frame of the machine and suitable mechanism to reciprocate it and a connecting link, the link being pivoted at one end to the reciprocating rod and at the other end being adjustably pivoted to the pawl and ratchet mechanism, whereby with a fixed reciprocation of the rod a faster or slower rotative motion of the ink-feeding roller may be attained and maintained whatever the position of the swinging frame, substantially as and for the purpose set forth.

60. In a printing press the combination, with a group of ink-distributing rollers and suitable driving and ink-supplying and ink-receiving mechanisms, of a reciprocatable lifting plate having mechanism to positively control at the limits of its reciprocations the individual positions of the ink-distributing rollers and mechanism to reciprocate the plate, whereby the ink-distributing rollers may be forced positively into operative positions by one motion of the lifting plate and may be forced positively therefrom by the reverse motion of the lifting plate, substantially as and for the purposes set forth.

61. In a printing press the combination, with a group of ink distributing rollers and suitable driving and ink-supplying and ink-receiving mechanisms, of a reciprocatable lifting plate having adjustable mechanism to control at the limits of its reciprocations the individual positions of the ink-distributing rollers and mechanism to reciprocate the plate and a stop to positively limit the motion of the plate in the direction toward the ink-receiving mechanism, whereby the ink-distributing rollers may be forced positively but adjustably into operative positions by one full motion of the lifting plate, and may be forced positively therefrom by the reverse motion of the lifting plate, substantially as and for the purposes set forth.

62. In a printing press the combination, with a group of ink-distributing rollers and suitable driving and ink-supplying mechanisms and a group of form-inking rollers, of a swinging frame and mechanism to swing it, said swinging frame carrying the form-inking rollers by fixed operative positions and carrying the ink-distributing rollers in slideways, and a lifting plate also carried by the said frame and having mechanism to control at the limits of its motions the individual positions of the ink-distributing rollers in their respective slideways by the carrying frame and mechanism to move the lifting plate, where in the ink-distributing rollers may be forced positively into operative position in contact with the form-inking rollers by one motion of the lifting plate and may be forced positively therefrom by the reverse motion of the lifting plate, and the form-inking rollers may be collectively swung out of and into operative contact with the printing surface, substantially as and for the purposes set forth.

63. The combination, with suitable impression and printing surfaces and suitable inking mechanism including a main ink-distributing cylinder, of a dampening mechanism including rollers positively driven by the main ink-distributing cylinder, and a swinging damping frame carrying said dampening mechanism, the damping frame being centered with the main ink-distributing cylinder, and mechanism to swing the damping frame, substantially as and for the purposes set forth.

64. The combination, with suitable impression and printing surfaces and suitable inking mechanism including a main ink-distributing cylinder, of a dampening mechanism having a metal rider and form-dampening rollers, and a swinging damping frame carrying said dampening mechanism, the damping frame being centered with the main ink-distributing cylinder, and the metallic rider being positively driven with said main ink-distributing cylinder, and mechanism to swing the damping frame, substantially as and for the purposes set forth.

65. The combination of a suitable driving gear wheel, a swinging damping frame centered therewith and mechanism to swing it, a water-supply roller, a metal rider, and form-dampening rollers, all carried by the damping frame, the water-supply roller reciprocating in slideways in the damping frame toward and away from the metal rider, and having mechanism to reciprocate, and a series of gear wheels positively connecting the water supply roller and the metal rider with the driving gear wheel, said series of gear wheels including a chain of movable gear wheels driving the reciprocating water supply roller and carried on a chain of pivoted links, substantially as and for the purposes set forth.

66. The combination with a main impression drum and a series of suitable printing surfaces arranged around it and a series of pressure bars carrying the printing surfaces, of a revoluble shifting disc or plate and mechanism to revolve or shift it, and a series of toggle levers pivoted to the frame at their outer ends and to the pressure bars at their inner ends, and to the revoluble shifting disc or plate at their center pivots, substantially as and for the purposes set forth.

67. The combination with a suitable impression drum and a series of suitable printing surfaces arranged around the drum, and a series of groups of inking rollers and a series of swinging ink frames carrying the form-inking rollers of said groups, of a series of separate swinging mechanisms to swing the ink frames, one for each ink frame, and a central driving mechanism to simultaneously actuate the separate swinging mechanisms, the separate swinging mechanisms being detachably secured to the central driving mechanism, substantially as and for the purposes set forth.

68. The combination with a suitable impression drum and a series of suitable printing surfaces arranged around the drum and a series of groups of inking rollers and a series of swinging frames carrying the form-inking rollers of said groups, of a series of separate swinging mechanisms to swing the ink frames, one for each ink frame, and a central driving mechanism to simultaneously actuate the separate swinging mechanisms, and adjustable stops to limit the motion of each ink frame toward its printing surface, substantially as and for the purposes set forth.

69. The combination with a suitable impression drum and a series of suitable printing surfaces arranged on the impression face of the drum, of a series of groups of dampening rollers, a series of swinging frames carrying the same, a central actuating device to simultaneously swing said frames toward and from the printing surfaces, and a series of connecting mechanisms connecting said central actuating device with the several swinging frames, substantially as and for the purposes set forth.

70. The combination, with a suitable impression drum and a series of printing surfaces arranged around it and a suitable main driving mechanism driving the drum and the printing surfaces positively together, of carrying mechanisms for carrying said printing surfaces and moving them simultaneously in toward or out from the impression drum and so into and out of operative position, and a controlling engine connected on the one side with said main driving mechanism and on the other side with the carrying mechanism of said printing surfaces and controlled independently of the regular printing operation of the printing press, whereby the printing surfaces may, prior to the beginning of the printing operation, be brought into suitable permanent printing pressure contact with the drum, by the main driving mechanism of the press, be positively and permanently held in such pressure contact so long as the printing operation is preceding, and may then be moved into permanent position out of contact with the drum by the main driving mechanism of the press, substantially as and for the purposes set forth.

71. The combination with a suitable impression drum and a series of printing surfaces arranged around it and a series of groups of inking rollers and a series of swinging ink frames carrying the same and a suitable main driving mechanism driving the drum and the printing surfaces and some of the ink rollers all positively together, of swinging mechanism for simultaneously swinging said ink frames in toward or out from the printing surfaces and a controlling engine connected on the one side with the said main driving mechanism and on the other side with the swinging mechanism for simultaneously swinging the ink frames, substantially as and for the purposes set forth.

72. The combination, with a suitable impression drum and a series of printing surfaces arranged around it and a series of groups of dampening rollers and a series of swinging damping frames carrying the same and a suitable main driving mechanism driving the drum and the printing surfaces and some of the dampening rollers all positively together, of swinging mechanism for simultaneously swinging said damping frames in toward or out from the printing surfaces and a controlling engine connected on the one side with said main driving mechanism and on the other side with the swinging mechanism for simultaneously swinging the damping frames, substantially as and for the purposes set forth.

73. The combination, with a suitable impression drum and a series of printing surfaces arranged around it and a series of groups of inking rollers, and a series of swinging ink frames carrying the same, of a controlling engine connected with said ink frames and with the carrying devices of said printing surfaces and constructed to simultaneously move said printing surfaces toward or from the impression drum and said ink frames toward or from the printing surfaces, substantially as and for the purposes set forth.

74. The combination, with a suitable impression drum and a series of printing surfaces arranged around it and a series of groups of inking rollers and a series of swinging ink frames carrying the same, and a series of groups of dampening rollers and a series of swinging dampening frames carrying the same, of a controlling engine connected with said ink frames and with said dampening frames and with the carrying devices of said printing surfaces and constructed to move said printing surfaces toward or from the impression drum and said ink frames towards or from the printing surfaces, and said damping frames toward or from the printing surfaces substantially as and for the purposes set forth.

75. In a controlling engine for a press, a shaft, means for rotating said shaft driven by the driving mechanism of the press, sets of connecting mechanism each set connecting with a different part of the press to be moved and adapted to move that part of the press one way or the other into or out of operative position as the set is driven in one direction or the other, two clutch gear wheels intermediate between said shaft and each set of said connecting mechanism, each couple of said gear wheels capable of connecting or disconnecting the said shaft with the said connecting mechanism, and of driving the said connecting mechanism in one direction when one gear wheel of said couple connects the shaft with the connecting mechanism, and of driving said connecting mechanism in the other direction when the other gear wheel of the couple connects them together, clutch mechanism for each couple of gear wheels adapted to cause one or the other of the said gear wheels to connect the shaft with the corresponding set of connecting mechanism or to cause both of said gear wheels to disconnect the shaft and said connecting mechanism, and means for operating the clutch mechanism, whereby the movement of the said different parts of the press into and out of operative position may be controlled.

76. In a controlling engine for a press, a shaft adapted to rotate in either direction, means for rotating it in either direction, mechanism connecting with a part of the press to be moved, a gear wheel arranged and adapted to connect or disconnect the shaft with said connecting mechanism, whereby the shaft, when connected to the connecting mechanism, will drive the latter to move the said part of the press, clutch mechanism adapted to cause the gear wheel to connect the shaft with the said connecting mechanism or to disconnect them, and means for operating the clutch mechanism, whereby the operation of the said part of the press will be controlled.

77. In a press, a shaft adapted to rotate in either direction, driving mechanism for rotating said shaft, two clutch gear wheels intermediate between said driving mechanism and the shaft, capable of connecting or disconnecting the said driving mechanism with the said shaft, and of driving the said shaft in one direction when one gear wheel connects the driving mechanism to the shaft, and of driving the shaft in the other direction when the other gear wheel connects them, clutch mechanism adapted to cause one or the other of the said gear wheels to connect the driving mechanism with the said shaft or to cause both of them to disconnect the driving mechanism from the shaft, means for operating said clutch mechanism whereby the shaft may remain at rest or may be driven in either direction at will, gear wheels mounted upon said shaft and connecting mechanism between the said gear wheels and parts of the press to be moved, whereby the operation of the said parts of the press may be controlled.

78. In a controlling engine for a press, a shaft adapted to rotate in either direction, means for rotating it in either direction, mechanism connecting with a part of the press to be moved, a gear wheel arranged and adapted to connect or disconnect the shaft with said connecting mechanism, whereby the shaft, when connected to the connecting mechanism, will drive the latter to move the said part of the press, electric clutch mechanism adapted to cause the gear wheel to connect the shaft with the said connecting mechanism or to disconnect them, a clutch circuit through said electric clutch mechanism, a circuit controller therein for making or breaking the circuit, an operating circuit, an electro-magnet therein controlling the circuit controller of the clutch circuit, and a circuit controller in the operating circuit under the control of the operator, a catch for holding the circuit controller of the clutch circuit in its operative position, an electro-magnet in a releasing circuit for withdrawing the catch, and a circuit controller in the said releasing circuit, whereby the operation of the said parts of the press may be controlled.

79. In a press, a shaft adapted to rotate in either direction, driving mechanism for rotating said shaft, two clutch gear wheels intermediate between said driving mechanism and the shaft, capable of connecting or disconnecting the said driving mechanism with the said shaft, and of driving the said shaft in one direction when one gear wheel connects the driving mechanism to the shaft, and of driving the shaft in the other direction when the other gear wheel connects them, electric clutch mechanisms adapted to cause one or the other of the said gear wheels to connect the driving mechanism with the said shaft or to cause both of them to disconnect the driving mechanism from the shaft, clutch circuits through the said electric clutch mechanisms, circuit controllers in said clutch circuits for making or breaking said circuits, an operating circuit for each of said clutch circuits, an electro-magnet in each operating circuit controlling the circuit controller in its corresponding clutch circuit, and a circuit controller in each operating circuit, under the control of the operator, whereby the operation of the said parts of the press may be controlled.

