through the loop, a spring lever in connection therewith for tightening the knot close to the sheaf, and knives, between the edges of which the strings are forced in order to cut them all, 2nd. The machine for picking up corn or other cut crops and delivering the same to the aforesaid or other tying apparatus; 3rd. The machine for receiving corn or other cut crops from a reaper composed of a balanced tilting platform, which is automatically or otherwise put in motion through the medium of a clutch bolt and slide arrangement acting by reason of the weight or impulse of the corn or other crop falling upon the balanced platform and delivering the same to the aforesaid or other tying apparatus, 4th. A convertible machine constructed to perform either of the aforesaid operations.

No. 10,249. Improvements on Horse Power Machines. (*Perfectionnements aux manèges.*)

John Jackson, Lucan, Ont., 16th July, 1879, for 5 years.

Claim—The spur wheel H, and bull-pinion I, in combination with the stationary bull-wheel A, pinion B and spur wheel C.

No. 10,250. Machine for Cutting the Tapering Plug end of well Tube Joints. (*Machine à couper le bout cône des joints des tuyaux de puits.*)

Thomas Ford, Plattsville, Ont., 16th July, 1879 (Extension of Patent No. 3,685), for 5 years.

No. 10,251. Machine for Blocking Horse Collars. (*Machine à donner la forme a jour aux colliers de cheval.*)

William Vahey, Forest, Ont., 16th July, 1879 (Extension of Patent No. 3,702), for 5 years.

No. 10,252. Improvements on Machine Guns. (*Perfectionnements aux canons mécaniques.*)

Myron Coloney and James H. McLean, St. Louis, Mo., U. S., 17th July, 1879, for 5 years.

Claim—1st. In a machine gun constructed with a horizontal range of barrels, a chambered breech slide working in rear thereof, and suitable guides to effect the simultaneous introduction of cartridges as the slide is projected alternately on each side of the range of barrels; 2nd. The combination of the range of hammers 71 71, elevating bars 78 and lever 79 80 81, to effect the simultaneous cocking thereof, 3rd. The combination, with a range of hammers 71 71, of a corresponding range of triggers 75 75, to release the hammers in succession, 4th. A battery gun mounted on a carriage with wheels transverse to the line of fire; 5th. A caisson for machine guns constructed with a series of shelves 87 and a hinged door or tail-board 88, giving access thereto from the rear and supported by a brace 90; 6th. The caisson constructed with shelves 87, compartment 92, ammunition box 94 and doors or shutters 93 95.

No. 10,253. Improvements on Electric Apparatus. (*Perfectionnements aux appareils électriques.*)

Charles F. Brush, Cleveland, Ohio, U. S., 17th July, 1879, for 5 years.

Claim.—1st. An annular armature constructed from a single solid piece of metal and grooved upon its periphery, or sides or both, 2nd. An annular armature, consisting of two or more plates formed with grooved sides or peripheries or both, and insulated either partly or entirely from each other, 3rd. A commutator cylinder consisting of an insulating hub or body to which are attached subsegments placed in proper electrical connection with the general mechanism in which the commutator is employed and wearing segments detachably attached to said subsegments, 4th. The combination of subsegments R, wearing segments S or T and screws K, 5th. The commutator having metallic insulating segments T, 6th. A commutator having metallic insulating segments I, attached to, and forming part of the adjoining conducting segments S, as shown in division three, 7th. A commutator having two conducting segments S, two opposing ends of which said segments are separated by an intervening insulator T, the other ends of said segments while insulated from each other being closely associated and not provided with an insulator T. 8th. A dynamo electric machine wherein a portion of the current produced, or capable of being produced thereby, is diverted for the purpose of maintaining a permanent magnetic field, 9th. In a dynamo-electric machine, the wire or helix E, having a comparatively high resistance and kept in closed circuit while the machine is running, in combination with the magnet wire or helix F F, as commonly employed, 10th. In an electric lamp, the combination with the carbon holder and core of a clamp surrounding the carbon holder, said clamp being independent of the core but adapted to be raised by a lifter secured thereto, 11th. In an electric lamp, the clamp D, or its equivalent, by means of which the carbon holder B is firmly held and permitted to accurately feed the carbon point as the same is consumed, 12th. In an electric lamp or regulator, the combination of the clamp D and adjustable stop D^1, or their equivalent, by means of which the carbon points are prevented from becoming so far separated as to break the electric current and extinguish the light, 13th. In an electric lamp, the combination of core or armature C and the clamp D, by means of which the carbon points are separated from each other as soon as the electric current is established and held as under during the continuance of the current, and then permitted to come together as soon as the current ceases. 14th. In an electric lamp or regulator the combination of the core or armature C, the clamp D and adjustable stop D^1, or their equivalent, whereby the points of the carbons are separated from each other when an electric current is established, and prevented from separating so far as to break the current and gradually feed together as the carbons are consumed. 15th. In combination with the core C, one or more sustaining spring c, or other equivalent.

No. 10,254. Improvement on Breech Loading Fire Arms, &c. (*Perfectionnements aux armes à feu chargeant par la culasse, &c.*)

Myron Coloney and James H. McLean, St. Louis, Mo., U. S., 17th July, 1879, for 5 years.

