

ground connections, with the armature disk I mounted on a central revolving shaft, the central rotating shaft provided with the arm G<sup>1</sup> and the circuit-closing key-board, as set forth. 30th. The combination of the electro-magnet J, having poles I<sup>1</sup>, I<sup>2</sup>, arranged as shown, with the disk armature I and shaft G, the arm G<sup>1</sup>, the keys E, E<sup>1</sup>, the wires J, J<sup>1</sup> and the circuit connections, as set forth. 31st. The combination of the electro-magnet J, having poles I<sup>1</sup>, I<sup>2</sup>, as shown, the disk armature I, the shaft G, the arms G<sup>1</sup> and H<sup>1</sup> and the circuit and connections, as set forth. 32nd. The combination of the electro-magnet J, having the poles I<sup>1</sup>, I<sup>2</sup>, as shown, the disk armature I, the shaft G, carrying said disk armature, the arms G<sup>1</sup> and H<sup>1</sup>, the vertically-adjustable segments, the contact springs, the retracting springs, the keys E, E<sup>1</sup>, the wires a<sup>1</sup>, a<sup>2</sup>, the circuit connections therefor and the switch, as set forth. 33rd. The combination of the shaft G, carrying disk I and arms G<sup>1</sup> and H<sup>1</sup> rigidly keyed thereon, with a suitable gearing mounted upon the shaft of a motor for rotating said shaft, as set forth.

### No. 27,328. Oil Hole. (*Boite à graisse.*)

Ephraim F. Herrington, West Hossick, N. Y., U. S., 2nd August, 1887; 5 years.

*Claim.*—1st. The combination, with the journal box or bearing having the oil hole or receptacle, of a laterally moving cover for the perforation or receptacle, and a spring for holding said cover in place over the same, substantially as described. 2nd. The combination of the journal box or bearing, provided with the oil hole or receptacle, the laterally moving cover to said receptacle, a guide or ways in which said cover moves, and the spring for automatically retracting said cover, after it has been moved, for oiling the journal, substantially as described. 3rd. The combination, with the journal-box or bearing, having the oil hole or receptacle, of the seat c, provided with the guide c<sup>1</sup>, the cover D pivoted to said seat and adapted to move on said guide, and the spring f interposed between said cover and seat or journal-box for holding the cover in place over the oil receptacle, substantially as described. 4th. The combination, with the journal box or bearing, of the raised and perforated seat, the sliding oil hole cover mounted and moving in ways on said seat, and the spring interposed between said seat and cover, substantially as and for the purpose described.

### No. 27,329. Bill of Exchange.

(*Lettre de change.*)

Albert Goldstein, Columbus, Ohio, U. S., 2nd August, 1887; 5 years.

*Claim.*—1st. A form, or assemblage of forms, either separate, detachable, or upon one sheet, constituting a bill of exchange, substantially as described. 2nd. A form or assemblage of forms, either separate, detachable, or upon one sheet, adapted to be used substantially as and for the purpose specified. 3rd. A bill of exchange, or form to be used as such, arranged in five divisions or parts, and adapted to be used separately, as and in the manner specified. 4th. The combination of the various parts, A, B, C, D and E, when used substantially as described.

### No. 27,330. Knitting Machine.

(*Machin à tricot.*)

Strangway & Co., (assignee of Henry Kitson), Toronto, Ont., 2nd August, 1887; 5 years.

*Claim.*—1st. The combination of the levers B, each pivoted at b to the cam-ring, the stitch regulating cam C, adapted to move vertically on the pin d in the slot c, and also adapted to move vertically in the slot b<sup>1</sup>, formed in the plate h, and the spring e, the stitch regulator D, having shaft g with bearings in the bracket o and side of cam-ring A, and the eccentric cam g rigidly attached to said shaft and adapted to give a downward motion to the free ends of said lever arms B, when the said eccentric cam g is caused to revolve, substantially as specified. 2nd. The combination of the levers B, each pivoted at one end to the cam-ring, their other ends being notched so as to overlap one another, the stitch-regulator D having a shaft g rigidly attached thereto and working in suitable bearings, and the eccentric cam g rigidly attached to said shaft and adapted to give a downward motion to the free ends of said lever-arms B, when the said eccentric cam g is caused to revolve, the said lever arms bearing on the stitch-regulating cams C, which are adapted to move vertically along with the springs e in the slots c, and also adapted to move vertically in the slots b<sup>1</sup>, formed in the plates h, to which the main drawing cams F are attached, and the spring dog f adapted to engage with notches in the periphery of the stitch-regulator D, substantially as described and for the purpose specified. 3rd. In a knitting machine, the combination of the stitch-regulating cams C, adapted to move vertically in the slots c and b<sup>1</sup> when actuated by the lever-arms B, and the springs e, the covering cams E, E<sup>1</sup> and the centre cam G, the wing cams I and the main drawing cams F attached to the slotted plates h, which are placed in grooves formed in the side of the cam cylinder, and are upheld by the springs i, together with the back cam a, substantially as described and for the purpose specified. 4th. The combination of the stitch regulator D, notched in a portion of its periphery, the bracket o rigidly attached to the rim of the cam-ring, the eccentric cam g and the shaft g<sup>1</sup>, which has bearings in the bracket o, the spring p placed in a recess formed in the bracket o and bearing against the short arm of the spring dog f, which is pivoted at r in a slotted bearing-piece s formed on the lower portion of the bracket o, the outer end of said spring dog f being adapted to engage with the notches formed on the periphery of said stitch regulator D, to lock the same, substantially as described and for the purpose specified. 5th. The combination of the bracket H and the adjusting screws K, binding the feet of the bracket to the rim of the cam ring, the adjusting screws L placed near the shoulders of said bracket, the ends of said screws L bearing against the side of the cam ring, the slot w and the thumb-screw R adjustable vertically in said slot, and which binds the bevelled shield M to the bracket H, substantially as described and for the purpose specified. 6th. The combination of the bevelled shield M, having a hole O and slit 4, and a leg Q formed thereon, the guide N and the thumb-screw R adjust-

