

held in place by the bracket and elastic packing, substantially as described. 4th. In a harrow tooth, the combination of a cross-bar having a recessed seat, a bracket having perforated lugs *c, d*, bolts *e*, a tooth pivoted to said bracket, a curved spring clamped at one end between the bracket and recessed cross-bar, an elastic packing fitted in the seat in the cross-bar beneath the curved spring, and a loop loosely mounted in the lower arm of the spring and embracing the pivoted harrow-tooth, all arranged and adapted to serve, as set forth.

### No. 24,643. Boot. (Botte.)

Michael C. Mullarky (assignee of Simeon Steben), Montreal, Que., 3rd August, 1886; 5 years.

*Claim.*—A boot upper, composed of a single piece of leather, of the configuration herein shown and described, with cut B folded on lines D and *a*, and stitched along line *b*.

### No. 24,644. Stump Extractor.

(*Arrache-Souche.*)

William Smith (assignee of Frank R. Smith), Tomah, Wis., U.S., 3rd August, 1886; 5 years.

*Claim.*—1st. In a stump extractor, a drum or windlass having the middle rounded and contracted, making a hour glass shaped, as and for the purpose shown and set forth. 2nd. In a stump extractor, the combination of a vertical standard or axle having a flange at its lower end, and having an eccentric circular flange or disk at its upper end, projecting towards the anchoring stump or stake, with a drum having a bore of the same diameter as the eccentric flange, and revolving upon the standard or axle, as and for the purpose shown and set forth. 3rd. In a stump extractor, the combination of a vertical standard or axle having a flange at its lower end, and having an eccentric flange or disk at its upper end, projecting towards the anchoring stump or stake, with a drum having a bore of the same diameter as the eccentric flange, and revolving upon the standard and formed hour glass-shaped, being contracted at its middle, as and for the purpose shown and set forth. 4th. In a stump extractor, the combination of standard or axle having a flat portion extending from the lower end, and provided with horizontal laterally-extending flanges at its lower edge, with two beams bolted at the sides of the flat portion clamping and holding the same, as and for the purpose shown and set forth. 5th. In a stump extractor, the combination of a standard or axle, having at its lower end a flat portion extending towards the anchoring stump or stake, and formed with a perforation in the extension, and provided with laterally projecting horizontal flanges at its lower edge, with two beams having bolts passing through them and a bolt passing through them and through the perforation in the flat portion of the standard, and clamping at both sides of the said flat portion, as and for the purpose shown and set forth. 6th. In a stump extractor, the combination of a standard for the winding drum having a flat portion at its lower end, extending towards the anchor and provided with a transverse perforation in the said extended portion, and with laterally projecting horizontal flanges at the lower edge, two beams clamping the flat portion between their ends and having bolts passing through them, and one bolt passing through the perforation in the flat portion of the standard and formed with recesses in the inner sides of the ends, and an anchor chain passed through the perforation formed by the recesses, as and for the purpose shown and set forth. 7th. In a stump extractor, the combination of a standard having a flange at its lower end, and an eccentric circular flange at its upper end, and having a flat portion at its lower end extending towards the anchor and formed with horizontal laterally projecting flanges at its lower edge, and with a transverse perforation in the extension, a winding drum having a sweep and turning upon the standard having a diameter equal to the diameter of the eccentric flange, two beams clamping the flat portion with their ends and having connecting bolts passing through them, and through the perforated flat portion, and formed with facing recesses in the inner sides, or the other ends of the beams, clamping the flat portion of the standard, and an anchor chain passed through the aperture formed by the recess, as and for the purpose shown and set forth. 8th. In a stump extractor, the combination of a pulley clevis, a sheave journaled in the said clevis and two plates secured to the arms of the clevis, and having meeting curved flanges at their outer edges, and having the inner edges cut out concave and sharpened, fitting inside of the edges of the sheave, as and for the purpose shown and set forth.

### No. 24,645. Automatic Boiler Cleaner.

(*Nettoyeur de Chaudière Automatique*)

Henry Sims, Erie, Penn., U.S., 4th August, 1886; 5 years.

*Claim.*—1st. The combination, in an automatic boiler cleaner, of one or more covered pans opening at one end, and located in the boiler about the water level, substantially as shown, with an upright settling tank provided with a blow-off cock near the bottom thereof, and a pipe connecting the ends of said pans in the boiler with the said tank, at or near the centre vertically of the tank, and also a pipe extending from the upper end of said settling tank across the fire chamber, and into the rear end of the boiler near the bottom thereof, substantially as and for the purpose set forth. 2nd. The combination, in an automatic boiler cleaner, of one or more triangular covered pans open at the large ends thereof, and located in the boiler about the water level, substantially as shown, with an upright settling tank provided with a blow-off cock near the bottom thereof, and a pipe connecting the small ends of said triangular covered pans in the boiler with the said tank, at or near the centre vertically of the tank, and also a pipe in the upper end of said tank provided with a screen, and extending therefrom into the fire chamber and across the rear end of the boiler, and entering the same at or near the bottom thereof, substantially as and for the purpose set forth. 3rd. In an automatic boiler cleaner, the triangular flat-bottomed and perpendicular sided covered pans A, the toe D connected to the small ends of the pans A, and the discharge pipe E, in combination with the boiler B, substantially as and for the purpose set forth. 4th. In an automatic

boiler cleaner, the upright settling tank F having the blow-off cock H near the bottom thereof, and an ingress pipe entering the same at G, and egress pipe near the top of said tank F, all substantially as and for the purpose set forth. 5th. In an automatic boiler cleaner, the combination, with the upright settling tank F, of an egress pipe near the top thereof provided with the screen L, substantially as and for the purpose set forth.

