

Claim.—1st. A driving pulley A, journaled loosely on the shaft B and held between the collars C and D, in combination with the pivoted dog F actuated by the spring G, substantially as and for the purpose specified. 2nd. The driving shaft B, having a handle H fixed to it, and a driving pulley A loosely journaled on it between the collars C and D, in combination with the pivoted dog F actuated by the spring G, substantially as and for the purpose specified.

No. 18,853. Combined Hay Rake and Loader. (*Râteau et Charge-Foin Combinés.*)

William W. New, Perry, Ill., U. S., 13th March, 1884; 5 years.

Claim.—In a combined hay loader and rake, the combination of the rake having the teeth R extending forward over the head forming spring-coils S, and provided with rollers T upon their ends, with the endless apron upon whose sides the said rollers bear, substantially as and for the purpose shown and set forth.

No. 18,854. Harvester Cutter. (*Lame de Moissonneuse.*)

Harry L. Hopkins, Chicago, Ill., U. S., 13th March, 1884; 5 years.

Claim.—1st. In a harvester cutting apparatus, a block or projection attached to the cutters so as to reciprocate therewith, in combination with a cap or holder projecting over the front of the cutters and partly over said block in light contact therewith, and arranged with reference thereto to permit the block or projection to nearly leave the holder in its movement in each direction, substantially as and for the purposes set forth. 2nd. In a harvester cutting apparatus, a guard finger or fingers C having the cap extended back partly over the cutters, in combination with the cutters E and block G attached to the cutter-bar arranged to reciprocate underneath the guard cap or caps and to nearly, or quite leave the same with its movements in each direction, substantially as and for the purposes set forth. 3rd. In a harvester cutting apparatus, a guard-finger C having its cap extended back partly over the cutters and provided with recesses a somewhat deeper than the thickness of the cutter-bar, in combination with the finger-bar A, the cutter-bar D, the knives E and the blocks C, all arranged and operating substantially as and for the purposes set forth. 4th. In a harvester cutting apparatus, an open slotted guard-finger, in combination with a reciprocating scalloped cutter and a block or projection connected to the cutters and arranged to move underneath a guard-cap or caps and in light contact therewith, substantially as and for the purposes set forth.

No. 18,855. Opening and Closing Fence Gates. (*Manière d'Ouvrir et Fermer les Barrières.*)

James L. Gamble, Palmerston, Ont., 13th March, 1884; 5 years.

Claim.—1st. A gate A hinged to the post B, in combination with the spindle C, connected to the gate and actuated by the chain F, substantially as and for the purpose specified. 2nd. A spindle C, suitably supported in the arms D fixed to posts B, a rod K, connecting the spindle C to the gate A, and a pulley E fixed to the said spindle, in combination with the chain F, connected to the pulley E at one end, and to the pivoted levers G at the other, substantially as and for the purpose specified. 3rd. The spindle C journaled on the post B, and provided with mechanism by which it may be caused to revolve, in combination with the rod K, connected to the spindle C at one end, and to the spring latch P at the other, so that the revolving of the spindle shall draw the latch from its hasp, substantially as and for the purpose specified. 4th. A double bell-crank M, pivoted on the top rail of the gate A, and connected to the spring latch P by the bar O and chains N, in combination with the rod K, connected at one end to the spindle C, and having a slot b at its other end, to fit over a pin in the bell-crank M, substantially as and for the purpose specified. 5th. The spindle C, provided with a pulley E, and connected by the chains F to the pivoted levers G, in combination with the rod K, connected to the spindle C, and after passing through a slot a, in the heel post L, is connected to the spring latch P, by the bell-crank M, chain N and bar O, substantially as and for the purpose specified.

No. 18,856. Process for the Purification of Sulphuric Acid and the Recovery of the Arsenic and Antimony Contained therein. (*Procédé d'Epurar de l'Acide Sulfurique et pour faire Revenir l'Arsenic et l'Antimoine qu'il Contient.*)

George Thomson, Dillonton, Que., and William Kemp, Yarrow-on-Tyne, Eng., 13th March, 1884; 5 years.

Claim.—1st. Precipitating the impurities contained in sulphuric acid by the addition thereto of ammonium sulphide, substantially as herein set forth. 2nd. Precipitating the impurities contained in sulphuric acid, and then removing same from the acid by filtering it through lead finely divided, substantially as herein described. 3rd. The expulsion of oxides of nitrogen from sulphuric acid treated with ammonium sulphide, by concentrating same by heat, substantially as herein set forth.

No. 18,857. Manufacture of Sheet Metal Pipes. (*Fabrication des Tuyaux en Tôle.*)

John E. Reynolds, Waterford, Ont., 13th March, 1884; 5 years.

Claim.—A sheet metal plate having two or more grooves rolled parallel to each other in its surface, so as to form grooves or channels on one side, and projecting beads or ribs on the other, as specified, the said plate thus formed being rolled into a cylindrical shape, in combination with a pin or projection a, rivetted or otherwise fastened to the plate.

No. 18,858. Shaft Hanger.

(*Support d'Arbre de Couche.*)

Hilen C. Crowell, Erie, Penn., U. S., 13th March, 1884; 5 years.

