

series of corrugations, as $d, d,$ and d', d' , which have their projections and depressions alternating and extended, substantially radially from the hub to the web C at the rim, and is integral with said hub, each other and the said web C, substantially as and for the purposes set forth. 4th. A double plate or hollow cast metal car wheel, which has one of the walls, as B, provided with corrugations, as $d, d,$ extended radially from the hub and integral with it, the opposite side wall, as with D' , and with the web C at the rim, and provided with a series of brackets F, F, arranged across the said web C and integral with it, and the wall of the chamber and the rim B, substantially as and for the purposes set forth.

No. 35,599. Steam Engine.

(Machine à vapeur.)

Nathan Huntley Edgerton, Philadelphia, and Charles Meigs Rhodes, Wayne, both of Pennsylvania, U.S.A., 10th December 1890; 5 years.

Claim.—1st. In a steam engine, having a reciprocating and rotary piston, a driving shaft passing through said piston, and a cross-bar with rollers on said shaft for engagement with said piston, substantially as set forth. 2nd. The combination of a cylinder A, piston C, driving shaft B, passing through said cylinder and piston, and rollers b, b , on said shaft for engagement with said piston, substantially as set forth. 3rd. The combination of cylinder A, having adjustable trunnion-head f , tubular piston C, having recesses or slots in its bore, and a circumferential spiral groove engaging with said trunnion head, a driving shaft passing through said cylinder and piston, and a roller engagement between said shaft and recesses in the bore of the piston, substantially as set forth. 4th. The combination of cylinder A reciprocating and rotary piston C, having packing rings c^1 , and heads c^2 , driving shaft B, passing through said cylinder and piston, and a cross-bar with rollers on said shaft for engagement with said piston, substantially as set forth. 5th. The tubular piston C, having circumferential spiral groove c^3 , annular corner recesses c^4 , packing rings c^5 in said recesses, heads c^2 for the piston and longitudinal recesses c^6 in the bore of the piston, substantially as set forth. 6th. The combination of cylinder A, having screw-plug F, provided with trunnion-head f , and jam-nuts f' , the piston C, having a spiral groove c^7 , of the form of a frustrum of a cone in cross-section, and a driving shaft passing through said cylinder and piston, substantially as set forth. 7th. The combination of a reciprocating and rotary piston, a driving shaft in gear therewith, and rotating cut-off valves on said shaft, substantially as set forth. 8th. In combination with cylinder A, the reciprocating and rotary cylinder shaft B and rotary valves G and G^1 , substantially as set forth. 9th. The combination of cylinder A, reciprocating and rotary piston C, shaft B, disk-valves G and G^1 on said shaft and port seats for said valves within said cylinder, substantially as set forth. 10th. The combination of cylinder A, the reciprocating and rotary piston C, shaft B, valves G, G^1 on the said shaft, and non-rotary sliding seats H and H^1 , having steam and exhaust ports for said valves, substantially as set forth. 11th. The engine cylinder A, enclosing the piston valves or cut-offs and seats with ports therefor, and supporting a driving shaft, substantially as set forth. 12th. In combination, with a reciprocating and rotary engine piston, and rotating driving shaft of rotary cut-off valves, substantially as set forth. 13th. The combination of cylinder A, piston C, valves G and G^1 , having notches or recesses g on said shaft, and sliding port-seats H and H^1 , substantially as set forth. 14th. The combination of cylinder A, piston C and valves G and G^1 at each end of the cylinder and mounted upon a shaft passing through said cylinder and piston, substantially as set forth. 15th. The combination of cylinder A, piston C, and valves G and G^1 , having notches g , with adjustable sides g^1 and seats H and H^1 , substantially as set forth.

No. 35,600. Ballot Box. (Boîte à scrutin.)

Levi Sargent Gardner and Edward E. Harvey, both of Detroit, Mich., U.S.A., 10th December, 1890; 5 years.

Claim.—1st. In a ballot or voting box, the combination, with the case and two or more wheels or disks, provided with a consecutive series of numbers, said case provided with slots or openings, whereby a single number on each wheel is exposed at a time, means for revolving each wheel a single space or number at a time, mechanism for releasing said wheels, and means for returning them to their normal positions when released, substantially as described. 2nd. In a ballot or voting box, the combination, with the case and two or more wheels or disks located therein and provided with a series of consecutive numbers, said case provided with slots or openings whereby a single number on each wheel or disk is exposed at a time, of a key for each wheel, projecting outside of the case, each key adapted when struck to engage and revolve its respective wheel a single space or number, means for releasing each wheel when desired, and means for returning the wheels to their normal positions when released, substantially as described. 3rd. In a ballot or voting box, the combination, with the case and two or more wheels or disks provided with a series of consecutive numbers, said case provided with openings or slots, whereby a single number on each wheel or disk may be exposed at a time, of a ratchet or notched surface on each wheel or disk, a pivoted key projecting beyond the case and provided with a pawl for engaging said notched or ratchet face, a pawl for engaging and holding the wheel, after it has been moved, means for disengaging the pawl from the wheel, when desired, and means for returning the wheel to its normal position when the pawl has been disengaged therefrom, substantially as described. 4th. In a ballot or voting box, the combination, with the case provided with indicating wheels or disks, having a series of consecutive numbers, said case provided with slots, whereby a single number on each wheel is exposed at one time, of a movable cover on the case whereby the slots may be covered from view at will, substantially as described. 5th. In a ballot or voting box, the combination, with the case, two or more indicating wheels or disks located therein, said case provided with slots whereby a single number on each wheel is exposed at a time, of guides upon the case for each wheel, whereby a card or

