

No. 12,888. Improvements in Dynamo-electric Machines. (*Perfectionnements aux appareils électro-dynamiques.*)

Hans J. Müller, New York, U. S., 31st May, 1881; for 5 years.

Claim.—1st. In combination with two or more commutators, and a series of field magnets, a series of armature coils, which are divided into groups, the coils of each group being connected with each other, and with a separate commutator for the purpose of producing several independent and separate external currents at the same time. 2nd. The combination, with commutators and series of field magnets, of an armature wheel having two or more different series of coils, the coils J_1 of one series having larger iron cores than those of the rest, and being wound with a less length of wire, and such larger cores being connected with a commutator and the magnets, and the other series of coils wound with a greater length of wire, which leads to the outer commutators, the current from the coils having the larger iron cores being used to excite the magnets, and the current from the others exclusively to do work in the external circuit. 3rd. The combination, with a commutator and a series of field magnets concentrically arranged, of an armature wheel having a series of coils, the width of whose cheeks exceeds by about one-eighth the distance between such magnets, so that they will overlap the latter, as shown, for the purpose of preventing sparks at the commutator. 4th. In a group of coils of the armature of a dynamo electric machine, the combination, with one or more coils J_2 or J_3 , of a coil J_1 having a larger iron core than the other coils, for the purpose of producing more magnetism for exciting the field magnets in these coils J_1 than in the rest. 5th. In the armature of a dynamo-electric machine, the combination of a series of coils, in number equal to a multiple of the number of field magnets of coils which have a larger iron core than the rest of the coils, and are equal in number to the number of field magnets in the machine and for the purpose of exciting the field magnets of the machine with a number of coils not greater than the number of field magnets, so that the other coils can be used independently for work in the external circuit. 6th. The combination of the negative wire with a relay and a resistance, for the purpose of conducting the secondary current through the field magnets in the same direction as the main current and to regulate the permanent charge of the machine. 7th. The rotating armature wheel having open sides and a series of broad spokes arranged radially and severally parallel to its axis, and the broad periphery having opening i between the spokes. 8th. The combination, with the field magnets and two or more commutators, of a series of armature coils formed of wires of different sizes, each one being connected with a separate commutator, whereby several currents of different intensity for external work are generated by the same machine. 9th. The combination, with the field magnets, of an armature wheel, having its coils J_1 J_2 J_3 placed in an inclined position to the radii of said wheel. 10th. The combination, with two or more internal circuits, of two or more switching devices, whereby any desired current can be used for work in the internal and external circuits, whereas the other currents perform work in the external circuits only. 11th. The combination, with two or more internal circuits, and two or more external circuits, of two or more switching devices, whereby any desired current can be switched off altogether, so as not to perform any labour in the internal nor external circuits, thus permitting the machine to be operated with decreased power. 12th. The combination, with two or more internal circuits and two or more external circuits, of two or more switching devices for connecting the armature circuits and magnet circuits, and two or more switching devices for connecting the armature circuits and the external circuits, whereby the current of any desired group of armature coils can be used to charge the magnets only, whereas the other currents are used for work in the external circuits only.

No. 12,889. Improvements on Mining Rifles Stream-Works. (*Perfectionnements aux lavoirs des mines.*)

William H. Howland, Oakland, Cal., U. S., 31st May, 1881; for 5 years.

Claim.—1st. A mining riffle composed of roof shaped gridiron sections placed in contact with each other on the bottom of the sluice. 2nd. A mining riffle composed of roof-shaped sections A , each of which is provided with parallel longitudinal slots b and intermediate grooved bars c on each side of the apex. 3rd. The riffle sections A having the alternate longitudinal slots b and intermediate grooved bars c and having the partition f said riffle sections being provided with the transverse quick-silver troughs e . 4th. A mining riffle composed of a number of roof-shaped gridiron sections A placed in longitudinal rows on the bottom of the sluice or flume, so as to be in contact with each other, the sections in adjoining rows overlapping each other.

No. 12,890. Improvements on Harvesting Machines. (*Perfectionnements aux moissonneuses.*)

David Maxwell, Paris, Ont., 31st May, 1881; for 15 years.

Claim.—1st. A rake arm for harvesting machines cored throughout its entire length and cast in one piece. 2nd. A rake arm cast in one piece cored throughout its entire length and provided with an offset. 3rd. A rake arm cored throughout its entire length and cast in one piece, in combination with a rolling head rake. 4th. A rake arm cast in one piece, cored throughout its entire length and provided with an offset, in combination with a rolling head rake. 5th. A rake head constructed in two sections, each one of which is independently adjustable on the rake. 6th. In harvesting machine rakes, the combination, with the crown wheel provided with one or more projections, of a vertical post K or its equivalent provided with an offset. 7th. The combination of the crown wheel β provided with the projections B_1 , the vertical post K , having an over hanging arm or offset, the crank K_3 , rod K_4 and counter balanced latch L with the gate J .

No. 12,891. Improvements on Grinding Mills. (*Perfectionnements aux moulins à moudre.*)

William D. Gray, Milwaukee, Wis., U. S., 31st May, 1881; for 5 years.

