

ment. 8th. The combination of the two machines having cylinders revolving at slightly different speeds, with a device for checking the faster cylinder, and contacts made simultaneously by the two machines, for operating the checking device by completing the circuit through the same. 9th. The combination of the two machines having cylinders revolving at slightly different speeds, of a checking device for the faster cylinder, operated by an electro-magnet in the circuit of a local battery, and contacts made simultaneously by the two machines and completing the main circuit through an electro-magnet controlling said local circuit. 10th. The combination of the cylinders and the electro-magnetic checking device controlled by the main circuit of sounders for indicating the synchronism of the cylinders. 11th. The combination of the cylinders and the electro-magnetic checking device, of sounders for indicating the synchronism of the cylinders, signalling keys placed between the sounders and line in shunts around the machines and switches for throwing in and out the machines and keys alternately, whereby the sounders will be operated by the machines or keys according to the position of the switches. 12th. The combination of the two machines having cylinders revolving at different speeds, and an electro-magnetic checking device for one of them, with a pivoted lever on each machine, connected to lines and to contacts between which said lever plays, one connected through the style circuit to battery or ground, and the other through the relay and sounder circuit, such lever being moved once during each revolution of each cylinder to break the style circuit and make the relay and sounder circuit. 13th. The combination, with the synchronously revolving cylinders and the transmitting and receiving styles, of the compensation circuit for neutralizing the effect of the static charge. 14th. The combination, with the synchronously revolving cylinders and the transmitting and receiving styles, of cams revolving with the cylinders, pivoted levers worked by said cams, and connected to line and making contacts for completing the style, the sounder and the compensation circuits. 15th. The combination, with the revolving cylinders, of the revolving cams, and the style carriage controlled by escapements worked by said cams. 16th. The combination of the electro-motors with weighted centrifugal arms, carried by universal rocking joints and connecting the motors with the driven mechanism. 17th. The combination of the horizontal electro-motors with the weighted centrifugal arms, carried by universal rocking joints, and the slotted cranks.

No. 13,578. Improvements on Car-Couplings

(*Perfectionnements aux accouplages des chars.*)

Alexander Porteous and William Murehey, Galt, Ont., 19th October, 1881; for 5 years.

Claim.—1st. In combination with a draw-bar, a lock having one end weighted in excess of the opposite end, whereby the link will be supported horizontally in the mouth of the draw-bar, when the coupling pin is inserted. 2nd. A draw-link for car-couplers, constructed with one end having a solid portion. 3rd. The combination of a draw-bar having a step 5 in the hole for the coupling pin, a pin adjustable by such step in an inclined position for coupling, and a link having one end heavier than the other.

No. 13,579. Improvements on Sleds.

(*Perfectionnements aux traîneaux.*)

James T. Gurney and Seth Whittier, Boston, Mass., U.S., 19th October, 1881; for 5 years.

Claim.—1st. The combination, with the top cross piece A, the runner and the runner frame provided with the inner and the outer trunnions or pivots, of the brace B secured to the central part of the cross piece A and adapted to support said cross piece and also to support the inner trunnion of the runner. 2nd. The combination, with the rave or top piece H, the bottom I and the cross piece A B, of the knee G when situated entirely below the rave H and provided with the laterally extending trunnions J J below the rave, for pivoting the runner. 3rd. The combination of the cross piece A, the strengthening bar B attached to the inner side of the bar A, the perforated plate D and the runner having the knee G.

No. 13,580. Improvements on Electro-Magnets and on Revolving Armatures for Electro-Dynamic Machines, and Means for Making the Same.

(*Perfectionnements aux électro-aimants et aux armatures à révolution pour les machines électro-dynamiques, et moyens de les confectionner.*)

Charles Dion, New York, N.Y., U.S., 19th October, 1881; for 5 years.

Claim.—1st. The process of making the revolving armatures of electro-dynamic machines by winding the flattened wire edgewise longitudinally upon the longitudinally divided core, and then uniting the dividing edges of the core in contact with each other to give the hollow or tubular form to the armature. 2nd. The armature composed of a tubular core and the flattened wire wound longitudinally upon the walls of the said core, the wire being edgewise with reference to the inner and outer surfaces of said walls upon which it rests. 3rd. In an armature, etc., a flattened wire coated with a compound of gelatine and bichromate of potash hardened by exposure to the light, the said flattened wire being wound longitudinally upon the walls of the core with the coils lying edgewise with reference to the inner and outer surfaces of the said walls. 4th. The method of forming the coils of armatures, electro-magnets, etc., by subjecting the ribbon wire to the action of conical rolls, the axes of which are substantially at right angles to each other, so that a differential drawing and compressing movement is exerted upon the ribbon wire to curve the same at the requisite parts. 5th. The method of forming oblong coils of flattened wire for the armatures of electro-dynamic machines, etc., by subjecting the ribbon wire alternately to the action of coincident conical rolls to form the bends at the ends of the coils, and of parallel feed rollers to form the straight portions of the coils. 6th. In an apparatus for forming the coils in the armatures of electro-dynamic machines, etc., the combination of the conical rolls B' C' constructed with recessed portions *r* and pro-