tablet containing the desired name may be inserted for each wheel, substantially as described. 6th. In a ballot or voting box, the combination, with the indicating wheels or disks, the keys for actuating the same, and the pawls for engaging and holding the wheels or disks, of the plunger L for disengaging said pawls, and means for returning the wheels to their normal position when so released, substantially as described. 7th. In a ballot or voting box, the combination, with the indicating wheels or disks, means for revolving said disks, means for holding them when revolved, and means for releasing them from said holding mechanism, of a spring or elastic band for returning said wheels to their normal position when released, substantially as described.

No. 35,601. Printing Machine.

(Machine à imprimer.)

Horace Greely Bender, John Grether, and George W. Sieber, all of Akron, Ohio, U.S.A., 10th December, 1890; 5 years.

Claim.—1st. In a printing machine, a flexible form, composed of separate leather characters, and a flexible apron to the surface of which the said characters are removably adhered, substantially as described. 2nd. In a printing machine, a flexible form consisting of a flexible apron and separate characters made out of leather temporarily adhered directly to the surface of said belt, in combination with cylinders on which said form is supported, and a revolving bed, substantially as described. 3rd. In a printing machine, a flexible form-carrier and a flexible form stretched upon said carrier and fastened thereto at its ends, and cylinders or rolls on which said carrier is supported, substantially as described. 4th. In a printing machine, a flexible form carrier, in combination with a flexible form stretched upon said carrier the entire length of the carrier, and having its ends temporarily fastened to the carrier, substantially as described. 5th. In a printing machine, a flexible carrier for a printing form, provided with parallel strips on its face, between which the said form is adapted to rest, substantially as described. 6th. In a printing machine, a flexible form carrier provided with parallel strips on its outer surface, and a flexible form lying between said strips, substantially as described. 7th. In a printing machine, a carrier and a form stretched, one upon the other, and fastened together, supports or guides for the form to keep it in alignment, a cylinder and roller on which the carrier and form are supported, and a revolving bed, substantially as described. 8th. In a printing machine, a flexible carrier provided with temporarily attached strips, forming lateral supports or guides to keep the form in alignment, in combination with a flexible form stretched over the carrier belt, between said strips and cylinders or rolls, on which said parts are supported, substantially as described. 9th. In a printing machine, a feed frame supported on rollers on the main frame and provided with gear, in combination with a flexible carrier, provided with gear meshing with the gear on said frame and a carrying cylinder and revolving bed arranged to work between said feed bars and gears, substantially as described. 10th. In a printing machine, a flexible carrier and a feed frame and gear on the edge of the said carrier meshing with gear on the edge of the said frame, and means to carry the frame back to its starting point, substantially as described. 11th. In a printing machine, a flexible carrier, provided with flexible gear along a portion of its edge, and a flexible form stretched over said carrier, in combination with a feed table, having feed gear meshing with the gear on the carrier, a revolving bed, and a support for the carrier and form, substantially as described. 12th. In a printing machine, a form-carrier, in the shape of an endless belt, having gear along a portion of its edges on its outer surface and parallel strips on said surface, serving as guides for the type form, substantially as described. 13th. In a printing machine, an endless flexible carrier, stretched over a carrying cylinder, and an idler and an endless type-form stretched over said carrier, in combination with a revolving bed, substantially as described. 14th. In a printing machine, a revolving bed, a carrying cylinder and an idler, in combination with an endless carrier, supported on the carrying cylinder and idler, and provided with guides to keep the type form in alignment, and a type form stretched lengthwise between said guides, substantially as described. 15th. In a printing machine, a stationary feed-table and a revolving bed, in combination with a movable feed frame at the sides of said bed, provided with an adjustable feed-regulating device and gear, a carrying cylinder, and a flexible form carrier on said cylinder, having gear meshing with the gear on the feed frame, substantially as described. 16th. In a printing machine, a movable feed frame provided with an adjustable device to regulate the feed of the material printed upon, and gear along its sides, in combination with a form carrier, having gear to mesh with the gear on said frame, and a form on said carrier, a carrying cylinder and a revolving bed, substantially as described.

No. 35,602. Waggon Brake. (Frein de wagon.)

Peter Shimer Criswell, Wheeling, West Virginia, U. S. A., 11th December, 1890; 5 years.

Claim.—In a waggon brake, the arms g^1, g^1 , connected with the bottom of the waggon body by ropes passing over pulleys on the axle, combined fixedly with a crank-shaft G, which is journaled on the bottom of said body, as and for the purpose set forth.

No. 35,603. Dash Board. (Garde-crotte.)

George Walter Powell, Lockport, New York, U.S.A., 11th December, 1890; 5 years.

Claim.—1st. A dash board, consisting of a rigid frame, a covering of uncoated manilla boards applied to opposite sides thereof and secured by lines of stitching, and an impervious coating applied to the stitched covering, whereby the latter is finished and the stitching and needle holes are protected and sealed, substantially as set forth.