

the crank shaft having a locking bar attached thereto, of a pin on the switch rod and a slotted guard plate pivoted to a yoke supported on the switch rod, 6th. The combination, with a switch rod having anti-friction rollers journaled in the outer end thereof, of a switch stand constructed with an inclined track-way and a link provided with an inclined depending projection, 7th. The combination, with the switch rod K, of the sliding sleeves M M, spring L and screw threaded sleeve N; 8th. The combination, with the switch rod H, of the bracket O, sliding sleeves M M, spring L and adjusting nuts m₂ m₁; 9th. The combination, with the switch rod K, of the yoke L provided with collar N N, the link k connecting the crank shaft and yoke, sliding sleeves M M, and spring L; 10th. The combination, with the switch rod K, spring L, sleeves M M and yoke L, of the link k and lift bar P; 11th. The combination, with the switch rod K and bracket O provided with pin R and lift bar P, of the yoke L, link k, guard plate Q and locking bar T; 12th. The combination, with the pin R connected with the switch rod, of the guard plate Q provided with openings g, support S and locking bar T; 13th. The combination, with the switch rod K provided with rollers o o, of the inclined track-way R and link k provided with a depending inclined projection; 14th. The combination, with the main switch rail having fingers or braces attached thereto, of switch chairs provided with end stops and staples; 15th. The combination, with a main rail having a bent portion e and a pointed switch rail, of mechanism for automatically closing the switch and retaining the switch rails in a yielding position to allow a train to run from the sliding onto the main track without leaving the switch open; 16th. The combination, with the switch rails of a switch, of mechanism connected therewith for automatically closing and locking the switch by the flanges of the car wheels when running on the main track; 17th. The combination, with switch rails of different lengths, of switch operating mechanism connected therewith and constructed and arranged to allow the train to run from the sliding onto the main track without leaving an open switch while the wheel flanges of a train running on the main track will automatically close and lock the switch if left open; 18th. In combination, with the main or blunt pointed switch rail having a brace secured thereto, of staples secured to the chain and extending over the brace on the main switch rail whereby the latter is prevented from being raised; 19th. In a railway switch, the combination with the main rail having a tapered end, of the main switch rail constructed with a blunt pointed end; 20th. The combination, with the main rail having a tapered end and the side rail extending beyond said tapered end, of the main switch rail constructed with a blunt pointed end; 21st. The combination, with a tapered switch rail, of a main switch rail constructed with a blunt pointed end and the main rail formed with a tapered end whereby the flanges of the wheels are guided by the main switch rail and prevented from striking the tapered switch rail; 22nd. The combination, with the main rail having a bent portion e and pointed switch rails of different length, of switch operating mechanism for imparting a positive movement to the switch rails when they are opened and closed, and retaining the same in either opened or closed position by spring power.

No. 9632. Improvements on Disintegrating Mills. (*Perfectionnements aux moulins à triturer.*)

Lewis J. Bennett, Buffalo, N. Y., U. S., 10th February, 1879, for 5 years.
 Claim.—1st. The combination, with the disks and rings of the cages of pins or bars arranged with capability of being separately removed or inserted, 2nd. The combination, with the disks and rings of the cages, of pins or bars consisting of a soft metal central rod and a chilled metal tube passed over said rod and secured between the disks and rings; 3rd. A pin or bar interposed between the disks and rings and arranged with capability of being revolved around its supporting pivots, whereby the wearing surfaces may be changed, 4th. The pin or bar having two parallel or nearly parallel sides r r and the curved sides r₁, 5th. The combination, with the pin or bar J, having the end projections a, of the disk I provided with grooves a for the reception of said projections a; 6th. The combination, with the rings P, of the protecting plates Q having the ledges q and the plates R, whereby the sides and edges of said rings are protected, 7th. The combination, with the plates Q having the ledges q, of the plates R fitted between the said ledges, and provided with circular recesses for the reception of the nuts N, 8th. The combination, with the rings P having their edges bevelled of the plates Q provided with the ledges q, plates R and the nuts N; 9th. The disks I I and K provided with wear plates K and r; 10th. The standard F, having the projection E, in combination with the front plate A; provided with the socket E, 11th. The combination, with the front plate A; having the socket E, of the standard F provided with the hollow projection E and the breaker M passed through the aperture F in said projection E and held therein by the fastening g, 12th. The combination, with the standard F of the threaded block g and the set screws g, 13th. The breaker M having the shoe m; 14th. The breaker M provided with the shoe m having the inclined part m₁, 15th. The combination, with the casing, of the shaft G and the cone V, 16th. A breaker, for a disintegrating mill, having one of its edges inclined, 17th. The combination, with the casing of the chute Y, said chute being arranged with capability of being reversed.

No. 9633. Improvements in Soldering Clamps. (*Perfectionnements aux mordaches pour souder.*)

Charles A. Bangs, Richmond, and George H. Pierce, Cleveland, Que., 10th February, 1879, for 5 years.
 Claim.—1st. In combination with the fixed core B, a band of moving clamps hinged to each other and each clamp composed of two side clips U C (with projection a c) either hinged to or sliding into a sole piece H; 2nd. The movable cores B B in combination with a band of moving clamps.

