

shaft n, the forked hangers, the bearings surrounding the shafts and pivoted in the forked ends of the hangers, substantially as set forth. 6th. In a middlings purifier, the combination of the brush-ways, the shaft, the forked hangers, the bearings surrounding the shaft and pivoted in the hangers, and adjusting devices connecting the hangers with the brush-ways, substantially as set forth. 7th. In a middlings purifier, the combination, with the brush-ways and belts, of the shafts o, the sleeves surrounding the shaft and provided with part-spherical bearings, of the arm T having rings adapted to receive the part-spherical bearings, substantially as set forth. 8th. In a middlings purifier, the combination, with the brush-ways and belts or chains of the shaft o, the sleeves provided with part-spherical bearings, the arms T having the rings adapted to receive the sleeve bearings, and adjustable connections between the arms and the frame of the machine, substantially as set forth. 9th. In a middlings purifier, the combination, with brush-ways and belts or chains of the brush shaft n, the hangers, and the yielding bearings interposed between the brush shaft and the hangers, substantially as set forth. 10th. In a middlings purifier, the combination, with the main frame, of the brush-ways, the belts or chains, the shaft o and yielding bearings supported upon the main frame, substantially as set forth.

No. 23,339. Wire Tubular Bearing for Suspender ends. (*Boutonniers en Fil de Fer pour Bretelles.*)

George F. Atwood Swanton, Vt., and Jedediah D. Beeman, Moriah, N.Y., U.S., 4th February, 1886; 5 years.

Claim.—1st. A cord-loop for suspenders, having the coiled-wire tubular bearing D for the cord, substantially as specified. 2nd. A cord-loop for suspenders, having the spirally-coiled tubular bearing for the cord, and an attaching loop formed entire from a single piece of wire, substantially as specified.

No. 23,340. Suspender Buckle. (*Boucle de Bretelle.*)

George F. Atwood, London, Vt., and Jedediah D. Beeman, Moriah, N.Y., U.S., 4th February, 1886; 5 years.

Claim.—As an improved article of manufacture, the suspender-buckle herein described, consisting of a single piece of wire formed with parallel loops A, B, the loop B having its ends forming the arms C, C carried straight to the plane of the buckle and at a relatively great distance from the cross-bars E, to increase the leverage or biting-power, and the said branches having terminal teeth D, D bent rearwardly, substantially as shown and described.

No. 23,341. Steam Boiler. (*Chaudière à Vapeur.*)

William Cooke, Orr Lake, John T. Lennox and Archibald Simpson, Barrie, Ont., 4th February, 1886; 5 years.

Claim.—1st. A steam boiler, consisting of a tube-chamber, B containing a number of horizontal tubes C located above a furnace A, and communicating with a water-space a, which leads into a steam space H, substantially as and for the purpose specified. 2nd. A steam boiler, consisting of a tube-chamber B containing a number of horizontal tubes C located above a furnace A, and communicating with the water space a which leads into a steam space A, in combination with the smoke-pipes D connecting the tube-chamber B with the smoke-box E, and passing through the steam space H, substantially as and for the purpose specified.

No. 23,342. Hose Connection. (*Joint de Boyau.*)

James A. McNairn, (assignee of James Findlay,) Toronto, Ont., 4th February, 1886; 5 years.

Claim.—The combination of the contracted nut A and wire coil B, with hose C and attachment D, as and for the purpose set forth.

No. 23,343. Carpet-Cleaning Machine. (*Machine à Nettoyer les Tapis.*)

Samuel T. Joll, Cleveland, and Daniel J. C. Arnold, New London, Ohio, U.S., 4th February, 1886; 5 years.

Claim.—1st. In a carpet-cleaning machine, the eight-sided cage G consisting of the heads, having radial spokes H joined to disks J, provided with the journals, and having the slotted panels I, the eight sides containing hinged panels M and provided with the tapering shelves N, alternately arranged as shown, and the cylindrical case A provided with door B in one side, and also having opening a at the bottom for discharge of the dust, in combination with the driving shaft F having pulleys A, &c. connected by belts K to the cage, the boxes for the journals of said cage and shaft supported on the posts C, C, all constructed and operating substantially as described and for the purpose specified.

No. 23,344. Crane for Loading Cotton Bales, etc., upon Waggon, etc. (*Grue pour Charger les Ballots de Coton, etc., sur les Wagons, etc.*)

Joseph Hollingsworth, Kilbourne, and Simon Witkowski, Caladonia, La., U.S., 4th February, 1886; 5 years.

