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CONTENTS.

INVENTIONS PATENTED.....	171
INDEX OF INVENTIONS.....	CLXXXI
INDEX OF PATENTEES.....	CLXXXII
ILLUSTRATIONS.....	181

No. 6598. Improvement on Copy Books.

(*Perfectionnement des cahiers.*)

Eugene F. Goodman, Clinton, Iowa, U. S., 23th September, 1876, for 5 years.

Claim.—The cord B, in combination with the sliding and reversible slip A having a copy on each side capable of being used on either one of two adjacent pages of the book.

No. 6599. Horse Shoe Nail Machine.

(*Machine à clou à cheval.*)

Joseph Varney, Montreal, Que., 23th September, 1876, for 5 years.

Claim.—1st. The combination of the slide bar *l*, guide bar *i* and feeder plate *b*; 2nd. The combination of the shaft *f* carrying the gauge *a*, and bracket *d* and centre bearing *e*. 3rd. The combination of the shaft *f* carrying the gauge *a*, bracket *d* and centre bearing *e*.

No. 6600. Machine for Making Metal Screws.

(*Machine à faire des vis métalliques.*)

Albert W. Gifford, Worcester, Mass., U. S., 23th September, 1876, for 5 years.

Claim.—1st. The rotary head A, provided with sets of jaws, in combination with a series of two or more arbors E F G arranged to operate with such head, and furnished with tools to effect simultaneously the operations of milling or shanking a screw blank, and pointing or cutting a thread on another, while an attendant may be in the act of removing a finished screw from one set of the jaws of the head and substituting a blank for such screw the said arbors being provided with mechanism for operating them; 2nd. The combination of the latch *k* and the escapement *t*; 3rd. The combination of the latch *k* and escapement *t* with the lever and the feeding mechanism of the arbor E, such feeding mechanism consisting of the pulleys *so y*, band *z*, shaft *z*, screw *ax*, worm gear *b*, gear *d* and rack *e*; 4th. The combination of the sleeve *m* and the studs *p q r s* with the two pulleys *so y* and the threading arbor G.

No. 6601. Improvement on Safety-Valves.

(*Perfectionnement des soupapes de sûreté.*)

Charles H. Thomson, St. Petersburg, Pa., U. S., 23th September, 1876, for 5 years.

Claim.—The combination of valve C stem D provided with loose collar I and pulley G, lever E and fulcrum F.

No. 6602. Improvements on Wood Pavements.

(*Perfectionnements aux pavages en bois.*)

William Porter, Ottawa, Ont., 23th September, 1876, for 5 years.

Claim.—1st. A sectional block pavement composed of vertical through blocks B having dovetail tenons and intermediate bearing strips or pieces C bevelled to fit the lateral sides of the tenons, when united by nutted bolts E. 2nd. In a sectional pavement, the dovetail blocks G inserted.

No. 6603. Stove Grate.

(*Grille de calorifère.*)

George H. Stansbury, Milwaukee, Wis., Alfred S. Hubbell and Henry S. Hubbell, Buffalo, N. Y., U. S., 23th September, 1876, for 5 years.

Claim.—1st. A stove grate composed of two plates A B, one being movable upon the other and both provided with corresponding openings *e d*, so that by adjusting the movable plate the grate can be opened or entirely closed thereby forming a tight grate which will retain all the ashes and coal

and enable a wood fire to be kept a great length of time; 2nd. A grate composed of a stationary grate plate A and swinging plate B, both provided with corresponding concentric openings *e and d*; 3rd. The combination of the stationary grate plate A and swinging plate B, both provided with concentric openings *e and d* arranged alternately in radial sets or rows, so that the openings of one set will be opposite the solid portions of the plate between the openings of the next adjacent sets.

No. 6604. Automatic Regulator Tempering Furnace.

(*Four de recuit à régulateur automatique.*)

Charles Dion, Chambly Basin, et James Baylis, Montreal, Que., 23th September, 1876, for 5 years.

Claim.—1st. The combination in the tempering chamber A, of the transverse shaft operating by means of projecting arms holding a rod from which hangs the carrying plate to dip alternately into a hot chamber and tank the article to be tempered; 2nd. In combination with the tempering furnace A, the shaft C running backward and forward by means of pinions D, working in racks E, the cover plate *z*; 3rd. The combination with the tempering chamber A of the tank L having diaphragm *l*; 4th. In combination with the furnace chamber B and tempering chamber A, the flues B₁ B₂ and B₃ surrounding the heated chamber K; 5th. In combination with a bath or vessel containing hot air or molten metal, a tube passing through it and entering a bath of oil, water or other fluid, so that the wire drawn through such tube shall not come in contact with the external air; 6th. The combination with the wire tube of an air passage and blow *r*; 7th. The combination of the tube N and rod N₁ with groove N₂; 8th. The pyrometer contained in metal tube and indicating the temperature; 9th. The combination with a furnace chamber and a split of upper and lower blast flues communicating respectively with them, and opened and closed automatically by the rise and fall of the temperature of the furnace; 10th. The armature Z Z₁, each influenced by a set of magnets thrown alternately into circuit by the action of the pointer S on either part of the split plate T₁ on the dial; 11th. The escapement rod Y mounted on the shaft V, engaging alternately at either end with a hook and projection formed on the armature Z, according as this is influenced or not by the magnets.

No. 6605. Improvements in Harvesters.

(*Perfectionnements aux moissonneuses.*)

Christopher C. Bradley, Syracuse, N. Y. U. S., 23th September, 1876, for 5 years.

Claim.—1st. As a means of connecting the finger bar to the main frame, an inclined post E set upon the inner end of the finger bar passing through bearings in the main frame; 2nd. The lever M placed upon the main frame at a point in front and outside of the drive wheel, and in combination with the tongue by means of the link Q and crank axle N; 3rd. As a substitute for a hinge, swivel or other analogous device, as a means of connecting a finger bar to the main frame and controlling the position of the finger bar relative to the main frame, a post or slide connection between said finger bar and main frame; 4th. The post E stayed at its upper extremity by a bracing device D M set upon and springing from the cutter bar or platform; 5th. In combination with the minor axle L, which carries the driving sprocket wheel J and bevel gear X the composite ratchet; pinion Y; 6th. The combination of the chain drum R, ratchet rod Q, ratchet plate T and hand lever V, the whole forming a device for lifting the finger bar vertically; 7th. In combination with the ratchet plate T, the hand lever V and spring U; 8th. In combination with the lifting drum R, the pawl S; 9th. The combination of the pinion *f*, interior ratchet plate A keyed to the minor axle L, spring controlled duplex pawl B and key *d*, the whole forming a device for throwing in or out of gear the actuating mechanism; 10th. In combination with a bushing P serving as an axle of the main drive wheel the ratchet rod Q journalled within the same as a space-saving device; 11th. A finger bar connected with the main frame by a post E and slide *p p* upon a device upon the main frame for lifting the cutter bar.

No. 6606. Improvements on Roofs.

(*Perfectionnements aux toitures.*)

Cyrus M. Warren, Brookline, Mass., U. S., 23th September, 1876, for 5 years.

Claim.—1st. The combination of a foundation layer of two or more thicknesses of paper or felt saturated with vegetable or mineral tar or other suitable material and a water proof protecting layer of native bitumen, or a compound of native bitumen or rosin and the residuum or heavy oil of petro-