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INVENTIONS PATENTED.

No. 13,619. Improvements in Machines for Cutting Button Holes. (*Perfectionnements aux machines à tailler les boutonsnières.*)

Charles A. Lake, Lynn, Mass., U. S., 4th November, 1881; for 5 years.

Claim.—1st. In combination with a rotating shaft, a head or part of the clutch fixed thereon, a stop attached to said head, and a movable rod or bar arranged to be automatically thrown into position to engage with said stop and arrest the motion of the head at regular intervals. 2nd. The combination of the two parts of a clutch, the shifting lever, pitman rod and treadle, with a movable locking rod arranged to be thrown into engagement with a stop, or the fixed part or head of said clutch, said movable locking rod being retracted by the downward motion of the pitman N for clutching. 3rd. The combination of head J having stop *m*, with rod O, lever P, spring J, incline O, shipping lever L having pin *a*, and the treadle and pitman, whereby the same movement that brings together the parts of the clutches also frees the head from the locking rod O. 4th. The combination of the two parts of a clutch and the stop *m* on the fixed part thereof, with shipping lever L arranged and adapted to engage said rod or connections thereof and retract the same. 5th. In combination with the rod O and devices for advancing and retracting the same, the curved brake spring P and the head J to which it is attached. 6th. In combination with the two parts of a clutch, the shipping lever L, latch bar *r*, and pitman N notched at *s*. 7th. In combination with the two parts of a clutch, the shipping lever L, latch bar *r*, spring *a*, notched pitman N and oblique piece *g*, attached to the fixed part of said clutch and adapted to operate said latch bar. 8th. The combination of pitman N, spring *o*, shipping lever L, the two parts of a clutch, and locking and unlatching mechanism for the fixed part of the clutch. 9th. In combination with the plunger D and cutter E, the bed plate F and elastic cushion *z*.

No. 13,620 Improvements on Upright Piano-forte Actions. (*Perfectionnements à l'action des pianos droits.*)

Albert K. Hebard, Cambridge, Mass., U. S., 4th November, 1881; for 5 years.

Claim.—1st. A jack composed of a lever C hinged to a stationary rail and recessed as at *m*, and of a fly I provided with a spring *e* and arranged to rest upon the lever and hinged to a hammer butt *h*, in combination with a hammer key connected with the jack lever C. 2nd. A jack composed of a lever C hinged to a stationary rail and recessed and shouldered as at *m* and *n*, and of a fly I provided with a spring *e* and arranged to rest upon the lever and hinged to a hammer butt *h*, in combination with a piano key A connected with the jack lever C. 3rd. A jack composed of a lever *c*, hinged to a stationary rail and recessed as at *m*, and of a fly I provided with a spring *e* and arranged to rest upon the lever and hinged to a hammer butt *h*, in combination with a piano key A connected by a lifter rod B to the jack lever C. 4th. A piano-forte action composed of a piano key A, lifter rod B, jack lever C, jack fly I and its spring *e*, hammer E and its butt *h*, and damper G and its lever H. 5th. The fulcrum pin I formed with the flat face V and rounded face U, in combination with the flat spring *o* against which the edges or covers of the flat face of the pin operate.

No. 13,621. Improvements in Stoves. (*Perfectionnements dans les poêles.*)

Michael C. Armour, Chicago, Ill., U. S., 4th November, 1881; for 5 years.

Claim.—1st. An oil or gas stove, provided with a cone plate, the ends of which are depressed and terminate in steps, in combination with post rising from the body of the lamp and penetrating perforations in said steps. 2nd. An oil or gas stove, the lamp of which is provided with perforated posts, a cone plate having ends which are perforated, and hooks for securing said cone plate down in its place. 3rd. An oil or gas stove provided with lamp chimneys terminating below in a plane inclining downward and backward, in combination with a lamp top which has similarly inclined surface corresponding with said chimneys. 4th. A stove top heating chamber B elevated above the floor of the lamp chamber and provided with apertures in its own floor, in combination with a lamp detachably arranged below chimneys fitting in the floor apertures and opening into the heat chamber above, and reaching to the lamp top below, and provided with front apertures at their bases adapted to allow the passage of the burners, and a sliding plate arranged in front of the chimneys and provided with apertures corresponding to the front apertures of the chimneys. 5th. An oil or gas stove having chimneys provided with openings at their sides for the purpose of admitting the burners. 6th. An oil or gas stove provided with an ordinary oven, in combination with an oven through which the combustion current passes. 7th. An oil or gas stove provided with an ordinary oven, in combination with a top over the combustion current and near enough to the burners for cooking, and an oven through which said current passes. 8th. An oil or gas stove provided with a warming chamber entirely through which the lamp chimneys pass, in combination with an oven through which the combustion current passes. 9th. An oil or gas stove provided with a warming chamber entirely through which the lamp chimneys pass, in combination with a top over the combustion current, and near enough to the burners for cooking, and an oven through which said current passes. 10th. An oven through which the combustion current passes, provided with an inner casing which, in connection with the main casing, forms a discharge chimney which opens out of the oven chamber at a point considerably below the top, and not closely over the entrance thereof, for the purpose of inducing a thorough distribution of the products of combustion through the oven while at the same time the remaining heat of the combustion current as it passes through said chimney is utilized. 11th. An oven through which the combustion current passes, provided with an inner casing, which, in connection with the main casing, forms a discharge chimney which opens out of the oven chamber at a point considerably below the top, and not closely over the entrance thereof, for the purpose of inducing a thorough distribution of the products of combustion through the oven while at the same time the remaining heat of the combustion current, as it passes through said chimney, is utilized. 12th. A stove top heating chamber arranged above the lamp, in combination with an oven arranged at the side of, and communicating with said chamber, and having the principal part of its heating space higher than the tops of the chimneys or other points at which the flame or combustion current is free to be diverted. 13th. The oven C, stove top heating chamber B, chimney *h*, provided with front aperture, damper *r* and lamp.

No. 13,622 Improvements on Machines for Forging Horse Shoe Nails. (*Perfectionnements aux machines à forger le clou à cheval.*)

Silas S. Putnam, Boston, Mass., U. S., 4th November, 1881; for 15 years.

Claim.—1st. In a machine for forging horse shoe nails and other articles, the vibrating hammers D D G G mounted upon shafts C C E E and actuated by rods *h h i i* pivoted thereto at points, in one pair outside, and in the other pair on the inner side of the centres on which they vibrate. 2nd. The vibrating hammers D D G G mounted upon shafts C C E E and actuated by rods *h h i i* pivoted thereto at points, in one pair outside, and in the other pair on the inner side of the centres on which they vibrate, and connected with the piston rod of an engine or motor, whereby the movement of the piston in either direction will cause the hammers of one pair to approach each other to give the blow, and the hammers of the other pair to simultaneously recede or separate from each other. 3rd. The valve actuating mechanism consisting of the bell crank lever L connected at its upper end with the valve rod *p* and having its fulcrum at *g*, in combination with the plate 19 attached to the piston rod *f* and having a cam groove *s* adapted to vibrate the lever L. 4th. The combination, with the cross head H and connecting rods *h i*, of the adjustable coupling pins I, each having a