able vertically in a slot formed in the bracket H, which is attached to the rim of the cam-ring, substantially as described and for the purpose specified. 7th. In a knitting machine, a stitch-regulator cam adapted to move vertically, and operated by mechanism for raising and lowering said cam, substantially as described. 8th. In a knitting machine, a drawing cam or cams adapted to suspend the drawing of yarn by a needle, until the next preceding needle has drawn its yarn and completed its stitch, substantially as described and specified.

### No. 27,331. Car-Coupling. (*Attelage de Chars.*)

Peary Thrush, Danier W. Avra, David Baker and John Baker, West Alexandria, Ohio, U. S., 2nd August, 1887; 5 years.

*Claim.*—1st. The combination, with the draw head A formed with a chamber B in its under side, sheaves C journaled in the chamber, a vertical shaft D journaled vertically in the draw head, a pulley or drum E mounted on the shaft within the chamber, and a rope F secured to the drum and formed into two branches, of the jaws H, pivoted in recesses between the lower and upper portions of the draw head, and provided with rearwardly-extending arms h, to which the two ends of the rope F are attached, and forwardly extending arms h<sup>1</sup>, which extend at an angle to the arms h, and springs N bearing against the inner side of the arms h, the pins I which serve as pivots for the jaws also providing connecting means for the upper and lower portions of the jaws, as and for the purposes set forth.

### No. 27,332. Manufacture of Coal Gas.

(*Fabrication du Gaz de Houille.*)

William P. Lane, Germantown, Penn., U. S., 4th August, 1887; 5 years.

*Claim.*—The process of manufacturing illuminating-gas, which consists in distilling a suitable gas stock, such as the ordinary coal, in the usual manner, introducing water or wet steam to such gas-stock while undergoing distillation, and passing the commingled gas and vapors evolved to a highly-heated retort, either empty or containing a refractory substance incapable of union chemically with any of the constituents of the evolved mass from the distilling-retort, and there converting the commingled gas and vapors into a fixed and permanent gas, substantially as described.

### No. 27,333. Upper of Boot and Shoe.

(*Empingue de Chaussure.*)

Thomas Tobin, Sorel, Que., 4th August, 1887; 5 years.

*Claim.*—As a new article of manufacture, a boot upper A having the angular configuration a, b, c, straight cut d, e, in combination with the straight part a<sup>1</sup>, b, the part d<sup>1</sup> e provided with a stiffening tongue g located as shown, the whole constructed and arranged substantially as and for the purposes set forth.

### No. 27,334. Automatic Electric Alarm Railway Signal. (*Signal électrique de chemin de fer.*)

William J. Mackle, Toronto Ont., 4th August, 1887; 5 years.

*Claim.*—1st. An automatic electric alarm railway signal, the rods bars or wires A and A<sup>2</sup>, the wheels C and the battery B, in combination with the wires D and the alarm bell E, substantially as described and for the purpose specified. 2nd. In a railway signal, the rods bars or wires A, A<sup>2</sup> in combination with a switch bar forming electric connection between A and A<sup>2</sup>, substantially as described and for the purpose specified.

### No. 27,335. Manufacture of Fuel and Illuminating Gas. (*Fabrication de Gaz Combustible et d'éclairage.*)

James Bujac, Catonsville, Md., U. S., 4th August, 1887; 5 years.

*Claim.*—1st. In a gas making apparatus, the combination of the tubular boiler, a flue boiler surrounded by a jacket provided with a plurality of flues, means for conveying the products of combustion through both boilers and into the flue of the jacket, substantially as described. 2nd. In a gas making apparatus, the combination of a tubular boiler, a flue boiler having a jacket provided with a plurality of flues, passages for the products of combustion through both boilers to the flues in the jacket, and air blast pipes for supplying air to support combustion in the jacket flues, substantially as set forth. 3rd. In a gas making apparatus, the combination of a tubular boiler, a flue boiler, a jacket for the latter having a plurality of flues, air blasts, pipes for supplying air to support combustion, and valves or dampers to regulate the passage of the products of combustion, as specified. 4th. In a gas apparatus, the combination of a tubular boiler, a flue boiler, a jacket having flues and pipes for taking steam from both boilers, and conducting it into one of the jacket flues, and thence through such flue to the incandescent fuel in the fire box of the tubular boiler, as specified. 5th. In a gas apparatus, the combination of tubular boiler, flue boiler, jacket having a plurality of flues, and means for regulating the passage of the products of combustion to the flues in the jacket whereby the heat in the flues may be regulated in one of them, as set forth. 6th. In a gas apparatus, the combination of tubular and flue boilers, a jacket for the latter having a plurality of flues, a liquid hydrocarbon conduct to one of the jacket flues where a hydrocarbon is gasified and mixed with the other gas, whence it passes through a proper conduct to the hydraulic main, as set forth.

### No. 27,336. Manufacture of Cooking Stoves Ovens. (*Fabrication des Fourneaux de Cuisine.*)

Thomas Jones and William H. McCormack, Peterborough, Ont., 4th August, 1887; 5 years.