

higher resistance, for shunting the main current through said feed operating magnet, substantially as described. 6th. The combination, with the electro-magnets N1 arranged in a shunt circuit for operating the pencil feed, and the electro-magnet N of higher resistance arranged in a derived circuit, of the levers M and M1 carrying armatures for such magnets respectively, a circuit breaking or shunting device operated by the first named lever to direct the main current over the coil of magnet N1, and means for restoring said shunting device to its normal condition by the action of the lever M1, substantially as described.

No. 18,648. Heating Furnace. (*Calorifère.*)

George R. Scates and William B. Melvin, Knoxville, Tenn., U. S., 8th February, 1884: 5 years.

Claim.—1st. In a furnace, the combination, with the water-heater arranged in the fire compartment, and the spoke drums having interior water cylinders, of the cold water pipe extending into the cylinder in one of said drums, and conveying the water from thence into one end of the heater, and the hot water pipe conveying the heated water from the heater to the cylinder in the other drum and from thence to its destination, as set forth. 2nd. In a furnace, the combination of the heater having a water heater arranged in its fire compartment, two smoke-drums in rear thereof having interior water cylinders, the cross-pipe connecting the drums at their bottom and having an upwardly-extending smoke-flue, the pipes or smoke-flues extending from the fire compartment to the drums, the smoke-flue extending direct from the fire compartment to the upwardly-extending final exit smoke-flue and having a deflecting damper, the cold water pipe and the hot water pipe, both leading from different ends of the water heater to the interior cylinders of the smoke-drums and also from said cylinders, as set forth.

No. 18,649. Stave Cutting Machine.

(*Machine à Tailler les Douelles.*)

Franz Witzmann and George D. Lambert, New Haven, Ct., U. S., 8th February, 1884: 5 years.

Claim.—1st. In a stave-cutting machine, the cross-head carrying a transverse curved cutter and a spring in rear of said cutter, to retain the last cut stave against the rear face of the knife while the next stave is being cut, as set forth. 2nd. The combination, with the cross-head having the removable blocks projecting from its front and formed with curved front edges, of the removable curved knife resting on the latter, and the adjustable spring secured to the cross-head and projecting up back of the knife, as set forth. 3rd. The combination, with the cross-head having the brackets projecting from the top of the curved-face front removable blocks, and the curved transverse knife secured to the latter and provided with screw-threaded shanks working up in said brackets, as set forth. 4th. The combination of the frame carrying the driving shaft, crank-wheels and pitmen, the longitudinally adjustable table, the rock arms journaled on a transverse shaft in rear of the table and provided with longitudinal slots, the cross-head adjustable by means of screws in these slots and carrying front blocks, and the knife secured to the latter, as set forth. 5th. The combination, with the cross-head having the front blocks and curved knife arranged thereon and with the table having a curved slot in rear of the knife base-block, of the adjustable curved guide arm arranged on the cross-head and extending down through the slot, as set forth. 6th. The combination of the base-bed having the inclined upwardly-projecting guides and front perforation, the upper bed having corresponding downwardly-projecting guides and front slot in which vertically slides a nut and the hand-screw for operating the beds, as set forth.

No. 18,650. Cinder-Sifting Machine.

(*Machine pour Cribler les Cendres.*)

Richard Ough (assignee of Louis Wisner), Toronto, Ont., 8th February, 1884: 5 years.

Claim.—1st. In a cinder-sifting machine constructed with an inclined and tapering cylinder, circular or otherwise, largest at the lower end and covered with wire-work, the combination of a lever handle for operating and giving to the cylinder a vibratory movement, as specified and described. 2nd. In combination with the cylinder B, the casing A, hopper G, delivery spout A, door I and hook J, the whole constructed and arranged as described, and operating substantially as and for the purposes set forth. 3rd. In combination with the cylinder B and casing A, the flanged ring L and hooks I, as and for the purposes set forth.

No. 18,651. Ornamenting Paper Hangings.

(*Ornementation des Tentures en Papier.*)

John B. Knoefflin, Lucien Baer, David Kraemer and Louis Beckhardt, New York, N. Y., U. S., 8th February, 1884: 5 years.

Claim.—As an improved article of manufacture, a fabric such as paper possessing the characteristic hereinbefore set forth, that is to say, one side of the paper having an attached covering or layer of flock such as powdered wool, and the outer surface of such covering or layer of flock having attached thereto disintegrated mica-seals or similar powdered mineral substance, substantially as described.

No. 18,652. Railway Velocipede.

(*Velocipède à Voie de fer.*)

Francis W. Randall, Tekowsha, and Horace G. Haines, Kalamazoo, Mich., U. S., 8th February, 1884: 5 years.