80. In a controlling engine for a press, the combination of electric clutch mechanism for connecting driving parts with a part to be driven or for disconnecting them, a circuit through said electric clutch mechanism adapted to cause it to connect the said parts together or to disconnect them, a circuit controller therein for making or breaking said clutch circuit, an electro-magnet in another circuit arranged and adapted to control the operation of the said circuit controller in the clutch circuit, a circuit through said electro-magnet and a circuit controller therein for making and breaking said operating circuit, whereby the clutch mechanism may be operated to cause it to connect the said driving parts with the said part to be driven or to disconnect them.

81. In a controlling engine for a press, the combination of electric clutch mechanism for connecting driving parts with a part to be driven or for disconnecting them, a circuit through said electric clutch mechanism adapted to cause it to connect the said parts together or to disconnect them, a circuit controller therein for making or breaking said clutch circuit, a catch for seizing and holding said circuit controller in its operative position to cause the clutch circuit to operate the clutch, an electro-magnet in another circuit arranged and adapted to control the operation of the circuit controller in the clutch circuit, a circuit through said electro-magnet and a circuit controller therein for making and breaking said operating circuit, and means, automatically actuated by the part to be driven at the limit of its movement, for releasing the catch to permit the circuit controller of the clutch circuit to resume its inoperative position, whereby the clutch mechanism may be operated to cause it to connect the said driving parts with the said part to be driven, or to disconnect them.

82. In combination with suitable hoisting arms and means for operating the same, a suitable frame or carriage and a set of circular rails and means for moving and positively holding at any point the carriage on the rails, substantially as set forth.

83. The combination, with a multicolour printing press having a series, circularly arranged, of hollow printing forms or surfaces carried on permanent shafts, of suitable hoisting arms and means for operating the same, a suitable frame or carriage for the hoisting arms, a set of circular rails concentric with the press for the carriage to move on, and means for moving the carriage on the rails, substantially as described.

84. A revoluble printing tube holder having a standard and a series of receiving shafts, each adapted to lock with and so as to continue the permanent shaft of a press, and mechanism to revolve the same, substantially as described.

85. The combination in a press of suitable hoisting arms, means for operating the arms, a frame or carriage carrying the same having grasping and rolling or sliding devices, a set of circular rails, a motor for actuating the means for operating the hoisting arms and also the grasping and rolling or sliding devices to cause the carriage to move along the rails, and a clutch adapted to connect the motor so as to operate either the hoisting arms or to move the carriage or to wholly disconnect it, whereby the carriage may be moved and the hoisting arms be

operated at will but dissimultaneously and whereby printing cylinders, tubes or supports therefor may be removed from operative position in the press and be carried to any desired position or may be carried from such position to and be inserted in their operative positions in the press.

86. In a press, hoisting arms consisting of two parts movable upon each other, means for operating the hoisting arms and means for moving the two parts thereof relatively to each other, whereby printing cylinders, tubes or surfaces or supports therefor may be placed in or be removed from, the press, substantially as set forth.

87. In a press, the combination with circular rails, having a rack, a carriage adapted to run thereon, an axle thereof provided with toothed wheels meshing with said rack, an electric motor mounted upon the carriage to drive the latter along the rails, and connecting gearing between the shaft of the motor and the said axle of the carriage, of conductors, one for each rail, each consisting of a metallic strip running the length of the rails and insulated therefrom and connected electrically at one end with a source of electricity, a metallic shoe upon each side of the carriage adapted to slide upon the metallic strip upon the rail on that side of the press, or to be removed therefrom, means for making or breaking contact between the shoe and the electric motor, whereby an electric current may be supplied to the motor, substantially as set forth.

88. In a press, the combination of a movable carriage, rails upon which it is adapted to move, a motor, connecting mechanism between the motor and the wheels of the carriage adapted to impart motion to the carriage, a worm and worm wheel forming part of said connecting mechanism, whereby the carriage may be moved along the rails and will be locked in position wherever stopped, substantially as set forth.

89. In a press, the combination of a movable carriage, rails along which the carriage is adapted to move, an electric motor thereon for driving the carriage, a circuit through the motor, normally broken, a circuit controller therein, normally open, an operating circuit, an electro-magnet therein for closing the circuit controller of the first circuit, means for making or breaking the operating circuit at will, a catch for holding said circuit controller in its closed position, a releasing circuit, an electro-magnet therein adapted to withdraw the catch from its operative position when the releasing magnet is energized, and means for making and breaking the releasing circuit at will, whereby the carriage may be moved along the rails and may be stopped at will.

90. In a press, the combination of a movable carriage, rails along which the carriage is adapted to move, an electric motor thereon for driving the carriage, a circuit through the motor, normally broken, containing a reversing switch, a circuit controller therein, normally open, an operating circuit, an electro-magnet therein for controlling the circuit controller of the first circuit, and means for making and breaking the operating circuit at will, whereby the carriage may be moved along the rails at will.

91. In a press, the combination of a movable carriage, hoisting arms connected therewith and means for operating said arms, rails along which the carriage is adapted to move, an electric motor thereon for driving the carriage, a circuit through the motor, normally broken, a circuit controller therein, normally open, an operating circuit, an electro-magnet therein for controlling the circuit controller of the first circuit, and means for making and breaking the operating circuit at will, whereby the carriage may be moved along the rails at will.

92. In a press, the combination of a movable carriage, rails along which the carriage is adapted to move, an electric motor connected with the carriage, connecting mechanism between the motor and the wheels of the carriage for imparting motion to the carriage, an electric clutch forming part of said connecting mechanism and adapted to cause the connecting mechanism to connect the motor operatively with the wheels to drive them or to disconnect them, hoisting arms connected with the carriage, connecting mechanism between the motor and and the hoisting arms for imparting motion to the latter to raise or lower them, an electric clutch forming part of said connecting mechanism and adapted to cause the connecting mechanism to connect the motor operatively with the hoisting arms to raise or lower them or to disconnect them, a circuit through the electric motor and a circuit through each of the electric clutches, a circuit controller in each of said circuits, under the control of the operator, an operating circuit for each of said circuits, an electro-magnet in each operating circuit for controlling the circuit controller of the corresponding first circuit, and means for making and breaking each of the operating circuits at will, a catch for holding each of said circuit controllers in its closed position, a releasing circuit for each catch, an electro-magnet in each releasing circuit adapted when energized to withdraw its catch to permit the circuit controller of the corresponding first circuit to break said circuit, whereby the carriage may be moved along the rails and the hoisting arms may be raised or lowered at will.

93. In a press, the combination of a movable carriage, hoisting arms connected therewith and means for operating said arms, rails along which the carriage is adapted to move, a motor for driving the carriage connecting mechanism between the motor and the wheels of the carriage for imparting motion to the carriage, an electric clutch forming part of said connecting mechanism and adapted to cause the said connecting mechanism to connect the motor operatively with the wheels to drive them or to disconnect them, a circuit through the electric clutch, a circuit controller therein, an operating circuit, an electro-magnet therein for closing the circuit controller of the first circuit, means for making and breaking the operating circuit at will, a catch for holding said circuit controller in its closed position, an electro magnet adapted when energised to withdraw the catch to permit the circuit controller of the first circuit to open to break said circuit, a releasing circuit through said electro-magnet, a contact point secured on the carriage, and forming part of said releasing circuit, one or more contact points also in said circuit arranged along the rails at any desired point or points, all so arranged that when the contact point on the carriage makes contact with any of said contact points on the rails, the releasing circuit will be closed through said releasing magnet, whereby the carriage may be automatically stopped at a predetermined point.

94. In a press, the combination of a movable carriage, rails along which the carriage is adapted to move, a motor, hoisting arms connected with the carriage, connecting mechanism between the motor and the hoisting arms for imparting motion from the motor to the hoisting arms to raise or lower them, an electric clutch forming part of said connecting mechanism and adapted to cause the connecting mechanism to connect the motor operatively with the hoisting arms to raise them or to lower them or disconnect them, a circuit through the electric clutch, a circuit controller therein, an operating circuit, an electro-magnet therein for controlling the circuit controller of the first circuit, and means for making and breaking the operating circuit at will, a catch for holding said circuit controller in its closed position, a releasing circuit, an electro-magnet therein adapted, when energized, to withdraw the catch to permit the circuit controller of the first circuit to open to break said circuit, a set of contact points in said releasing circuit, one of said contact points being carried by one of the hoisting arms and the other borne upon the framework of the carriage and so arranged that, when the hoisting arms are in their raised position, the two contact points will make contact with each other to close the said releasing circuit, whereby the upward movement of the hoisting arms will be automatically stopped at the proper point.

95. In combination with a press having a plurality of printing cylinders, a standard, swinging heads secured to the standard and adapted to swing horizontally thereon, and to move vertically thereon, and a plurality of receiving shafts secured to said swinging heads, and adapted to register with the permanent shafts of the printing cylinder and to receive and support form cylinders or printing tubes, whereby the form cylinders or printing tubes may readily and simultaneously be removed from or be placed upon the permanent shafts of the printing cylinders, substantially as set forth.

96. In combination with a press having a plurality of printing cylinders, a standard, brackets secured to the standard and moving vertically thereon, means for moving the brackets vertically, swinging heads mounted upon the brackets and adapted to swing horizontally thereon, and a plurality of receiving shafts secured to said swinging heads and adapted to receive and support form cylinders or printing tubes, whereby the receiving shafts may be caused to register with the permanent shafts of the printing cylinders, and the form cylinders or printing tubes may readily and simultaneously be removed from or be placed upon, the permanent shafts of the printing cylinders, substantially as set forth.

97. The combination in a lithographic printing press, with an impression cylinder and a printing cylinder adapted to print lithographically upon one side of a continuous web, of an impression cylinder and a printing cylinder adapted and arranged to print upon the reverse side of said web, substantially as set forth.

98. The combination of an impression cylinder and a printing cylinder adapted and arranged to print upon the back of a continuous web, with an impression cylinder and a printing cylinder of a lithographic printing press, arranged and adapted to print lithographically upon the face of said continuous web, and an off-setting roll to take the off-set from the back of the continuous web, substantially as set forth.

99. In a multicolor press, the combination, substantially as described, with a suitable impression surface and a series of suitable prints ing surfaces, of an inking mechanism including a series of ink fountains near their respective printing surfaces, a fountain for each separat-colored ink to be printed by a printing surface, and a series of groups of intervening ink-carrying and distributing rollers, a series of distant ink reservoirs, one for each fountain, and a series of systems of connecting ink ducts, there being a system connecting each reservoir with its ink fountain, said fountains being grouped together whereby the various colored inks may be blended or mixed and supplied to the ink fountains as required under the care of one person from a single place.

100. In a multicolour press, the combination, substantially as described, with a suitable impression surface and a series of suitable printing surfaces, of an inking mechanism including a series of air-tight ink fountains near their respective printing surfaces, a fountain for each separate coloured ink to be printed by a printing surface, and a series of groups of intervening ink-carrying and distributing rollers, a series of distant ink reservoirs, each reservoir being provided with a separate ink forcing device, one for each fountain, and a series of systems of connecting air-tight ink ducts, there being a system connecting each reservoir with its ink fountain, said fountains being grouped together whereby the various coloured inks may be blended or mixed and supplied to the ink fountains as required under the care of one person from a single place.

101. In a lithographic press, the combination, substantially as described, with suitable impression and printing surfaces, of a dampening mechanism, including a water-supply roller or fountain near the printing surface, and a group of intervening water-carrying and distributing rollers, a common water pipe or device, including a filter and separate water ducts connecting the common supply pipe with the water supply roller or fountain.

102. In a lithographic press, the combination, substantially as described, with suitable impression and printing surfaces, of a dampening mechanism including a water-supply roller or fountain near the printing surface and a group of intervening water-carrying and distributing rollers, a distant common water pipe or device, and a system of connecting water ducts including a reversible pump.

