

In a desulphurizing apparatus for desulphurizing ores, the process of drawing pulverized matter by a steam ejector through a heated coil and discharging the same into a suitable place or places. 3rd. In an apparatus for desulphurizing ores, the combination of the steam and desulphurizing apparatus in one case or shell wherein both are heated from one fire, for the purpose specified.

No. 17,594. Interlocking Bolts.

(*Boulons de sûreté.*)

Thomas J. Bush, Lexington, Ky., U.S., 5th September, 1883; 5 years.

Claim.—1st. The combination of bent bolts A and A' formed with the locking notches a and a' at a suitable distance from their lower ends, the bolts being polygonal or round in cross section, substantially as described. 2nd. The combination, with a railroad tie provided with crossing holes and apertured fish-plates F, of the cross-locked bolts A A' bent, threaded and nutted on their ends whereby the rail flanges are rigidly secured to the ties, as described. 3rd. The bent bolt A formed with the notch a and faced off at the back as shown at e', in combination with the bolt A' faced off at the back as shown at b' and formed with the notch a' and the curved face c, substantially as described. 4th. The combination with the notched and bent bolts A A' of the wedge B, substantially as described. 5th. The combination with the bent and notched bolts A A' of the plates F F', substantially as shown and described. 6th. The combination with the bent and notched bolts A A', of the plates G formed with the extensions h h', as and for the purposes set forth.

No. 17,595. Coat Rack. (*Porte-habit.*)

Beverly R. Nelles, Grimsby, Ont., 6th September, 1883; 5 years.

Claim.—1st. In a coat rack, a series of pivoted arms C and shoulder supports E pivoted thereto at their outer end, the arms separated by tubes, spools D or their equivalent device on rod B supported by brackets A, substantially as and for the purpose specified. 2nd. In a coat rack, the combination of the pivoted arms C carrying pivoted shoulder supports E, blocks D, brackets A, bolt B, all arranged and constructed substantially as and for the purpose specified.

No. 17,596. Switch Stand. (*Support d'aiguille.*)

Archer Baker, Montreal, Que., 6th September, 1883; 5 years.

Claim.—1st. In a switch-stand the casting of forging of the locking block J and the switch stand A B provided with a bottom projection K, all in one piece as described and for the purposes set forth. 2nd. The combined radius and lifting bar E suitable to any throw switch which locks handle D and secures locking bar F at one operation and the automatic arrangement thereby effected. 3rd. In combination with a switch stand the steps L L L, as described for the purpose set forth.

No. 17,597. Sand-band for Vehicle Axles.

(*Collier des essieux de voitures*)

Frank S. Rolfe, Waterbury, Vt., U. S., 10th September, 1883; 5 years.

Claim.—1st. A metallic sand guard or protector consisting essentially of a perforated plate having an internal collar or annular projection adapted to receive the inner of the axle box, substantially as shown and described. 2nd. The combination with an axle, of a metallic sand guard or protector composed of a perforated plate K having an internal collar c with an annular recess inside to receive the round part of the axle-arm and square outside to receive the square part of the axle, substantially as shown and described. 3rd. The combination with the axle A and its arm B, of the hub E, band I and perforated plate K having an internal collar c, substantially as shown and described.

No. 17,598. Process and Apparatus for the Manufacture of Syrup and Sugar. (*Procédé et appareil pour la fabrication du sirop et du sucre.*)

William F. Browne, New York, N. Y., U. S., 10th September, 1883; 5 years.

Claim.—1st. In the manufacture of syrup and sugar, the process of concentrating the saccharine liquid which consists in forcing it under pressure in an occluded condition to prevent carbonization through a conduit subjected to the heat of a furnace and into a separator or expansion chamber outside of the furnace for separating the steam and vapor from the saccharine matter. 2nd. In the manufacture of syrup and sugar, the process of concentrating the saccharine liquid which consists in forcing it under pressure from the upper or cooler portion of a conduit through and out of the hottest portion thereof into a separator or expansion chamber where the aqueous vapor is separated from the saccharine liquid or syrup for the purpose specified. 3rd. In the manufacture of syrup and sugar, the process of concentrating the saccharine liquid which consists in forcing it under pressure in a continuous stream or streams through a heated conduit or conduits from a cooler to the hottest portion thereof and discharging it into an expansion chamber for the separation of the steam from the liquid or syrup. 4th. In the manufacture of syrup and sugar, the process of concentrating the saccharine liquid and utilizing the steam eliminated therefrom which consists in forcing such liquid under pressure through a heated conduit in an occluded condition and discharging it into a closed separator or expansion chamber and conducting the steam therefrom to an engine or other places of use. 5th. In the manufacture of syrups and sugar, the process of concentrating the saccharine liquid which consists in forcing it under pressure through a heated conduit in an occluded condition and discharging it into a separator and forcing the resulting partially concentrated syrup therefrom into an evaporating device or devices where the concentration is completed. 6th. The process of evaporating a saccharine liquid which consists in passing it through a channel in a pan over a steam coil in which superheated steam moves in an opposite direction to the flowing liquid whereby the liquid is sub-

