

No. 40,509. Magnetic Separator.*(Séparateur magnétique.)*

William Durant Hoffman, Brewster, New York, U.S.A., 1st October, 1892; 6 years.

Claim.—1st. In a magnetic separator, mechanism for completing the separation, a stratifying magnet located in advance of the completing mechanism and means for conducting the material to be operated upon within the field of the stratifying magnet, substantially as set forth. 2nd. In a magnetic separator, a feeding device, a finishing magnet, a stratifying magnet located intermediate of the feed and finishing magnet, and means for conducting the material to be operated upon successively within the fields of the stratifying and finishing magnets, substantially as set forth. 3rd. In a magnetic separator, a feeding device, a finishing magnet, a stratifying magnet located intermediate of the feed and finishing magnet, and an endless belt carrier for conducting the material to be operated upon within the fields of the stratifying and finishing magnets, substantially as set forth. 4th. In a magnetic separator, the combination with an endless belt carrier, means for feeding the material to be operated upon on to the belt, and mechanism for completing the separation, of a stratifying magnet located intermediate of the finishing mechanism and comprising a series of poles of opposite polarity located in proximity to the belt, substantially as set forth. 5th. The combination with an endless belt carrier, and means for feeding the material to be operated upon on to the belt, of a stratifying magnet and a finishing magnet, each comprising a series of poles of opposite polarity, and arranged to act successively upon the material as it passes along the belt, substantially as set forth. 6th. In a magnetic separator, the combination with an endless belt carrier, and a separating magnet located in proximity thereto, of drums forming supports for the opposite ends of the carrier, and a swinging frame in which one of said supporting drums is mounted, and means for adjusting the same, and hence the drum toward and away from the opposite drum to determine the tension of the belt, substantially as set forth. 7th. The combination with the separating magnet arranged in curved form and the hollow perforated shaft at the centre of the curved magnet, of the partition within said hollow shaft, and means for directing the current of air through the shaft for cooling the magnets, substantially as set forth. 8th. The combination with the separating magnet and endless belt carrier extending in proximity to the magnet, of the casing spaced from the endless belt carrier to form an air conduit between the two and the feed chute and hinged to its support and resting with its free end upon the belt for distributing the material evenly upon the belt and sealing the air conduit at the feed end of the casing, substantially as set forth. 9th. The combination with the separating magnet arranged in curved form, the hollow shaft at the centre and the endless belt carrier in proximity to the curved magnet, of a conduit for the air in proximity to the outer face of the belt, an air chamber, an adjustable gate for opening and closing communication between the chamber and the air conduit in proximity to the belt, and an exhaust conduit in communication with the air chamber, substantially as set forth.

No. 40,510. Means for Electrically Giving Reciprocating Motion. *(Moyen de donner un mouvement électrique réciproque.)*

Henry S. McKay, Boston, Massachusetts, U.S.A., 1st October, 1892; 6 years.

Claim.—1st. In combination with two or more electro-magnetic devices connected in series, an armature adapted to be reciprocated by the attraction of said magnetic devices, and the circuit being always closed or unbroken, and the armature in its attracted movement acting to energize the two magnetic devices or sets of magnetic devices alternately, cutting out one magnetic device or set, by a short circuit, while energizing the other magnetic device or set, all as and for the purposes set forth. 2nd. In combination with a rod or other device to which reciprocating motion is to be given, two or more electro-magnetic devices connected in series, an armature attached to said rod or other device, and adapted to be reciprocated by the attraction of said magnetic devices, and the circuit being always closed or unbroken, the armature in its attracted movement acting to energize the two magnetic devices or sets alternately, by cutting out one magnetic device or set with a short circuit, while energizing the other magnetic device or set, all as and for the purposes set forth. 3rd. In combination with two or more electro-magnetic devices connected in series, an armature adapted to be reciprocated by the attraction of said magnetic devices, and the circuit being always closed or unbroken, a commutator adapted to be operated by the reciprocating movement of the armature to alternately cause the current to rise and fall from one magnetic device to the other, by cutting out one magnetic device or set of magnetic devices with a short circuit, while the other magnetic device or set is being energized, all as and for the purposes set forth. 4th. In combination with two or more electro-magnetic devices connected in series, the armature adapted to be reciprocated by the attraction of said devices, two or more pairs of stationary contacts situated apart from each other, a contact of one pair connected by a conducting medium to a contact of the other pair or pairs, and said contacts also con-

