No. 21,458. Mordanting and Dyeing Goods.

(Application du Mordant et Mode de Teinture des Marchandises.)

Rudolph Silberberg, Jersey, N.Y., U.S., 20th April, 1885; 5 years.

Claim.—1st. The improved chromum product, hereinbefore described, consituting an oxalate of chromium and resulting from the combination of oxalic acid and chromium, substantially as set forth. 2nd. The within-described mode of making oxalate of chromium, the same consisting in adding to a solution of bichromate of potash water and nitric acid a solution of oxalic acid in water and glycerine, and then boiling the solutions and drawing off the clear liquor, substantially as described. 3rd. The within-described mode of dyeing fabrics containing cotton with analine dyes, the same consisting in first impregnating the fibre with chrome oxide, and in then subjecting the prepared fibre to the action of the analine dye, substantially as set forth. 4th. A mordant for preparing fabrics for dyeing with analine dyes, consisting of a mixture of a solution of oxalate of chromium and a solution of caustic soda, substantially as described.

No. 21,459. Corner Stays for Trunks, etc.

(Cornière pour Coffres, etc.)

Pardon T. Perkins, Oswego, N.Y., U.S., 20th April, 1885; 5 years.

Claim.—1st. The within-described corner stay for boxes, trunks and analagous articles, consisting of an angular plate adapted to embrace the corner of said articles, and provided with tongues or projections adapted to engage with grooves or indentations in the two adjacent sides of the article, said plate adapted to be secured in position by rivets, screws, or other suitable means, substantially as set forth. 2nd. A corner stay for boxes, trunks and analogous articles, consisting of an angular metallic plate corresponding to the corner of the box, and provided on its inner sides with tongues for engaging with grooves in the sides of the box, and having at its base a web resting against the under side of the box, and fastening devices for securing said plate in position, substantially as shown and described. 3rd. The combination of a box or analogous article, provided near its corners with vertical grooves *a*, *a*, the angular plate A provided with the web *p* and tongues *c*, *c*, the angular plate B provided with the web *d* and rivets or other suitable fastening devices for securing said plates respectively to exterior and interior corners of the article, substantially as described and shown.

No. 21,460. Cork Screw. *(Tire-Bouchon.)*

Thomas Curley, Troy, N.Y., U.S., 20th April, 1885; 5 years.

Claim.—A cork screw shank, having a suitable screw and handle, and provided with a projecting stop P, in combination with cup C having a sleeve G adapted to loosely fit said shank, and provided with one or more slots or grooves *a*, *a*1 adapted to receive said stop, substantially as described and for the purposes set forth.

No. 21,461. Dry Earth Closet.

(Fosse d'Aisance à la Terre Sèche.)

Robert P. Kennedy and Matthew Kennedy, Owen Sound, Ont., 20th April, 1885; 5 years.

Claim.—1st. The direct mode of moving backward, and retaining the hopper mouth E, by the seat C through the medium of a roller A, substantially as hereinbefore set forth. 2nd. The direct mode of thrusting forward the hopper mouth E, by applying weight D D, with or without rods F, F, to the upper end of the hopper B, substantially as hereinbefore set forth.

No. 21,462. Process and Apparatus for the Production of Sulphurous Acid Solutions and Salts. *(Procédé et Appareil pour la Production des Solutions et Sels d'Acide Sulfureux.)*

Eugene B. Ritter and Charles Killner, Podgora, Austria, 20th April, 1885; 5 years.

Claim.—1st. The process of purifying sulphurous acid gases of sublimed sulphur arsenic, dust, etc., held in suspension, and of freeing the same from sulphuric acid, by means of a filter composed of layers of material not effected by sulphuric acid, alternated with layers of lime stones, arranged substantially as described. 2nd. The process of regaining the sulphurous acid blown off with the steam from paper pulp digesters, by cooling and condensing the steam, whereby the sulphurous acid is absorbed, and then bringing the solution in contact with the carbonates, of the bases from which sulphite is to be formed, whereby the solution is restored to its original chemical composition, as set forth. 3rd. An absorption apparatus for the production of sulphite solutions containing the bases, such as lime, stone, dolemite or magnesite, in the form of blocks, substantially as described. 4th. In an apparatus for the production of sulphurous acid solution, the combination of a closed tank or box, having a grating above its bottom, with a gas pipe leading into said tank or box below the grating, and erminating in a perforated distributer, a water pipe opening into said tank or box above the grating leading from the tank to a source of supply, and a gas pump connected to a gas pipe leading from the top of the tank or box, substantially as described. 5th. In an apparatus for the production of sulphurous acid solution, the combination of a tank having a grating, with a gas pipe leading into said tank below the grating, said pipe being first lead up above the level of the top of the tank, and then downwardly to near the bottom, where it enters the same, and a water pipe opening into said tank above the top of said grating, substantially as described. 6th. In an apparatus for the production of compounds of sulphurous acid and an alkaline base, the combination of a series of tanks having gas conveying pipes leading into the first tank of the series near its bottom, a pipe leading from the top of one tank to the bottom of the next in series, and pipes arranged in the same manner connecting all the tanks successively with a gas pipe interposed at a suitable point in the gas conveying pipe, and water pipes adapted to supply water to the several tanks in succession, substantially as described. 7th. In an apparatus for the production of sulphurous acid solutions or salts, the combination of the tanks I, I I, I I I, IV, having coiled gas pipes F1, F2, F3, F4, and gratings E1, E2, E3, E4, with the gas pump G, gas pipes 1, 2, 3, 4, connecting said tank and gas pump, and the water pipes *g*, *h*, *i*, *k*, all constructed and arranged substantially as and for the purpose described. 8th. The process of producing sulphurous acid solutions and salts, consisting in generating the sulphurous acid gas in a suitable apparatus, purifying and cooling the gas, leading it to a tank filled with constantly changing water, which flows through the tank in opposite direction to the direction of the gas, through an alkaline base in the tank, and finally leading the solution from the tank to a suitable receptacle, while the the waste products of the gas escape into the open air, substantially as set forth.