No. 9634. Improvements on Meat Mallets. (*Perfectionnements aux maillets à viandes.*)

Clements T. Stephens, Ithaca, N. Y., U. S., 10th February, 1879, for 5 years.
 Claim.—1st. The handle a, the head or weight b, tooth holding base plate c; 2nd. The combination of the handle a, the head b, tooth holding base c, cleaning plate d with the rod f extending through the head b of the mallet (or partially so) and lying loosely therein, equipped with the spiral spring surrounding with its condensing bases g and h and nut f, or other equivalents, whereby the cleaning plate d may be operated, 3d. The weighted head b, in combination with the cleaning plate d and spiral spring (or springs) z ver-

lically arranged so that the said cleaning plate may be turned from the base of the mallet head b to the lower end of knives e by physical or automatic force, 4th. In combination with the mallet head b, the teeth or knives z provided with chisel or incisor edges arranged in parallel rows across the face of the weighted head b, said chisel or incisor edges in each row being set at right angles to those of the adjoining rows whereby a series of clear cuts will be given to the meat.

No. 9635. Improvements on Water Wheels. (*Perfectionnements aux roues hydrauliques.*)

William H. Froot, Minneapolis, Min., U. S., 10th February, 1879, for 5 years.
 Claim.—1st. In combination with the vertically stationary clutches E E, shaft c and governor balls H H; with their connecting arms, the tapered disks F F; with intermediate pinions b; between said disks, 2nd. The vertically stationary bevel gears F E; having one common pinion b, in combination with the bevelled disks F F; with intermediate pinion b₁, 3rd. The combination, with the shaft C and c, of the groove or grooves c and conduits r whereby the shafts and step may be oiled without stopping the machinery, 4th. The combination and arrangement of the shaft m, gear b₂, notched plate k, spring catch w and cam k; whereby the governor may be automatically disconnected from the gate rod or thrown out at pleasure, 5th. The combination, with the shaft c, of an adjustable spring pin d, whereby the speed of the governor may be regulated, 6th. The arrangement upon a water wheel governor of a graduated indicating device, whereby the position of the gates may be ascertained.

No. 9636. Process for Amalgamating Precious Metals. (*Procédé pour amalgamer les métaux précieux.*)

Julio H. Rae, New York, U. S., 10th February, 1879 for 5 years
 Claim.—1st. The process of amalgamating auriferous or argentiferous ore, by forcing the same on a pulverized state against an amalgamated plate supplied with water through the medium of a blast of air; 2nd. The combination of a closed chamber, a lateral amalgamated plate situated in said chamber, means for supplying said plate with water and an air forcing device connected to one side of the chamber opposite to the lateral plate, 3rd. The combination of an amalgamated base plate, a closed chamber arranged above said plate a lateral amalgamated plate situated in said chamber, means for supplying both plates with water and an air forcing device connected to one side of the chamber opposite to the lateral plate, 4th. The combination of an amalgamated base plate divided into two sections and a trap which is made in one piece with the first section of the plate and arranged between the two sections

No. 9637. Improvements on Stove Pipe Machines. (*Perfectionnements aux machines à tuyaux de poêles.*)

Frank R. Packham, Mechanicsburgh, Ohio, U. S., 10th February, 1879, for 5 years.
 Claim.—1st. Two cylindrical fluted rolls arranged to mesh into each other with their axis in diverging lines, 2nd. Two spirally fluted rolls arranged with their surfaces nearer together at one end than at the other; 3rd. The frame provided with the open slot to receive the pivoted shaft and with the cap plate serving the double purpose of excluding the chips and dirt and of sustaining the compressing screw, 4th. In combination with the diverging crimping rolls, the beading rolls having their outer ends enlarged; 5th. In fluted rolls and detachable beading rolls adapted for removal independently of the fluted rolls, 6th. In combination with the fluted rolls, the hardened steel guards applied to the frame.

No. 9638. Process for Resolving Vulcanized Rubber Waste. (*Procédé de révivification des déchets de caoutchouc vulcanisé*)

Thomas Aspden, London, Ont., 10th February, 1879, for 5 years.
 Claim.—1st. The process of reducing vulcanized rubber to a plastic state by first cutting the vulcanite into lumps of a suitable size, then wetting the same with linseed oil, then gradually heating the oil coated mass in a suitable pan over the fire to 400 or 500 degrees; 2nd. The process of reducing vulcanized rubber to a fluid state by cutting it into lumps, then wetting the same with linseed oil, then heating the oil coated mass until it becomes plastic, then allowing it to cool and boiling the same in linseed oil, in quantity to reduce it to a fluid of the required strength or density.

No. 9639. Improvements on Bottles. (*Perfectionnements aux bouteilles.*)

Melville S. Bagley, Buenos Ayres, Argentine Republic, 10th February, 1879, for 5 years.
 Claim.—A bottle or hollow vessel of a book shape.

No. 9640. Improvements on Mattresses. (*Perfectionnements aux matelas.*)

Charles P. Rice, Toronto, Ont., 10th February, 1879, for 5 years.
 Claim.—1st. A bed mattress composed of the parallel longitudinally crimped wires I secured at the ends to cross rods, and at intermediate point between the ends by transverse crimped wires G; 2nd. The mattress A provided with suspension springs E, in combination with the suspension bars C and brackets B, 3rd. The side compression springs H H, in combination with the mattress.

No. 9641. Improvements on Repeating Matches. (*Perfectionnements aux allumettes à reprise.*)

William W. Batchelder, New York, U. S., 10th February, 1879, for 5 years.
 Claim.—1st. The combination, in a suitable casing, of two or more substances or compounds which, in themselves, are not explosive, but which, if mixed or united, and rubbed, or otherwise mechanically acted upon, will explode or burn rapidly, said substances or compounds being separated,