103. In a printing press, the combination with a single impression drum having a continuous impression surface of one or more rounded printing surfaces arranged on the impression face of the drum, and a cylinder having a printing surface for applying the bronze size arranged on the impression face of the drum, the printing surfaces and the sizing cylinder being positively driven with the drum, and mechanism for moving the same into and out of contact with the impression face of the drum, said mechanism including a series of radial arms connected for operation with the printing surfaces and the sizing cylinder, and means for operating said arms, and a bronzing and dusting attachment adapted to be attached to and removed from the press so as to be brought into or out of operative relation with the impression drum, and adapted to apply the bronze to and distribute it upon the paper, and to remove the superfluous powder therefrom, while the paper is carried upon the single impression drum.

104. In a printing press, the combination with a single impression drum having a continuous impression surface of one or more rounded printing surfaces arranged on the impression face of the drum, and a cylinder having a printing surface for applying the bronze size arranged on the impression face of the drum, the printing surfaces and the sizing cylinder being positively driven with the drum, and bronzing and dusting attachment adapted to be applied to the impression face of the drum, and mechanism for moving the printing surfaces, the sizing cylinder and the bronzing and dusting devices into and out of contact with the impression face of the drum, said mechanism including pressure arms operatively connected with the printing surfaces, the sizing cylinder and the bronzing dusting and attachment, means for moving the pressure arms in and out simultaneously, and gear connections on the bronzing and dusting attachment, adapted to be driven by the impression drum when the attachment is in operative position on the drum and adapted to drive the bronzing and dusting devices, substantially as set forth.

105. In a printing press, the combination of a single impression drum having a continuous impression surface, printing cylinders arranged around the impression face of the drum, a sizing cylinder having a continuous printing surface for applying bronze size arranged upon the impression face of the drum, gearing between the said cylinders and the drum whereby they are driven positively with the drum, boxes at the ends of the printing and sizing cylinders having bearings in which said cylinders turn, a bronzing attachment, a dusting attachment, supporting arms projecting from the ends of the bronzing and dusting attachments, ways in the frame of the machine in which the

boxes and supporting arms move, radial arms connected with said boxes and supporting arms, means for adjusting the position of the boxes and supporting arms on the radial arms, means for operating said radial arms, and gear connections between the bronzing and dusting attachments and the cylinder, substantially as set forth.

106. In the bronzing device of a press, the combination of means for applying the power to the material, and one or more distributing belts having a surface of fur or other suitable material, rollers upon which each belt is carried and with which it revolves, and means for giving the rollers and the belts an oscillating crank movement over the surface of the material to be bronzed, substantially as set forth.

107. In a press, the combination with an impression drum and a suitable device for applying the bronze, of a dusting device consisting of two closed compartments, one compartment being provided with one or more dusting rollers adapted to revolve in said compartment and to bear against the impression drum, and the other compartment being provided with a roller having a surface of felt or similar material adapted to bear against the impression drum, an exhausting device, and pipes leading from the compartments to the exhausting device, substantially as set forth.

108. The combination with a printing press and its guiding rollers, of slitters for trimming the sheet, substantially as set forth.

109. The combination with the drum of a printing press, of grippers mounted upon a sprocket chain adapted to grip and carry the paper web and deliver the same, gearing for driving said sprocket chain, cams for moving said grippers to enable them to seize the paper web, revolving knives to cut such web into sheets, cams to open said grippers to cause them to release their hold upon the paper sheets, and endless tapes for delivering the sheets, moving at a greater rate of speed than that of the paper web, substantially as set forth.

110. A gripper for seizing and carrying the paper in a printing press composed of a fixed jaw and a movable jaw, the latter adapted, when acted upon by suitable cam surfaces, to separate from the stationery jaw and then to turn sideways from underneath the paper to permit its escape, substantially as set forth.

111. The combination, with the discharge, or delivery, mechanism of a printing press, of an enclosed heater box having asbestos-lined walls and lid, endless carrier tapes passing through the box and adapted to receive and carry through the box the web or sheets from the press, electric heating tubes for heating the heater box, suitable electric connections with said tubes, and delivery tapes adapted to receive the web or sheets from the carrier tapes and to deliver the same, substantially as set forth.

112. In a multicolour press, the combination of a series of impression drums, each having a circumferentially continuous uniformly elastic impression surface, of a series of uniform printing forms having circumferentially continuous cylindrical printing surfaces, mechanism to move the printing surfaces toward and from the impression surfaces and to move the printing surfaces into, and hold them in, printing contact with the impression drums in accurate and permanent relationship each printing surface to all the others, a series of inking mechanisms, one for each printing surface, each inking mechanism including a group of ink-distributing rollers, and mechanism to move them toward and from the printing surfaces, and suitable paper supplying and delivering devices for supplying paper on a web, substantially as described.

113. In a multicolour lithographic press, the combination with a series of impression drums each having a circumferentially continuous uniformly elastic impression surface, of a series of uniform printing forms having circumferentially continuous cylindrical printing surfaces, mechanism to move the printing surfaces toward and from the impression surfaces and to move the printing surfaces into, and hold them in, printing contact with the impression drums in accurate and permanent relationship each printing surface to all the others, a series of inking mechanisms, one for each printing surface, each inking mechanism including a group of ink-distributing rollers, and mechanism to move them toward and from the printing surfaces, and a series of dampening mechanisms, one for each printing surface, each dampening mechanism including a group of water-distributing rollers and mechanism to move them toward and from the printing surface, and suitable paper-supplying and delivering devices for supplying paper on a web, substantially as described.

114. The combination with an interior form support, of an exterior curved circumferentially discontinuous inflexible printing form constructed interiorly to fit the support and removable therefrom and of exterior planographic surface suitable to receive a design as by the lithographic process of transferring and to be thereafter developed by etching or in any other suitable manner into a printing surface for that design of the character desired.

115. The combination with an interior form support, of an exterior curved circumferentially discontinuous inflexible printing form constructed internally to fit the support and removable therefrom and of exterior planographic surface suitable to receive a design as by the lithographic process of transferring and to be thereafter developed by etching or other suitable manner into a printing surface for that design of the character desired, the printing form being composite and consisting of an inner strengthening base and an outer printing surface of different material from the base but integral therewith.

116. The combination with an interior form support, of an exterior curved circumferentially discontinuous inflexible printing form constructed interiorly to fit the support and removable therefrom and of exterior electrolytically deposited zinc planographic surface suitable to receive a design as by the lithographic process of transferring and to be thereafter developed by etching or in other suitable manner into a printing surface for that design of the character desired, the printing form being composite and consisting of an inner strengthening base faced exteriorly with copper and an outer printing surface of electrolytically deposited zinc.

117. In a printing press, the combination with an interior form support, of an exterior curved circumferentially discontinuous inflexible printing form applicable to and removable from the support, the printing form being composite and consisting of an inner inflexible curved base containing aluminum permanently adapted to fit the interior support and a zinc surface formed on or applied to the curved base and integral therewith, substantially as described.

118. In a printing press, the combination with an interior form support, of an exterior curved circumferentially discontinuous inflexible printing form applicable to and removable from the support, the printing form being composite and consisting of an inner inflexible curved base of aluminum faced exteriorly with copper and permanently adapted to fit the interior support and a zinc printing surface electrolytically deposited on the curved base and integral therewith, substantially as described.

119. In a printing press, the combination with an impression drum having a series of discontinuous impression surfaces and with a series of inking mechanisms, of a series of interior form supports and a series of exterior curved circumferentially discontinuous inflexible printing forms, each form applicable to and removable from its support and adjustable longitudinally and circumferentially, the printing forms being composite and consisting of an inner inflexible curved base permanently adapted to fit the interior support and a printing surface of different material formed on or applied to the curved base and integral therewith, the printing forms being arranged on the impression face of the drum and rotating positively therewith, substantially as described.

120. In a planographic printing press, the combination with a suitable impression surface and a series of inking and dampening mechanisms, of a series of interior form supports and a series of exterior curved circumferentially discontinuous inflexible printing forms, each form applicable to and removable from its support and adjustable longitudinally and circumferentially, the printing forms being composite and consisting of an inner inflexible curved base of aluminum faced exteriorly with copper and permanently adapted to fit the interior support, and a thin planographic zinc printing surface electrolytically deposited on the curved base and integral therewith, substantially as described.

121. The method of and apparatus for casting a hollow zinc printing tube substantially as herein described and shown in Fig. 94.

122. The method of and apparatus for casting a thin exterior zinc printing surface upon a suitable hollow strengthening base substantially as described herein and shown in Fig. 94.

123. The combination with the paper-carrying surface, of paper-holding grippers mounted at the sides thereof and provided with heads to overlap the paper, said grippers having a slotted and pivoted mounting and having springs to hold the heads inward over the paper and down on the paper, and cams fixed in the frame of the machine and arranged in the path of the grippers and adapted first to raise the grippers in their slots and the heads of the grippers from the paper and then to swing the grippers on their pivots and the heads of the grippers outwardly from over the paper, substantially as and for the purposes set forth.

124. A clutch mechanism consisting of a part fast to a shaft and a part not fast to the shaft, the adjacent faces of the two parts being provided with teeth, the sides of which run at an angle of substantially forty-five degrees to the plane of the face of each part of the clutch, said teeth being adapted to interlock with each other when the two parts of the clutch are drawn together and means for drawing them together, whereby motion will be imparted from the fast part to the other part of the clutch, substantially as set forth.

125. In a printing press, the combination with a printing device consisting of an interior form supporting device and an exterior removable and replaceable hollow printing form and suitable inking mechanism, of an impression device consisting of a series of discontinuous impression surfaces arranged with their entrance ends a fixed distance apart to which distance the circumferential length of the printing surface conforms and having slots or openings between adjacent impression surfaces, whereby the printing pressure of the printing device on the paper is periodically relieved, and means for supplying the paper on the web, substantially as described.

Specification, £9 4s. Drawing on Application.

Application No. 2782.—HARRY JAMES BUCHAN, of Redfern, near Sydney, New South Wales, Plumber, "*Improvements in Acetylene Generators.*"—Dated 21st November, 1899.

Claims:

1. In an acetylene generator, the combination of a water sealed shoot 19, a carbide receptacle 20 with lips 21 and 22, and an oscillating feeder consisting of a shaft 26, cheeks 27, bottom plate 24, and curved cut-off plate 25, substantially as described.

2. In an acetylene generator, a carbide feeder consisting of a rocking plate with segmental back plate which back plate closes the mouth of the carbide carrier when the feeder is rocked to eject a charge of carbide into the generator, substantially as described.

3. The combination of the gas holder, the generator 13, the carbide carrier 20, the rocking feeder, the water sealed shoot 19, the dispersing cone 20x, the gas pipes 10 and 11, the cup 14 and the water feed pipe 15, substantially as described.

4. In an acetylene generator, a generating chamber 13 with sloping bottom 17 and perforated false bottom 16, water cup 14 and water feed pipe 15, carbide shoot 19, dispersing cone 20x, clearing closure 42, and draw-off pipe 18, substantially as described.

5. In an acetylene generator, the combination with a rocking carbide feeder, of operating mechanism consisting of a pin 30 on a crank arm attached to the shaft 26, a lever 34 with curved slotted end 33, and a tappet piece 35 carried by the gas holder dome, substantially as described.

6. In an acetylene generator, the combination with a rocking carbide feeder, of operating mechanism consisting of a fall-over weight 28 and an overhung pin 30 mounted on crank arms on the shaft 26, a lever 34 with slotted end 33 working on a pin 32 which is mounted on a carrier 38, and tappet mechanism for oscillating said lever 34, substantially as described.

Specification, 9s. Drawings on application.

MALCOLM A. C. FRASER,
Registrar of Patents.

