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Notice of Acceptance of Complete Specifications.

Patent Office,
Wellington, 1st October, 1902.

COMPLETE specifications relating to the under-mentioned applications for Letters Patent have been accepted, and are open to public inspection at this office. Any person may, at any time within two months from the date of this *Gazette*, give me notice in writing of opposition to the grant of any such patent. Such notice must set forth the particular grounds of objection, and be in duplicate. A fee of 10s. is payable thereon.

No. 14239.—19th November, 1901.—ARTHUR COMETTI, of Petone, Wellington, New Zealand, Millwright. An electric machine for starting trotting-horses on time handicap.*

Claims.—(1.) An electric machine for starting trotting-horses on time handicap, consisting of the various parts combined and arranged and operating substantially as specified, and shown on the drawing. (2.) In a trotting-race starting-machine, a dial or face divided in the centre and having figures extending from top to bottom and alternately placed on right and left of the division in the dial and equally spaced from each other, with the combination of a two-pointed hand or indicator ascending or descending up or down the division in such dial. (3.) In a machine for the purpose indicated, the combination of a clockwork descending

weight which passes over a wire or other electric conductor, with electricity for the purpose specified, and whereby an electric bell is controlled for giving indication to the drivers or riders of horses when to start in trotting-races. (Specification, 2s. 9d.; drawings, 1s.)

No. 14357.—16th December, 1901.—WALTER ALBERT TUCK, Jun., of Pig Valley, Wakefield, New Zealand, Farmer, late Sawmillier. An improved wire-strainer.*

Extract from Specification.—It consists of a reel with two flanges, one being considerably larger than the other, with teeth set half-way round this larger flange, being parallel with the surface of the reel. The smaller flange carries two hooks, which are intended to catch the wire when applying the strainer, and to direct or run the wire on to the reel as the strainer is put in action.

Claim.—My improved wire-strainer as described, and as illustrated on the drawings. (Specification, 1s. 3d.; drawings, 1s.)

No. 14747.—14th April, 1902.—JOHN THOMAS GOOD, of Hutor, Glenthompson, Victoria, Farmer. An improved attachment to rabbit-traps.

Claim.—An attachment to rabbit-traps consisting of a rectangular frame or shield as E, having a marginal rim as e and side walls as e', arranged and secured upon the trap by a wire as F, which takes into channels or curls formed on lower edges of shield, substantially as described and shown. (Specification, 2s.; drawings, 1s.)

No. 14749.—17th April, 1902.—HENRY JAMES JONES, of Stratford, Taranaki, New Zealand, Mechanic. Liquid-seal cover.*

Claim.—In receptacles for holding calcium-carbide and the like, a chamber formed upon the outside of the opening into such receptacle and adapted to contain oil or other liquid, and a lid or cover fitting over the opening and formed with sides, the bottoms of which will dip into the liquid within the chamber when the lid is placed on the receptacle, as and for the purposes specified.

(Specification, 1s. 6d.; drawings, 1s.)

No. 14863.—9th May, 1902.—FREDERICK ARTHUR JONES, of 91, Adelaide Terrace, Perth, Western Australia, Tramway Superintendent; OLIVER BOWMAN, of Perth aforesaid, Accountant; GEORGE McMULLEN, of Perth aforesaid, Architect; and ARTHUR RANKIN, of Perth aforesaid, Lineforeman. Nozzle appliance for cleaning the grooves of tram or other railways.

Claims.—(1.) The process of washing or scouring the grooves and rails of tram and railways by means of a travelling nozzle appliance, and substantially as set forth and explained. (2.) A nozzle appliance fitted with controlling and safety valves and feed-pipes, in combination with a travelling body of feed-water, substantially as and for the purposes set forth, and as illustrated in the drawings. (3.) A nozzle appliance fitted with controlling and safety valves and feed-pipes, in combination and in operative communication with a travelling body of feed-water, and with a force-pump for supplying such water at high pressure to said nozzle appliance, substantially as and for the purposes set forth, and as illustrated in the drawings.

(Specification, 2s. 9d.; drawings, 1s.)

No. 15027.—19th June, 1902.—ROBERT FERGUS SMITH, of Smith and Smith, Octagon, Dunedin, New Zealand, Merchant. A new window-sash fastener.

Claim.—The combination of a perforated or indented metal plate A, together with a thumbscrew attachment on another plate B, substantially as and for the purpose set forth.

(Specification, 1s.; drawings, 1s.)

No. 15083.—1st July, 1902.—RICHARD CURTIS, of Ongarue, King-country, Auckland, New Zealand, Carpenter. An improved suspender.*

Claim.—A device having curved or claw-like projection at one end of a ground-plate interlocking with corresponding points or pins at the top plate, so that when the top plate is closed on the bottom plate a complete fastener is obtained. May be single in form or duplex, so that a complete attachment is made between any two parts as a suspender, coupler, joiner, or fastener. As substantially set forth in specification and drawings.

(Specification, 1s. 6d.; drawings, 1s.)

No. 15145.—19th July, 1902.—ADOLPH FREDERICK WILLIAM LORIE, of Princes Street, Dunedin, New Zealand, Draper and Universal Provider. Improvements in sash-fasteners.*

Claims.—(1.) In a sash-fastener such as described, the corrugated plate substantially as described, and illustrated in Figs. 1 and 2 of the drawings, and for the purposes set forth. (2.) In a sash-fastener such as described, the perforated plate substantially as described, and illustrated in Figs. 3 and 4 of the drawings, and for the purposes set forth. (3.) In a sash-fastener such as described, the serrated plate substantially as described, and illustrated in Figs. 5, 6, and 7 of the drawings, and for the purposes set forth. (4.) In a sash-fastener such as described, the balanced hook substantially as described, and illustrated in Fig. 10 of the drawings, and for the purposes set forth. (5.) The combination and arrangement of parts substantially as described, and illustrated in Fig. 9 of the drawings, and for the purposes set forth. (6.) The combination and arrangement of parts substantially as described, and illustrated in Fig. 11 of the drawings, and for the purposes set forth. (7.) The combination and arrangement of parts substantially as described, and illustrated in Fig. 12 of the drawings, and for the purposes set forth. (8.) The combination and arrangement of parts substantially as described, and illustrated in Figs. 13 and 14 of the drawings, and for the purposes set forth. (9.) The combination and arrangement of parts substantially as described, and illustrated in Figs. 15, 16, and 17 of the drawings, and for the purposes set forth. (10.) In a sash-fastener such as illustrated in Figs. 15, 16, and 17 of the drawings, the guide brackets substantially as described, and illustrated in the said figures, and for the purposes set forth. (11.) A sash-fastener comprising, in combination, the corrugated plate substantially as described, and illustrated in Figs. 1 and 2 of the drawings, adapted to be secured to a vertical rail of an upper sash, and a nut and screw adapted to be secured on the top rail of a lower sash opposite said corrugated plate, substantially as described. (12.) A sash-fastener comprising, in combination, the perforated plate substantially as described, and illustrated in Figs. 3 and 4 of the drawings, adapted to be secured to a vertical rail of an upper sash, and a nut and pointed screw adapted to be secured on the top rail of a lower sash opposite said perforated plate, substantially as described. (13.) A sash-fastener comprising, in combination, the serrated plate substantially as described, and illustrated in Figs. 5, 6, and 7 of the drawings, adapted to be secured to a vertical rail of an upper sash, and a nut and chisel-ended or a pointed screw adapted to be secured on the top rail of a lower sash opposite said serrated plate, substantially as described. (14.) A sash-fastener comprising, in combination, the corrugated plate substantially as described, and illustrated in Fig. 1 of the drawings, adapted to be secured to a vertical rail of an upper sash, a nut and screw adapted to be secured to the top rail of a lower sash opposite said corrugated plate, and a balanced hook, substantially as described, and illustrated in Fig. 10 of the drawings, adapted to be secured to the window-frame for the purpose set forth, substantially as described. (15.) A sash-fastener comprising, in combination, the perforated plate substantially as described, and illustrated in Fig. 3 of the drawings, adapted to be secured to a vertical rail of an upper sash, a nut and pointed screw adapted to be secured to the top rail of a lower sash opposite said perforated plate, and a balanced hook substantially as described, and illustrated in Fig. 10 of the drawings, adapted to be secured to the window-frame for the purpose set forth, substantially as described. (16.) A sash-fastener comprising, in combination, the serrated plate substantially as described, and illustrated in Fig. 5 of the drawings, adapted to be secured to a vertical rail of an upper sash, a nut and a chisel-edged or pointed screw adapted to be secured to the top rail of a lower sash opposite said serrated plate, and a balanced hook substantially as described, and illustrated in Fig. 10 of the drawings, adapted to be secured to the window-frame for the purpose set forth, substantially as described. (17.) A sash-fastener comprising the combination and arrangement of parts substantially as described, and illustrated in Fig. 11 of the drawings, secured on the top rail of a lower sash, with the corrugated plate illustrated in Figs. 1 and 2 secured to an opposing vertical rail, substantially as described. (18.) A sash-fastener comprising the combination and arrangement of parts substantially as described, and illustrated in Fig. 12 of the drawings, secured on the top rail of a lower sash, with the corrugated plate illustrated in Figs. 1 and 2 secured to an opposing vertical rail, substantially as described. (19.) A sash-fastener comprising the combination and arrangement of parts substantially as described, and illustrated in Fig. 11 of the drawings, secured on the top rail of a lower sash, with the corrugated plate illustrated in Figs. 1 and 2 secured to an opposing vertical rail, and a balanced hook, illustrated in Fig. 10, secured to the window-frame, substantially as described. (20.) A sash-fastener comprising the combination and arrangement of parts substantially as described, and illustrated in Fig. 12 of the drawings, secured on the top rail of a lower sash, with the corrugated plate illustrated in Figs. 1 and 2 secured to an opposing vertical rail, and a balanced hook, illustrated in Fig. 10, secured to the window-frame, substantially as described. (21.) A sash-fastener consisting of the combination and arrangement of parts illustrated in Figs. 13 and 14 of the drawings, substantially as described. (22.) A sash-fastener consisting of the combination and arrangement of parts illustrated in Figs. 15, 16, and 17 of the drawings, substantially as described. (23.) A sash-fastener consisting of the combination and arrangement of parts illustrated in Figs. 15, 16, and 17, but with the end of the screw pointed or chisel-edged, and with any form of plate as illustrated in Figs. 1 to 7, substantially as described.

(Specification, 12s. 6d.; drawings, 2s.)

No. 15281.—22nd August, 1902.—ROBERT HALL COLTMAN, of Milne Street, Hunterville, New Zealand, Plumber and Tinsmith. Improved means for automatically ejecting silt and other sedimentary deposit from tanks or cisterns.*

Claims.—(1.) In means for ejecting silt and other sedimentary deposit from tanks or cisterns, a settling chamber or receptacle formed upon the bottom of the tank and made integral therewith, a plug valve in the bottom of such chamber, a float adapted to float upon the top of the water in the tank, a rigid connecting-rod joining the float to the plug of the valve, and a pipe leading from beneath the valve in the settling-chamber, as specified. (2.) The general arrangement, construction, and combination of parts in my improved means for automatically ejecting silt and other sedimentary deposit from tanks or cisterns, as described and explained, as illustrated in the drawing, and for the several purposes set forth.

(Specification, 3s.; drawings, 1s.)

No. 15340.—1st September, 1902.—FREDERICK JOHN TONKIN, of Eketahuna, New Zealand, Plumber and Tinsmith. An improved rain-water strainer and filter.