No. 21,463. Hot Water Boiler.

(Chaudière à Eau Chaude.)

George Bolton, Peterborough, Ont., 20th April, 1885; 5 years.

Claim.—1st. A boiler, made square or oblong in horizontal plan, and provided with the vertical riser tubes E, and the horizontal tubes F and G connecting the tubular base or fire-pot A with the boiler-head D, as shown and described. 2nd. The six-sided boiler-head D, cast in one piece, and having the internal stays *a*, *a* cast with it, and connected with the base A by the riser tubes B, as shown and specified. 3rd. The tubular base or fire-pot A, cast in one piece, and formed so as to serve for two or more fire grates, substantially as shown in Figs. 3 and 4. 4th. The combination, with the above-described boiler, of the grate bars *c*, *c*, of the boiler furnace journalled in a grate bed M cast in a single piece, so as to be removable bodily from the furnace, all as herein shown and described and for the purpose set forth.

No. 21,464. Wind Engine. *(Moulin à Vent.)*

Peter D. Graham, Corunna, Ind., U.S., 20th April, 1885; 5 years.

Claim.—1st. In a windmill, the frame A provided at its top with a fixed standard, forming exteriorally a bearing for the wheel-hub, and interiorally a bearing for the main shaft. 2nd. In a windmill, the combination, substantially as before set forth, of the standard, provided at its top with an exterior bearing, the hub mounted to rotate on said bearing, and the main shaft secured to and supported by said hub and adapted to rotate in bearings arranged below its support. 3rd. The combination of the standard, the spider journalled thereon, the cranks journalled in the arms of the spider, the connecting-rods secured at one end to the cranks and at the other end to levers pivoted to the spider, and means, substantially such as described, for operating said levers to control the position of the cranks. 4th. The combination, substantially as before set forth, of the standard having the holes, the spider, the cranks, a sleeve mounted to slide upon the standard, the rack-bars, links connecting the sleeve with the rack-bars, mechanism for connecting the rack-bars with the cranks and means for elevating the sleeve. 5th. The combination, substantially as before set forth, of the grooved standard having the holes, the spider, the cranks, a sleeve mounted to slide upon the standard, the rack-bars links connecting the sleeve with the rack-bars, mechanism for connecting the rack-bars with the cranks and means for elevating the sleeve. 6th. The combination, substantially as before set forth, of the standard, the sleeve mounted to slide on the standard, a lever for elevating the sleeve, the spring-bar, and means for connecting the lever with the spring-bar. 7th. In a windmill, the combination, substantially as before set forth, of the upper bearing for the main shaft, the hub-bearing arranged concentric therewith, and the hub provided with a single oiling aperture to supply lubricant to both of said bearings. 8th. In a horizontal windmill, the combination of the flanged hub, the radial arms removably secured thereto, the cranks having their upper bearings in the outer ends of said arms, and mechanism secured to the under side of said flange, and arms for controlling the position of the cranks, substantially as before set forth. 9th. In a vane for windmills, the combination, substantially as before set forth, of the frame provided at one end with a socket-iron having lateral extensions, and the tie wires secured at one end to said extensions and at the other end to the opposite end of the frame. 10th. The combination, substantially as before set forth, of the shaft I provided at its lower bearing with a bevel pinion, the hanger swivelingly connected to the lower bearing of said shaft, and provided with the set screw and the horizontal shaft having a bevel pinion journalled in the hanger and provided with a crank and pulley, or equivalent mechanism, by which power may be transmitted.

No. 21,465. Rail Clearer for Snow Ploughs.

(Gratte-Rail pour Charrues à Neige.)

Augustus F. Priest, Fort William, Ont., 20th April, 1885; 5 years.

Claim.—1st. A rail clearer for snow-ploughs, comprising a plate K supported above and across the rail C by a vertically movable frame fitted to slide in ways fixed to the snow-plough, and said plate K fitted to the frame, so as to have independent lateral play across the rail, and means for raising and lowering the frame and plate, substantially as herein set forth. 2nd. A rail clearer for snow ploughs, comprising a plate K, the lower edge of which is formed at *k*4 to stand across the head of the rail C, and at *k*1, *k*2 to stand inside and below the top of the rail, and said plate K, being supported by a vertically movable frame fitted to slide in ways fixed to the snow plough, and said plate being supported so as to have independent lateral play across the rail, and means for raising and lowering the frame and plate, substantially as herein set forth. 3rd. A rail clearer for snow ploughs, comprising a plate K slotted as at *k*, and shaped at its lower edge at K1, K2, K4, substantially as specified, a frame D fitted to slide in ways E, E fixed to the mould-board A, and the hangers *h*, *h*1 held to frame D and passed through the slots *k* of plate K, in combi-