Patent Office, Perth,
8th December, 1899.

NOTICE is hereby given that the undermentioned applications for the Grant of Letters Patent, and the complete Specifications annexed thereto, have been *accepted*, and are now open to public inspection at this Office.

Any person or persons intending to oppose any of such applications must leave particulars, in writing, in duplicate (on Form D), of his or their objections

thereto, within two calendar months from the first appearance of this advertisement in the Western Australian *Government Gazette*. A fee of Ten shillings (10s.) is payable with such notice.

For particulars of claims, vide Gazette No. 49, 8th December, 1899.

Application No. 2659.—GEORGE GARIBALDI TURRI, of Salisbury Building, Queen Street, Melbourne, in the Colony of Victoria, Patent Agent (*George Archibald Lowry*), "*Apparatus for making Grass Twine.*"—Dated 2nd September, 1899.

Specification, £1 17s. Drawings on application.

Application No. 2660.—GEORGE GARIBALDI TURRI, of Salisbury Building, Queen Street, Melbourne, in the Colony of Victoria, Patent Agent (*George Archibald Lowry*), "*Apparatus for Compressing Fibrous or other Material.*"—Dated 2nd September, 1899."

Specification, £1 13s. Drawings on application.

Application No. 2775.—SYDENHAM OXENHAM, of Poverty Bay, in the Colony of New Zealand, Brickmaker, "*Appliance for Straining Water before it enters a Storage Tank.*"—Dated 21st November, 1899.

Specification, 2s. 6d. Drawings on application.

Application No. 2776.—SYDENHAM OXENHAM, of Poverty Bay, in the Colony of New Zealand, Brickmaker, "*An improved Automatic Mode of and Apparatus for Ejecting Silt and Deposit from Tanks and Cisterns.*"—Dated 21st November, 1899.

Specification, 5s. Drawings on application.

Application No. 2777.—SYDENHAM OXENHAM, of Poverty Bay, in the Colony of New Zealand, Brickmaker, "*An improved Guard to protect House-Guttering from the intrusion of small birds and the deposit of refuse matter.*"—Dated 21st November, 1899.

Specification, 3s. 6d. Drawings on application.

Application No. 2778.—ADELPHE LEON PHILARETE CHASLES, of Orleans, in the Department of the Loiret, in the Republic of France, Gentleman, "*New or improved Facing for the Pedals of Bicycles, the Steps of Carriages, the Steps of Staircases, and the like.*"—Dated 21st November, 1899.

Specification, 8s. Drawings on application.

Application No. 2779.—ISAAC SMITH, of the firm of Sydney Smith & Sons, of Basford Brass Works, Nottingham, England, Brassfounders, "*Improvements in apparatus for use as a Meter, Motor Pump, and similar purposes.*"—Dated 21st November, 1899.

Specification, 5s. 6d. Drawings on application.

Application No. 2781.—RUDOLPH MENZ, of 19 Royal Exchange, King William Street, Adelaide, in the Province of South Australia, Watchmaker, "*Improvements in Cooling Safes or Chambers.*"—Dated 21st November, 1899.

Specification, 12s. Drawings on application.

Application No. 2783.—GEORGE HENRY GREEN, of Unley Road, Unley, in the Province of South Australia, Accountant, "*Improved Mechanism for Fare Boxes and Tills for Receiving and Automatically Registering and Recording Fares.*"—Dated 22nd November, 1899.

Specification, £1. Drawings on application.

Application No. 2784.—RICHMOND GOLD AND SILVER CIGARETTE COMPANY, of 15 Broad Street, New York, U.S.A. (Assignee of CASSIUS MONTEZUMA RICHMOND), "*Improvements in Cigarette Wrappers.*"—Dated 25th November, 1899.

Specification, 4s. 6d. Drawings on application.

Application No. 2785.—DESRUMAUX'S AUTOMATIC WATER SOFTENER AND PURIFIER, LIMITED, of Greek Street Chambers, Greek Street, Leeds, in the County of York, England (Asignee of HENRI DESRUMAUX), "*Improvements in Apparatus for Purifying Water and other Liquids.*"—Dated 25th November, 1899.

Specification, 17s. 6d. Drawings on application.

MALCOLM A. C. FRASER,
Registrar of Patents.

Patent Office, Perth,
1st December, 1899.

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For particulars of claims, vide Gazette No. 48, 1st December, 1899.

Application No. 2404.—JOHN GORE MASSIE, C.E.M.E., of Belleville, Illinois, in the County St. Clair and State of Illinois, United States of America, Engineer, "*An improved Method of Ventilating Mines, and apparatus therefor.*"—Dated 28th February, 1899.

Specification, 7s. 6d. Drawings on application.

Application No. 2478.—HARRY PHILLIPS DAVIS, of 327 Neville Street, Pittsburgh, in the County of Allegheny, State of Pennsylvania, United States of America, Electrical Engineer, "*Improvements in Circuit Breakers.*"—Dated 22nd April, 1899.

Specification, 6s. Drawings on application.

Application No. 2724.—THOMAS EDWARDS, of Webster Street, Ballarat, in the Colony of Victoria, Metallurgist, "*An improved Gas Generator, applicable in the Chlorination Process of Recovering Gold from Ores.*"—Dated 10th October, 1899.

Specification, 4s. 6d. Drawings on application.

Application No. 2756.—WILHELM GOTTFRIED PEDERSEN, of 17 Carolinevej, Hellerup, Denmark, Wholesale Dealer; LUDVIG ADLER, of 42 Vimmelskaftet, Copenhagen, Denmark, Manufacturer, and PETER NICOLAI HOLST, of 15 Odensegade, Copenhagen, Denmark, Director, "*A new or improved Cigarette-making Machine.*"—Dated 4th November, 1899.

Specification, 10s. Drawings on application.

Application No. 2763.—FRANCIS EDWARD ELMORE, of Pontefract Road, Hunslet, Leeds, in the County of York, England, Electro-Metallurgist, "*Improvements in separating Metallic from Rocky Constituents of Ores, and apparatus therefor.*"—Dated 7th November, 1899.

Specification, 4s. Drawings on application.

Application No. 2764.—RUDOLF DIESEL, of No. 2 Schack Strasse, Munich, Germany, Engineer, "*Improvements in or relating to Internal Combustion Engines.*"—Dated 7th November, 1899.

Specification, 16s. Drawings on application.

Application No. 2765.—James Gitsham, of 445 Punt Road, Richmond, in the Colony of Victoria, Metallurgist, "*Improved Method or Process for the Extraction and Recovery of Zinc from Sulphide Ores.*—Dated 7th November, 1899.

Specification, 6s.

Application No. 2767.—Frederick Isitt, of Leichhardt, near Sydney, in the Colony of New South Wales, Gas Engineer, "*Improvements in Gas Lighting Mantles and Incandescible Materials therefor.*"—Dated 10th November, 1899.

Specification, 11s. 6d.

Application No. 2768.—John Thomas, of 53 Bloemfontein Avenue, Uxbridge Road, London, England, Engineer, "*An improved Saddle Clip for Cycles and the like.*"—Dated 10th November, 1899.

Specification, 4s. 6d. Drawings on application.

MALCOLM A. C. FRASER,
Registrar of Patents.

Patent Office, Perth,
24th November, 1899.

NOTICE is hereby given that the undermentioned Applications for the Grant of Letters Patent, and the Complete Specifications annexed thereto, have been *accepted*, and are now open to public inspection at this Office.

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For particulars of claims, vide Gazette No. 47, 24th November, 1899.

Application No. 2739.—John Coughlan, of Denmark, Western Australia, Driver, "*Improved Flexible Spider Harness for Horse Traction.*—Dated 20th October, 1899.

Specification, 3s. 6d. Drawings on application.

Application No. 2769.—Jacob Steiger, of 24 Finsbury Square, London, England, "*Improvements in the Manufacture of Cement.*"—Dated 14th November, 1899.

Specification, 5s. 6d.

Application No. 2757.—Edward Waters, junior, a member of the firm of Edward Waters & Son, of No. 131 William Street, Melbourne, in the Colony of Victoria, Patent Agents (*The Linotype Company, Limited*), "*Improvements in Linotype Machines.*"—Dated 4th November, 1899.

Specification, £2 3s. Drawings on application.

Application No. 2758.—Edward Waters, junr. a member of the firm of Edward Waters & Son, of 131 William Street, Melbourne, in the Colony of Victoria, Patent Agent (*The Linotype Company, Limited*), "*Improvements in Linotype Machines.*"—Dated 4th November, 1899.

Specifications, £1 12s. Drawings on application.

Application No. 2759.—Edward Waters, jun., a member of the firm of Edward Waters & Son, of No. 131 William Street, Melbourne, in the Colony of Victoria, Patent Agents (*George Westinghouse and Edwin Rund*), "*Improvements in Internal Combustion Engines.*"—Dated 4th November, 1899.

Specification, 10s. Drawings on application.

MALCOLM A. C. FRASER,
Registrar of Patents.

Patent Office, Perth,
17th November, 1899.

NOTICE is hereby given that the undermentioned Applications for the Grant of Letters Patent, and the complete Specifications annexed thereto, have been *accepted*, and are now open to public inspection at this Office.

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For particulars of claims, vide Gazette No. 46, 17th November, 1899.

Application No. 2388.—Herbert Vaughan Hampton, of 504 Elizabeth Street, Melbourne, in the Colony of Victoria, Engineer, "*Improvements in Oil-explosion Engines.*"—Dated 8th February, 1899.

Specification, 8s. Drawings on application.

Application No. 2511.—Wilfrid Hampson, of Southern Cross, in the Colony of Western Australia, Roman Catholic clergyman, "*An Improved Process of Extracting Gold from Ore commonly known as 'Kanowna Pug,' to be called the 'Petra-absorption Process.'*"—Dated 10th May, 1899.

Specification, 3s. 6d.

Application No. 2595.—Emile Bede, of Brussels, Belgium, Engineer, "*Improvements connected with Electric Traction.*"—Dated 10th July, 1899.

Specification, 13s. Drawings on application.

Application No. 2740.—Fraser and Chalmers, Limited, of 43 Threadneedle Street, London, England (Assignee of John Stumpf), "*Improvements in High Speed Pumps.*"—Dated 21st October, 1899.

Specifications, 10s. Drawings on application.

Application No. 2741.—Ernest Burton, of Wickham Terrace, Brisbane, in the Colony of Queensland, Dentist, and Richard Boyd Echlin, of Toowong, near Brisbane, aforesaid, Journalist, "*An Improved Ticket Printing and Issuing Machine applicable to enumerating Machines, such as Totalisator Machines.*"—Dated 21st October, 1899.

Specification, £1 1s. Drawings on application.

Application No. 2742.—James Wilson, of 274 Flinders Street, Melbourne, Manager, and George William Walker, of 12 Austin Street, Hawthorn, Electrician, both in the Colony of Victoria, "*An Improvement in Telephone Circuits, applicable to Mining and other purposes.*"—Dated 21st October, 1899.

Specification, 4s. Drawings on application.

Application No. 2748.—Meyer Joseph Davidsen, of 29 Vestergade, Copenhagen, Denmark, Civil Engineer, "*Improvements in Mills for pulverising or pulverising and mixing Cements and other Substances.*"—Dated 28th October, 1899.

Specification, 5s. Drawings on application.

Application No. 2753.—Richard Sparrow, of Barrack Street, Perth, Western Australia, Patent Agent (*Joseph Baxeres de Alzugaray*), "*Improvements relating to the Extraction of Gold, Silver, and other Metals from Ores, and the like.*"—Dated 1st November, 1899.

Specification, 7s. Drawings on application.