Claim.—1st. In a three-wheel velocipede, the revolvable axle having the central pinion, a drive-wheel secured at each end of said axle and means for co-acting with said pinion to propel the device, in combination with a brace-wheel located in the rear of one of said drive-wheels, all substantially as set forth. 2nd. A velocipede having two drive-wheels rigidly secured to a revolvable axle, and a brace-wheel located on a line with one of said drive-wheels and at right

angles to said axle, substantially as set forth. 3rd. The combination, with the frame, of a seat consisting of the base-board and the double seat revolvably pivoted thereon, substantially as set forth. 4th. The combination, with a revolvable axle provided with a drive-wheel at each end and having a central pinion of the gear having the side extension, and the brake device having a shoe adapted to engage the periphery of said extension, all substantially as described. 5th. The frame consisting of the two side bars and the forward truss and bridge constructed and arranged, substantially as set forth. 6th. In a velocipede, the side bars jointedly connected with the forward bar and detachably connected at the rear, whereby they may be swung around parallel with the axle closing the device, substantially as set forth. 7th. In a combined hand and foot treadle, the hand-lever and a foot-treadle pivoted together, said hand-lever being connected by a rod to the gear-crank and the rear end of the foot treadle suspended by a rod to the seat-board, substantially as set forth.

No. 18,653. Self-Levelling Berth.

(*Lit de bord Suspendu.*)

Albion P. Bickmore and Edward B. Pendleton, Hyde Park, Mass., U. S., 8th February, 1884: 5 years.

Claim.—1st. The combination, with a fixed bracket and a universally-jointed support carried thereby, of a suspended frame carrying an upper and lower berth, said bracket being between the said upper and lower berths, substantially as described. 2nd. A supporting frame having upwardly and downwardly projecting arms, a berth pivoted upon the upper arms, and a second berth pivoted upon the lower arms, and a bracket intermediate between said berths fixed to the frame suitable support, and suitable flexible connections between the frame carrying the arms and said bracket, substantially as described. 3rd. The combination, with the cases or sockets containing the connected spherical segments and the ball bearings, of the frame attached to the lower socket and composed of upwardly elevated arms 5, 6, supporting a swinging upper berth, and downwardly projecting arms 7, 8, supporting a similar lower berth.

No. 18,654. Manufacture of Paper Pulp.

(*Fabrication de la Pâte à Papier.*)

David O. Francke, Korudal Måludal, Sweden, 8th February, 1884: Re-issue of Patent No. 13,695.

Claim.—1st. The herein described solution composed of sulphites of lime or other alkalis in water, along with an excess of sulphurous acid, substantially as herein specified. 2nd. The process of manufacturing paper pulp from wood and analogous vegetable fibre, by subjecting the material in a finely divided state to the action of acid calcium sulphide under heat and pressure, without previous treatment. 3rd. As a new article of commerce, paper pulp made by the action under heat and pressure of acid calcium sulphite on wood, wheat, maize or other straw, or other suitable vegetable fibre, as herein described.

No. 18,655. Electric Current Regulator.

(*Régulateur de Courant Electrique.*)

Elihu Thomson, Lynn, Mass., U. S., 13th February, 1884: 5 years.

Claim.—1st. The combination, in a current regulator, of a single commutator cylinder, two pairs of oppositely and differentially moving brushes and an operating electro-magnet, substantially as and for the purpose described. 2nd. The combination, in a current regulator, of the armature lever A, separate pairs of commutator brushes connected to said lever at different points, and a revolving commutator upon which said brushes bear. 3rd. The combination of a separate set of ture lever A, rocker arms T, 2, each carrying a separate commutator brushes, a commutator cylinder K1, K2, K3, and connecting link l attached to the armature lever and to the rocker arms at opposite sides of their fulcrums, so as to move them in opposite directions. 4th. The combination, with the positive and negative collecting brushes for a dynamo-electric machine, of means for increasing their collecting extent simultaneously with their forward adjustment. 5th. The combination, with a compound positive or negative collecting brush for the commutator of a dynamo-electric machine, of means for increasing the collecting extent of said brush rearwardly simultaneously with a forward movement of the forward portion thereof, substantially as and for the purpose described. 6th. In a compound commutator collecting brush, the combination, with a forward adjustable spring, of an auxiliary rear spring and means for moving the latter backward, simultaneously with the forward movement of the former. 7th. In an automatic current regulating apparatus, the combination of a derived circuit around the working resistances, a regulator magnet coil in said derived circuit, and mechanism operated thereby for adjusting the position of the commutator brushes of the machine supplying current to the working resistances.

No. 18,656. Tag. (*Etiquette.*)

Edward W. Thompson, Lowell, Mass., U. S., 13th February, 1884: 5 years.

Claim.—1st. The combination of a tag provided with a longitudinal slot, and one or more spring hooks or jaws attached to said tag and projecting across said slot, as and for the purpose specified. 2nd. The combination of a tag provided with a longitudinal slot and one or more transverse slots leading into said first named slot, and one or more spring hooks or jaws attached to said tag and projecting into the transverse slots and across the first named slot, as and for the purpose specified. 3rd. The combination of the tag slotted longitudinally and transversely, and one or more spring hooks secured to said tag wholly within the surface of the same, and reaching into the transverse slots and through the longitudinal slot of said tag, as and for the purpose specified. 4th. The combination of a tag slotted longitudinally and transversely and provided with longitudinal grooves, and one or more spring hooks or jaws let into said grooves below the surface of a tag, as and for the purpose specified. 5th. The combination of a tag slotted longitudinally and transversely and provided with transverse