

consisting of the hub H, radial arms *a* and beaters *d* secured to the outer ends of said arms, and the case *c*, the said beater head *D* arranged within said drum and adapted to rotate in an opposite direction therefrom, substantially as and for the purpose set forth. 2nd. The combination, with the case *c* consisting of two parts hinged together and having the feed pipe *F*, and the exit pipe *E* arranged on the side of said case opposite to said feed pipe shaft, beater head *D*, consisting of the hub H secured on the inner end of said shaft, and having radial arms *a*, and beater plates *d* secured on the outer ends of said arms, shaft *S*, rotatable drum *B* consisting of hub *B* secured on said shaft, head *B'* having the central perforations *r*, and the removable lining plates *a*, head *B'* having the central feed opening surrounded by the outwardly projecting flange *B'*, and having the removable lining plates *a*, the said beater head arranged within said drum and adapted to rotate in an opposite direction therefrom, and adapted to have a suction air blast pass through said case and drum, substantially as and for the purpose set forth. 3rd. The combination of the shafts *S* and *S'* having respectively the pulleys *P* and *P'*, and fly wheels *F*, *F'*, the case *c* constructed in two parts hinged together and having an inlet feed pipe *F*, and an exit pipe *E* arranged on its side opposite said feed pipe, and adapted to have a suction air blower applied thereto, rotatable drum *B* and beater head *D*, all arranged to operate substantially as and for the purpose set forth. 4th. In a rock pulverizing machine, the combination of a rotatable drum having a feed opening in one of its heads, and exit perforations in its head opposite the head having the feed opening, a beater head arranged within said drum and adapted to rotate in an opposite direction therefrom, and a case for inclosing said parts and having a suction air blower for withdrawing the pulverized material from said drum and case, substantially as and for the purpose set forth.

No. 29,489. Combined Doll and Phonograph. (*Poupée-phonographe*)

William W. Jacques, Newton, Mass., U. S., 11th July, 1888; 15 years.

Claim.—1st. The combination of a phonograph and a doll provided with a body carrying said phonograph, and a head having an orifice therein for the emission of sounds from the phonograph, substantially as described. 2nd. The combination of a phonograph having its stylus or tracer, supported by the opposing tension of two or more springs, and a dog serving as a receptacle and a support for said phonograph, substantially as described. 3rd. The combination of a phonograph and a doll having a body provided with a cavity for receiving and a support for holding the phonograph therein, and a resonator contained in a perforated head for conveying and emitting sounds produced by the phonograph within the body, substantially as described. 4th. The combination, with a doll provided with a cavity, and a support or supports for a phonograph, of a phonograph having a diaphragm held in a frame at one edge, and controlled in its movement by a spring upon the upper and under sides of said frame, substantially as described. 5th. In a phonograph, the combination of a traveling record-surface, with a pivoted diaphragm provided with a stylus and maintained between two counteracting springs under tension in operative relation with said record surface, substantially as described. 6th. The combination, with a phonograph, of an automatic shipping device, actuated by the reversed motion of the record-surface, substantially as described. 7th. The combination, in a phonograph, of a diaphragm held in a hinged frame cushioned by a spring acting upon one side thereof, with a second spring acting upon the other side of the frame, and having an extension bearing upon the record surface, so as to disengage the stylus from the record-surface when the motion of the latter is reversed, substantially as described. 8th. A record plate for phonographs consisting of a foil of metal which is superficially hard upon the side which is to receive the record, and is normally soft upon the other side, substantially as described and for the purpose specified. 9th. In combination, with a phonograph or record-plate, of a foil made superficially hard upon the side which is to receive the record, whereby while the record may be readily impressed thereon, it becomes practically permanent, substantially as described.

No. 29,490. Filtering Apparatus.

(*Appareil à filtrer.*)

Robert Cooper, Herbert F. Claxton and George H. Holdroyd, Huddersfield, Eng., 11th July, 1888; 5 years.

Claim.—1st. In a filtering apparatus, one or more perforated tubes having a filtering medium wrapped upon it or them and turned in at the ends, the said tube, or each of the said tubes, where more than one is employed being carried at one end upon a tapering nozzle through which the liquid to be filtered is introduced, and at the other end upon a tapering plug in such a manner that when the said plug is forced into the tube tight joints will be formed at both ends, substantially as described. 2nd. In a filtering apparatus having perforated tubes covered with filtering cloth turned in at the ends, forming the said tubes with beaded ends, for the purpose specified. 3rd. In a filtering apparatus having perforated tubes covered with filtering cloth turned within the said tubes, and supported by tapering plugs and nozzles, the employment of elastic packing rings placed between the ends of the tubes and the said plugs or nozzles to form tight joints, and to prevent the cutting of the filtering material, substantially in the manner described. 4th. The improved filtering apparatus, constructed and arranged to operate substantially as hereinbefore described and illustrated in the accompanying drawing.

No. 29,491. Boot and Shoe Vamp.

(*Empoigne de chaussure.*)

Pierre Ouquette, Montreal, Que., 11th July, 1888; 5 years.

Résumé.—Un nouvel article de manufacture, une chaussure formée d'une empoigne A, a, a¹, a², a³, a⁴, a⁵, a⁶, c, d, e, f et d'un morceau B, pour servir à compléter la partie postérieure, à tout tel que ci-dessus décrit et pour les fins sus-mentionnées.