Application No. 2754.—AMEDEE MATHURIN GABRIEL SEBILLOT, of 60 Boulevard de Clichy, Paris, France, Engineer, "*Improvements in the manufacture of Sulphuric Acid.*"—Dated 1st November, 1899.

Specification, 11s. 6d. Drawings on application.

MALCOLM A. C. FRASER,
Registrar of Patents.

Patent Office, Perth,
10th November, 1899.

NOTICE is hereby given that the undermentioned Applications for the Grant of Letters Patent, and the Complete Specifications annexed thereto, have been *accepted*, and are now open to public inspection at this Office.

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For particulars of claims, vide Gazette No. 45, 10th November, 1899.

Application No. 2744.—ALFRED HARVEY, a member of the firm of ALFRED HARVEY & COMPANY, of 48 William Street, Melbourne, in the Colony of Victoria, Tea Brokers (*Charles Howard Windle*), "*An improved method of and means for securing Corrugated Sheet Iron to the Purlins of Roofs.*"—Dated 24th October, 1899.

Specification, 4s. Drawings on application.

Application No. 2745.—EDWARD HARNETT, of St. Peter's Cottage, Usk Road, Battersea, in the County of London, England, Engineer, "*Improvements in the application of Springs to Cycles.*"—Dated, 24th October, 1899.

Specification, 4s. 6d. Drawings on application.

Application No. 2746.—DAVID WILLIAM HARWOOD, of 40 Milligan Street, Perth, Western Australia, Gentleman, "*Pneumatic Malting Process, and Constructive Arrangement for the effecting of same.*"—Dated 25th October, 1899.

Specification, 3s. 6d. Drawings on application.

Application No. 2747.—ALFRED STEVENS and WILLIAM STEPHEN PENNEY, both of 99 Cannon Street, London, E.C., England, Boatbuilders, "*Improvements in or relating to Brakes for Road and other Vehicles.*"—Dated 25th October, 1899.

Specification, 5s. 6d. Drawings on application.

Application No. 2749.—ADOLPH SOMMER, of Cambridge, in the County of Middlesex, State of Massachusetts, United States of America, Manufacturer, "*Solutions of Sweet Carbamides in Oils, Fats, Waxes, Resins, and process of making the same.*"—Dated 28th October, 1899.

Specification, 6s. 6d.

Application No. 2752.—HERBERT LOUIS JACKMAN, Architect, and WALTER CHARLES TORODE, Contractor, both of 75 King William Street, Adelaide, South Australia, "*Improvements in and connected with Windows, Screens, and Frames.*"—Dated 1st November, 1899.

Specification, 5s. Drawings on application.

Application No. 2755.—HENRY TEESDALE SMITH and EDWARD SHOTTER HUME, both of Albany, Western Australia, Mill Manager and Engineer, respectively, "*Telescopic Draw-bar for railway trucks and such like vehicles.*"—Dated 3rd November, 1899.

Specification, 3s. 6d. Drawings on application.

MALCOLM A. C. FRASER,
Registrar of Patents.

Patent Office, Perth,
3rd November, 1899.

NOTICE is hereby given that the undermentioned Applications for the Grant of Letters Patent, and the complete Specifications annexed thereto, have been *accepted*, and are now open to public inspection at this Office.

Any person or persons intending to oppose any of such applications must leave particulars, in writing, in duplicate (on Form D), of his or their objections thereto, within two calendar months from the first appearance of this advertisement in the Western Australian *Government Gazette*. A fee of Ten shillings (10s.) is payable with such notice.

For particulars of claims, vide Gazette No. 44, 3rd November, 1899.

Application No. 2488.—GEORGE WESTINGHOUSE, of Pittsburgh, Allegheny, Pennsylvania, United States of America, Engineer; CHARLES APPLETON TERRY, of New York, United States of America, Patent Attorney, and HARRY PHILLIPS DAVIS, of Pittsburgh, aforesaid, Electrical Engineer, "*Improvements relating to Collectors and Conductors for Electric Railways on the Overhead System.*"—Dated 1st May, 1899.

Specification, 15s. Drawings on application.

Application No. 2495.—BENJAMIN GARVER LAMME, of Pittsburgh, Allegheny, Pennsylvania, United States of America, Electrical Engineer, "*Improvements in Direct Current Systems of Electrical Distribution.*"—Dated 2nd May, 1899.

Specification, 4s. 6d. Drawings on application.

Application No. 2703. — GEORGE BOARDMAN WEBB, of Westfield, New Jersey, United States of America, Mechanical Engineer, "*Improvements in Measuring Faucets.*"—Dated 26th September, 1899.

Specification, 13s. Drawings on application.

Application No. 2715.—EDWARD WATERS, jun., a member of the firm of Edward Waters & Son, of William Street, Melbourne, Victoria, Patent Agent (*George Westinghouse and Edwin Ruud*), "*Improvements in Gas Engines.*"—Dated 3rd October, 1899.

Specification, £2. Drawings on application.

Application No. 2729.—SOLOMON ROBERT DRESSER, of Bradford, Pennsylvania, United States of America, Inventor, "*Improvements in Pipe Couplings.*"—Dated 13th October, 1899.

Specification, 9s. Drawings on application.

Application No. 2733.—JOHN AUGUSTUS BAGSHAW and THOMAS HENRY BAGSHAW, of Elizabeth Street, Adelaide, South Australia, Engineers and Agricultural Implement Makers, "*A Duplex Threshing and Heading Machine for threshing Grain from the Sheaf.*"—Dated 17th October, 1899.

Specification, 6s. Drawings on application.

Application No. 2735.—ALBERT EDWARD HORLICK PAYNE, of 2 Park Road, Upper Baker Street, London, England, Builder's Manager, "*Improvements in or relating to Ready Reckoners, and the like.*"—Dated 17th October, 1899.

Specification, 12s. 6d. Drawings on application.

MALCOLM A. C. FRASER,
Registrar of Patents.

Patent Office, Perth,
27th October, 1899.

NOTICE is hereby given that the undermentioned Applications for the Grant of Letters Patent, and the Complete Specifications annexed thereto, have been *accepted*, and are now open to public inspection at this Office.

Any person or persons intending to oppose any of such applications must leave particulars, in writing, in duplicate (on Form D), of his or their objections thereto, within two calendar months from the first appearance of this advertisement in the Western Australian *Government Gazette*. A fee of Ten shillings (10s.) is payable with such notice.

For particulars of claims, vide Gazette No. 43, 27th October, 1899.

Application No. 2691.—Samuel Lesem, of 1532 Race Street, Denver, Colorado, United States of America, Insurance Agent (Assignee of George Wesley Pickett), "*Improvements in Electric Rock Drills.*"—Dated 25th September, 1899.

Specification, 16s. 6d. Drawings on application.

Application No. 2702.—Thomas Alva Edison, Inventor, of Llewellyn Park, Orange, New Jersey, United States of America, "*Improvements in Horizontal Crushings or Grinding Rolls.*"—Dated 26th September, 1898.

Specification, 7s. 6d. Drawings on application

Application No. 2705.—Henri Dolter, of 41 Rue Taitbout, Paris, France, Engineer, "*Improvements in apparatus for Electric Traction.*"—Dated 26th September, 1899.

Specification, 7s. 6d. Drawings on application.

Application No. 2707.—George Richard Hildyard, of 32 East Dulwich Road, Surrey, England, Printer, "*Improvements in the Manufacture of Plates for Printing.*"—Dated 29th September, 1899.

Specification, 6s. 6d.

Application No. 2708.—James Mactear, of 28 Victoria Street, Westminster, London, England, Chemical Engineer, "*Improvements in the obtainment of Cyanogen Compounds.*"—Dated 29th September, 1899.

Specification, 7s. 6d. Drawings on application.

Application No. 2712.—John Alstine Secor, Engineer, of 1177 Dean Street, Borough of Brooklyn, City and State of New York, United States of America, "*Improvements in means for Marine Propulsion.*"—Dated 3rd October, 1899.

Specification, 12s. 6d. Drawings on application.

Application No. 2713.—Henry Tindal, of 12 Sarphatikade, Amsterdam, in the Netherlands, Gentleman, "*An Improved Apparatus for the Production of Ozone.*"—Dated 3rd October, 1899.

Specification, 5s. Drawings on application.

Application No. 2714.—Henry Tindal, of 12 Sarphatikade, Amsterdam, in the Netherlands, Gentleman, "*An Improved Apparatus for Sterilising Liquids by Ozone.*"—Dated 3rd October, 1899.

Specification, 10s. Drawings on application.

Application No. 2720.—Rice Owen Clark, jun., of Hobsonville, Auckland, New Zealand, Pipe Manufacturer, "*Improvements in Machines for working Clay and the like.*"—Dated 7th October, 1899.

Specifications, 2s. Drawings on application.

Application No. 2725.—Robert Henry Jeffrey, of 45 Hornsey Lane Gardens, Highgate, in the County of Middlesex, England, Mining Engineer, "*Improvements in Ore Feeders.*"—Dated 10th October, 1899.

Specifications, 4s. 6d. Drawings on application.

Application No. 2728.—John James Roth, of 211 Clarence Street, Sydney, New South Wales, Importer, "*A New and Improved Method of Displaying Advertisements.*"—Dated 13th October, 1899.

Specification, 1s. 6d.

Application No. 2731.—William Edward Shaw, of "Penlee," Prospect Road, Summer Hill, near Sydney, New South Wales, Merchant, "*An Improved Lid or Cover for Cylindrical Metal Vessels closed by a tagger tin-plate top.*"—Dated 17th October, 1899.

Specification, 2s. 6d. Drawings on application.

Application No. 2732.—Matthew May, of Burra in the Province of South Australia, Engineer, "*An Improved Rotatory Circular Vanning Table.*"—Dated 17th October, 1899.

Specification, 9s. Drawings on application.

Application No. 2734.—George John Hoskins, of Sydney, New South Wales, Engineer, "*An Improved Mode of and Apparatus for, making Cores for Pipes and other Cylindrical Castings.*"—Dated 17th October, 1899.

Specification, 4s. 6d. Drawings on application.

MALCOLM A. C. FRASER,
Registrar of Patents.

Patent Office, Perth,
20th October, 1899.

NOTICE is hereby given that the undermentioned Applications for the Grant of Letters Patent, and the complete specifications annexed thereto, have been *accepted*, and are now open to public inspection at this Office.

Any person or persons intending to oppose any of such applications must leave particulars, in writing, in duplicate (on Form D), of his or their objections thereto, within two calendar months from the first appearance of this advertisement in the Western Australian *Government Gazette*. A fee of Ten shillings (10s.) is payable with such notice.

For particulars of claims, vide Gazette No. 42, 20th October, 1899.

Application No. 2366.—Edward Goodridge, of Royal Hotel, Moss Vale, in the Colony of New South Wales, Hotelkeeper, "*An improved Urinal.*"—Dated 16th January, 1899.

Specification, 2s. 6d. Drawings on application.

Application No. 2668.—Frederick Charles Saunders, of 4 Marli Place, Esplanade, St. Kilda, in the Colony of Victoria, Managing Clerk (*Arthur Saunders*), "*An improved Framing or Support for the Display of Bottles, Jars, and like vessels.*"—Dated 5th September, 1899.

Specification, 3s. 6d. Drawings on application.

Application No. 2709.—Edward William Parish, of 281 Strand, in the County of London, England, Commercial Traveller, "*Improvements in Low-pressure Steam Apparatus for cooking, heating, drying, evaporating, steam-generating, and similar purposes.*"—Dated 29th September, 1899.

Specification, 6s. Drawings on application.

Application No. 2717.—GEORGE WILLIAM TIFFEN, of Collins Street, Melbourne, in the Colony of Victoria, in the Colony of New Zealand, "*Improvements in Skylight Frames and the like.*"—Dated 7th October, 1899.

Specification, 3s. 6d. Drawings on application.