Claim—1st. A breech loading gun constructed with a chambered slide and a recoil spring and follower to take up the force of the explosion, 2nd. A breech slide constructed with chambers extending completely through from front to back, said slide having a reciprocating movement transverse to the gun, so that one chamber, or set of chambers, is brought into position for loading while the other is in position for firing, and vice versa. 3rd. The combination of a chambered breech slide S and a shutter 14 to close or cover its rear end, 4th. A recoil spring, follower and firing pin combined to effect the automatic cocking of the firing pin by the force of the explosion, 5th. The trigger constructed with two holding pins to insure the catching of the firing pin, 6th. A cartridge constructed with a cylindrical shell and a ball of greater diameter, forming a shoulder for seating the cartridge in loading from the front and permitting the free expulsion of the shell rearward after the ball is discharged, 7th. A circumferentially grooved cartridge in combination with a transversely moving breech slide and a suitable holder to permit the introduction and removal of the cartridge and shell by transverse movement, and to hold it against the stroke of the firing pin.

No. 10,255. Nail Machine. (*Machine à clou.*)

Royal C. Grant, Middleport, Ohio, U. S., 17th July, 1879 for 5 years.

Claim.—1st. The combination with the cylinder, the movable block carrying the nipper, the shaft having an arm o, and the cam for raising and lowering the nipper block, for the purpose of carrying the blank down to the score in the dies and subsequently expelling the cam. 2nd. In rest plate M, the nipper block and the nipper combined with the feed tube and cylinder. 3rd. The movable die attached to the die block X, the eccentric, the cam for operating them, and arms or projections with which said cam comes in contact as the cylinder rotates, for the purpose of operating the die. 4th. The combination of the pivoted adjustable lever A^1, having an arm a^1, the L-shaped cam Z, and the eccentric and movable die; 5th. The combination of a vertical rotating feed tube and a horizontal rotating cylinder, each provided with suitable knives or cutters. 6th. The combination of the rotating feed tube, the tappet device, and the bars for holding and oscillating the nail plates. 7th. The tappet proper, having a screw nut and spring applied to its shank, in combination with the push bars and plate holding bars. 8th. The combination of the spring e and the push bars and plate holding bars *b b*.

No. 10,256. Improvements on Carriage Rockers. (*Perfectionnements aux moutons des voitures.*)

Joseph Benoit, North Hatley, Que., 17th July, 1879, for 5 years.

Claim.—The lower bar A, in combination with the countersunk lock C and the flanges *b b*, the upper bar D, in combination with the lock E, the flanges F F and the socket I, also the bolt cover K.

No. 10,257. Improvements on Boiler Furnaces. (*Perfectionnements aux fourneaux des chaudières.*)

William Scully and Richard S. Dillon, Detroit, Mich., U.S., 17th July, 1879, for 5 years.

Claim.—1st. The hopper D, table E and reciprocating slide or strike F F^1 F^2, combined together for the purpose of intermittently measuring the fuel previous to discharging the same into a boiler furnace. 2nd. The mechanical devices composed of a reciprocating slide, mechanically actuated by means of which the fuel is discharged from the table E, upon the grate bars A of a furnace, through an opening in the front wall thereof. 3rd. The combination of a mechanically measuring and feeding device with a boiler furnace. 4th. The grate bars A, 5th. The combination of the grate bars A with mechanically measuring and feeding devices, 6th. In combination with a boiler furnace, an independent dumping grate C, actuated outside the furnace wall. 7th. The combination with the grate bars A, an independent dumping grate C, when said bars are adapted, in their reciprocating movements, to force the debris of the fire on to said dumping plate or grate. 8th. The combination of mechanically actuated fuel measuring and feeding devices with grate bars A, adapted to receive the fuel upon their forward ends, and gradually advance the same toward the rear of the furnace. 9th. A boiler furnace provided with a mechanically operating measuring and fuel feeding device, and with grate bars actuated by said measuring and feeding devices, the combination therewith of an independently actuated dumping plate. 10th. In combination with a boiler furnace provided with mechanical devices for measuring and feeding fuel to the same through an opening in the front of said furnace wall, the flue M immediately over said opening, for the purpose of discharging heated air on to the fuel as it enters the furnace.

No. 10,258. Machine for Nutting Bolts. (*Machine à visser les noix sur les boulons.*)

Ralph Hudson, Orrin Clark and Albert Jenkins, (Assignees of Samuel L. Worsley,) Buffalo, N. Y., U. S., 17th July, 1879, for 5 years.

Claim.—1st. The combination of the nut holder constructed with a cross channel for the nuts, the nut mover and the bolt discharger. 2nd. The combination of the nut holder, the bolt holder, the bolt clamp and the turning mechanism, 3rd. The combination of the nut holder, the bolt holder, the bolt clamp, the turning mechanism and the leading cam, 4th. The combination of the nut holder, the bolt holder, the nut mover, the bolt clamp and the turning mechanism, 5th. The comomination of the nut holder, the bolt mover, the bolt clamp and the turning mechanism, 6th. The combination of the nut holder, the bolt holder, the bolt clamp, the turning mechanism, the transfer mechanism and the leading cam, 7th. The combination of the nut holder, the bolt holder, the nut mover, the bolt clamp, the turning mechanism, the transfer mechanism and the leading cam, 8th. The combination of the nut holder, the bolt holder, the nut mover, the bolt mover, transfer mechanism, the bolt clamp and the turning mechanism, 9th. The combination of the nut holder, the bolt holder, the bolt clamp and the transfer