Claim.—1st. In a roller grinding mill, the combination of a driving belt and the counter-shaft provided with a driving pulley, around which the belt passes, whereby an adjustment, of the counter-shaft is caused to tighten its

driving belt. 2nd. The roller driving pulleys located at the top and the counter-shaft pulley at the bottom, in combination with the single driving belt passed beneath the counter-shaft pulley and thence upward and outward over the roller pulleys. 3rd. The combination of the counter-shaft provided with pulleys at its two ends and the rolls independently driven from pulleys upon opposite ends of the counter shaft. 4th. A counter-shaft mounted in the base and connected by belts with each and all the rolls separately, whereby a uniformity of motion is secured, and all the belts are tightened at once. 5th. A counter-shaft connected at its two ends by belts with rolls, in combination with independently and vertically adjustable supports connected by transverse pivots with the boxes sustaining the ends of the counter-shaft. 6th. The combination of the frame, the counter-shaft, the pivoted bearings P , the forked arms R having the bearings therein, and screw Q . 7th. The combination of the stationary roll B , and the adjustable roll C mounted in the upper end of pivoted supports D , the pivots of which are located in advance of the axis of the roll, whereby the roll is caused to fall back by gravity and so remain when released. 8th. The combination of a roll, an upright swinging arm at each end of said roll, an eccentric adjustable pivot located at the lower end of said arm, and devices acting against the upper end of the arm. 9th. The combination of a roll, and upright swinging sustaining arms having their lower ends mounted on vertically adjustable pivots, the latter thus serving both to sustain and to adjust the rolls. 10th. In combination with the movable roller bearing, the rod E , adjustable stop devices to limit the inward movement of the bearing, an outside spring urging the bearing inward and adjusting devices to regulate the tension of the spring. 11th. In combination with the roller bearing, the adjustable rod provided at one end with a stop to limit the inward movement, a spring and means for adjusting the latter and provided at the other end with a stop and holding device. 12th. In combination with the swinging roll supports D , and the rods E connected thereto, the eccentrics m , shafts n and rod p . 13th. In combination with the movable roll supports D , and the rods E , adjustably connected thereto, a transverse shaft n provided with two eccentrics connected to the rods E , at opposite ends of the roll, whereby the roll may be thrown into and out of action instantly without changing the adjusting devices. 14th. The combination of two rolls B C , arranged to rotate at different speeds towards each other, said rolls being provided with spiral ribs or teeth, all lying in one and the same direction, the teeth of the slower roll having upright faces on the rear sides, and the teeth of the faster roll having upright faces on the front side. 15th. In combination with a pair of rolls, two independent scrapers sustained by weighted levers, mounted on a single shaft. 16th. In combination with a roller grinding mill, two independent feed controlling gates operating in connections with one pair of rolls, one gate adapted to be adjusted and fixed to control the rate of feed, and the other adapted to be opened and closed instantly at will, to stop and start the feeding. 17th. In combination with the feeding throat, the external gate provided with the adjusting screw, the internal stop gate and the eccentric for actuating the same. 18th. The combination of the internal gate having arms or studs thereon, the eccentric, the shaft extending through the hopper, and an arm or arms, applied to the outer end of the shaft. 19th. The combination of a feed hopper and two independent adjustable gates applied to its outlet.

No. 12,892. Improvements on Lightning Rods. (*Perfectionnements aux paratonnerres.*)

Thomas C. Hewitt, London, Ont., 1st June, 1881; for 5 years.

Claim.—1st. A tongue A projecting from one section B of a lightning rod, and inserted in corresponding dovetail in the next section, so as to form a lock. 2nd. A flexible lightning conductor composed of outer copper tube C , enclosing one or more galvanized iron wires D .

No. 12,893. Improvements on Harness Hip Straps. (*Perfectionnements aux barres des fesses de harnais.*)

Henry Schlimm, Listowell, Ont., 1st June, 1881; for 5 years.

Claim.—The combination of the metal strip I provided with button head J and stud K , and hip strap H provided with slide M .

No. 12,894. Improvements in the Manufacture of Fluid Extract of Coffee, and in the Apparatus used Therefor. (*Perfectionnements dans la préparation de l'extract liquide du café et à l'appareil pour cet objet.*)

Ernest C. Saunders, Montreal, Que., 1st June, 1881; for 5 years.

Claim.—1st. The process of manufacturing fluid extract of coffee by successive percolations of coffee, &c., at a temperature not exceeding that of boiling point. 2nd. The closed vessels or percolators G G provided with perforated diaphragms H H and outlets set in shafts formed in the vessel A , in which the water is heated to be boiling point.

No. 12,895. Improvements on Saw Teeth. (*Perfectionnements aux dents des scies.*)

John L. Marr and Robert Marr, Woodhouse, Ont., 1st June, 1881; for 5 years.

Claim.—The pentagonal truncated trapezoidal saw tooth with three cutting edges c c d , or, in other words, the chisel pointed saw tooth c c d .

No. 12,896. Improvements on Treating Ores. (*Perfectionnements dans le traitement des minerais.*)

Nicolas E. Reynier, Paris, France, 1st June, 1881; for 5 years.

Claim.—Le traitement électro chimique des minerais ou des masses métalliques en vue de la production économique de l'électricité le tout tel qu'essentiellement caractérisé par les points suivants: 1o. L'application nouvelle d'électrolytes à base de soude ou de potasse caustique dans le traitement électro-chimique sus-indiqué des minerais de cuivre de nickel, de cobalt, de plomb, de mercure, d'argent d'or, etc. 2o. La substitution d'un