Application No. 2718.—ALBERT CLAYTON PALMER, of Euroa, in the Colony of Victoria, Miller, "*Improvements in Appliances for the removal from and replacing of Pneumatic Tyres on Wheel Rims.*"—Dated 7th October, 1899.

Specification, 8s. Drawings on application.

Application No. 2719.—JAMES CAMPBELL, of Broad Arrow, in the Colony of Western Australia, Civil Engineer, and LIONEL RICHARD DAVIS, of Broad Arrow aforesaid, Civil Servant, "*Improvements in Reflector Lights for Pianos and like Musical Instruments.*"—Dated 7th October, 1899.

Specification, 8s. Drawings on application.

Application No. 2722.—JOSEPH JAMES JOYCE, of No. 414 Elizabeth Street, Sydney, in the Colony of New South Wales, Bag Manufacturer, "*An improved Printing Surface or Block.*"—Dated 10th October, 1899.

Specification, 3s. 6d. Drawings on application.

MALCOLM A. C. FRASER,
Registrar of Patents.

Applications for Patents.

NOVEMBER 25TH—DECEMBER 9TH.

[Where Provisional Specification accompanies Application an asterisk is affixed.]

No.	Date.	Name.	Address.	Title.
*2786	28th Nov., 1899	Delprat, G. D., Horwood, E. J., and Klug, G. C.	Broken Hill, N.S.W.	Improvements in apparatus for use in the leaching of ores and other metalliferous products.
2787	28th Nov., 1899 (Dated 1st May, 1899, under Patent Act Amendment Act, 1894)	Trivick, S.	Clapham Common, England	Improvements in and connected with solvents for metals and the treatment of gold and other ores for the extraction of the contained metals.
*2788	4th Dec., 1899	Drake, W. A., and Dunn, J. ...	Perth, W.A. ...	An improved tag or attachment for rings and the like.
*2789	5th Dec., 1899	Logan, R., and Port, J. C. ...	Perth, W.A. ...	Improvements in timber cutting machines.
*2790	5th Dec., 1899	Forwood, W. W.	Adelaide, S.A. ...	Improvements in grinding or grinding and amalgamating pans.
2791	5th Dec., 1899	Wilson, J., and Pugh, W. ...	South Woodford and Cambridge, England	An improvement in or connected with the locking bars of railway points and signal apparatus.
*2792	5th Dec., 1899	Harris, J. J., and Toft, E. ...	London, England ...	Improvements in gloves and the like used in sport.
*2793	5th Dec., 1899	Ashton, W. M.	Wanganui, N.Z. ...	An improved device for holding sheep and the like.
*2794	5th Dec., 1899	Ward, C. H., and Thomas, E. W.	Sydney, N.S.W. ...	Improved apparatus for intercepting the gold and other valuable products which pass off with the fumes from apparatus for the preliminary treatment of such products.
*2795	5th Dec., 1899	Ward, C. H., and Thomas, E. W.	Sydney, N.S.W. ...	Improved apparatus for intercepting the gold and other valuable products which pass off with the fumes from apparatus for the preliminary treatment of such products.
2796	6th Dec., 1899	Waters, E., jun. (*Linotype Co. Limited*)	Melbourne, Vict. ...	Improvements in machines for making printing bars.
*2797	8th Dec., 1899	Spaake, O. J.	Perth, W.A. ...	An improved spiral concentrator for treating metalliferous matter.

Provisional Specifications.

Patent Office, Perth,
15th December, 1899.

APPLICATIONS for Letters Patent, accompanied by Provisional Specifications, which have been accepted from the 25th November to the 9th December, 1899:—

Application No. 2761.—GEORGE HENRY WALKEDEN, of Kalgoorlie, Western Australia, Engineer, "*An improved Combination Condensing and Cooling Appliance.*"—Dated 6th November, 1899.

Application No. 2762.—JOHN PHILLIPS DINHAM, of Busselton, Western Australia, Engineer, "*Double Multiple Saw Mill Plant.*"—Dated 6th November, 1899.

Application No. 2766.—EDWARD LUSCOMBE EVENS, of Malvern, South Australia, Solicitor, "*An improved Line Holder or Support.*"—Dated 7th November, 1899.

Application No. 2788.—WILLIAM ADAMS DRAKE and JOSEPH DUNN, both of 69 Barrack Street, Perth, Western Australia, Manufacturers, "*An improved Tag or Attachment for Rings and the like.*"—Dated 4th December, 1899.

MALCOLM A. C. FRASER,
Registrar of Patents.

Index of Applicants for Patents.

NOVEMBER 25TH—DECEMBER 9TH.

Name.	Title.	No.	Date.
Ashton, W. M.	An improved device for holding sheep and the like ...	2793	5th Dec., 1899
Delprat, G. D., Horwood, E. J., and Klug, G. C.	Improvements in apparatus for use in the leaching of ores and other metalliferous products	2786	28th Nov., 1899
Drake, W. A., and Dunn, J.	An improved tag or attachment for rings and the like ...	2788	4th Dec., 1899
Dunn, J., and Drake, W. A.	*Vide* Drake, W. A., and Dunn, J.	2788	4th Dec., 1899
Forwood, W. W.	Improvements in grinding or grinding and amalgamating pans	2790	5th Dec., 1899
Harris, J. J., and Toft, E.	Improvements in gloves and the like used in sport ...	2792	5th Dec., 1899
Horwood, E. J.	*Vide* Delprat, G. D., and others	2786	28th Nov., 1899
Klug, G. C.	*Vide* Delprat, G. D., and others	2786	28th Nov., 1899
Linotype Co., Limited	*Vide* Waters, E., jun.	2796	6th Dec., 1899
Logan, R., and Port, J. C.	Improvements in timber cutting machines	2789	5th Dec., 1899
Port, J. C., and Logan, R.	*Vide* Logan, R. and Port, J. C.	2789	5th Dec., 1899
Pugh, W., and Wilson, J.	*Vide* Wilson, J., and Pugh, W.	2791	5th Dec., 1899
Spooke, O. J.	An improved spiral concentrator for treating metalliferous matter	2797	8th Dec., 1899
Thomas, E. W., and Ward, C. H. ...	*Vide* Ward, C. H., and Thomas, E. W.	2794	5th Dec., 1899
Thomas, E. W., and Ward, C. H. ...	*Vide* Ward, C. H., and Thomas, E. W.	2795	5th Dec., 1899
Toft, E., and Harris, J. J.	*Vide* Harris, J. J., and Toft, E.	2792	5th Dec., 1899
Trivick, S.	Improvements in and connected with solvents for metals and the treatment of gold and other ores for the extraction of the contained metals.	2787	28th Nov., 1899
Ward C. H., and Thomas, E. W. ...	Improved apparatus for intercepting the gold and other valuable products which pass off with the fumes from apparatus for the preliminary treatment of such products	2794	5th Dec., 1899
Ward, C.H., and Thomas, E. W. ...	Improved apparatus for intercepting the gold and other valuable products which pass off with the fumes from apparatus for the preliminary treatment of such products	2795	5th Dec., 1899
Waters, E., jun. (*Linotype Co., Ltd.*)	Improvements in machines for making printing bars ...	2796	6th Dec., 1899
Wilson, J., and Pugh, W.	An improvement in or connected with the locking bars of railway point and signal apparatus	2791	5th Dec., 1899

Index to Subjects of Patent Applications.

NOVEMBER 25TH—DECEMBER 9TH.

Title.	Name.	No.	Date.
Amalgamating Pans	*Vide* Grinding	2790	5th Dec., 1899
Bars (Printing)	*Vide* Printing Bars	2796	6th Dec., 1899
Concentrator	Spooke, O. J.	2797	8th Dec., 1899
Gloves	Harris, J. J., and Toft, E.	2792	5th Dec., 1899
Gold	Trivick, S.	2787	28th Nov., 1899
Gold	Ward, C. H., and Thomas, E. W.	2794	5th Dec., 1899
Gold	Ward, C. H., and Thomas, E. W.	2795	5th Dec., 1899
Grinding	Forwood, W. W.	2790	5th Dec., 1899
Holding Sheep	Ashton, W. M.	2793	5th Dec., 1899
Leaching	Delprat, G. D.; Horwood, E. J.; and Klug, G. C. ...	2786	28th Nov., 1899
Locking Bars	Wilson, J., and Pugh, W.	2791	5th Dec., 1899
Ores	*Vide* Leaching	2786	28th Nov., 1899
Ores	*Vide* Gold	2787	28th Nov., 1899
Printing Bars	Waters, E., jun.	2796	6th Dec., 1899
Tag for Rings	Drake, W. A., and Dunn, J.	2788	4th Dec., 1899
Timber Cutting	Logan, R., and Port, J. C.	2789	5th Dec., 1899

Index of Patentees.

NOVEMBER 25TH—DECEMBER 9TH.

Name.	Title.	No.	Date.	*Gazette.* Date.	No.	Page.
Conroy, W. A.	*Vide* Manchee, J. W.	2607	18th July, 1899	4th Aug., 1899	31	2354
Cuming, A. J.	Improved method of and apparatus for branding carcases	2213	17th Sept., 1898	29th Sept., 1899	39	3201
Denaeyer, A.	Improved manufacture of cocoa, chocolate, or other alimentary substances, with milk and apparatus therefor	2678	12th Sept., 1899	6th Oct., 1899	40	3279
Festu, M., Sandercock, H., and Johnston, J. L.	Improved method of obtaining gold by electro-chemical means	2270	28th Oct., 1898	29th Sept., 1899	39	3201
Festu, M., Sandercock, H., and Johnston, J. L.	An improved electro-amalgamator ...	2269	28th Oct., 1898	29th Sept., 1899	39	3201
Johnston, J. L.	*Vide* Festu, M., and others	2270	28th Oct., 1898	29th Sept., 1899	39	3201
Johnston, J. L.	*Vide* Festu, M., and others	2269	28th Oct., 1898	29th Sept., 1899	39	3201
Manchee, J. W (Assignee of Manchee, J. W., and Conroy, W. A.)	Improvements in wire fence-droppers ...	2607	18th July, 1899	4th Aug., 1899	31	2354
Metzler, A. J.	Improvements in the gelatinising of brewing grain	2677	12th Sept., 1899	6th Oct., 1899	40	3279
Pearse, J. J.	An improved grid or broiler	2670	8th Sept., 1899	29th Sept., 1899	39	3201
Rowe, N.	Improvements relating to the regulation of electro-motive force	2576	21st June, 1899	29th Sept., 1899	39	3201
Sandercock, H.	*Vide* Festu, M., and others	2269	28th Oct., 1898	29th Sept., 1899	39	3201
Sandercock, H.	*Vide* Festu, M., and others	2270	28th Oct., 1898	29th Sept., 1899	39	3201
* Spencer, R. M.	*Vide* Wylie, C. A.	1712	26th July, 1897	25th July, 1898	15	2238
* Wylie, C. A. (*Spencer, R. M.*)	Improvements in window screens, more particularly in that class known as fly-screens	1712	26th July, 1897	25th July, 1898	15	2238

* Issued 30th July, 1898.

Index of Subjects of Patents Granted.

NOVEMBER 25TH—DECEMBER 9TH.