Claims.—(1.) In a rain-water strainer and filter, in combination, a tank having a vertical perforated partition, a second partition perforated at its lower part, a chamber

containing charcoal, a perforated cover to the charcoal-chamber, and an overflow-pipe, substantially as set forth. (2.) In a rain-water strainer and filter, in combination, a tank having a vertical perforated partition, a second partition perforated at its lower part, a chamber containing charcoal, a perforated cover to the charcoal-chamber, an overflow-pipe, and a chamber having a sloping bottom and a screw cap, the said chamber being placed below the tank, which has an opening communicating with the said chamber, substantially as set forth. (3.) In a rain-water strainer and filter, in combination, a tank having a vertical perforated partition held in guides, a second partition perforated at its lower part, a chamber containing charcoal, a perforated cover to the charcoal-chamber held in position by a clip, and an overflow-pipe, substantially as set forth. (4.) The combination and arrangement of parts comprising the apparatus for straining and filtering water, substantially as and for the purposes described and illustrated.

(Specification, 2s. ; drawings, 1s.)

No. 15343.—30th August, 1902.—FRANCIS WILLIAM PAYNE, of Dunedin, New Zealand, Consulting Engineer. Improved tailings-elevator.

Claims.—(1.) In a tailings-elevator, the combination of a hollow drum furnished with flanges and beaters, having tailings delivered within said drum, said tailings falling through slots in said drum before advancing beaters are thrown forward, all substantially as described, and as shown on the drawing. (2.) In a tailings-elevator, a hollow drum A furnished with a number of slots A¹ and a corresponding number of beaters such as B, B¹, or B², all substantially as described, and for the purposes as set forth, and as shown on the drawing.

(Specification, 1s. 6d. ; drawings, 1s.)

No. 15374.—6th September, 1902.—EDWARD WATERS, Jun., a member of the firm of Edward Waters and Son, Patent Agents, of 414-418, Collins Street, Melbourne, Victoria (nominee of Reginald Aubrey Fessenden, of Manteo, North Carolina, United States of America, Electrical Engineer). Improvements in and relating to means for the transmission of power and signals by electro-magnetic waves.

Extract from Specification.—My invention relates to the transmission of power and signals by electro-magnetic waves of a kind which have been investigated by me, and is particularly concerned with means for the efficient sending and receiving of such waves and for the exact maintenance of tuning. These waves differ from those described by Hertz in that they are not complete waves, but only half-waves, and in that they travel over the surface of a conductor, and hence, unlike Hertz waves, can be deflected from a straight line. They have the property in common with Hertz waves in that the energy received by a given area varies inversely as a given distance. They differ from the waves investigated by Lodge in that they are not current waves, but semi-free ether waves. Thus in the Lodge waves the electric energy is maximum when the magnetic energy is minimum, and all energy not absorbed by resistance losses is recoverable; whilst with the form investigated by me electric energy is a maximum at the same time as the magnetic, and none of the energy radiated is recoverable, except by reflection. I have found that it is essential for the proper sending and receipt of these waves that the surface over which they are to travel should be conducting, and highly conducting in the neighbourhood of the point where the waves are generated or received. I have found that this highly conducting portion of the surface should preferably extend to at least a distance from the origin equal to a quarter-wave length of the wave in air, and in the direction toward the station or stations to which it is desired to send the waves. Where the sending station is in a city or similar place where the waves may be cut off by high buildings or high trees this highly conducting path should be extended still further until it passes beyond the limits of the obstacle, and there the highly conducting portion, which may be in the form of strips of metal or other conductor, or of a number of wires, is connected to the ground. This arrangement may be called a wave-chute. And, further, it is generally believed that conductors of a considerable length are necessary for the efficient production of electro-magnetic waves. By the term "electro-magnetic waves" as used herein is meant waves of a wave-length long in comparison with the wave-length of what are commonly called heat-waves or radiant heat. By "grounded conductor" is meant a conductor grounded either directly or through a capacity, an inductance, or a resistance so that the current in the conductor flows from the conductor to the ground, and *vice versa*, when electro-magnetic waves are generated. The terms "tuned" and "resonant" are used herein as one including

the other. Such impression is, however, erroneous, as I have discovered that by generating the waves in a medium whose permeability to electro-magnetic waves or specific inductive capacity, or both, is greater than that of air, short conductors may be used for the purpose of propagating and receiving electro-magnetic waves. Where one of the constants only is increased the same general effects are produced, as, for example, where the conductor is immersed in water so pure as to be non-conducting in alcohol or other substances having large specific inductive capacity the periodicity is decreased compared with that of the same conductor in air, and radiation is increased thereby, giving the effect of a long conductor.

[NOTE.—The number and length of the claims in this case preclude them from being printed, and the foregoing extract from the specification is inserted instead.]

(Specification, 19s. 6d. ; drawings, 2s.)

No. 15375.—6th September, 1902.—EDWARD WATERS, Jun., a member of the firm of Edward Waters and Son, Patent Agents, of 414-418 Collins Street, Melbourne, Victoria (nominee of Reginald Aubrey Fessenden, of Manteo, North Carolina, United States of America, Electrical Engineer). Improvements in the art of signalling by electro-magnetic waves.

Claims.—(1.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the practically continuous transmission and reception of electro-magnetic waves or impulses, and modifying or changing the character of such waves or impulses without interruption of their continuity, substantially as set forth. (2.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the practically continuous transmission and reception of electro-magnetic waves or impulses, and continuously modifying or changing the character of such waves or impulses without interruption of their continuity, substantially as set forth. (3.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the transmission and reception of electro-magnetic waves or impulses, and modifying or varying the character of a portion of such waves or impulses without interruption of their continuity, substantially as set forth. (4.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the transmission and reception of electro-magnetic waves or impulses of uniform character, and continuously modifying or varying the character of a portion of such waves or impulses without interruption of their continuity, substantially as set forth. (5.) As an improvement in the art of transmitting sounds by electro-magnetic waves, the method described, which consists in the generation of electro-magnetic waves or impulses, and modifying or varying the character of such waves or impulses by sound waves or impulses without interruption of their continuity, substantially as set forth. (6.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the practically continuous transmission and reception of electro-magnetic waves or impulses, normally of a predetermined character, and modifying or changing the character of such waves or impulses without interrupting their continuity by changing the electrical constants of the sending conductor so as to change the degree of resonance between the generator and sending conductor, substantially as set forth. (7.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the practically continuous generation of waves or impulses, and modifying or changing the intensity of said waves without interrupting their continuity, thereby rendering them capable of affecting a receiving conductor, tuned to correspond with sending conductor, during only a portion of the time. (8.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the practically continuous generation of waves or impulses, and modifying or changing the intensity of such waves or impulses without interrupting their continuity by changing the resistance in the sending conductor. (9.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the practically continuous generation of waves or impulses, and modifying or changing the intensity of said waves without interrupting their continuity, thereby rendering them capable of affecting a receiving conductor, tuned to correspond with the sending conductor, to different degrees at different times. (10.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the practically continuous transmission and reception of electro-magnetic waves, normally of a predetermined character, and modifying or changing the character of such waves or impulses without interruption of their continuity, substantially as set forth. (11.) As an improvement in the art of signalling by electro-magnetic waves,

the method described, which consists in the practically continuous transmission and reception of electro-magnetic waves or impulses, normally of a predetermined character, and continuously modifying or changing the character of such waves or impulses without interruption of their continuity, substantially as set forth. (12.) As an improvement in the art of transmitting sounds by electro-magnetic waves, the method described, which consists in the generation of electro-magnetic waves or impulses, normally of uniform character, and modifying or varying the character of such waves or impulses by sound waves or impulses without interruption of their continuity, substantially as set forth. (13.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the practically continuous transmission and receipt of electro-magnetic waves, and modifying the character of said waves at the sending-station without interrupting their continuity, substantially as set forth. (14.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the practically continuous generation of electro-magnetic waves or impulses of constant periodicity, and modifying or changing the intensity of such waves or impulses without interrupting their continuity, substantially as set forth. (15.) As an improvement in the art of signalling by electro-magnetic waves, the method described, which consists in the practically continuous generation of electro-magnetic waves or impulses of constant periodicity, and modifying or changing the intensity of such waves or impulses by changing the resistance of the sending conductor without interrupting the continuity of the waves, substantially as set forth.

(Specification, 9s. 6d. ; drawings, 2s.)

No. 15381.—8th September, 1902.—ROBERT WOOLEY GIBBS, of Tasman Street, Nelson, New Zealand, Carpenter, and THOMAS HECTOR MANSON, of Nile Street, Nelson aforesaid, Carter. A new improved truss for rupture.

Description.—Consists of a flat steel spring 5 or more inches in length and $\frac{3}{4}$ in. in width, and thickness of ordinary clock-spring, and a similar piece 3 in. in length riveted to the centre of one side of the 5-in.-length piece, as in letter A drawing accompanying this specification. Four $\frac{1}{4}$ in. holes are drilled into this combined spring at equal distances apart, which is then covered with fine leather with corresponding holes as above spring contains, as in letter B. The spring B is attached to centre of each pad of truss, two screws in each end, which fixes the spring firmly to the pads, as in letter C. A curvature or bow being given to the combined spring A, and outwards at its ends secured to each pad of the truss, gives the tension or pressure over the ring of the rupture when the side strap D draws the belt or band of the truss tight or slack together, keeping the pads on to the ring of the rupture in whatever movement the body may be inclined, as in letters C, C.

Claim.—For the make and design of the combined spring of any suitable material for the same and for the way, shape, and method of placing the spring upon the front of pads of rupture-trusses, for and in the manner described.

(Specification, 1s. 3d. ; drawings, 1s.)

No. 15383.—11th September, 1902.—Sir OLIVER JOSEPH LODGE, Knight, D.Sc., F.R.S., of Edgbaston, Birmingham, Warwick, England ; ALEXANDER MUIRHEAD, of Shortlands, Kent, England, D.Sc., Telegraph Engineer ; and EDWARD ERNEST ROBINSON, of Edgbaston aforesaid, Electrician. Receivers for wireless telegraphy.