vided with mechanism for giving movement in unison simultaneously to the two rolls. 7th. In an apparatus for forming the coils in the armatures of electro-dynamic machines, etc., the combination of the recessed conical rolls B' C', the guide K and the recessed parallel rollers H H', the whole combined and arranged for joint use and operation. 8th. In an apparatus for forming the coils in the armatures of electro-dynamic machines, etc., the combination of the yoke D carrying the shaft of the conical roll C', with the bearings on the frame E which support the shaft of the conical roll B, whereby provision is made for adjusting the conical faces of the two rolls with reference to each other. 9th. The process of forming bends in flattened wire for winding electro-magnets, armatures of electro-dynamic machines, etc., which consists in subjecting the flattened or ribbon wire to pressure differing in degree at the opposite edges of said wire.

No. 13,581. Hand Drag Saw. (*Scie à bras trainante.*)

John Givens, Shakespear, Ont., 19th October, 1881; (Extension of Patent No. 6,715.)

No. 13,582. Churn Power. (*Moteur de ba. attc.*)

Valentine H. Tisdale, Hamilton, Ont., 19th October, 1881; (Extension of Patent No. 6,686.)

No. 13,583. Improvements on Sewing Machines. (*Perfectionnement aux machines à coudre.*)

Frank G. Altmann and Fred Pommer, Edina, Mo., U. S., 20th October, 1881; for 5 years.

Claim.—1st. A threading tube through which the thread passes continuously during the operation of the machine. 2nd. A threading tube capable of being moved vertically and diagonally, or by circular motion, toward or from the eye of the needle. 3rd. The combination, with the needle bar, of brackets attached thereto and having bearings for a curved spring steel bar or rod carrying at its lower end a needle threader, which by raising or lowering the said rod in its bearings is carried from or toward the eye of the needle. 4th. An adjustable threading tube carrier secured to the needle bar of a sewing machine. 5th. The combination of the needle bar, the adjustable threaded tube carrier, and a spring lever or catch for retaining the latter in the position to which it may be adjusted in relation to the needle bar. 6th. The needle threader consisting of a suitably shaped block having a vertical groove and a conical opening, the small end of which terminates in said groove. 7th. The combination of the frame A provided with bearings E, and a needle bar having brackets F G H relatively to said needle bar, a vertically movable curved steel bar or rod D carrying at its lower end a needle threader, and means for securing said bar or rod D in an elevated position.

No. 13,584. Improvements on Fire-Extinguishers. (*Perfectionnements aux extincteurs d'incendie.*)

Albert M. Burritt, Waterbury, Ct., U.S., 20th October, 1881; for 15 years.

Claim.—1st. The combination of a water distributor, and water-way of a fire-extinguisher with a collar screwed into the water-way, and a plug secured into said collar, by a connection fusible at a low degree of heat. 2nd. The combination of a distributor and a water-way of a fire-extinguisher, with a flanged collar screwed into the water-way, a plug secured in said collar by a fusible connection, and a channel leading from the water-way below the collar to a point beneath the flange of the collar. 3rd. A fire-extinguisher consisting of a perforated distributor and water-way connected thereto, combined with a socket between the distributor and water-way arranged to receive the detachable plug, and the said water-way constructed to form a chamber around said socket. 4th. The combination of a perforated distributor connecting with water-way, with a metal plug of semi-spherical or spherical shape secured in the water-way, at the entrance to the distributor, by a fusible connection. 5th. The combination, with a distributor of a fire-extinguisher, of a cap attached thereto by a device which will permit the disconnection of the cap, when the pressure of the water comes upon the inside of the cap. 6th. The combination of the plug C, constructed to fit the seat in the water-way, and secured thereto by a fusible connection, with the headed spindle attached to the said plug and supported in the water-way to arrest the outward or opening movement of the plug. 7th. The combination of the plug C constructed to fit the seat in the water-way and secured thereto, by a fusible connection, with the headed spindle attached to the said plug, and supported in the water-way to arrest the outward or opening movement of the plug, the said plug secured to the spindle by a screw thread, whereby the plug may be drawn upon its.

No. 13,585. Method of, and Apparatus for Controlling the Accuracy of Sighting in Rifle Practice. (*Méthode et appareil pour contrôler la précision de l'ajustage dans l'exercice du tir.*)

Richard Morris, Lewisham, Eng., 20th October, 1881; for 5 years.

Claim.—1st. Fitting to the rifle an inner barrel for firing with very small cartridges and firing with such rifle with inner barrel, at a screen or target placed at a short distance from the men, which screen is marked with bulls eyes, and with horizontal and vertical division lines for indicating the points at which the bullets should pass through with correct sighting and aiming. 2nd. The combination, with rifles or small arms, of an inner barrel E, screwed into a breech stock B and secured by a screw nut G. 3rd. In combination with the barrel E, and breech block B, the slides I acted upon by the extractor of the rifle, for removing the case of the small cartridge. 4th. A target or screen for controlling rifle practice marked with bulls eyes, and with horizontal division lines for indicating the points at which bullets should hit the screen for certain degrees of elevation in sighting. 5th. An inner barrel for small arms constructed of a rear part E of copper