jected to a rising or increasing temperature and the heat of the steam more fully utilized. 7th. In the evaporation of a saccharine liquid, the process of automatically removing the scum therefrom which consists in causing the liquid to flow through a heated channel against and through perforated skimming devices in a continuous current whereby the scum is automatically forced from the pan. 8th. In the defecation of saccharine juice, the process of automatically removing the coagulated and other impurities therefrom which consists in causing the juice to circulate by heat from a central cylinder through a perforated section at the top thereof into the outer cylinder and back again repeatedly and thus force the impurities in the form of scum over the top of the inner cylinder into an annular gutter and thus conducting them away from the defecator. 9th. The process of manufacturing sugar which consists in subjecting the freshly expressed juice to the defecating process, filtration, evaporation and concentration in closed vessels without exposure to the air whereby oxidation and carbonization are prevented and a better product produced. 10th. In combination with the heating coils or conduits, a forcing device and an evaporating pan for receiving the heated liquid for the purpose described. 11th. The combination with the heating coils or conduits having an induction pipe entering their upper or cooler portion and an eduction pipe leading from their lower or hottest portion, of a forcing device and an evaporating pan. 12th. The heating coils or conduits, an evaporating pan and an interposed trap in combination with a suitable forcing device for forcing the liquid to be evaporated into the coils or conduits located in a furnace and on into the pan. 13th. A vacuum pan having an inclined bottom, a spiral division plate secured thereto forming a spiral channel and a steam heating coil in the channel, in combination with an induction pipe for liquid entering the upper portion of the channel. 14th. An evaporating pan having a suitable channel and heating devices in connection therewith, in combination with an inclined skimmer or skimmers and separator located in one or more of the channels for automatically skimming the liquid, substantially as described. 15th. A closed evaporating pan having a steam escape pipe in combination with a steam heating coil therein having a jet nozzle terminating in said steam escape pipe, operating as and for the purpose described. 16th. Two or more closed, evaporating pans in combination with one or more trapping devices interposed between the pans for conducting the liquid from pan to pan. 17th. In combination with evaporating apparatus, a defecating device consisting of an outer tank, an inner chamber communicating therewith at the bottom and having at the top a perforated section connecting with a room or gutter for conducting away the scum. 18th. A defecating device consisting of an outer tank and an inner open bottomed steam heated cylinder having at its top an inclined perforated rim. 19th. A defecating device consisting of an outer tank and an inner open bottomed cylinder in combination with the steam heating coils for causing circulation of the juice. 20th. The described defecating device in combination with a central tube, a screw threaded nut, a screw threaded shaft and a crow bar for raising and lowering the tank. 21st. In combination with the evaporating apparatus and the defecating devices, the interchangeable filters interposed between them. 22nd. In combination with the evaporators and heating coils, the defecating tanks, the interposed filters and a pump for drawing the juice through the filters and forcing it into the heating coil. 23rd. The portable sugar works consisting of a combination of the pressure rolls, the defecating tanks and the evaporating apparatus mounted in a suitable frame on wheels, for the purpose described. 24th. In a portable sugar works, the evaporating apparatus in combination with the pressure rolls and the necessary adjuncts thereto made of steel whereby the maximum capacity is retained, with a minimum amount of metal and lightness and durability secured and the whole mounted on wheels for the purpose specified.

No. 17,599. Revolving Screen.

(*Ecran tournant.*)

Philip Cadell, Victoria, B.C., 10th September, 1883; 5 years.

Claim.—The combination in a continuative revolving screen of corrugated wire cloth (or perforated metal H) forming the screening surface of the screen, substantially as and for the purpose set forth.

No. 17,600. Horse Tail Holder. (*Croupière.*)

Allen C. Smith, Canaan, and Van Rensselaer Powell, Troy, N. Y., U. S., 10th September, 1883; 5 years.

Claim.—1st. A horse tail holder having on its inner surface a series of tapering grooves or recesses, substantially as set forth. 2nd. A horse-tail holder having a portion of its inner surface formed with a series of tapering grooves or recesses and composed of a somewhat soft and elastic material, substantially as set forth. 3rd. A horse-tail holder composed of a curved strip a, of metal having a grooved or recessed lining b of somewhat soft and elastic material and at its ends straps furnished with a fastening device, substantially as described.

No. 17,601. Book Protector.

(*Appareil pour protéger les livres.*)

Peter N. Breton, Montreal, Que., 10th September, 1883; 5 years.

Claim.—A book protector composed of the covering boards A and B provided with perforations for the straps C C, box D, water proof cover E, cover straps a a, buttons b b and handle F, substantially as shown and specified.

No. 17,602. Buzz or Trueing-up Planer.

(*Raboteur.*)

William W. Laidlaw, Galt, Ont., 10th September, 1883; 5 years.

Claim.—1st. In a buzz or trueing-up planer, a table divided at a point immediately over and parallel with the cylinder and having one or both of its parts pivoted or hinged on the frame of the machine so that it can be tilted for the purpose of exposing the cylinder. 2nd. In a buzz or trueing-up planer, a divided table hinge I as specified, in combination with a locking device for holding the table in a horizontal position, substantially as specified.