Claims.—(1.) In combination, in a coherer, two conducting-surfaces, a film of fluid insulating-material between such surfaces capable of being broken down upon the occurrence of an ethereal wave in the neighbourhood, and automatic means serving to renew such film. (2.) In combination, in a coherer, two conducting-surfaces, a film of fluid insulating-material between such surfaces, and means serving to impart motion to one of the conducting-surfaces for the purpose of restoring the continuity of the film whenever it is broken down by an ethereal wave. (3.) In combination, in a coherer, two conducting-surfaces one of which is solid and the other of which is fluid, a film of insulating-material between such surfaces capable of being broken down upon the occurrence of an ethereal wave in the neighbourhood, and means serving to renew such film. (4.) In combination, in a coherer, two conducting-surfaces one of which is solid and the other of which is fluid, a layer of fluid insulating-material upon the fluid conductor, means serving to immerse the solid conductor into the fluid one so that a film of the fluid insulating-material is between the conductors, and means serving to renew the last-mentioned film whenever it is broken down by an ethereal wave. (5.) In combination, in a coherer, two conducting-surfaces one of which is solid and the other of which is mercury, a layer of fluid insulating-material upon

the mercury, means serving to immerse the solid conductor into the mercury so that a film of the fluid insulating-material is between the conductors, and means serving to renew the last-mentioned film whenever it is broken down by an ethereal wave. (6.) In combination, in a coherer circuit, a battery, a recorder-coil, and a coherer comprising two conducting-terminals separated by a renewable film of fluid insulating-material, one of the conducting-terminals being carried by or attached to the recorder-coil. (7.) In combination, in a coherer circuit, a battery, a resistance shunt around the battery, and a coherer comprising two conducting-terminals separated by a renewable film of fluid insulating-material. (8.) In combination, in a coherer circuit, a battery, a coherer comprising two conducting-terminals separated by a film of fluid insulating-material, and means, actuated either from the coherer circuit itself or extraneous from such circuit, serving to restore the continuity of such film whenever it is broken down by an ethereal wave. (9.) In combination, in a coherer circuit, a battery, a coherer comprising two conducting-terminals separated by a film of fluid insulating-material, means actuated from the coherer circuit itself serving to restore the continuity of such film whenever it is broken down by an ethereal wave, and a siphon recorder in series in the said circuit. (10.) In combination, in a coherer, two conducting-surfaces, a film of fluid insulating-material between such surfaces, a vibrating body to which one of the conducting-surfaces is attached, and means to vibrate the said body whereby the continuity of said film is restored after having been broken down by an ethereal wave. (11.) In combination, in a coherer, a trough, a pool of mercury forming one terminal of the coherer in such trough, a layer of fluid insulating-material above the mercury, a disc forming the other terminal of the coherer located partly within the mercury and said fluid insulating-material respectively, and means to rotate the disc so that the continuity of the said film is restored after having been broken down by an ethereal wave. (12.) Coherers and coherer circuits constructed, arranged, and operating substantially as described and illustrated in the drawings.

(Specification, 6s. 9d. ; drawings, 1s.)

No. 15384.—11th September, 1902.—WILLIAM ALGERNON EDE-CLENDINEN, of 54, Elphin Grove, Glenferrie, Victoria, Surgeon-Dentist. Improved nicotine-trap and smoke-cooling appliance for tobacco-pipes and cigar-holders.

Claims.—(1.) A chamber A, as specified, constructed with two internal trap projections or bosses *a* provided with holes *a*¹ and with a third hole as *a*² furnished with a movable plug as D, as and for the purpose described and substantially as shown. (2.) A chamber as A of an elliptical section, having holes formed about its conjugate axis to receive the inwardly projecting trap-nipples as *b* and *c* of pipe or cigar-holder stems, and said chamber being, if desired, jointed at A¹, substantially as described and shown. (3.) A chamber as A of an elliptical section having trap bosses as *a* formed about holes *a*¹ lying in axial line with the conjugate diameter of said chamber, and which latter is jointed as at A¹ substantially as described and shown. (4.) A chamber as A of an elliptical section having three holes, two to receive the inwardly projecting trap nipples of pipe or cigar-holder stems and the third to receive a movable plug, said holes being of uniform size so that the parts are interchangeable, substantially as described and shown. (5.) In combination, the chamber as A having internal trap bosses *a*, *a*, provided with holes *a*¹, hole *a*² at about right angles to said trap bosses and provided with a movable plug D, said holes being of uniform size and designed to fit either the bowl-stem nipple *b*, mouthpiece-stem nipple *c*, or the movable plug D, substantially as described and shown. (6.) In combination, the chamber as A furnished with trap bosses *a*, *a*, hole *a*², movable plug D, mouthpiece-stem C, the nipple *c* of which projects through hole *a*² far enough to form a trap, and the nipple of bowl junction-piece E, substantially as described and shown. (7.) In combination, the elliptical-section chamber as A, furnished with traps consisting of the internally projecting nipples on the holder F and mouthpiece C of a cigar or cigarette holder, said nipples passing through the holes *a*¹, *a*¹, and said chamber being either with or without the cleaning-hole and movable plug, substantially as described and shown.

(Specification, 4s. 6d. ; drawings, 1s.)

No. 15385.—11th September, 1902.—ERIC OLOV RISSSTROM, of Murchison Street, Rushworth, Victoria, General Salesman. Improvements in show-stands for axes and the like.

Claims.—(1.) In a stand of the class indicated, the lower tier for holding axes substantially in the positions set forth. (2.) In a stand of the class indicated, the upper tier for holding axes substantially in the positions set forth. (3.) In a stand of the class indicated, the lower and upper tiers in combination for holding axes substantially as set forth. (4.) In a stand of the class indicated, the combinations of the parts *a* to *g* substantially as set forth. (5.) In a stand

of the class indicated, the arrangement of the spaces for the heads of the axes in the lower tier in the positions set forth. (6.) In a stand of the class indicated, the arrangement of the spaces for the heads of the axes in the upper tier as set forth.

(Specification, 3s.; drawings, 1s.)

No. 15386.—8th September, 1902.—GEORGE JOHN HOSKINS, of Sydney, New South Wales, Australia, Engineer. An improved joint for the locking-bar type of rolled-iron pipes.

Claims.—(1.) In the locking-bar type of rolled iron or steel pipes, an annular band or collar in combination with a recess formed by cutting away the external ends of the locking bars of two adjacent pipes, and caulking the annular seam formed by the collar with the external surface of the pipe, as and for the purposes specified. (2.) In the locking-bar type of rolled iron or steel pipes, an annular band or collar in combination with a recess formed by cutting away the external ends of the locking-bars of two adjacent pipes, and with wedges inserted between the cut-down ends of the locking-bars and the edges of the band or collar, as and for the purposes set forth. (3.) In the locking-bar type of rolled iron or steel pipes, an annular band or collar in combination with a recess formed by cutting away the external ends of two adjacent pipes, and with auxiliary spigot ends riveted to the ends of the pipes and wedged to the locking-bars, whereby an ordinary caulked lead joint may be made, as specified. (4.) In the locking-bar type of rolled iron or steel pipes, in combination, an annular band or collar shaped like a socket and riveted to one pipe, an auxiliary spigot end riveted to the other pipe, both socket and spigot ends being wedged to the locking-bars, and a recess formed by cutting away the external ends of the locking-bars of two adjacent pipes so that the annular socket and spigot ends may lie evenly upon the external surfaces of the pipe-plates, the whole forming a combination whereby an ordinary caulked lead joint may be made with rolled iron or steel pipes of the locking-bar type, as set forth.

(Specification, 3s. 9d.; drawings, 2s.)

No. 15388.—12th September, 1902.—FREDERICK AUGUSTUS MILLER, of Ross Place, Lawrence, Otago, New Zealand, Builder. An improved lifting-jack.

Claims.—(1.) In a lifting-jack, a kicker or support pivoted to the sole of the jack, and a chain connecting the kicker to the lever, substantially as set forth. (2.) In a lifting-jack, in combination, a kicker or support having a slotted hole at its bottom end and pivoted to the sole of the jack, and forked at its upper end to embrace the lever, a piece of hoop steel in the bottom of the fork, and a chain connecting the kicker to the end of the lever, substantially as set forth. (3.) In a lifting-jack, in combination, a lever fulcrumed to a pillar, steps upon the end of the lever, a stop on the lower side of the lever, a kicker pivoted to the sole of the jack, and a chain connecting the kicker to the lever, substantially as set forth. (4.) The combination and arrangement of parts comprising my improved lifting-jack, substantially as and for the purposes set forth.

(Specification, 2s.; drawings, 1s.)

No. 15390.—12th September, 1902.—ALBERT CEDERMAN, of Hokitika, New Zealand, Engineer. An improvement in buckets for dredges.

Claim.—In a dredge-bucket, a lip riveted thereto and having a pointed part, substantially as and for the purposes set forth.

(Specification, 1s.; drawings, 1s.)

No. 15393.—10th September, 1902.—ARTHUR KINGDON SMITH, of 133, Macquarie Street North, Sydney, New South Wales, Bookseller (assignee of George McNeill Robb, of Potts Point, near Sydney aforesaid). Apparatus for recording and indicating the score of players in such games as table-tennis, lawn-tennis, and the like.

Claim.—In an apparatus for recording and indicating the score of the players in such games as table-tennis, lawn-tennis, or the like, the combination of two series of numbers representing respectively the games won and the points obtained in the current game, such numbers being arranged in progressive order either round the edges of a pair of dials or in horizontal groups, the scores being indicated in the former case by revolving dial-hands or in the latter case by sliding pointers; with a pair of slots for the names of the players, provided either with a revolving index-hand or a

sliding pointer, and the printed words "Server," "Points," and "Games," substantially as described, and as illustrated in the drawings.

(Specification, 2s. 3d.; drawings, 1s.)

No. 15394.—10th September, 1902.—EDWARD WATERS, Jun., a member of the firm of Edward Waters and Son, Patent Agents, of 414-418, Collins Street, Melbourne, Victoria (nominee of Reginald Aubrey Fessenden, of Manteo, North Carolina, United States of America, Electrical Engineer). Improvements in signalling by electro-magnetic waves.

Claims.—(1.) A receiver for currents produced by electro-magnetic waves consisting of a conductor having small heat-capacity, substantially as set forth. (2.) A receiver for currents produced by electro-magnetic waves consisting of a conductor having small radiating-surface, substantially as set forth. (3.) A receiver for currents produced by electro-magnetic waves consisting of a conductor having slow resistance and small heat-capacity, substantially as set forth. (4.) A receiver for currents produced by electro-magnetic waves consisting of a conductor having a curved portion of small heat-capacity, substantially as set forth. (5.) A receiver for currents produced by electro-magnetic waves consisting of a conductor constructed to lose its heat more rapidly by conduction than by radiation, substantially as set forth. (6.) A receiver for currents produced by electro-magnetic waves consisting of a conductor rapidly responsive as regards temperature to variations in electric currents, substantially as set forth. (7.) A receiver for currents produced by electro-magnetic waves consisting of a conductor formed of two or more materials, and having small heat-capacity, substantially as set forth. (8.) A receiver for currents produced by electro-magnetic waves consisting of a short conductor having small heat-capacity, substantially as set forth. (9.) In a system of signalling by electro-magnetic waves, the combination of a receiving circuit and a receiver having a small heat-capacity, and adapted to be energized by currents produced by electro-magnetic waves in the receiving circuit, substantially as set forth. (10.) In a system of signalling by electro-magnetic waves, the combination of a receiver rapidly responsive as regards temperature to variations in currents produced by electro-magnetic waves, and an indicating-mechanism controlled by changes in temperature due to variations in currents in said receiver, substantially as set forth. (11.) In a system of signalling by electro-magnetic waves, the combination of a receiving conductor, a receiver rapidly responsive as regards temperature to variations in electric currents, and adapted to be energized by currents produced by electro-magnetic waves in the receiving conductor, a circuit controlled by said receiver, and an indicating-mechanism controlled by said circuit, substantially as set forth. (12.) In a system of signalling by electro-magnetic waves, the combination of a grounded sending conductor, a receiving conductor, a receiver rapidly responsive as regards temperature to variations in electric currents and adapted to be energized by currents produced by electro-magnetic waves in the receiving conductor, a circuit controlled by said receiver, and an indicating-mechanism controlled by said circuit, substantially as set forth. (13.) A system of signalling by electro-magnetic waves, having, in combination, a receiver responsive as regards temperature to variations in currents produced by electro-magnetic waves, and a differentially wound indicating-mechanism controlled by currents produced in the receiving conductor by electro-magnetic waves, substantially as set forth. (14.) In a system of signalling by electro-magnetic waves, the combination of a receiving conductor, a receiver responsive as regards temperature to variations in currents produced in said conductor by electro-magnetic waves, a circuit controlled by said receiver, and a differentially wound mechanism controlled by said circuit, substantially as set forth. (15.) In a system for signalling, &c., by electro-magnetic waves, the combination of a receiver responsive as regards temperature to variations in currents produced by electro-magnetic waves, and a differentially wound indicating-mechanism dependent for its operation on currents produced by electro-magnetic waves in the receiving conductor, substantially as set forth. (16.) In a system for signalling, &c., by electro-magnetic waves, the combination of a conductor adapted to radiate and receive electro-magnetic waves, mechanism for causing the radiation of electro-magnetic waves from said conductor, means for modifying one or more of the characteristics of said waves, a receiving mechanism controlled by currents produced in said conductor by electro-magnetic waves, and means for bringing said conductor into operative relation with either the generating or the receiving mechanism, substantially as set forth. (17.) In a system for signalling, &c., by electro-magnetic waves, the combination of a conductor adapted to radiate and receive electro-magnetic waves, mechanism for causing the radiation of electro-magnetic waves from said conductor, a receiving mechanism

