

**No. 10,639. Improvements on Rail'y Brakes.***(Perfectionnements aux freins des railoutes.)*

John Hardy and John G. Hardy, Vienna, Austria, 12th November, 1879, for 5 years.

*Claim.*—1st. In brakes operated under atmospheric pressure by the production of a vacuum in a cylinder, the employment of a vacuum cylinder formed of two flat headed or approximately flat headed truncated cones united at their bases, in combination with a loosely fitting rigid and flat piston head of a diameter approximating to the internal diameter of the smaller end of the cones, and with a flexible sack connecting such piston head with the cylinder at or about midway between the ends of the latter, so as to be supported by the same at the two extremities of each stroke of the piston, the sack being of a similar shape to but slightly smaller than one of the cones forming the cylinder; 2nd. The employment, in brakes operated under atmospheric pressure by the production of vacuum, of two separate or independent pipes or series of pipes leading from the ejector air pump or other air exhausting apparatus, or from one of them, if more than one be employed, one of such pipes connecting the exhausting apparatus with the vacuum cylinders of the carriages composing the train, and the other of such pipes connecting the exhausting apparatus with the vacuum cylinders of the engine and tender; 3rd. The combination of parts or apparatus consisting of a vacuum cylinder or cylinders, and a vacuum reservoir or reservoirs constructed, arranged and fitted with accessories, so as to operate the compound valve, or any equivalent valve; 4th. The employment of a vacuum cylinder for automatically regulating the supply of steam to the air ejectors of vacuum brakes; 5th. The combination of parts constituting brake apparatus wherein the operation of a chain brake is controlled by a system of vacuum service pipes and automatic regulating apparatus, combined so as to render the action of chain brakes simultaneous, continuous and automatic; 6th. The combination of parts whereby brakes are worked by means of a weight or weighted lever controlled by combination with a vacuum cylinder for holding the brakes out of action by atmospheric pressure during the maintenance of a vacuum in the said cylinder, the brakes being, on destruction or sensible deterioration of such vacuum, directly applied, by the descent, by the gravitation of the weight or weighted lever, such parts being combined and arranged as described.

**No. 10,640. Quadruplex and Multiplex Telegraphs.** *(Télégraphes à quadruple et multiple courants.)*

Alexander Muirhead, Westminster, Eng., and George K. Winter, Madras, India, 12th November, 1879, for 5 years.

*Claim.*—1st. The biphix relay, or relay with two tongues so arranged as to their polarity and adjustment that one leaves its contact point when the current strength has a value at one extreme of a series of four currents, while the other leaves its contact point when the current strength is at the other extreme of the series, the local circuit of the relay being completed by the tongues while the current has either of the intermediate values, and the arrangement of the tongues being such that after the first adjustment is made, further adjustment is accomplished simultaneously for both tongues by one and the same motion of the adjusting screw; 2nd. The application of the biphix relay to biphix, quadruplex and multiplex, working in the manner described; 3rd. The method of quadruplex and multiplex telegraphy, resulting from a combination of the method of sending two or more messages simultaneously in the same direction with the method of transmitting simultaneously from opposite ends, the distinctive feature of which is the introduction of the receiving apparatus between the middle of the battery and earth signalling by interchanging the true and artificial lines.

**No. 10,641. Improvements on Machine Guns.***(Perfectionnements aux canons à répétition.)*

William Gardner, Cleveland, Ohio, U. S., 12th November, 1879, for 15 years.

*Claim.*—1st. A gun provided with a cartridge bed or carrier adapted to have an intermittent motion transverse to the axis of the barrel, said bed or carrier provided with a yielding diaphragm *E*; 2nd. A cartridge bed or carrier adapted to have an intermittent motion transverse to the axis of the barrel of a gun, a yielding diaphragm moving with said bed or carrier, a plunger, or its equivalent, having its motion in line with the axis of said barrel, and mechanism whereby said diaphragm may be depressed to permit of its passage beneath said plunger; 3rd. The laterally reciprocating cartridge bed or carrier formed with a rigid side support and vertically yielding diaphragm, the same being adapted to enclose a cartridge; 4th. The combination, with the extractor hook and the plate secured to the upper casing section, and formed with shoulders, of the plunger and the two abutments, respectively on each side thereof, the same forming a flange groove for the cartridge; 5th. A machine gun provided with the flange groove, or its equivalent, one side, or wall, only of which groove partly consists of the extractor hook; 6th. The way or groove formed by the curved or bevelled surfaces *a* on the plate secured to the upper section, whereby the cartridge, during its longitudinal motion, is prevented from lateral displacement; 7th. The combination, with the extractor, of the upper bearing surface *A*<sub>3</sub> and the bed carrier *E*<sub>5</sub>, whereby the cartridge is securely held within the grasp of the extractor and said extractor prevented from upward displacement; 8th. The plunger *D*<sub>1</sub>, provided with the bevel or cam *f*, in combination with a yielding diaphragm *E*<sub>6</sub>; 9th. The yielding diaphragm *E*<sub>6</sub> in combination with the cam *E*<sub>7</sub>, or its equivalent, whereby said diaphragm is raised after having been depressed; 10th. The cam *E*, bar *E*<sub>1</sub> and diagonal cam slot *E*<sub>2</sub> for giving the cartridge bed or carrier its motion; 11th. The combination, with the transversely moving or oscillating cartridge bed or carrier, of the diaphragm adapted to be operated either by spring pressure, cam engagement, or both, whereby said diaphragm is adapted to return to its projected position above the level of said carrier after passing under the plunger; 12th. The combination with the shaft provided with the discharging abutments, placed in the rear of said cams and the carrier actuating cams, and adapted to receive the recoil of the gun therefrom; 13th. The combination, with the barrel connecting by a slip joint with the casing and formed with a recess in its outer side body, of a pin or key adapted to fit partly in said recess and partly in the casing wall of the barrel opening, whereby said barrel is readily removable and is also secured against longitudinal or rotary movement; 14th. The combination, with the reciprocating plunger frame, of one or more casters upon which said frame has movement.