Title.	Name.	No.	Date.	*Gazette.* Date.	No.	Page.
Amalgamator	Festu, M., Sandercock, H., & Johnston, J. L.	2269	28th Oct., 1898	29th Sept., 1899	39	3201
Branding Carcases	Cuming, A. J.	2213	17th Sept., 1898	29th Sept., 1899	39	3201
Broiler	*Vide* Grid	2670	8th Sept., 1899	29th Sept., 1899	39	3201
Chocolate	*Vide* Cocoa	2678	12th Sept., 1899	6th Oct., 1899	40	3279
Cocoa	Denaeyer, A.	2678	12th Sept., 1899	6th Oct., 1899	40	3279
Droppers	Manchee, J. W.	2607	18th July, 1899	4th Aug., 1899	31	2354
Gelatinising Grain	Metzler, A. J.	2677	12th Sept., 1899	6th Oct., 1899	40	3279
Gold	Festu, M., Sandercock, H., & Johnston, J. L.	2270	28th Oct., 1898	29th Sept., 1899	39	3201
Grid	Pearse, J. J.	2670	8th Sept., 1899	19th Sept., 1899	39	3201
Regulating Force	Rowe, N.	2576	21st June, 1899	29th Sept., 1899	39	3201
*Screens	Wylie, C. A.	1712	26th July, 1897	25th July, 1898	15	2238
Wire Fence Droppers	*Vide* Droppers...	2607	18th July, 1899	4th Aug., 1899	31	2354

* Issued 30th July, 1898.

Trade Marks.

Patent Office, Perth,
15th December, 1899.

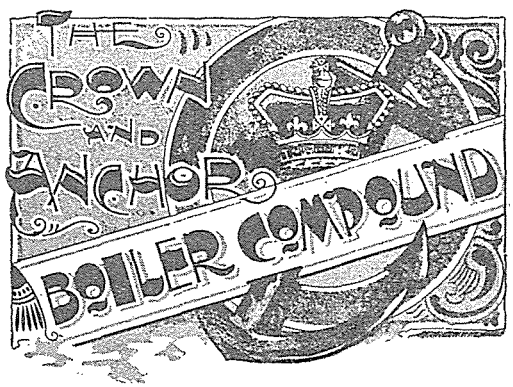
IT is hereby notified that I have received the undermentioned Applications for the Registration of Trade Marks.

Any person or persons intending to oppose any of such applications must leave particulars in writing, in duplicate (on Form F), of his or their objections thereto, within two months of the first advertisement of the applications in the Western Australian *Government Gazette*.

A fee of £1 is payable with such notice.

MALCOLM A. C. FRASER,
Registrar of Designs and Trade Marks.

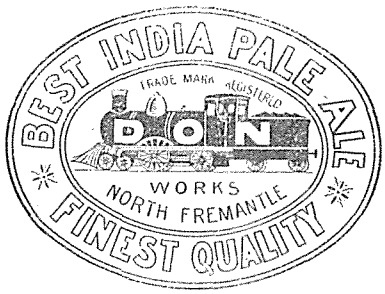
Application No. 1768, dated 9th October, 1899.—JOHN LESLIE MCCLURE, trading as "Crown and Anchor Manufacturing Company," Atlas Chambers, Cliff Street, Fremantle, to register in Class 50, Sub-section 10, in respect of Boiler Compound for preventing Incrustation in Boilers, a Trade Mark, of which the following is a representation :—



The essential particulars of the Trade Mark are the words "Crown and Anchor" and combination of devices, and the applicant disclaims any right to the exclusive use of the added matter.

This Mark was first advertised in the Western Australian *Government Gazette* of the 20th October, 1899—*vide* notice at head of Trade Mark advertisements.

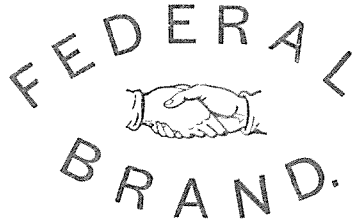
Application No. 1765, dated 5th October, 1899.—Edwin Morgan, West Australian Bottling Works, Thompson Road, North Fremantle, West Australia, to register in Class 43, in respect of Fermented Liquors and Spirits, a Trade Mark, of which the following is a representation:—



The essential particulars of the Mark consist of the device of an Engine and the word "Don," and I disclaim any right to the exclusive use of the added matter.

This Mark was first advertised in the Western Australian *Government Gazette* of the 20th October, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1766, dated 5th October, 1899.—William Burford, trading under the name or style of "W. H. Burford & Sons, Limited," at Albany Road, Perth, Western Australia, Soap and Candle Manufacturers, to register in Class 47, in respect of Candles, Common Soap, Detergents; and Starch, Blue, and other Preparations for Laundry purposes, a Trade Mark, of which the following is a representation:—



This Mark was first advertised in the Western Australian *Government Gazette* of the 20th October, 1899—*vide* notice at head of Trade Mark Advertisements.

Application No. 1771, dated 17th October, 1899.—Holmes Samuel Chipman, of No. 54 Margaret Street, Sydney, in the Colony of New South Wales, Merchant, to register in Class 6, in respect of Typewriters, a Trade Mark, of which the following is a representation:—

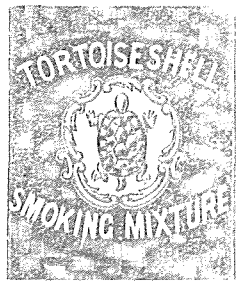
REM-SHO

This Mark was first advertised in the Western Australian *Government Gazette* of 27th October, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1773, dated 21st October, 1899.—The Hillside Chemical Company, of Newburgh, New York, United States of America, Manufacturing Chemists, to register in Class 3, in respect of Chemical Substances prepared for use in medicine and pharmacy, a Trade Mark, of which the following is a representation:—

This Mark was first advertised in the Western Australian *Government Gazette* of 27th October, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1775, dated 28th October, 1899.—W. A. and A. C. Churchman, of Portman Road, Ipswich, England, Tobacco Manufacturers, to register in Class 45, in respect of Tobacco, whether manufactured or unmanufactured, a Trade Mark, of which the following is a representation:—



The essential features of the Trade Mark consist of the device and the word "Tortoiseshell," and the applicants disclaim any right to the exclusive use of the added matter.

This Mark was first advertised in the Western Australian *Government Gazette* of the 3rd November, 1899—*vide* notice at head of Trade Mark advertisements.

Application Nos. 1776 and 1777, dated 28th October, 1899.—Vinolia Company, Limited, of Malden Crescent, London, England, Manufacturing Chemists, Perfumers, and Soap Makers, to register in Class 47, in respect of Candles, Common Soap, Detergents, Illuminating, Heating, or Lubricating Oils, Matches and Starch, Blue and other Preparations for Laundry purposes. Application No. 1777, to register in Class 48, in respect of Perfumery (including Toilet Articles, Preparations for the Teeth and Hair, and Perfumed Soap), a Trade Mark, of which the following is a representation:—

WHITE CAP.

This Mark was first advertised in the Western Australian *Government Gazette* of the 3rd November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1647, dated 12th May, 1899.—Bovine, Limited, of 44 to 47 Bishopsgate Street Without, London, E.C., to register in Class 42, in respect of Foods for Cattle,

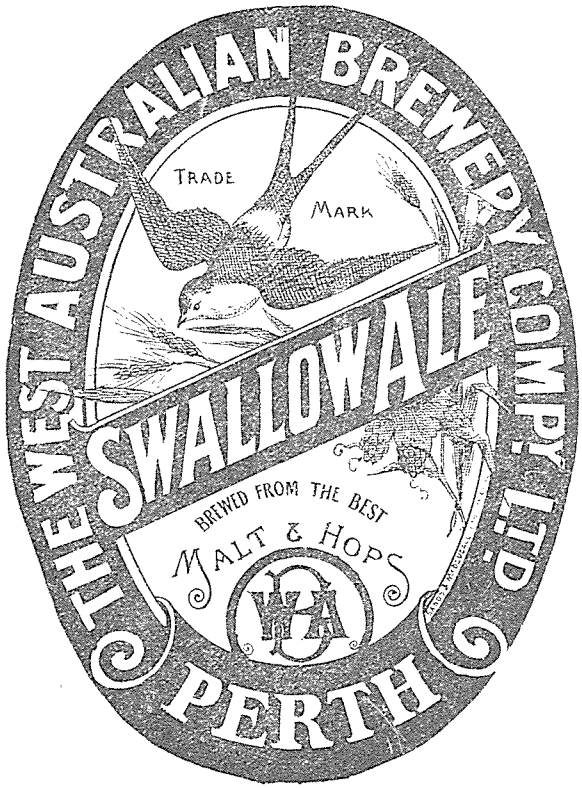
Horses, Poultry, and other like animals, a Trade Mark, of which the following is a representation :—

THE BOVINE

The Applicant Company claim to have used the Mark prior to January, 1885.

This Mark was first advertised in the Western Australian *Government Gazette* of the 10th November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1763, dated 2nd October, 1899.—THE WEST AUSTRALIAN BREWERY COMPANY, LIMITED, of Barndon Hill, Burswood, W.A., to register in Class 43, in respect of Fermented Liquors.



The essential particulars of the Trade Mark are (1) *device of a Swallow;* (2) *the word "Swallow," and applicant Company disclaims any right to the exclusive use of the added matter, except their trading name and address.*

This Mark was first advertised in the Western Australian *Government Gazette* of the 10th November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1764, dated 5th October, 1899.—VACUUM OIL COMPANY, of Rochester, New York, U.S.A.; 31 Queen Street, Melbourne, Victoria, and elsewhere, Oil and Grease Manufacturers, to register in Class 47, in respect of Candles, Common Soap, Detergents, Illuminating, Heating, or Lubricating Oils, Matches, a Trade Mark, of which the following is a representation :—

VACLITE.

This Mark was first advertised in the Western Australian *Government Gazette* of the 10th November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1772, dated 19th October, 1899.—JAMES BYFIELD, of Northam, in the Colony of Western Australia, Miller, to register in Class 42, in respect of Flour, Oatmeal, Semolina, Wheatmeal, a Trade Mark, of which the following is a representation :—

SNOWDROP.

This Mark was first advertised in the Western Australian *Government Gazette* of the 10th November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1778, dated 30th October, 1899.—SALMON & GLUCKSTEIN, LIMITED, 41 Clerkenwell Road, London, England, Tobacco Manufacturers, to register in Class 45, in respect of Tobacco, whether manufactured or unmanufactured, a Trade Mark, of which the following is a representation :—

The essential particular of the Trade Mark is the combination of devices, and the applicants disclaim any right to the exclusive use of the added matter, except in so far as it consists of their own name and address.

This Mark was first advertised in the Western Australian *Government Gazette* of the 10th November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1750, dated 15th September, 1899.—SARGOOD, BUTLER, NICHOL & EWEN, of Wellington Street, Perth, Warehousemen, to register in Class 38, in respect of Boots and Shoes, a Trade Mark, of which the following is a representation :—

The essential particular of the above Mark consists of the word "Standard," and applicants disclaim any right to the exclusive use of the added matter.

This Mark was first advertised in the Western Australian *Government Gazette* of the 17th November, 1899—*vide* notice at head of Trade Mark advertisements.