controlled by currents produced in said conductor by electro-magnetic waves, and means for bringing said conductor into operative relation with either the generating or the receiving mechanism, substantially as set forth. (18.) In a system for signalling, &c., by electro-magnetic waves, the combination of a conductor adapted to radiate and receive electro-magnetic waves, mechanism for causing the radiation of electro-magnetic waves from said conductor, a receiving mechanism controlled by currents produced in said conductor by electro-magnetic waves, and electrically operating means for bringing said conductor into operative relation with either the generating or the receiving mechanism, substantially as set forth. (19.) In a system for signalling, &c., by electro-magnetic waves, the combination of a conductor adapted to radiate and receive electro-magnetic waves, mechanism for causing the radiation of electro-magnetic waves from said conductor, means for modifying step by step one or more of the characteristics of said waves, a receiving mechanism controlled by currents produced in said conductor by electro-magnetic waves, and means for bringing said conductor into operative relation with either the generating or the receiving mechanism, substantially as set forth. (20.) In a system for signalling, &c., by electro-magnetic waves, the combination of a conductor adapted to radiate electro-magnetic waves from said conductor, and means for modifying one or more of the characteristics of said waves, substantially as set forth. (21.) In a system for signalling, &c., by electro-magnetic waves, the combination of a conductor adapted to radiate electro-magnetic waves, means for causing the radiation of electro-magnetic waves from said conductor, and means for modifying step by step one or more of the characteristics of said waves, substantially as set forth. (22.) A system for signalling, &c., by electro-magnetic waves, having in combination a receiver rapidly responsive as regards temperature to variations in currents produced by electro-magnetic waves, and a differentially wound mechanism controlled by said receiver, substantially as set forth. (23.) In a system of signalling by electro-magnetic waves, a tuning-device having one or more conductors arranged for tuning, and constructed so as to have small inductance as compared with that of a coil containing an equal length of the conductor, for the purpose of preventing the inductance from prolonging the oscillations of the sending circuit, and hence cutting down the radiation per oscillation, substantially as set forth. (24.) In a system of signalling by electro-magnetic waves, a tuning-device having one or more conductors arranged for tuning, and so adjusted as to have the same ratio of inductance to capacity per unit of length that the radiating conductor has, as distinguished from tuning-devices having conductors so formed as to have maximum inductance, substantially as set forth. (25.) In a system of signalling by electro-magnetic waves, the combination of a conductor and a spark-gap, with means for changing the function of the conductor, *i.e.*, from sending to receiving, without bridging the spark-gap, substantially as set forth. (26.) In a system of signalling by electro-magnetic waves, the combination of a radiating conductor, a spark-gap, a capacity and a source of voltage with a high resistance, whereby an intermittent discharge across the spark-gap may be produced, substantially as set forth. (27.) In a system of signalling by electro-magnetic waves, the combination of a radiating conductor, a spark-gap, one terminal of the spark-gap being connected to ground, a capacity and a source of voltage with a high resistance, whereby an intermittent discharge across the spark-gap may be produced, substantially as set forth. (28.) In a system of signalling by electro-magnetic waves, the combination of a radiating conductor and a spark-gap, one terminal of the spark-gap being connected to ground, with means for changing the function of the conductor, *i.e.*, from sending to receiving, without bridging the spark-gap, substantially as set forth. (29.) In a system of signalling by electro-magnetic waves, the combination of a radiating conductor or spark-gap, a capacity and a source of voltage with a high resistance, and means for varying said resistance whereby any desired number of discharges per second across the spark-gap may be produced, substantially as set forth. (30.) In a system of signalling by electro-magnetic waves, the combination of a wave-responsive device, an indicating-mechanism, and means for operating the indicating-mechanism when the wave-responsive device becomes inoperative while in operative connection, substantially as set forth. (31.) In a system of signalling by electro-magnetic waves, the combination of a receiver, an indicating-mechanism, and means for operating the indicating-mechanism when the receiver is ruptured, substantially as set forth. (32.) In a system of signalling by electro-magnetic waves, the combination of a receiving circuit, a series of receivers, and means for shifting said receiver into and out of operative relation to the receiving conductor, substantially as set forth. (33.) A receiver for currents produced by electro-magnetic waves, consisting of a composite conductor, substantially as set forth. (34.) A system for signalling by electro-magnetic waves, the com-

bination of a receiver, rods movable into and out of contact with the terminals of the receiver, contacts adapted to be brought into contact by the rods when shifted out of contact with the receiver-terminals, substantially as set forth. (35.) A system for signalling by electro-magnetic waves, in combination therewith a tuning-device consisting of one or more connected pairs of conductors and one or more contact-pieces connecting the legs of each pair movable along the same, substantially as set forth. (36.) A system of signalling by electro-magnetic waves having in combination one or more connected pairs of connected conductors in series in the sending circuit, and contact-fingers adapted to bear against the conductors in succession, thereby shunting different portions of the sending conductor, substantially as set forth. (37.) A system of signalling by electro-magnetic waves having in combination a sending conductor, and a key provided with fingers arranged to be brought into contact with the sending conductor at different points, substantially as set forth. (38.) A system of signalling by electro-magnetic waves having in combination a sending conductor, and a key provided with fingers adapted to be brought into contact in succession with the sending conductor at different points, substantially as set forth. (39.) A system of signalling by electro-magnetic waves having in combination therewith mechanism for the production of the proper signal of a station at that station, as means for indicating the busy or free state of that station, substantially as set forth. (40.) A system of signalling by electro-magnetic waves having in combination therewith automatic mechanism for the production of the proper signal of a station at that station, as means for indicating the busy or free state of that station, substantially as set forth. (41.) A system of signalling by electro-magnetic waves having in combination a sending conductor and a normally closed shunt, said parts being so arranged that the sending conductor will have the natural period proper to that station, substantially as set forth. (42.) A system of signalling by electro-magnetic waves having in combination a sending conductor, a sending key forming part of a shunt for said conductor and provided with a finger normally in contact with the conductor, so that said conductor will normally have the natural period proper to that station, substantially as set forth. (43.) A system of signalling by electro-magnetic waves having in combination therewith means for indicating to a third station during sending or receiving that such sending or receiving station is busy, substantially as set forth. (44.) In a system of signalling by electro-magnetic waves, the combination of a radiating conductor and a gap, one terminal of the gap being connected to ground, with means for changing the function of the conductor, *i.e.*, from sending to receiving, without bridging the gap, substantially as set forth. (45.) In a system of signalling by electro-magnetic waves, a receiving conductor, a transformer connected in operative relation to the receiving conductor, in combination with a current-actuated wave-responsive device in the secondary circuit of the transformer, substantially as set forth. (46.) In a system of signalling by electro-magnetic waves, a sending conductor, a receiving conductor, a transformer connected in operative relation to the receiving conductor, in combination with a current-actuated wave-responsive device in the secondary circuit of the transformer, the secondary circuit being tuned to the same frequency as the waves emitted by the sending conductor, substantially as set forth. (47.) In a system of signalling by electro-magnetic waves, the method described, which consists in the generation of a current or currents in a portion of a receiving mechanism consisting of relatively fixed and movable members by the generation of electro-magnetic waves at the sending station, and then producing a current or currents in the other portion of the receiving mechanism by the current or currents generated by the electro-magnetic waves, whereby one part of the receiving mechanism is caused to move relative to the other part, substantially as set forth. (48.) In a system of signalling by electro-magnetic waves, the combination of means located at the sending station for the generation of electro-magnetic waves, a receiving conductor at the other station, a field coil or coils adapted to be energized by the currents produced in the receiving conductor, and a ring forming a closed circuit movably supported with its plane normally at an angle less than a right angle to the field, the ring having relatively low resistance and high self-induction, so that a current induced therein will impart a twisting movement to the ring, and means for recording or observing the movements of the ring, substantially as set forth. (49.) In a system of signalling by electro-magnetic waves, a grounded sending conductor, a receiving conductor, a transformer connected in operative relation to the receiving conductor, in combination with a current-actuated wave-responsive device in the secondary circuit of the transformer, the secondary circuit being tuned to the same frequency as the waves emitted by the sending conductor, substantially as set forth. (50.) In a system of signalling by electro-magnetic waves, a sending conductor, a receiver conductor, a transformer connected in operative relation to the receiving conductor, in combination with a current-actuated

wave-responsive device in the secondary circuit of the transformer, the secondary circuit, receiving conductor, and sending conductor all being tuned to the same periodicity, substantially as set forth.

(Specification, £1 12s. 6d.; drawings, 5s.)

No. 15402.—16th September, 1902.—JOHN WHITELAW, Carver, and JOSEPH MUNRO, Cabinetmaker, both of Wellington, New Zealand. An improved machine for "chipping" potatoes and the like.

Claims.—(1.) In machines for "chipping" potatoes and the like, a base plate formed with a sliding top surface, a knife-frame resting upon and adapted to be reciprocated upon such sliding surface, a horizontal knife extending transversely across the top of the knife-frame, and a number of vertical knives depending at intervals from beneath the horizontal knife, in combination with means whereby the knife-frame and knives may be reciprocated and the material to be chipped fed into the machine so as to come into contact with the knives, as specified. (2.) A base plate formed with a sliding top surface, a cover hinged to the base plate and provided with a bottomless feed-hopper attached thereto, in combination with a knife-frame fitting between the cover and the sliding surface of the base plate and provided with means whereby it may be reciprocated, a horizontal knife extending across the top of the knife-frame with vertical knives depending at intervals therefrom, and an anvil-block provided with slots or grooves into which the knife-edges are adapted to fit, as and for the purposes set forth. (3.) The general arrangement, construction, and combination of parts in our improved machine for "chipping" potatoes and the like, as described and explained, as illustrated in the drawings, and for the several purposes set forth.

(Specification, 4s.; drawings, 1s.)

No. 15414.—18th September, 1902.—THE LINOTYPE COMPANY, LIMITED, of 188, Fleet Street, London, England (assignees of Thomas Hooley, of 3 and 5, Duke Street, Stockport, Chester, England, Printer and Lithographer). Improvements in and connected with machines for printing in gold, silver, or other powders.

