spiral or compound curve, in combination with the planing irons adjustably secured to the straight walls, so that the cutting edge may be adjusted forward as well as outward, as set forth. 8th. In a saw, the blade having throats or openings formed therein, in combination with the planing irons adjustably attached to one of the walls of the throats or openings, so that their cutting edge may be set further out as desired, as set forth.

No. 20,875. Mariner's Compass.

(Boussole Marine.)

James Scotland and Francois Cordon, Island of St. Pierre, 13th January, 1885; 5 years.

Claim.—1st. The combination of a mariner's compass bowl and its needle or cord, with a stud extending up from such needle or cord, and with a revoluble furcated arm pivoted to the glass cover of the bowl of the compass, and having such studs between its prongs, the said revoluble arm and the pivot of the needle or card having or being to have, connected with them an electric circuit provided with a galvanic battery or generator of electricity, and an apparatus for sounding or giving an alarm when the circuit may be closed by the stud being carried into contact with the revoluble arm of one of the prongs or springs thereof, all being to operate substantially and for the purpose as set forth. 2nd. The combination of a mariner's compass bowl and its needle or card, with a revoluble furcated arm arranged within the bowl, and pivoted to its glass cover, a stud extending up from the compass card or needle, and between the prongs of the arms a cup of mercury and a wire or wires extending into the latter from the magnetic needle or cards, all being substantially and to operate for the purpose described, with an electrical circuit, its galvanic battery and an alarm applied to such circuit. 3rd. The combination of a mariner's compass, having a revoluble furcated and metallic arm pivoted to its bowl, and also having a metallic stud extending up from the needle or magnet of the card, and between the prongs of such arm, with an electric circuit and its battery or generator of electricity, and with an alarm apparatus connected with such circuit, to operate, to sound or give an alarm on the circuit being closed by connect of the stud with the arm, all being substantially and for the purpose as set forth.

No. 20,876. Skate. *(Patin.)*

Henry A. Wilbur, West Somerville, and Frank W. Lowe, Boston, Mass., U.S., 13th January, 1885; 5 years.

Claim.—1st. The combination of the sole-clamp plates B, B, provided with the headed tongs *b*, *b*, the sliding plate C having the radial slots *c*, *c*, and turned down edges *c*, *c*, and the slotted plate D having the recesses *d*, *d*, the plates C and D being arranged underneath the clamp-plates B, B, as and for the purpose set forth. 2nd. The sliding plate C having the ratcheted slot E, in combination with the adjusting plate F provided with ears *f* and pin *f*1 and the lever G, as and for the purpose specified. 3rd. The combination of the sliding plate C having the radial slots *c*, *c*, the ratcheted slot E and the turned edges *c*, *c*, the slotted plate D provided with the recesses *d*, *d*, the sole clamp-plates B, B, the adjusting plate F and lever G, all arranged for joint action substantially as specified.

No. 20,877. Apparatus for the Extraction of Gold, &c., from Ores, &c. *(Appareil pour l'Extraction de l'Or, &c., des Minerais, &c.)*

Henry R. Cassel, New York, N.Y., U.S., 14th January, 1885; 5 years.

Claim.—1st. The apparatus for electrolyzing a solution capable of generating chlorine for the purpose of treating metals, ores and especially auriferous compounds, which consists in a revolving drum containing carbon rods forming the positive pole, and its periphery being composed of asbestos, cloth or other filtering material, such drum being entirely submerged in the solution contained in the vat in which the negative pole is also placed, and supported either upon brackets or suspended in such vat from above, suitable means being provided to keep the drum in motion, all substantially as set forth. 2nd. The use in the apparatus for the treatment of refractory auriferous compounds, described in the preceding claim, of lime or other suitable alkaline, earth or other chemical compound or element, for the purpose of neutralizing acids generated by secondary action, but which will not precipitate gold, or the use of a solution which will itself under electrolytical decomposition yield such a base, substantially for the purpose specified. 3rd In the apparatus described, the means for rotating the drum and also for conveying the current from any suitable source of electricity to the anode contained in such drum while the latter is rotating, such means consisting in a shaft provided with suitable means of rotation and passing through a stuffing box in the side of the vat, the end within such vat being capable of being connected to and disconnected from the shaft of the drum, and both shafts being provided with terminals and leads so arranged as to complete the circuit, substantially in the manner described.

No. 20,878. Improvements in Boots and Shoes. *(Perfectionnements aux Chaussures.)*

Alexander J. Renaud, Montreal, Que., 15th January, 1885; 5 years.

Reclame.—La combinaison, avec une chaussure lacée, de la patte B et des boutons F, tel que decrit et pour les fins indiquees.

No. 20,879. Composition of Matter to be used in the Making of Mortar, for Building Purposes, Laying Pavements, &c. *(Composition de Matières pour être employée dans la Fabrication du Mortier pour des fins de Construction, Pavage, &c.)*

Duncan McLean, Wallacetown, Ont., 15th January, 1885; 5 years.