Claim.—1st. In a crane, the combination of the base beams, crossing each other and mortised together, the upright post mounted at the intersection of said base beams and having a shoulder near its lower end and a spindle at its upper end, the detachable braces and brace-rods, the detachable cap-beams mounted upon the upper end, of the upright post, a bracket mounted upon the shoulder of said post, and having an inclined brace connected detachably with the

cap-beam, a winding-drum journaled in said bracket, and suitable pulleys and tackle, all arranged and combined, substantially as and for the purpose set forth. 2nd. The combination of the base beams, crossing each other and connected detachably the attachable upright post, the inclined braces fitted in mortises in the said post and in the rear end of the base beams, and a flanged collar fitted upon the upright post over the upper ends of the said braces, substantially as and for the purpose set forth. 3rd. The combination with the base beams, etc., the upright post having a spindle at its upper end, a sleeve fitted upon said spindle and provided with lugs, brace rods pivoted between said lugs and having their lower ends connected detachably to the rear ends of the base-beams and the cap-beam journaled upon said sleeve, substantially as and for the purpose set forth. 4th. The combination, with a crane constructed substantially as herein described, and equipped with the tackle, as set forth, of a steel-yard attached to said tackle, for the purpose of ascertaining the weight of the load that is lifted and to assist as a lever in manipulating the same, substantially as and for the purpose set forth.

No. 23,345. Steam Pipe Covering.

(*Enveloppe de Tuyau de Vapeur.*)

Charles Lambkin and Charles F. Torrance, Batavia, N.Y., U.S., 4th February, 1886; 5 years.

Claim.—The combination of the mineral wool, the intended wrapper, the re-enforce paper and the non-combustible paper, secured between the inner ends of the outer wrapping and the re-enforce paper, substantially as described and for the purpose set forth.

No. 23,346. Process of Making Lactose or Milk Sugar. (*Procédé de Production de la Lactine ou Sucre de Lait.*)

The American Milk Sugar Company, (assignee of Aloah H. Sabin,) Burlington, Vt., U.S., 4th February, 1886; 5 years.

Claim.—1st. The described process of obtaining milk sugar from whey, consisting preliminarily purifying the whey by boiling or heating and then filtering it, subsequently evaporating the filtered liquid barely to dryness, and then cooling and washing the curds, crystallized sugar resulting from the evaporating operation, as and for the purposes hereinbefore set forth. 2nd. The method of removing impurities from the curd milk sugar, consisting in reducing the sugar to a coarse powder and washing the same with cold water during or subsequently to the reducing operation, as and for the purposes hereinbefore set forth. 3rd. The method of preliminarily purifying the whey by subjecting it to the action of rennet of acid and heat, and then filtering it, substantially as hereinbefore set forth. 4th. In the manufacture of milk sugars from whey, I claim subjecting the whey to the action of heated or dried air during the operation of evaporating said whey, the air being passed over or through the liquid, substantially as and for the purposes hereinbefore set forth.

No. 23,347. Crate For Picking and Shipping Fruit. (*Manne pour Cueillir et Transporter les Fruits.*)

George Wilkin and Cyrus C. Harvey, Dundee, N.Y., U.S., 4th February, 1886; 5 years.

Claim.—1st. A crate having a raised portion F on one side and a recess or groove e to receive the corresponding portion F of another crate, substantially as described. 2nd. A crate having a raised portion on one side and an opening or recess e in its opposite side, in combination with spring-actuated hooks with apertures below the springs of the hooks, for the reception of the hooks of another crate, substantially as shown and described. 3rd. A crate having a raised portion F and dovels r, r or their equivalent, in combination with a crate having a recess or opening e to receive such raised portion, whereby lateral movement is prevented, when so arranged together in the manner substantially as described. 4th. In combination with a crate having the raised portion F, and recess e underneath it, the cover H having the opening e through it, substantially as described. 5th. In a crate, the lid H having projecting pieces f, f and an opening e through it, in combination with spring-actuated hooks with apertures below the springs of the hooks for the reception of the hooks of another crate, substantially as set forth and described.

No. 23,348. Straw Cutter. (*Coupe-Paille.*)

Thomas Hendry, Seaforth, Ont., 5th February, 1886; 5 years.

Claim.—1st. In a straw cutter, the above described attachment for reversing the feed, the same consisting of the double pinion N or pair of gear wheels, cast or otherwise fastened together and sliding on shaft B, so as to engage with bevel wheel M, substantially as shown and described. 2nd. In combination with the double pinion N, the carriage or gear slipper O sliding on shaft B and having lugs or jaws R cast or otherwise formed on its outer face, substantially as shown and specified. 3rd. In combination with the double pinion N and gear slipper O, having lugs R, the bevel P and fulcrum Q, so arranged as to be self-locking, substantially as shown and specified.

No. 23,349. Water Elevator.

(*Machine d'Epuisement.*)

Abram R. Nellis, Glenn's Ferry, Idaho, U.S., 5th February, 1886; 5 years.

Claim.—1st. In a water-elevator, the frame having a current wheel mounted therein, and a deflecting wall extending up-stream and at an angle to the current, and another portion which extends up to and overhangs, the embankment of the stream, the rollers mounted the one in the upper end of the overhanging portion and the other in the frame proper, the belt, and the bucket secured thereto.