Claims.—(1.) In an apparatus for printing in gold, silver, or other powders in the manner referred to, a horizontal bed, a work-table adapted to be reciprocated on the said bed, a vertically adjustable printing-block above the latter, an oil-roller, a powder-roller, and a powder-supply roller suspended from the said block, all combined substantially as and for the purpose set forth. (2.) In an apparatus for printing in gold, silver, or other powders in the manner referred to, a horizontal bed, a work-table adapted to be reciprocated on the said bed, a vertically adjustable printing-block above the latter, an oil-roller, a powder-roller, and a powder-supply roller suspended from the said block, a slotted bracket on each side of the printing-block, a slide in each of the said brackets adapted to be reciprocated therein, bearings carried by the said slides in which the said oil-roller and powder-roller are mounted adjacently, and bearings on the back ends of the said brackets in which the said powder-supply roller is mounted, all combined substantially as and for the purpose set forth. (3.) In an apparatus for printing in gold, silver, or other powders in the manner referred to, a horizontal bed, a work-table adapted to be reciprocated on the said bed, a vertically adjustable printing-block above the latter, an oil-roller, a powder-roller, and a powder-supply roller suspended from the said block, a slotted bracket on each side of the printing-block, a slide in each of the said brackets adapted to be reciprocated therein, bearings carried by the said slides in which the said oil and powder rollers are mounted adjacently, and a connection between the said slides and work-table for horizontally reciprocating the said rollers jointly, all combined substantially as and in the manner set forth. (4.) In an apparatus for printing in gold, silver, or other powders in the manner referred to, a horizontal bed, a work-table adapted to be reciprocated on the said bed, a vertically adjustable printing-block above the latter, an oil-roller, a powder-roller, and a powder-supply roller suspended from the said block, a slotted bracket on each side of the printing-block, a slide in each of the said brackets adapted to be reciprocated therein, bearings carried by the said slides in which the said oil-roller and powder-roller are mounted, and rails on the sides of the said block, the shaft-ends of the said oil-roller extending across the same, and inclines at the front end of the said rails adapted to guide the said shaft-ends underneath the said rails on the forward travel of the work-table, all combined substantially as and for the purpose set forth.

(Specification, 4s.; drawings, 1s.)

No. 15417.—18th September, 1902.—ERNEST SMITH BALDWIN and HENRIE HAMPTON RAYWARD, doing business under the name and style of Baldwin and Rayward, of National Chambers, Grey Street, Wellington, New Zealand, Patent Agents (nominees of George Edward Ridgway, of Brentwood, Ashley, Chester, England, Engineer). Improvements in apparatus for spreading liquids over given areas, primarily applicable for distributing sewage on to filter-beds.

Claims.—(1.) The improved apparatus for spreading sewage or other liquids over filter-beds, consisting of open troughs and means for imparting rotary motion to the said troughs, said means being adapted to be operated by the flow of the sewage itself, as and for the purpose described. (2.) The improved apparatus for spreading sewage over given areas, consisting of open troughs adapted to be moved rotarily, a supply-pipe, blades and openings between the supply-pipe and troughs whereby the troughs are caused to rotate upon the flow of sewage, substantially as described. (3.) The improved apparatus for spreading sewage over given areas, consisting of open troughs adapted to be moved rotarily, a supply-pipe having tangential openings *e* and blades *f*, blades *g* mounted at the inner ends of the troughs whereby the troughs are caused to turn upon the flow of sewage, in combination with the regulating plate *u*, substantially as described. (4.) The improved apparatus for spreading sewage over given areas, consisting of a pillar, open troughs radially arranged about the pillar and suspended therefrom, a supply-main opening to the axis of the troughs, vanes and openings between the supply-main and the radially arranged troughs whereby on the flow of sewage through the main the troughs will be caused to revolve, as and for the purpose set forth. (5.) In apparatus having troughs for spreading sewage or other fluids over filter-beds or other given areas, the combination with said troughs of an adjustable plate as *u* for regulating the outflow, substantially as described. (6.) The improved apparatus for spreading sewage or other fluids over filter-beds or other given areas, consisting of radial troughs as *j* that are supported by a central pillar as *l* and caused to rotate by the fluid from a central feed acting on tangential blades as *g*, in combination with blades as *f*, and with a plate *u* affixed to the troughs for regulating the outflow therefrom, all substantially as described.

(Specification, 8s. 6d.; drawings, 2s.)

No. 15418.—18th September, 1902.—ERNEST SMITH BALDWIN and HENRIE HAMPTON RAYWARD, doing business under the name and style of Baldwin and Rayward, of National Chambers, Grey Street, Wellington, New Zealand, Patent Agents (nominees of George Edward Ridgway, of Brentwood, Ashley, Chester, England, Engineer). An improved self-flushing time-valve appliance to sewage-distribution and other like purposes.

Claim.—The improved self-flushing time valve applicable to sewage-distribution and other like purposes, consisting principally of a door or flap, hinged at the top and closing downwards, acting against a seating fixed in the distributing-channel so that the pressure of the accumulating fluid keeps the valve closed, an opening or openings being made through or above the said valve at such a height that when the level of the accumulated fluid rises to a given height it flows through the said opening or openings into a chamber attached to the valve until the weight of fluid in such chamber overcomes the pressure on the valve, opening the same and allowing the fluid to escape with a "flush," substantially as described, and illustrated by the drawings.

(Specification, 2s. 9d.; drawings, 2s.)

No. 15419.—17th September, 1902.—THOMAS STEVENSON, of Dunedin, New Zealand, Mechanical and Electrical Engineer. Improved removable shaft-bushes, especially for rough machinery and rough work.

Claims.—(1.) In bushed shafts, the combination of a shaft having a portion of same of other than the round section, with a bush fitting same, the said part preventing the bush turning on the shaft, and the whole further secured by a pin or bolt, all substantially as set forth, and as shown on the drawing. (2.) In bushed shafting, in combination, a shaft *A* having the end or ends concentrically shouldered as *A*¹, and further shouldered with any other than a round concentric section as *A*², with a bush *B*, *B*¹, fitting same so that it will be as part of the shaft *A*, taking the wear from same at the bearings, said bush *B* being further secured by pin *C* through *B*¹ and *A*², all substantially as set forth, and as shown on the drawing.

(Specification, 1s. 9d.; drawings, 1s.)

No. 15422.—19th September, 1902.—THE STROWGER AUTOMATIC TELEPHONE EXCHANGE, a corporation organized under the laws of the State of Illinois, having their offices at 375, The Rookery, Chicago, Cook County, Illinois, United States of America, Manufacturers (assignees of Alexander Elsworth Keith, Electrical Engineer, John Erickson, Electrical Engineer, and Charles Julius Erickson, Electrical Engineer, all of 142, Washington Street, Chicago aforesaid). Automatic telephone exchange.

Claims.—(1.) In a telephone exchange having a series of circuits leading from subscribers' stations, a series of selectors, one for each station, and automatically operated independent means for selecting the connection between the selectors. (2.) In a telephone exchange having a series of circuits leading from subscribers' stations, a series of selectors, one for each station, a second series of selectors, and a series of connectors, and automatic means for placing every first selector in electrical connection with every other first selector through the second selectors and connectors. (3.) In a telephone exchange having a series of circuits leading from subscribers' stations, a series of selectors, one for each station, and a number of lines adapted to electrically interconnect the selectors, and automatically operated independent means for selecting one of such lines. (4.) In a telephone exchange having a series of circuits leading from subscribers' stations, a series of selectors, one for each station, and a number of lines adapted to electrically interconnect the selectors, and automatically operated independent means adapted to make no connection with a busy line, but select a line not busy. (5.) In a telephone exchange having a series of circuits leading from subscribers' stations, a series of selectors, one for each station, and a number of lines adapted to electrically interconnect the selectors, and automatically operated independent means for selecting one of such lines, consisting of an electro-magnet, a source of electric current, a circuit-breaker, and a controlling switch, operated substantially as stated. (6.) In a telephone exchange having a series of circuits leading from subscribers' stations, a series of selectors, one for each station, and a number of lines adapted to electrically interconnect the selectors, and automatically operated independent means for selecting one of such lines, consisting of an electro-magnet, a source of electric current, a circuit-breaker, and a controlling switch, operated substantially as stated. (7.) In an automatic telephone exchange, the combination with a series of subscribers' lines leading therein of a series of selector switches, one for each subscriber, magnets in each of said switches for moving a main-line switch-arm in two directions, one of said movements controlled directly by the subscriber, and the other movement automatically controlled by mechanism at the exchange. (8.) In an automatic telephone exchange, the combination with a series of subscribers' lines leading therein of a series of selector switches, one switch for each subscriber, a number of lines adapted to interconnect the selectors, and means adapted to make such connection, consisting of an electro-magnet fitted to operate the main switch-arm and whose armature is adapted to hold closed or open the electric circuit therethrough. (9.) The combination in a telephone exchange having a series of subscribers' lines leading therein, and such lines having insulated terminals arranged in rows and adapted to being electrically connected with, of a body (metal between the rows, for the purpose stated. (10.) The combination in an automatic telephone exchange having a series of subscribers' lines leading therein, and having a system of interconnecting switches, of which latter each is provided with rows of separately insulated contact points, each adapted to be contacted by arms which complete the interconnecting circuit, a condensing body disposed between each of the said rows for the purpose stated. (11.) The combination in a telephone exchange having a series of subscribers' lines leading therein which have insulated terminals arranged in a plurality of rows and adapted to being electrically connected with, of a condensing body between the rows, and a plurality of such bodies in electrical communication for the purpose stated. (12.) The combination in a telephone exchange having a series of subscribers' lines leading therein of insulated terminals in the lines arranged in pairs, each adapted to being electrically connected with any other pair, the pairs of terminals arranged in rows, and a condensing body disposed between the rows for the purpose stated. (13.) The combination in a telephone exchange having a series of subscribers' lines leading therein of insulated terminals in the lines arranged in pairs of each adapted to being electrically connected with any other pair, the pairs of terminals arranged in a plurality of rows, a condensing body between the rows, and a plurality of such bodies in electrical connection.

(Specification, £1 12s.; drawings, 11s.)

No. 15423.—19th September, 1902.—HENRY LANE WALLACE, of 1335, North Pennsylvania Street, Indianapolis, Indiana, United States of America, Capitalist (assignee of Joseph Wilson Nethery, of 65, Blanche Building, Indianapolis aforesaid, Building Superintendent). Valves.

Claims.—(1.) In an automatically closing valve with a single main-valve seat wherein a starting-valve opens a by-pass above a piston-head and thereby allows the main valve to rise from its seat, means of the nature described whereby the flow of fluid is substantially cut off at the extreme open position of said main valve. (2.) In a valve of the nature described, a double-walled casing wherein the inner and outer walls are united at or near the ends and longitudinally along one side and have a by-pass through such longitudinal casing, the inner wall being nearly divided by a narrow circumferential slit through which the fluid enters the chamber therein. (3.) In connection with the subject-matter of claim 1, the provision of two cut-off points above the main-valve seat with gradually tapering spaces between them whereby as the valve moves towards either end of its traverse the available fluid-passage-way is decreased. (4.) In connection with the subject-matter of claim 3, the guide-wings traversing the tapering spaces. (5.) The centrally pivoted spiral-edged cut-off gate to adjust the size of the orifice opening through the piston-head. (6.) The half-rings or fillers of varying thickness applied to the main valve for the purpose described. (7.) As a modification of the subject-matter of claim 6, the graduated cone 40, as set forth. (Specification, 11s.; drawings, 2s.)

No. 15424.—19th September, 1902.—GEORGE MITCHELL, of Naco, Arizona, United States of America, Metallurgist, and LUCIUS DAY COPELAND, of Los Angeles, California, United States of America, Mechanical Engineer. Method, process, and apparatus for utilising the heat of slag for generating steam.