Claim.—A compound composed of the ordinary plasters or cements used for building purposes, or for laying pavements and common salt, substantially in the proportions and for the purposes set forth.

No. 20,880. Electrical Conductor.

(Conducteur Electrique.)

Henry F. Campbell, Concord, N. H., U. S., 15th January, 1885; 5 years.

Claim.—1st. An electric conductor provided with a covering of insulating material, and having an enclosing anti-inductive envelope composed of paramagnetic and diamagnetic substances upon the said covering, the said shield having terminals connected with the ground, substantially as described. 2nd. The combination, with an electrical conductor having an anti-inductive shield or envelope composed of paramagnetic and diamagnetic elements, as described, of terminals reflexed or bent backward along the trend of the wire, the shield thus being interposed between the operative wire and the terminals, substantially as described. 3rd. The combination, with an electrical conductor having a shield or envelope, of a grounded terminal to the said envelope, and a similar shield or envelope inclosing the said terminal, substantially as described. 4th. An electrical conductor having a covering of insulating material and an anti-inductive shield thereon, composed of paramagnetic and diamagnetic substances, the said conductor with its insulating covering and shield being flexible, substantially as described. 5th. An electrical conductor and insulating covering therefor, combined with an anti-inductive shield composed of paramagnetic and diamagnetic substances in themselves, good conductors of electricity, substantially as described. 6th. An insulated electrical conductor, provided with an inclosing anti-inductive shield composed of paramagnetic and diamagnetic substances, the amount of the former being in excess of the amount of the latter, substantially as described. 7th. The combination, with an electrical conductor having an anti-induction shield, of terminals reflexed or bent back, substantially as described. 8th. An electrical conductor having a flexible insulating covering, combined with an anti-inductive shield composed of a strip or band of paramagnetic and diamagnetic substances wrapped spirally around the said insulating covering, substantially as described. 9th. An electrical conductor having a flexible covering of insulating material, combined with an anti-induction shield composed of iron coated with zinc, tin, or other diamagnetic metal, substantially as described. 10th. The combination, with an insulated electrical conductor, of an anti-inductive shield composed of two or more paramagnetic substances compounded together, substantially as described. 11th. An electrical conductor composed of an insulated wire covered with a flattened soft or annealed strip, of paramagnetic material wrapped about it with the edges of the strip in intimate contact to form a practically continuous shield, or a shield without gaps or spaces, substantially as described. 12th. An electrical conductor composed of an insulated wire covered with a flattened strip, of paramagnetic material suitably annealed and wound spirally about the insulated wire, the edges of the strip, coming intimately in contact or overlapping to avoid spaces between adjacent edges of the said strip, substantially as described. 13th. An electric conductor having a covering of insulating material, combined with an anti-inductive shield composed of paramagnetic material and forming a portion of a complete electric circuit, substantially as described. 14th. The combination, with an insulated electrical conductor, of an anti-inductive shield composed of two or more paramagnetic substances compounded together, as set forth, the said shield forming a portion of a complete electric circuit, substantially as described. 15th. In a cable, a series of independent insulated conductors, each provided with an anti-inductive shield, as described, the said shields forming a portion of a metallic circuit, substantially as described. 16th. A cable composed of a series of independent insulated conductors, each provided with an anti-inductive shield, as described, a portion of the said shields being insulated from the remainder in the body of the cable, but electrically connected at the ends thereof, each shield thereby forming a portion of a complete electric system within the cable and independent of the insulated conductors inclosed in the shields, substantially as described.

No. 20,881, Coal Handling Machine.

(Appareil pour Transporter le Charbon.)

John R. Bailey and Thomas T. Hyde, Toronto, Ont., 15th January, 1885; 5 years.

Claim.—1st. In a coal elevating and dumping machine, constructed with a single or double tramway, provided with a car or cars to run thereon, for conveying the coal from the dumping bucket to the bins, the combination of a screen constructed in the form of an inverted V, with one upper hopper and two under hoppers connected therewith, the upper hopper placed directly below the elevated bucker and above the screw, into which upper hopper the coal is dumped, and passes down each side of the sloping screen into the lower under hopper, constructed with solding doors and operated by the mechanism described for this purpose, substantially as specified and shown. 2nd. In a coal elevating and dumping machine, constructed as described, the combination of a screen S located below the upper screw G to receive the small coal and dust which pass through the upper screen, as also the coal that may be scattered in dumping from the bucket, this grading screen is constructed with two separate sieves, one sieve S1 through which the dust passes, the other sieve S2 admits pea-coal to pass through, the larger pieces pass over the screen as nut coal, substantially as described. 3rd. A spout N, connecting the screw S with the hopper I and hopper H, for the purposes set forth. 4th. The mechanism for operating the doors *k*, *k* of the hopper J comprising the handle *a*, elbow *b*, links *d*, *d*1, as shown and described.

No. 20,882. Apparatus for Carburetting Air.

(Appareil pour Carburer l'Air,)

William F, Burrows, Boston, Mass., U. S., 15th January, 1885; 5 years.

Claim.—1st. The combination, with the water and air induction