### No. 24,646. Mechanical Movement.

(*Mouvement Mécanique.*)

Charles Hammelmann, Buffalo, N. Y., U. S., 4th August, 1886; 5 years.

*Claim.*—1st. The combination, with a driving wheel C provided with a clutch disk F, of a loose clutch disk G, which is turned alternately backwardly and forwardly, and which is thrown in engagement with the disk F on its forward movement, and out of engagement on its backward movement, substantially as set forth. 2nd. The combination, with a driving wheel C, provided with a clutch disk F, of a loose clutch disk G, and a collar H which is turned alternately backwardly and forwardly, and which throws the disk G alternately in engagement and out of engagement with the disk F, substantially as set forth. 3rd. The combination, with the driving wheel C, provided with a clutch disk F, of a loose clutch disk G, provided with lugs *h* and a collar H, provided with inclined guides *j*, in which the lugs *h* engage, substantially as set forth. 4th. The combination, with the driving wheel C provided with a clutch disk F, of the loose clutch disk G, a collar H connected with the disk G and provided with a pinion J, and a reciprocating rack bar K engaging with the pinion J, substantially as set forth. 5th. The combination, with the driving wheel C provided with a clutch disk F, of a loose clutch disk G, a collar H connected with the disk G and provided with a pinion J, and a rack bar K engaging with the pinion J, a hand lever N and a rod O connecting the rack bar with the hand lever, substantially as set forth. 6th. The combination, with a rotary blower L, of a driving wheel C, provided with a clutch disk F, a loose clutch disk G, and a collar H connected with the disk G and turned alternately backward and forward, substantially as set forth. 7th. The combination, with the driving wheel C, provided with a clutch disk F, of a loose clutch disk G, a collar H provided with a pinion J, a rack bar K, and a casing L enclosing the rack bar and provided with guides *l*, substantially as set forth. 8th. The combination, with the wheel C, cast with a neck E and clutch disk F, of the loose clutch disk G, made in halves and mounted on the neck E, by securing the halves together, substantially as set forth. 9th. The combination, with a fan, of a driving wheel, a clutch connected with said wheel, a rack bar and pinion whereby the clutch is moved back and forth, and a hand lever whereby the rack bar is set in motion, substantially as set forth.

### No. 24,647. Steam Generator.

(*Générateur de Vapeur.*)

Joseph A. Eno, Newark, N.J., U.S., 4th August, 1886, 5 years.

*Claim.*—1st. In a steam generator, the combination, with a boiler, of two or more generator flues, constructed substantially as described, and a cylinder or branch adapted to receive the water from the boiler and distribute it to each of said flues, substantially as set forth. 2nd. In a steam generator, the combination, with a boiler, of two or more generator flues, constructed substantially as described, a cylinder or branch adapted to receive water from the boiler and distribute it to each of said flues, and a supply pipe adapted to take the water from said boiler and convey it to said cylinder or branch, substantially as set forth. 3rd. In a steam generator, the combination, with a boiler, of a generator flue, constructed substantially as described, and arranged approximately horizontally, and a discharge pipe adapted to convey the water and steam from said flue into the forward part of the boiler, substantially as set forth. 4th. In a steam generator, the combination, with a boiler, of two or more generator flues, constructed substantially as described, and arranged approximately horizontally, a supply pipe adapted to take water from the boiler and convey it to said flue, and one or more discharge pipes adapted to convey the water and steam from said flues into the forward part of the boiler, substantially as set forth. 5th. In a steam generator, the combination, with a boiler, of two or more generator flues, constructed substantially as described, a cylinder or branch adapted to receive water from the boiler and distribute it to said flues, a supply pipe arranged to take water from said boiler and convey it to said cylinder or branch, and one or more discharge pipes adapted to convey the water and steam from said flues into said boiler, substantially as set forth. 6th. In a steam generator, an assemblage of two or more generator flues, constructed substantially as described, and united to one or more discharge pipes by one or more Y-branches, substantially as and for the purposes set forth. 7th. In a steam generator, the combination, with a boiler, of two or more generator flues, constructed substantially as described, a cylinder or branch adapted to receive water from said boiler and distribute it to said flues, and one or more discharge pipes connected with said flues by Y-branches, substantially as and for the purposes set forth. 8th. In a steam generator, the combination, with a boiler, of one or more generator flues, constructed substantially as described, and a sediment drum or receptacle arranged to separate and remove the sedimentary matters from said water, said drum or receptacle being placed entirely below the point of ingress of the water which supplies said generator flues, substantially as and for the purposes set forth. 9th. In a steam generator, the combination, with a boiler, of one or more generator flues, constructed substantially as described, a sediment drum or receptacle, a sediment pipe adapted to convey water and sediment to said drum, and a pipe adapted to convey the water from said sediment pipe toward said flues, said sediment pipe being of larger internal diameter than the other said pipe, substantially as and for the purpose set forth. 10th. In a steam generator, the combination, with a boiler, of one or more generator flues, constructed substantially as described, a supply pipe arranged to take water from said boiler and convey it to said flues, a discharge pipe adapted to convey the water and steam from said flues to said boiler, and a sediment drum or receptacle arranged to separate and remove