Claims.—(1.) The process of generating a constant supply of steam under pressure from the heat contained in hot slag, consisting in intermittently feeding charges of hot slag into a body of water confined under pressure in a steam-generator adapted to be closed steam-tight while charges of slag are being fed into the body of water and discharged therefrom, substantially as set forth. (2.) The process of generating a constant supply of steam under pressure from heat contained in hot slag and in granulating the slag, which consists in intermittently feeding charges of hot slag into water confined under pressure in a steam-generator adapted to be closed steam-tight while charges of slag are being fed into the water and discharged therefrom and in intermittently discharging granulating slag from such confined body of water, substantially as set forth. (3.) The combination with a steam-generator, a slag-receptacle arranged to feed hot slag into water contained in the generator, and means for controlling the discharge of the granulated slag, of suitable valves for maintaining the pressure within the generator while slag is being fed into and discharged from the same, substantially as set forth. (4.) The combination with a steam-generator and means for feeding hot slag by its gravity into the generator and discharging granulated slag by its gravity therefrom, of means for maintaining the steam-pressure within the generator while the slag is being fed into and discharged therefrom, substantially as set forth. (5.) A slag steam-generator constructed to have slag fed into a body of water under pressure and discharged therefrom and provided with removable lining sections, substantially as set forth. (6.) A slag steam-generator having a slag-receptacle, in combination with a valve located inside the generator, and means for rotating the valve on its seat, substantially as set forth. (7.) The combination with a steam-generator and a slag-feeding receptacle, of means for introducing steam above the slag-receptacle to equalise the pressure thereon, substantially as set forth. (8.) A slag steam-generator having a slag-feeding receptacle for feeding hot slag into a body of water in the generator, and a device for breaking up the slag while being fed, substantially as set forth. (9.) A slag steam-generator constructed to feed hot slag into water in the generator while confined under pressure and provided with valve-controlled receptacle into which the cooled slag is discharged, substantially as set forth. (10.) A slag steam-generator provided with means for discharging the slag from the slag-feeding receptacle within the generator, substantially as set forth. (11.) The combination with a slag steam-generator, of means for agitating the cooled slag and assisting in its discharge, substantially as set forth. (12.) A slag steam-generator having a tilting slag-receptacle inside the generator, and means for seating its open end over the feed-opening in the generator-casing, substantially as set forth. (Specification, 9s.; drawings, 7s.)

No. 15434.—23rd September, 1902.—GEORGE CHRISTOPHER CLARKE, of Sentinel Road, Ponsonby, Auckland, New Zealand, Settler. Improvements in or relating to gates.

Claims.—(1.) In the construction of gate-frames, a number of double wires extending in parallel lines longitudinally across the frame and secured to the uprights at both ends thereof, and means whereby each of such double wires may

be twisted on themselves, as and for the purposes set forth. (2.) In the construction of gate-frames, a number of double wires secured to the upright at one end, by being passed around a vertical rod let into a groove formed therein, and continued in parallel lines longitudinally across the frame and secured to spindles revolvably mounted in the upright at the other end of the frame, such spindles being each provided with means whereby they may be turned and locked at will, as and for the purposes set forth. (3.) The general arrangement, construction, and combination* of parts in my improvements in or relating to gates, as described and explained, and for the several purposes set forth.
(Specification, 2s. 3d.; drawings, 1s.)

F. WALDEGRAVE,
Registrar.

An asterisk (*) denotes the complete specification of an invention for which a provisional specification has been already lodged.

NOTE.—The cost of copying the specification and drawings has been inserted after the notice of each application. An order for a copy or copies should be accompanied by a post-office order or postal note for the cost of copying.

The date of acceptance of each application is given after the number.

Provisional Specifications.

Patent Office,
Wellington, 1st October, 1902.

APPLICATIONS for Letters Patent, with provisional specifications, have been accepted as under:—

No. 15117.—14th July, 1902.—EARNEST HEINRICH WILHELM, of Marton, Rangitikei, New Zealand. An improved appliance for castrating, docking, and searing lambs.

No. 15261.—15th August, 1902.—WILLIAM HENRY KEON, of 37, Cargill Street, Dunedin, New Zealand, Marine Engineer, and WALTER OLIPHANT MILLER, of Ross Street, Roslyn, Otago, New Zealand, Company Secretary. Improvements in and relating to fire-escapes.

No. 15262.—15th August, 1902.—WILLIAM HENRY KEON, of 37, Cargill Street, Dunedin, New Zealand, Marine Engineer, and WALTER OLIPHANT MILLER, of Ross Street, Roslyn, Otago, New Zealand, Company Secretary. Improvements in the mechanism of water-closet cisterns and the like.

No. 15278.—21st August, 1902.—WILLIAM DESMOND, of Outram, Otago, New Zealand, Carpenter. An improved lamp-bracket.

No. 15294.—21st August, 1902.—HERMAN AUGUST, of Esk Street, Invercargill, New Zealand, Furniture-manufacturer. Improvements in water-closets and commodes.

No. 15380.—1st September, 1902.—JOHN WATT and BELLA WATT, of Balclutha, New Zealand, Gas Engineers. An improved hydrocarbon-gas generator.

No. 15389.—4th September, 1902.—PHILLIP SCORINGE, of Timaru, New Zealand, Labourer. An improved trouser-clip.

No. 15376.—10th September, 1902.—JOHN KENNETH MCNEILL and WILLIAM ERNEST COLLINS, both of Wanganui, New Zealand, Commission Agents. Improvements in apparatus for compressing ensilage.

No. 15387.—8th September, 1902.—NEIL HAMILTON WHISKER, of King Street, Newmarket, Auckland, New Zealand, Plumber; ALFRED SMART, the Younger, of Williamson Street, Epsom, Auckland aforesaid, Plumber; JAMES WILSON, of Short Street, Newmarket aforesaid, Plumber; and THOMAS GEORGE PEEK, of Arthur Street, Ellerslie, Auckland aforesaid, Builder. An improved fire-escape.

No. 15389.—12th September, 1902.—HENRY EDWIN McDONALD, of Mowbray Street, Wellington, New Zealand, Journalist. Improvements in vehicle-wheels.

No. 15391.—10th September, 1902.—ALEXANDER AITCHISON CAMPBELL, of Aitchison Street, Willoughby, North Sydney, New South Wales, Plumber. Improvements in water-heaters.

No. 15392.—10th September, 1902.—CATHERINE MARY BROPHY, of Upper Manilla, New South Wales, School-teacher. An appliance to assist the accurate measurement of ladies' skirts.

No. 15396.—13th September, 1902.—JOHN SYDNEY WESTON, Amalgamator, HENRY FOX CHAFFEY, Engineer, and FRED ERNEST SMITH, Carpenter, all of Greymouth, New Zealand. An improved apparatus for saving gold.

No. 15397.—13th September, 1902.—GEORGE W. BELL, of 112, Darlinghurst Road, Sydney, New South Wales, Author. Improvements in street-sweepers.

No. 15398.—13th September, 1902.—FRIEDRICH WILHELM SUDHOLZ, of the Farners' Foundry, Raleigh Street, Footscray, Victoria, Agricultural-implement Maker. An improved combination manure-distributing and potato-planting attachment for ploughs.

No. 15399.—12th September, 1902.—LYNN STAPLES, of 23, Montreal Street South, Christchurch, New Zealand, Boot-maker, and WILLIAM TAYLOR, of 48, Colombo Street, Sydenham, Canterbury, New Zealand, Bootmaker. Improved means for ventilating boots, shoes, and the like.

No. 15400.—12th September, 1902.—WILLIAM HERDMAN, of Christchurch, New Zealand, Railway Employee. An improved egg-beater which is utilisable for other analogous purposes.

No. 15401.—11th September, 1902.—JOHN RUGG, care of Mr. Webber, Seafield View Road, Auckland, New Zealand, Labourer. A rack for holding brooms and suchlike.

No. 15403.—16th September, 1902.—ARTHUR HYAM NATHAN, of Auckland, New Zealand, Merchant (assignee of Frank H. Combes and William Francis Tucker, both of Auckland aforesaid). Improved machine for packing tea and other substances.

No. 15404.—12th September, 1902.—THOMAS WILLIAM COULTHARD, of Mangapai, New Zealand, Sawmiller (nominee of John Fowler, of Whangarei, New Zealand, Engineer). An improved box for the carriage and shipping of eggs.

No. 15405.—13th September, 1902.—MOSES BATE, of Brighton Road, Parnell, near Auckland, New Zealand, Millwright. An improved extractor and separator of gold and other metals, and of wheat and other products.

No. 15407.—17th September, 1902.—JOHN MARQUIS GRAHAM, of Gore, New Zealand, Dredgemaster. Automatic fire-alarm.

No. 15408.—13th September, 1902.—MILTON WILSON FLEMING, of Milton, New Zealand, Agent. Portable truck and hoist.

No. 15409.—15th September, 1902.—TRISTAN D'ACHUNHA CRESWELL MAXTED, of Blenheim, New Zealand, Gas-fitter. An improved automatic self-sealing water-closet seat and nightsoil receptacle.

No. 15410.—18th September, 1902.—HORACE MCGOWAN, of "Clonnel," Church Street, Randwick, New South Wales, Engineer. Improvements in adjustable fittings for pendant electric lamps.

No. 15411.—18th September, 1902.—WILLIAM JURISS, of Christchurch, New Zealand, Carpenter. Improvements relating to the manufacture of building-bricks.

No. 15412.—18th September, 1902.—JOSEPH CARLYLE, of Waimate, New Zealand, Farm-hand. Improvements in or relating to troughs for feeding sheep and other animals.

No. 15413.—18th September, 1902.—UNITED SHOE MACHINERY COMPANY, of Paterson, in the State of New Jersey, a corporation duly organized under the laws of said State of New Jersey, and having their principal place of business at 205, Lincoln Street, Boston, Massachusetts, United States of America (assignees of Benjamin Franklin Mayo, of Salem, Massachusetts aforesaid, Inventor). Improvements in or relating to mechanism for assorting nails.

No. 15415.—18th September, 1902.—JOHN CREAMER, of 15, Barker Street, Wellington, New Zealand, Carpenter. An improvement in plane-irons.

No. 15416.—18th September, 1902.—EVELYN AUGUSTA CONYERS, of 25, Flinders Lane, Melbourne, Victoria, Certificated Nurse. An improved supporting frame to be used with a slipper bed-pan.

No. 15420.—19th September, 1902.—OTTO BÖRS, of Coola, Trundle, New South Wales, Grazier. Improvements in sheep-shears.

No. 15421.—19th September, 1902.—JOHN ALEXANDER HAMILTON, of Payneham Road, St. Peter's, South Australia, Mining Engineer. Improvements in concentrating and amalgamating tables.

No. 15425.—19th September, 1902.—WILLIAM AGUSTINE COLLINS, of Wanganui, New Zealand, Settler. An improved appliance for holding the legs of cows.

No. 15427.—20th September, 1902.—THOMAS McMILLAN, of Wylie's Crossing, Otago, New Zealand. Improvements in or relating to window-blinds.

No. 15428.—19th September, 1902.—NEIL BROWN McLELLAN, of Bannockburn, New Zealand, Miner. Improved door-retainer.

No. 15429.—22nd September, 1902.—JOHN WHITEHOUSE, of Waihi, Auckland, New Zealand, Locomotive-driver. Improved spark-arrester.