Applications Nos. 1615 and 1616, dated 17th April, 1899.—FREDERICK ALBERT LEWIS and JOHN BENJAMIN WHITTY, trading as "The Lubroline Oil and Grease Com-

pany," of 339 Flinders Lane, Melbourne, Manufacturers, to register in Class 47, in respect of Candles, Common Soap, Detergents, Illuminating, Heating, or Lubricating Oils, Matches; Application No. 1616, to register in Class 50, s.s. 3, in respect of Blacking, Blacklead, Stove Polish, Knife Polish, Boot Size and Dressing, Boot Creams, and Graphite, a Trade Mark, of which the following is a representation :—

LUBROLINE

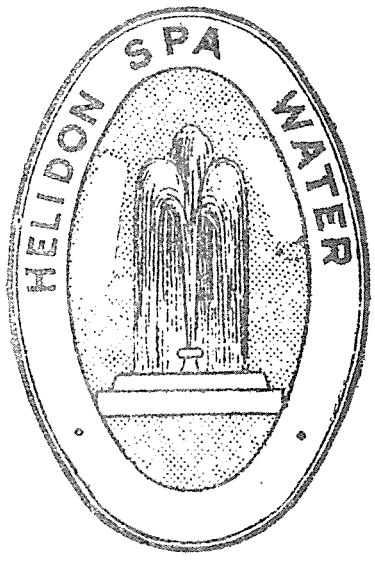
This Mark was first advertised in the Western Australian *Government Gazette* of the 24th November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1617, dated 17th April, 1899.—Frederick Albert Lewis and John Benjamin Whitty, trading as "Lewis and Whitty," of 339 Flinders Lane, Melbourne, Soap Manufacturers, to register in Class 47, in respect of Candles, Common Soap, Detergents, Illuminating, Heating, or Lubricating Oils, Matches, a Trade Mark, of which the following is a representation :—

M O O N

This Mark was first advertised in the Western Australian *Government Gazette* of the 24th November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1779, dated 7th November, 1899.—Egbert Edward Kennedy, trading as E. E. Kennedy & Co., of Philimore Street, Fremantle, Western Australia, Importer, to register in Class 44, in respect of Mineral and Aerated Waters, natural and artificial, including Ginger Beer, a Trade Mark, of which the following is a representation :—



The essential particulars of the Mark consist of the representation of a fountain enclosed within a double oval border, and any right to the exclusive use of the added matter is disclaimed.

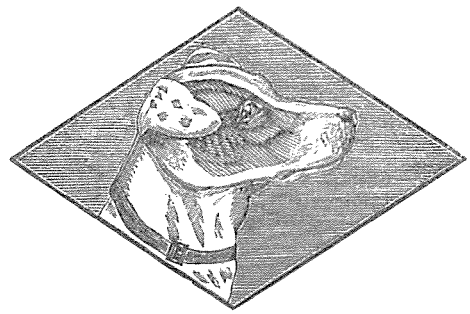
This Mark was first advertised in the Western Australian *Government Gazette* of the 24th November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1780, dated 14th November.—Wm. Adams & Co., Ltd., of 163 Clarence Street, Sydney, in the Colony of New South Wales, and at 521 and 523 Collins Street Melbourne, in the Colony of Victoria, and elsewhere, Oil, Merchants, Importers, and Engineers Furnishers, to register in Class 47, in respect of Lubricating Oils and Preparations, a Trade Mark, of which the following is a representation :—

The essential particulars of the Trade Mark consist of the device of a castle and the word "Castle" within a circle, and the applicants disclaim any right to the exclusive use of the added matter save and except the word "Adams."

This Mark was first advertised in the Western Australian *Government Gazette* of the 24th November, 1899—*vide* notice at head of Trade Mark advertisements.

Applications Nos. 1782 and 1783, dated 14th November, 1899.—Joseph Dempsey, of Kalgoorlie, Western Australia, Aerated Water and Cordial Manufacturer, to register in Class 15, in respect of Glass Bottles. Application No. 1783, to register in Class 44, in respect of Mineral and Aerated Waters, natural and artificial, including Ginger Beer, a Trade Mark, of which the following is a representation :—



This Mark was first advertised in the Western Australian *Government Gazette* of the 24th November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1785, dated 20th November, 1899.—Splatt, Wall & Co., of 325 Hay Street, Perth, Importers and Engineers, to register in Class 22, in respect of Cycles, a Trade Mark, of which the following is a representation :—

RAMBLER.

This Mark was first advertised in the Western Australian *Government Gazette* of the 24th November, 1899– *vide* notice at Head of Trade Mark advertisements.

Application No. 1786, dated 20th November, 1899.—Splatt, Wall & Co., of 325 Hay Street, Perth, Importers and Engineers, to register in Class 22, in respect of Cycles, a Trade Mark, of which the following is a representation :—

THE MARVEL.

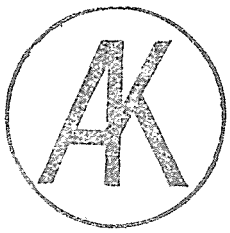
This Mark was first advertised in the Western Australian *Government Gazette* of the 24th November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1787, dated 20th November, 1899.—SPRATT, WALL & Co., of 325 Hay Street, Perth, Importers and Engineers, to register in Class 22, in respect of Cycles, a Trade Mark, of which the following is a representation:—

ACME.

This Mark was first advertised in the Western Australian *Government Gazette* of the 24th November, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1731, dated 18th August, 1899. THE ANTIKAMNIA CHEMICAL COMPANY, of 1723 Olive Street, St. Louis, United States of America, Manufacturing Chemists, to register in Class 3, in respect of Chemical Substances prepared for use in Medicine and Pharmacy, a Trade Mark, of which the following is a representation:—



This Mark was first advertised in the Western Australian *Government Gazette* of the 1st December, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1784, dated 17th November, 1899.—THE BRITISH AND FOREIGN SAFETY FUSE COMPANY, of Redruth, in the County of Cornwall, England, Manufacturers, to register in Class 20, in respect of Explosive Substances, a Trade Mark, of which the following is a representation:

The essential particulars of the Trade Mark are (1) *the device of an anchor and coil of rope or fuse, and* (2) *the word "Anchor," and applicants disclaim any right to the exclusive use of the added matter.*

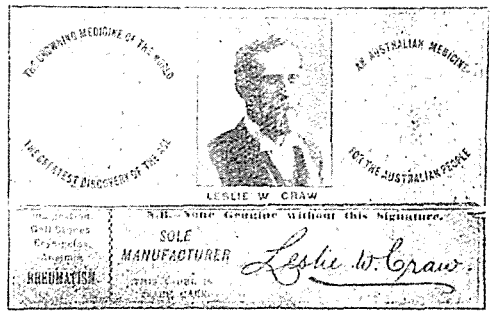
This Mark was first advertised in the Western Australian *Government Gazette* of the 1st December, 1899, *vide* notice at head of Trade Mark advertisements.

Applications Nos. 1789 and 1790, dated 25th November, 1899.—EDWARD COOK AND COMPANY, LIMITED, of East London Soap Works, Bow, London, England, Soap Manufacturers, to register, in Class 47, in respect of Candles, Common Soap, Detergents, Illuminating, Heating and Lubricating Oils, Matches, and Starch, Blue, and other Preparations for Laundry purposes. Application No. 1790 to register, in Class 48, in respect of Perfumery (including Toilet Articles, Preparations for the Teeth and Hair, and Perfumed Soap) a Trade Mark, of which the following is a representation:—

EMU

This Mark was first advertised in the Western Australian *Government Gazette* of the 1st December, 1899, *vide* notice at head of Trade Mark advertisements.

Application No. 1774 dated 25th October, 1899.—LESLIE W. CRAW, trading as "Cura Vitae Proprietary," of 229 Elizabeth Street, Melbourne, in the Colony of Victoria, Manufacturer, to register in Class 3 in respect of Chemical Substances prepared for use in medicine and pharmacy, a Trade Mark, of which the following is a representation:—



The essential particulars of the Mark are (1) *the copy of the written signature, and* (2) *the photographic representation, and any right to the exclusive use of the added matter is disclaimed by the applicant.*

This Mark was first advertised in the Western Australian *Government Gazette* of the 8th of December, 1899, *vide* notice at head of Trade Mark advertisements.

Application No. 1781, dated 14th November, 1899.—Messrs. A. M. BICKFORD & SONS, of Currie Street, Adelaide, in the Province of South Australia, Pharmaceutical Chemists, to register in Class 43, in respect of Fermented Liquors and Spirits, a Trade Mark, of which the following is a representation:—

The essential particulars of the Trade Mark are the words "Kingfisher," "Our Jack," and the device of the Laughing Jackass or Kingfisher, and the applicants disclaim any right to the exclusive use of the added matter.

This Mark was first advertised in the Western Australian *Government Gazette* of 8th December, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1793, dated 28th November, 1899.—THE BRITISH URALITE COMPANY, LIMITED, of 37 Lombard Street, in the City of London, Manufacturers, to register in Class 17, in respect of Compounds of Asbestos and Silica for use in Building and Decoration, a Trade Mark, of which the following is a representation:—

URALITE.

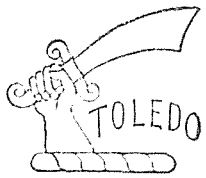
This Mark was first advertised in the Western Australian *Government Gazette* of the 8th December, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1794, dated 28th November, 1899.—THE BRITISH URALITE COMPANY, LIMITED, of 37 Lombard Street, in the City of London, Manufacturers, to register in Class 17, in respect of Compounds of Asbestos and Silica for use in Building and Decoration, a Trade Mark, of which the following is a representation:—

IMSCHEN.

This Mark was first advertised in the Western Australian *Government Gazette* of the 8th December, 1899—*vide* notice at head of Trade Mark advertisements.

Application No. 1797, dated 8th December, 1899.—JNO. HY. ANDREW & Co., Limited, Toledo Steel Works, Sheffield, England, Manufacturers, to register in Class 5, in respect of Iron and Steel, both raw and in bar, and Rail, Bolt, and Rod, Sheets, Plates, and Hoops, a Trade Mark, of which the following is a representation :—



The said Trade Mark having been used by the Applicants and their predecessors in business in respect of the said goods since upwards of 15 months before the 1st January, 1885.

Application No. 1798, dated 8th December, 1899.—JNO. HY. ANDREW & Co., Limited, Toledo Steel Works, Sheffield, England, Manufacturers, to register in Class 5, in respect of Steel, a Trade Mark, of which the following is a representation :

The said Trade Mark having been used by the applicants and their predecessors in business in respect of the said goods since upwards of 25 years before the 1st January, 1885.

This Mark was first advertised in the Western Australian *Government Gazette* of the 15th December, 1899—*vide* notice at head of Trade Mark advertisements.

NOTICE.

Patent Office, Perth,
15th December, 1899.

IN *re* APPLICATION No. 1766, W. H. BURFORD AND SONS, LIMITED.

ON page 3170 of the *Government Gazette* of 20th October, 1899, No. 49, *for* "William Burford, trading under the name or style of W. H. Burford & Sons, Limited, at Albany Road, Perth, Western Australia," *read* "W. H. Burford & Sons, Limited, a company incorporated under the laws of the Province of South Australia, and having its registered office situated at Sturt Street, Adelaide, in the said Province, and also doing business at Albany Road, Perth, Western Australia."

MALCOLM A. C. FRASER,
Registrar of Patents, etc.

Alphabetical List of Registrants of Trade Marks.

NOVEMBER 25TH—DECEMBER 9TH.

Name.	Goods.	Class.	No.	Date.	*Gazette.* No.	*Gazette.* Date.	*Gazette.* Page.
Butler —	*Vide* Sargood, Butler, Nichol, & Ewen	38	1751	15th Sept., 1899	40	6th Oct., 1899	3295
Ewen —	*Vide* Sargood, Butler, Nichol, & Ewen	38	1751	15th Sept., 1899	40	6th Oct., 1899	3295
Nichol —	*Vide* Sargood, Butler, Nichol, & Ewen	38	1751	15th Sept., 1899	40	6th Oct., 1899	3295
Sargood, Butler, Nichol, & Ewen	Boots and shoes	38	1751	15th Sept., 1899	40	6th Oct., 1899	3295

Index of Goods for which Trade Marks have been Registered.

NOVEMBER 25TH—DECEMBER 9TH.

Goods.	Name.	No.	Date.	Class.	*Gazette.* No.	*Gazette.* Date.	*Gazette.* Page.
Boots	Sargood, Butler, Nichol, & Ewen	1751	15th Sept., 1899	38	40	6th Oct., 1899	3295
Shoes	*Vide* Boots	1751	15th Sept., 1899	38	40	6th Oct., 1899	3295

By Authority: RICHARD PETHER, Government Printer, Perth.