**No. 10,642. Improvements on Snow Ploughs.***(Perfectionnements aux chasse-neige.)*

Rosseel Payne, Ox Bow, N. Y., U. S., 12th November, 1879, for 5 years.

*Claim.*—1st. The combination, with the wheel *B*, revolving in the vertical plane, of the cutters *E* and the casing *A*; 2nd. The wheel *A*, revolving on the vertical plane provided with wings, blades *l* set at an angle to the wings and tapering hub *F*; 3rd. The combination of the wheel *A*, hub *F*, discharge opening *J* and *M*, and an apron consisting of top *D*, bottom *S* and cutters *E*.

**No. 10,643. Improvements in Printing Presses.** *(Perfectionnements aux presses d'imprimerie.)*

Charles Ellery, Albany, N. Y., U. S., 12th November, 1879, for 5 years.

*Claim.*—1st. The combination, with the vibrating paper holder *B*, of the fly *F* to deliver the sheets of paper into the said paper holder; 2nd. The platform *A*, provided with the cushions *G* and the fly *F*, in combination with a paper holder *B*, having the flaring sides *b* adapted to receive a vibratory motion.

**No. 10,644. Improvements on Printing Presses.** *(Perfectionnements aux presses d'imprimerie.)*

Charles Ellery, Albany, N. Y., U. S., 12th November, 1879, for 5 years.

*Claim.*—1st. The sliding head *B*, arranged to reciprocate, as described, and provided with a movable cross-bar *E*, or other analogous device, for carrying the sliding tubes *H*, and adapted to move in a line at, or about, a right angle to the plane of the movement of the said sliding head, in combination with the catch pieces *F*, or other similar releasing device; 2nd. The combination, with the sliding head *B* and cross-bar *E*, arranged in relation to each other and to operate as described, of the wipers *p* and catch pieces *F*; 3rd. The combination of the sliding head *B* with the buffers *N* and springs *n*; 4th. The combination, with the framework *A*, provided with the ways *a*, of the detachable paper holder *S* provided with the separator knives *t*; 5th. The combination, with the sliding head *B* having a movable cross-piece *E* and provided with the sliding tubes *H* having valves *v*, of the suction pipe *K*, stop cock *O*, and rock shaft *L* provided with the arms *l* *l*<sub>3</sub>; 6th. The combination of the sliding tube *H*, valve casing *I* and valve *J*; 7th. The combination, with the sliding head *B*, provided with dogs *R* and stops *e*, of the movable cross-bar *E* provided with studs *e*<sub>2</sub>, arranged to engage with the pins *r* of said dogs; 8th. The paper holder *S* provided with separators having the knives *t*; 9th. The combination, with a paper holder *S*, of the cross-bar *U* provided with the knives *u*.

**No. 10,645. Improvements on Check-Rein Supports.** *(Perfectionnements aux supports des fausses-rènes.)*

Asahel B. Tracy, Mayville, N. Y., U. S., 12th November, 1879, for 5 years.

*Claim.*—1st. The check-rein support consisting of plates *A* *D* and pulley *C*; 2nd. The combination, with the check-rein support, of the rosette *I* and button *B*.

**No. 10,646. Improvements on Paper Files.***(Perfectionnements aux liasses à papiers.)*

Herménégilde B. Casgrain, Ottawa, Ont., 13th November, 1879, (Extension of Patent No. 150), for 5 years.

**No. 10,647. Apparatus for Screening and Loading Coal.** *(Appareil pour cribler et charger le charbon.)*

James W. Upson, Sallmaige, Ohio, U. S., 14th November, 1879, (Extension of Patent No. 4044), for 5 years.

**No. 10,648. Lime Kiln.** *(Fourneau à chaux.)*

Michael Callan, Innerkip, Ont., 14th November, 1879, (Extension of Patent No. 4040), for 5 years.

**No. 10,649. Improvements on Shingle Machines.** *(Perfectionnements aux machines à bardaou.)*

William Goldie, Fentonville, Mich., U. S., 14th November, 1879, (Extension of Patent No. 10,522), for 5 years.

**No. 10,650. Game for Parlour Amusement.***(Jeu pour l'usage des salons.)*

William B. Cowan, Guelph, Ont., 17th November, 1879, for 5 years.

*Claim.*—1st. In a new game, apparatus composed of forts *A* *C*, having concentric walls *A* *A* *H* *H* *D* and provided with entrances *B* *E*; 2nd. The combination and arrangement of the outside walls *A* *A* with wings *f*, at the ends, walls *H* *H* with wings *n* *n*, at the ends, and curved extensions *o* enclosing a space *p* opposite the *V*-shaped projection *d*, walls *D* with extensions *q* enclosing a space *r* opposite the *V*-shaped projection *K* and entrances *B* *E*.

**No. 10,651. Machine for Drawing Wire.***(Machine pour étirer le fil de fer.)*

Charles D. Rogers, Providence, R. I., U. S., 17th November, 1879, for 15 years.

*Claim.*—1st. The combination with the draw plate, the coiling drum, the driving clutch plate and spring bolt, which rotatively connects the clutch plate and drum and affords a free disconnection of plate and drum in the absence of tensile strain on the wire, of the presser *N* which controls the free end of the wire on the drum and obviates uncoiling when the drum and spindle are operatively disconnected; 2nd. The combination, with the coiling drum, the driving clutch plate and the bolt by which the drum and clutch