No. 15430.—23rd September, 1902.—DUNCAN WILLIAM MCARTHUR, of Paeroa, Auckland, New Zealand, Civil Engineer. A paper-feeding attachment for typewriting machines.

No. 15431.—23rd September, 1902.—FRANK HENRY WALDEMAR COWPER, of 125, Colombo Street, Christchurch, New Zealand, Manager in New Zealand of the Australian Manufacturing and Importing Company, Limited (nominee of Thomas Nathan Rayward, of 47, Bow Lane, London, England, Manager in London of the Australian Manufacturing and Importing Company, Limited). An improved damping-apparatus for employment in copying letters and the like.

No. 15432.—23rd September, 1902.—JAMES ANDREW FIDDES, of Leith Walk, North-east Valley, Dunedin, New Zealand, Tram-conductor. Improved apparatus for propelling and sustaining boats and the like.

No. 15433.—23rd September, 1902.—FREDERICK LYNDSEY SUMMERTON, of 11, Worcester Street, Christchurch, New Zealand, Engineer, and FREDERICK JOHN AMOS, of 80, Hereford Street, Linwood, New Zealand, Joiner. Improved cycle-propelling mechanism.

F. WALDEGRAVE,
Registrar.

NOTE.—Provisional specifications cannot be inspected, or their contents made known by this office in any way, until the complete specifications in connection therewith have been accepted.

The date of acceptance of each application is given after the number.

Letters Patent sealed.

LIST of Letters Patent sealed from the 17th September to the 29th September, 1902, inclusive:—

- No. 13753.—T. Grundy and R. Potter, clothes-peg.
No. 13779.—A. E. Macindoe, packing-holder for machine-shafts.
No. 13816.—C. May, automatic register.
No. 13826.—J. S. Holmes, counter-check or sales-book.
No. 14450.—A. McLeod, indoor game.
No. 14694.—T. H. Brown and J. E. Staples, branding-fluid.
No. 14732.—Nernst Electric Light, Limited, G. S. Ram, and E. G. Sheppard, Nernst lamp.
No. 14898.—L. Jaubert, brick.
No. 15013.—A. S. Band, clip for securing wires.
No. 15014.—W. Payne and J. L. Taylor, treating copper-ores.
No. 15016.—C. Peterson, cigars, &c., holder.
No. 15038.—J. A. Dahlqvist and C. L. Holm, separating fatty substances.
No. 15039.—P. Hoppe, closing bulkhead-doors.
No. 15040.—W. Wattie, straw-matting and loom for same.
No. 15041.—O. Tipton, manure and seed sower.
No. 15044.—W. Buckingham, rotary engine.
No. 15045.—G. Bamberg, detergent.
No. 15046.—C. Robinson, destruction of vermin.
No. 15047.—W. C. Runge, graphophone.
No. 15048.—W. C. Quinby and J. J. Moore, explosive compound.
No. 15068.—F. M. Gaudet, target.
No. 15069.—J. Purvis and T. Rouse, artificial stone.
No. 15070.—J. T. Hunter, alternating-current electric motor (B. G. Lamme).
No. 15071.—The American Tobacco Company, making cigarette-wrapper, with mouth-piece (S. D. S. Rakowitzky and S. S. D. Rakowitzky).
No. 15072.—The American Tobacco Company, inserting cotton in cigarette-wrapper tubes (S. D. S. Rakowitzky).
No. 15073.—The American Tobacco Company, cigarette-tube (K. Harnisch).

F. WALDEGRAVE,
Registrar.

Letters Patent on which Fees have been paid.

[NOTE.—The dates are those of the payments.]

SECOND-TERM FEES.

- No. 11018.—Safety Explosives, Limited, explosive (H. Boyd). 29th September.
No. 11024.—J. H. Blackwood, ventilating-ridging for buildings. 25th September.

THIRD-TERM FEE.

- No. 8037.—W. F. Jobbins, obtaining glycerine from soap-makers' spent lyes (J. Van Ruymbeke and W. F. Jobbins). 26th September.

F. WALDEGRAVE,
Registrar.

Subsequent Proprietors, &c., of Letters Patent registered.

[NOTE.—The name of the Patentee is given in brackets; the date is that of registration.]

- No. 7237.—The International Cigar Machinery Company, of Jersey City, State of New Jersey, United States of America, machine for manufacturing cigars. [La Compagnie Générale pour l'exploitation des machines à fabriquer les cigares (Brevets Jean Reuse) Société Anonyme—J. Reuse.] 26th September, 1902.

No. 7933.—Henry Arthur Wheat, Engineer, and Nehemiah Gutheridge, Merchant, both of Melbourne, Victoria. Cash-carrier. [R. Reid.] 26th September 1902.

No. 7933.—The Lamson Store Service Company, Limited, of Sydney, New South Wales, cash-carrier. [H. A. Wheat, N. Gutheridge, and R. Reid.] 26th September, 1902.

No. 10711.—Lewis Grant Abrams, of Phoenix Chambers, 158, Pitt Street, Sydney, New South Wales, Customhouse Agent and Broom-manufacturer, broom. [J. Matherson.] 26th September, 1902.

No. 13187.—Frederick William Brooking, of Stratford, New Zealand, Commission Agent, generation of acetylene gas. Registered as proprietor of the half-interest of Joseph Baker in the invention. [H. J. Jones and J. Baker.] 30th September, 1902.

No. 14661.—Frederic Hamlet Long, of 84, Adams Street, Chicago, in the County of Cook, State of Illinois, United States of America, Chemist, metallurgic filter. [E. Waters, jun.—F. H. Long.] 26th September, 1902.

No. 14662.—Frederic Hamlet Long, of 84, Adams Street, Chicago, in the County of Cook, State of Illinois, United States of America, Chemist, electrolytic converter. [E. Waters, jun.—F. H. Long.] 26th September, 1902.

No. 14807.—C. B. Cottrell and Sons Company, a corporation organized under the laws of the State of New Jersey, and engaged in business at Stonington, in the State of Connecticut, United States of America, and at No. 41, Park Row, in the City of New York, and State of New York, United States of America aforesaid, Manufacturers of Printing Machines, printing plates. [E. Waters, jun.—C. B. Cottrell and Sons Company—M. A. McKee.] 26th September, 1902.

F. WALDEGRAVE,
Registrar.

Notice of Request to amend Specification.

Patent Office,
Wellington, 1st October, 1902.

A REQUEST for leave to amend the specification (including drawings) relating to the undermentioned application for Letters Patent has been received, and is open to public inspection at this office. Any person may, at any time within one month from the date of this *Gazette*, give me notice in writing of opposition to the amendments. Such notice must set forth the particular grounds of objection, and be in duplicate. A fee of 10s. is payable thereon.

No. 14350.—18th December, 1901.—JAMES WATSON, of 33, Thorndon Quay, Wellington, New Zealand, Designer. Improvements in metallic glazing-bars and appliances thereof.

The nature of the proposed amendment is as follows: To substitute the whole of the following specification for the one originally filed:—

"Improvements in metallic glazing-bars.—I, James Watson, of 14A, Thorndon Quay, Wellington, in the Colony of New Zealand, Designer and Sculptor, do hereby declare the nature of my invention for improvements in metallic glazing-bars, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

"For improvements in metallic glazing-bars which have for their object the construction of skylights and other glazed structures of zinc, galvanised iron, steel, and other suitable sheet material.

"My improvements consist of glazing-bars being constructed with convolute-shape gutters. These convolute-shape gutters, I claim, form the most important feature in the construction of metallic skylights and suchlike structures, as the action of the metal does not conflict with the glass, which remains perfect in every extremity of weather and changing temperature, as the glass is resting on the convolute-shape gutters, which form an elastic body for same to lay on, consequently a natural expansion and contraction is permitted to take place without deranging or cracking of glass.

"The perpendicular centre part of glazing-bars being so formed as to leave a narrow channel running between same parallel with the convolute-shape gutters. Into the narrow channel a core of suitable design may be placed when required to obtain additional strength and architectural effect in the construction of skylights and other glazed structures. I also use a weathercapping which forms the external covering for the upper part of perpendicular centre portion of glazing-bars, and likewise forms a covering and protection for the edges of glass.

"The following illustration of the accompanying drawings will show, of which Figs. 1, 2, 3, showing end section of glazing-bars as formed into shape from strips of sheet metal. Figs. 4 and 5 show end section of glazing-bars, with attachments such as cores, glass, weathercaps, and the general method of fixing same. Fig. 6 illustrates a complete

skylight: Letter A represents the convolute-shape gutters; letters A, A, represent the aperture of convolute-shape gutters; letter B represents the perpendicular centre part of skylight-bars; letter C represents the glass; letter D represents the weathercaps; letter E represents the cores; letter F represents the flashing or apron-pieces of glazing-bars as shown by Figs. 2 and 3; similar letters indicate corresponding parts of the various figures.

"In the construction of skylights which are suitable for corrugated-iron and slate roofs, as illustrated by Fig. 6, I form such skylights in the following manner: I first use the glazing-bars shown by Fig. 2 with the apron-piece and form therewith the two sides and upper part of skylight-frame. I then use the glazing-bar shown by Fig. 3 to form the lower cross portion of frame. This glazing-bar is also provided with apron-piece and a shallow perpendicular centre part for the glass to project over. Having now formed the framework of skylight, I now intersect as many of the glazing-bars shown by Fig. 1 or 4 between the framework as may be required, such bars running parallel with the sides of frame, whilst I leave the convolute-shape gutters at the lower end of glazing-bars projecting through the lower cross portion of skylight-frame for the purpose of providing for escape of condensation. I then place the glass between the frame on the convolute-shape gutters, and fix the weathercapping in position over the perpendicular centre parts of frame, and likewise cover the edges of the glass with the exception that the lower edge of glass projects over the lower cross portion of skylight-frame and is held in position by means of a metal strip, and likewise by the weathercapping, which is fixed in the ordinary manner by means of nuts and bolts. Having now formed a complete skylight which is provided with an apron-piece around the four sides of same by which means such skylights are fixed to corrugated-iron and slate roofs of buildings.

"When it becomes necessary to construct large skylights on buildings already erected, or in course of erection, the apron-piece of such skylights are made to suit the roof-construction of buildings whereon they are erected.

"Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is: Metallic glazing-bars constructed with convolute-shape gutters, as hereinbefore described, and as shown by the accompanying drawings.

"Dated this 3rd day of September, A.D. 1902.—JAMES WATSON."

To file fresh drawings.

The applicant states: "My reasons for making this amendment are as follows: In order that certain parts may be excised from the specification and claims in accordance with the decision of the Registrar."

F. WALDEGRAVE,
Registrar.

Applications for Letters Patent abandoned.

LIST of Letters Patent (with which provisional specifications only have been received) abandoned from the 18th September to the 1st October, 1902, inclusive:—

- No. 14238.—S. S. Gimblett, boot-fastening.
- No. 14241.—W. Jennings, removing river-bars, &c.
- No. 14243.—C. Tandy, fire-escape.
- No. 14249.—A. Senior, filing flax-stripper drum.
- No. 14250.—A. W. A. Barnard and W. G. Reid, pruning-shears.
- No. 14256.—W. L. Mitchell, bicycle-pedal.
- No. 14257.—C. C. Rawlins, driving dredge machinery from ashore.
- No. 14260.—J. H. Williams, wet scutcher.
- No. 14261.—A. Campbell, extracting gold from black sand.
- No. 14265.—J. Johnson, stocking for artificial leg.
- No. 14266.—J. Johnson, foot for artificial leg.
- No. 14267.—J. Dunbar, single-disc ridger.
- No. 14268.—C. G. Watson and W. K. Elder, spinal support.
- No. 14269.—G. Holford, animal-trap.
- No. 14270.—A. J. C. Woodford, feeder for printing machinery.
- No. 14272.—J. Hutcheson, steel-wire-rope ladder.
- No. 14284.—C. J. Cozge, spile for casks.
- No. 14285.—E. L. Wickins, steam-propelled road-vehicle.
- No. 14286.—D. T. Harvie and J. Meggs, disappearing door for canvas target.
- No. 14289.—R. Hawcridge, clothes-peg.
- No. 14294.—C. L. Watt, brand for carcasses.
- No. 14295.—I. Pearson, animal-trap.
- No. 14302.—A. McLeod, combination game.