No. 29,492. Hay Elevator and Carrier.

(*Monte-foin.*)

The U. S. Wind Engine and Pump Company, (assignee of William H. Burnham and John H. Miller), Batavia, Ill., U. S., 11th July, 1888; 5 years.

Claim.—1st. An improvement in hay elevators and carriers, consisting of the lower carrier frame M, B made in two parts, and provided on its internal opposite portions with catches *L*, *L'*, and the parts M, M', having rocker convex lower bearing-surfaces, in combination with the upper carrier-frame A having an annular bearing at its lower end, and a flange *F* for the support of the parts M, *L*, and the flange provided with notches *N* which engage the catches *L*, *L'*, as specified. 2nd. The trip lever *E* provided with a hollow lower portion, and the hollow swivel *L* having a seat *m* in the top part of the hollow portion, in combination with the rope *K* secured to the swivel, as specified.

No. 29,493. Process of Manufacturing Iron and Steel. (*Procédé de fabrication du fer et de l'acier.*)

Riley P. Wilson, Franklin J. Wall, Franklin A. Thurston, Thomas L. Bibbins and William L. Flanagan, New York, N. Y., U. S., 12th July, 1888; 5 years.

Claim.—1st. The herein described improvement in the art of treating metal, which consists in subjecting the molten metal in charges to a gentle air-blast through the same, and simultaneously therewith maintaining from a separate source an excess of combustible carbonaceous matter in the gases within an inclosed chamber above the molten charge, substantially as and for the purpose described. 2nd. The process herein described for treating impure iron for the manufacture of wrought iron or steel, the same consisting in subjecting the impure iron while in a molten state to the action of an air blast, in order to oxidize and carry off the impurities, and simultaneously subjecting the iron to the action of a reducing atmosphere of hydrocarbon gas or vapor held above the surface of the molten metal, substantially as specified.

No. 29,494. Seal Lock. (*Serrure à cachet.*)

Daniel E. Doherty, (assignee of Perry Brown), Louisville, Ky., U. S., 12th July, 1888; 5 years.

Claim.—1st. A seal lock provided with a defacer moving in line with the bolt, and means for moving said defacer to destroy the seal before the bolt is moved, as set forth. 2nd. The combination, with the bolt and the hasp engaging the same, of a defacer moving in line with the bolt, and means for operating said defacer to cause it to engage and operate the bolt, as set forth. 3rd. The combination, with the bolt and the defacer moving in line therewith, but in bearing independent of the bolt, of means for engaging said defacer to move the same to cause it to destroy a seal before engaging the bolt, substantially as described. 4th. The combination, with the bolt and the defacer having a limited loose connection therewith, of a hinged cover and a hasp carried thereby to engage said bolt, substantially as described. 5th. In a seal lock, the combination, with a spring actuated bolt and the spring actuated defacer having a limited loose connection therewith, of a hinged cover and a hasp carried thereby and formed with a transverse groove, substantially as and for the purpose specified. 6th. The combination, with the slotted case and the defacer provided with teeth working through the slots in said case, of a having a stem working in guides in said case, of a bolt moving in guides in said case, and having a limited loose connection with said defacer, a hasp engaging said bolt independent of the defacer, and means for moving said defacer to destroy a seal before moving the bolt, substantially as described. 7th. In a seal lock, the combination, with the case having a slotted diaphragm, as described, of a defacer having a stem working in a guide on one side of said diaphragm, and an arm at right angles to said stem carrying teeth working in the slots of the diaphragm, substantially as and for the purpose specified. 8th. In a seal lock, the combination, with the case, the seal and the plate *B*, of elastic block *C* secured to said plate to press upon said seal, substantially as and for the purpose specified. 9th. The combination, with the case having slotted diaphragm and half barrel open at one side, as shown, of the defacer having a stem working in said half-barrel, and a right-angled extension working in the cut-away portion of said barrel, and carrying teeth working in the slots of the diaphragm, substantially as described. 10th. The combination, with the case having a diaphragm *A* and half-barrel *C* open at one end, and formed with ledge *e*, and tapering seat of the back plate formed with half-barrel *B*, and wedge-shaped lug *d* engaging said seat, substantially as shown and described. 11th. The combination, with the case having diaphragm *A*, stud *C* and half-barrel *C*, of the bolt having a stem working in said half-barrel, a slot engaging said stud and provided at its opposite end, with extensions *g* formed with downwardly extending lugs *g*, substantially as and for the purpose specified.

No. 29,495. Self-Locking Attachment for Fare Boxes. (*Fermure automatique de boîte à billets.*)

James H. Claspy and Jesse W. Cuieppor, Atlanta, Ga., U. S., 12th July, 1888; 5 years.

Claim.—1st. In a cash-box for street cars, the combination, with the spring lock provided with the locking hook *11* and the guide-pin *a*, of the key *12*, said pin being so placed as to guide the key when it enters the lock, and retain it in its proper position to act on both locking hooks simultaneously, as set forth. 2nd. In a cash-box for street cars, the combination, of the key *12*, hollow piston *13*, spring *17*, and slotted inclosing tube *14* all arranged and adapted to rotate the key when the piston is forced back upon the spring, as set forth.