nected respectively with a terminal of the two magnetic devices, the opposite terminal of said magnetic devices being connected with the main circuit wires, and the opposite contact of said pairs of contacts short circuited to the main circuit, whereby a continuous current is always maintained, and a conducting commutator or commutators connected in series, and by alternately connecting with the two contacts of each pair will alternately energize the two magnetic devices or sets, by cutting out the opposite magnetic device or set with a short circuit, all as and for the purposes set forth. 5th. In combination with two or more electro-magnetic devices connected in series, the armature adapted to be reciprocated by the attraction of said devices, two or more pairs of stationary brushes or contacts situated apart from each other, a contact of one pair connected by a conducting medium to a contact of the other pair or pairs, and said contacts also connected respectively with a terminal of the two magnetic devices, the opposite terminals of said magnetic devices being connected with the main circuit, a conducting commutator or commutators connected in series, of a length less than the distance between the pairs of contacts, and adapted to move back and forth between and come in contact with different sets of contacts, and means connected with the armature or rod for reciprocating said commutator or commutators, all as set forth. 6th. In combination, with the sets of fixed contacts, a reciprocating slide provided with a conducting commutator or commutators, and having lateral projections, and means for reciprocating said slide and commutator or commutators alternately in both directions, by said means striking and pushing alternately first one projection and then the other, all as and for the purposes set forth. 7th. In combination, with the two electro-magnetic devices, or sets of magnetic devices connected in series, an armature attached to a rod and adapted to be reciprocated by said devices, a flange or projection extending laterally from said rod or armature, a reciprocating slide provided with a conducting commutator or commutators, and having lateral projections to be acted upon alternately by the flange or projection extending from the rod or armature, contact pieces for making connection with said commutator or commutators, one contact of each set or pair being also connected with one terminal of each magnetic device, and the other contacts being connected by short circuit wires with the main circuit, all as set forth. 8th. In combination, with two electro-magnetic devices, or sets of magnetic devices connected in series, an armature attached to a rod and adapted to be reciprocated by said devices, a flange or projection extending laterally from said rod or armature, a conducting commutator having adjustable mechanism to be operated by said flange or projection, conductors for making contact with said commutator or commutators and connected respectively with the two magnetic devices, whereby the stroke of said rod or armature is shortened or lengthened as desired, all as and for the purposes set forth.

No. 40,511. Mixing Machine. *(Appareil pour mélanger les liquides et substances pulvérisées.)*

Joseph Thomas Lowe Randle, Toronto, Ontario, Canada, 1st October, 1892; 6 years.

Claim.—1st. In a mixing machine, the frame composed of three or more arms, radial from its centre and having a longitudinal slot in each as a means by which the frame is secured in position, substantially as described. 2nd. In a mixing machine, the combination, of the frame composed of three or more arms radial from its centre and having a longitudinal slot in each as a means to secure the frame in position, and the journal bearings secured between two adjacent arms of the frame, substantially as shown and described. 3rd. In a mixing machine, the combination, of the frame composed of the radial arms having longitudinal slots therein as described, the journal bearings supported by two adjacent arms, and the shaft supported in said bearings and supporting a gear wheel on its inner end, substantially as shown and described. 4th. In a mixing machine, the combination, of the frame composed of the radial arms having longitudinal slots as described, the journal bearings supported by two adjacent arms of said frame, the shaft having a gear wheel on its inner end and supported in said journal bearings, and the gear wheel having an extended hub to form a bearing supported by the inner one of said journal bearings, substantially as shown and described. 5th. In a mixing machine, the combination, of the frame as specified, the journal bearings supported by two adjacent arms of said frame, the shaft supported in said bearings and having a gear wheel on its inner end, the gear wheel supported to revolve on its own extended hub and meshing with the gear wheel on the horizontal shaft carried by said bearings, and the vertical shaft passing through and revolved by the gear wheel having the extended hub, said vertical shaft having means as specified to support a mixing arm on its lower end and centred to vibrate on a centre pin, substantially as shown and set forth. 5th. In a mixing machine, the combination, of the frame as specified, the journal bearings supported by said frame, the shaft supported in said bearings, and having a gear wheel on its inner end, the gear wheel carried by the inner bearing and meshing with the gear on the shaft in said bearings, the vertical shaft adapted to revolve with the gear wheel encircling it and movable along it longitudinally, and the mixing fan on the lower portion of said vertical shaft and composed of a hub and reclining blades having perforations therein, substantially as shown and described.