F. WALDEGRAVE,
Registrar.

Letters Patent lapsed.

LIST of Letters Patent (with which complete specifications only have been lodged) lapsed from the 18th September to the 1st October, 1902, inclusive:—

- No. 12962.—H. G. Vine, cash-book.
- No. 13267.—A. C. Pocock and E. Toms, acetylene-gas generator.
- No. 13474.—G. T. Booth, conductor-tube for agricultural instrument.
- No. 13483.—W. H. Wilson and J. S. Awdry, sheep-shearing machine.
- No. 13492.—A. C. Dennes, retaining-catch for brooch-pin.
- No. 13493.—W. A. Shore and J. White, gold-saving appliance.
- No. 13511.—R. H. Ashcroft, filling fountain pens.

F. WALDEGRAVE,
Registrar.

Letters Patent void.

LIST of Letters Patent void through non-payment of renewal fees from the 18th September to the 1st October, 1902, inclusive:—

THROUGH NON-PAYMENT OF SECOND-TERM FEES.

- No. 10700.—T. Cahil, typewriting-machine.
- No. 10701.—J. Dallimore, registering-apparatus.
- No. 10702.—E. J. Menesdorffer, lid for jug.
- No. 10703.—M. R. Pierce and F. H. Murphy, bicycle-gears.
- No. 10704.—R. Moodie, washing-apparatus.
- No. 10710.—L. Pearce, altering gauge of rolling-stock.
- No. 10718.—R. S. McFarland and G. K. Askin, bicycle-support.
- No. 10719.—H. Maclachlan and J. W. Lahey, window-sash fastener.
- No. 10722.—J. I. Knight, covering seat of saddle-tree.
- No. 10725.—W. H. Hand, gas and oil lighting (M. Horsley and R. Farrington).
- No. 10727.—J. S. Beeman, cigarette-mouthpiece machine.
- No. 10728.—J. S. Beeman, machine for finishing end of cigarette.
- No. 10729.—B. S. Nicholls and J. H. Nicholls, cooking-range.
- No. 10734.—W. H. Bryant, music-turner.
- No. 10736.—G. A. Montgomery, fastening for horse-cover.
- No. 10738.—H. Sedcole, wool-press.
- No. 10739.—A. G. Wells, grinding-mill.
- No. 10740.—A. A. Lockwood, amalgamating-apparatus.

THROUGH NON-PAYMENT OF THIRD-TERM FEES.

- No. 7689.—A. G. Whipple, explosive (A. C. Rand).
- No. 7705.—W. Angell, covering upholsters' work.

F. WALDEGRAVE,
Registrar.

Applications for Registration of Trade Marks.

Patent Office,
Wellington, 1st October, 1902.

APPLICATIONS for registration of the following trade marks have been received. Notice of opposition to the registration of any of these applications may be lodged at this office within two months of the date of this *Gazette*. Such notice must be in duplicate, and accompanied by a fee of £1.

No. of application: 3942.
Date: 18th September, 1902.

TRADE MARK.
The word
NIGROL.

NAME.
SHARLAND AND Co., LIMITED, of Auckland and Wellington
New Zealand, Wholesale Druggists.

No. of class: 50.
Description of goods: Boot-polish.

No. of application: 3900.
Date: 22nd July, 1902.

TRADE MARK.



The essential particulars of this trade mark are the word "Laurel" and the device; and any right to the exclusive use of the added matter is disclaimed.

NAME.

HENRY OSBORNE, of Willowby, Ashburton, New Zealand.

No. of class: 42.
Description of goods: Butter.

No. of application: 3949.
Date: 25th September, 1902.

TRADE MARK.

The word

CLINKER.

NAME.

JOSHUA REUBEN CHAPMAN, of Christchurch, in the Colony of New Zealand, Bookbinder.

No. of class: 39.
Description of goods: Book-bindings.

No. of application: 3890.
Date: 21st August, 1902.

TRADE MARK.



The essential particulars of this trade mark are the combination of devices and the words "La Flor de Perdiz"; and any right to the exclusive use of the added matter is disclaimed.

NAME.

H. E. PARTRIDGE, of Auckland, New Zealand, Tobacco and Cigar Merchant.

No. of class: 45.
Description of goods: Cigars.

No. of application: 3891.
Date: 21st August, 1902.

TRADE MARK.



The essential particular of this trade mark is the combination of devices; and the applicant disclaims any right to the exclusive use of the added matter, except his trading-name, "Perdiz y Cia," in Spanish.

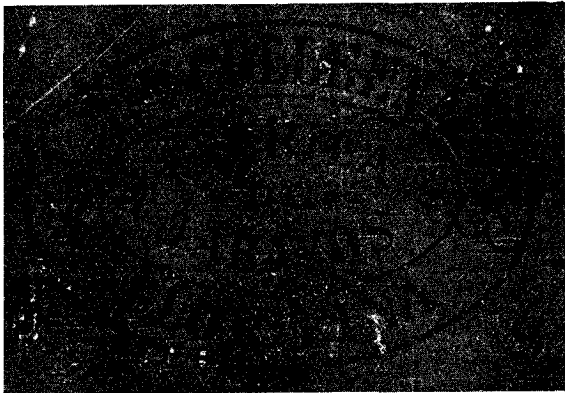
NAME.

H. E. PARTRIDGE, of Auckland, New Zealand, Tobacco and Cigar Merchant.

No. of class: 45.
Description of goods: Cigars.

No. of application : 3892.
Date : 21st August, 1902.

TRADE MARK.



The essential particulars of this trade mark are the words 'La Colleena'; and any right to the exclusive use of the added matter is disclaimed.

NAME.

H. E. PARTRIDGE, of Auckland, New Zealand, Tobacco and Cigar Merchant.

No. of class : 45.
Description of goods : Cigars, cigarettes, and tobacco.

No. of application : 3894.
Date : 21st August, 1902.

TRADE MARK.



The essential particulars of this trade mark are the combination of devices and the words "La Legalidad"; and any right to the exclusive use of the added matter is disclaimed.

NAME.

H. E. PARTRIDGE, of Auckland, New Zealand, Tobacco and Cigar Merchant.

No. of class : 45.
Description of goods : Cigars.

No. of application : 3929.
Date : 11th September, 1902.

TRADE MARK.



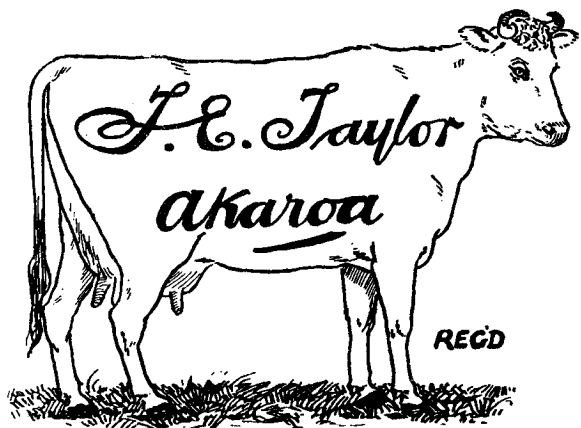
NAME.

REGINALD ALBERT DUTTON, of Albert Avenue, Mount Eden, Auckland, New Zealand.

No. of class : 3.
Description of goods : Patent medicines.

No. of application : 3940.
Date : 16th September, 1902.

TRADE MARK.



NAME.

THOMAS EDWARD TAYLOR, of Akaroa, New Zealand, General Merchant.

No. of class : 42.
Description of goods : Cheese.

No. of application : 3945.
Date : 24th September, 1902.

TRADE MARK.

The words

ARMY & NAVY.

NAME.

H. E. PARTRIDGE AND Co., of Auckland, New Zealand, Merchants.

No. of class : 45.
Description of goods : Tobacco.

No. of application : 3884.
Date : 16th August, 1902.

TRADE MARK.



NAME.

JOHN FREDERICK WILLIAM COOK, of College Road, Auckland,
New Zealand, Manufacturers' Agent.

No. of class : 3.
Description of goods : A preparation of a linament.

No. of application : 3951.
Date : 26th September, 1902.

The word

TRADE MARK.

RAPITI.

NAME.

SARGOOD, SON, AND EWEN, of Wellington, New Zealand,
Warehousemen.

No. of class : 38.
Description of goods : Felt hats.

No. of application : 3952.
Date : 29th September, 1902.

TRADE MARK.

The word

DREADNAUGHT.

NAME.

SARGOOD, SON, AND EWEN, of Wellington, New Zealand,
Warehousemen.

No. of class : 36.
Description of goods : Oilskin clothing.

F. WALDEGRAVE,
Registrar.

Trade Marks registered.

LIST of Trade Marks registered from the 18th September to the 1st October, 1902, inclusive :—
No. 2993; 3349.—The Patent Borax Company, Limited. Class 2. (*Gazette* No. 57, of the 10th July, 1902.)
No. 2994; 3350.—The Patent Borax Company, Limited, Class 3. (*Gazette* No. 57, of the 10th July, 1902.)
No. 2995; 3351.—The Patent Borax Company, Limited. Class 48. (*Gazette* No. 57, of the 10th July, 1902.)
No. 2996; 3352.—The Patent Borax Company, Limited. Class 47. (*Gazette* No. 57, of the 10th July, 1902.)
No. 2997; 3560.—B. P. Bidder. Class 50. (*Gazette* No. 57, of the 10th July, 1902.)
No. 2998; 3830.—J. Watson and Co., Limited. Class 43. (*Gazette* No. 57, of the 10th July, 1902.)
No. 2999; 3831.—Slee Slee and Co., Limited. Class 42. (*Gazette* No. 57, of the 10th July, 1902.)
No. 3000; 3841.—The Muralo Company. Class 1. (*Gazette* No. 57, of the 10th July, 1902.)
No. 3001; 3296.—Peek, Frean, and Co. Class 42. (*Gazette* No. 60, of the 24th July, 1902.)
No. 3002; 3838.—W. and A. Gilbey, Limited. Class 43. (*Gazette* No. 60, of the 24th July, 1902.)
No. 3003; 3836.—The United Farmers' Co-operative Association. Class 42. (*Gazette* No. 60, of the 24th July, 1902.)
F. WALDEGRAVE,
Registrar.

Subsequent Proprietors of Trade Mark registered.

[NOTE.—The name of the former proprietor is given in brackets; the date is that of registration.]
NO. 3738/2911.—Thomas Ashton Garratt, of Lyttelton, New Zealand, Chemist, and Thomas Wyld Fairman, also of Lyttelton aforesaid, Physician. [J. P. Luke.] 20th September, 1902.

F. WALDEGRAVE,
Registrar.

By Authority: JOHN MACKAY, Government Printer, Wellington.