Claim.—1st. In a shaft hanger, the frame A with openings cored out of the bosses A₁, A₂, having screw thread a, cast on the walls of said openings, in combination with the screws D, Dr, set screws e, and swivelled bearing blocks C, C. 2nd. In a shaft hanger, the frame A having opening, cored in the bosses A₁, A₂, with segments of screw threads a, a formed therein, adjusting screws D, Dr, placed within said openings and provided with swivelled bearings C, C, in combination with the box B B₁ having bosses b, b₁, as shown. 3rd. In a shaft hanger, the combination, with the frame A, having adjusting screws arranged above, below and at each side of the shaft and bearing blocks C, C, in contact with the screws arranged above and below, of a journal box having curved bosses b, b₁, b₂ thereon, as shown and for the purposes mentioned. 4th. A shaft hanger frame, having adjusting screw openings cored therein with segments of screw-threads on one side of said openings, and a jam screw operating to hold the adjusting screw in said openings against said thread segments, substantially as and for the purposes set forth.

No. 18,859. Combined Culvert and Seal Trap. (*Ponceau et Chausse-Trappe pour Phogues Combinés.*)

Thomas Tomlinson, Toronto, Ont., 13th March, 1884; 5 years.

Claim.—1st. A metal culvert box A, provided with a branch pipe to connect with the sewer, and a reflux valve C, as specified, in combination with a partition E, substantially as and for the purpose specified. 2nd. A culvert box A, having a detachable side piece B arranged to incline inwardly, as specified, in combination with a reflux valve C hinged to the side piece B, so as to cover the aperture b, substantially as specified. 3rd. A culvert box A, provided with a side piece D, arranged to incline inwardly, as specified, in combination with a detachable partition E, substantially as and for the purpose specified. 4th. A culvert box A, having flanges F formed on its inside and set at an angle, as specified, in combination with a detachable partition E, arranged to rest upon the flanges F and having a lip H, to fit upon the top edge of the inwardly inclined side B, substantially as and for the purpose specified. 5th. A grating J, shaped substantially as shown and having a flange c, to fit around the top edge of the culvert box A, in combination with the cap K, bolted to the top of the culvert box A, substantially as and for the purpose specified.

No. 18,860. Hoisting Machine. (*Monte-Charge.*)

William L. Beaty, Harvey L. Beaty and Oscar Beaty, Welland, Ont., 13th March, 1884; 5 years.

Claim.—1st. In a hoisting machine, in which the motion of the axle is conveyed to the rope drum by a friction clutch, a disc E having a flange e extending at right angles from its surface a short distance below its periphery, in combination with a series of wooden blocks f arranged endwise around the flange e and securely bolted to the disc, the said blocks being bevelled from the periphery of the disc E towards the outer edge of the flange e, substantially as and for the purpose specified. 2nd. In a hoisting machine, in which the motion of the axle is conveyed to the rope drum by a friction clutch, a disc E having an octagonal flange extending at right angles to its surface a short distance from its periphery, in combination with a series of wooden blocks f arranged endwise around the flange, one block for each octagonal side, the said blocks being securely bolted to the disc and bevelled off from the periphery of the disc towards the outer edge of the flange, substantially as and for the purpose specified. 3rd. In a hoisting machine, in which the drums are journaled on the driving axle, a disc or discs E keyed to the said axle and having an octagonal flange e extending outwardly from its periphery, with block of wood arranged around the disc and bolted to the octagonal sides, the said blocks being bevelled as shown, in combination with the drum C journaled on the axle A and having a conically-recessed head, to fit over the bevelled flange e, with mechanism for adjusting the drum longitudinally on its axle, substantially as and for the purpose specified. 4th. In a hoisting machine, a disc E keyed to the axle A, and having an octagonal flange e extending outwardly from its periphery, with block of wood arranged around the disc and bolted to the octagonal sides, the said blocks being bevelled, as described, to fit into the conically recessed head D of the drum C, which is journaled on the axle A, in combination with a key fitting into an elongated key-way made in the axle A at the outer end of the drum C, and actuated by a screw arranged to butt against a spindle fitting into a hole extending from the end of the axle to the key-way, substantially as and for the purpose specified. 5th. In a hoisting machine, in which the rope drum is adjustably connected to its axle by a friction clutch formed by the end of the drum being brought in contact with a disc keyed to the axle, the said adjustment of the drum being effected by a spindle and screw through a nut in the frame and acting against the end of the drum, an arm O fastened to the outer end of the screw, in combination with a rock shaft Q journaled in the frame of the machine and connected to the arm O, substantially as and for the purpose specified. 6th. In a hoisting machine, in which the rope drum is journaled on its axle and derives motion through a friction clutch adjustably connecting it to a disc keyed to the axle, a pinion a fastened to the drum and gearing with a wheel journaled on a counter-shaft, the face of the disc being conically recessed to fit over an inversely-shaped flange on a disc keyed to the counter-shaft and in combination with a pinion also fastened to the counter-shaft and gearing with a wheel keyed to the axle, the connection between the loose and tight discs on the counter-shaft being adjustable so that the rope drum may be driven or not by the gearing specified, substantially as and for the purposes specified. 7th. In a hoisting machine, in which the rope drum is adjustably connected to its shaft by a friction clutch, a counter-shaft having a pinion keyed to it, which pinion gears with a larger wheel keyed to the rope drum's axle so that the counter-shaft shall revolve at a higher speed than the axle, a gear wheel F journaled on the counter-shaft and engaging with a pinion fastened to the rope drum, in combination with a friction connection