

Claim.—1st. The improvement, in reducing wood and other material to fibre for paper pulp, consisting in crushing or jamming the same between broad faced bars, as described. 2nd. The improvement, in reducing wood and other material to fibre, consisting in crushing the material between metallic bars, plates or other devices, and at the same time tearing or disintegrating the fibre by abrading material, such as natural or artificial stone. 3rd. A pulping engine, having reducing surfaces provided with broad faced bars, for crushing the fibrous material between them. 4th. The combination, in a pulping engine, of bars, blades or other metallic devices, with blocks or pulley pieces of natural or artificial stone. 5th. The combination of the top and bottom plates or their equivalent, provided each with broad faced bars arranged so that the bars on one plate cross those on the other, and means for removing one or both plates. 6th. A series of reducing plates arranged in pairs, in combination with a shaft carrying one plate of each pair and a casing supporting the other plate. 7th. The combination, with the shaft and casing and a series of reducing plates arranged in pairs and attached, one plate of each pair to the shaft, and one to the casing, of means for raising and lowering the shaft and attached plates so as to bring them closer to, or farther from those attached to the casing. 8th. A pulping engine for reducing wood and other material to fibre for making pulp, comprising, in combination a casing, supporting frame, shaft, reducing plates arranged in pairs and attached to said shaft and casing, an inlet for introducing the material into the engine and an outlet for the pulp. 9th. The combination, with each other, of two or more pairs of reducing plates or their equivalents, such as cylinders and concaves provided each with bars, blades or other metallic devices with or without blocks or filling pieces, of abrading material arranged in series with the space between the plates or their equivalents gradually diminishing. 10th. A reducing plate or its equivalent provided with bars, blades or other metallic devices on its surface, and with blocks or filling pieces of abrading material, such as natural or artificial stone, between the bars or blades.

No. 16,437. Improvements on Mining Machines. (*Perfectionnements aux machines à miner.*)

Francis M. Lechner and Joseph A. Jeffrey, Columbus, Ohio, U. S., 2nd March, 1883: (Extension of Patent No. 8492.)

No. 16,438. Improvements on Earth Excavators and Conveyors. (*Perfectionnements aux machines à déblayer.*)

Charles A. Smith, Normalville, Ill., (co-inventor with Fred D. Smith, New Carlisle, Ind.,) U.S., 2nd March, 1883; for 5 years.

Claim.—1st. The combination, in an earth excavator and conveyor of an endless chain F carrying bottomless scoops, shovels or buckets H H, and an independent apron or belt I supported against, or directly underneath and travelling with the said buckets during only a part of their upward travel. 2nd. The combination of an endless chain consisting of centrally open links carrying bottomless buckets H H, the independent endless apron or belt I made shorter than the chain F, the chute E and the wheels B C and D, the wheels B and C carrying the chain F, and the wheels B and D carrying the belt I.

No. 16,439. Improvements on Dynamo-Electric Machines. (*Perfectionnements aux machines electro-dynamiques.*)

George W. Fuller, Norwich, Conn., U.S., 6th March, 1882; for 15 years.

Claim.—1st. A dynamo-electric machine provided with a suitable commutator and suitable electrical connections, two parallel systems of rotating field magnets, a system of circumposed stationary armature coils arranged between the opposed poles of the two systems of field magnets, and loosely encircling segments of a floating armature core in the form of a flattened ring built up of segments of magnetic material joined to segments of non-magnetic material. 2nd. In a dynamo-electric machine, in which the field magnets are rotated and the circumposed armature coils are stationary, an annular armature core independent of the armature coils and suspended in the bight or bights of a cord or cords hung over an elevated pulley, and prevented from lateral swaying by suitably grooved guider rollers acting through two or more of the spaces, between the outer portions of the circumposed stationary coils upon a cord or cords lying against the periphery of the annular core. 3rd. In the dynamo-electric machine in which the field magnets are rotated and the circumposed armature coils are stationary, a stationary commutator cylinder provided with interiorly placed insulated strips suitably connected with the stationary coils, and brushes mounted upon, and rotating with the shaft of the rotating field magnets, but insulated therefrom and electrically connected with the field and working circuits and adapted to bear upon the concave faces of the commutator strips fastened to the interior of the stationary commutator cylinder. 4th. A commutator in which the commutator strips are affixed to the interior of a stationary cylinder surrounding the stub end of the rotating shaft upon which the rotating field magnets are mounted, brush-holders in the form of semi-cylinders partially embracing the stub end of the rotating shaft and respectively fastened to, and electrically connected with two contact wheels suitably insulated from each other the contact wheels being provided with stationary brushes by means of which the electrical impulses induced in the stationary coils and collected by the rotating brushes are conducted to the terminals of the field and working circuits. 5th. The adjustable pulleys L1 L2 bearing in opposite directions upon the cords in the bights of which the armature core is suspended, for effecting the lateral adjustment of the armature core. 6th. The frame for supporting the circumposed stationary coils H composed of the plates G a, provided with means of adjusting the circumposed coils H relatively to the armature core I.

No. 16,440. Improvements on Dynamo-Electric Machines. (*Perfectionnements aux machines electro-dynamiques.*)

George W. Fuller, Norwich, Conn., U.S., 6th March, 1883; for 15 years.

Claim.—1st. A system of rotating field magnets and a rotating armature core and stationary armature coils loosely surrounding the said armature core, and a commutator in two parts which are electrically connected respectively with the opposite ends of the circuit, which includes the coils of the field magnets, in combination with two commutator brushes which are electrically connected respectively with the opposite ends of a circuit including any desired number of the stationary armature coils, for the purpose of exciting the field magnets by a current derived from the said armature coils and thus rendering the machine self-charging. 2nd. In combination with suitably excited field magnets and an armature core which are rotated, and armature coils which are stationary, a commutator in two parts which are electrically connected respectively with the opposite ends of a circuit including any desired number of the said stationary armature coils, and two brushes electrically connected respectively with the opposite ends of an outside or working circuit. 3rd. The commutator M electrically connected with the circuit, which includes the coils of the rotating field magnets, and with a circuit which includes any desired number of the stationary armature coils C, loosely surrounding the rotating armature core L, in combination with the commutator R and contact wheels S electrically connected by means of the brushes S1 with an outside circuit, and the brushes m4 and m5 electrically connected with a circuit not employed to charge the field.

No. 16,441. Improvement on Post-Hole Diggers. (*Perfectionnement des machines à percer les trous des pieux.*)

James A. Fleming, Denver, Col., U.S., 6th March, 1883; for 15 years.

Claim.—1st. A post hole digger provided with a jarring device or knocker on, or forming part of the handle by means of which it may be driven into the earth. 2nd. A post hole digger provided with a jarring device or knocker, and upper and lower knocking heads by means of which it may be driven into the earth and loosened therefrom.

No. 16,442. Improvements on Tubular Lanterns. (*Perfectionnements aux lanternes tubulaires.*)

Robert P. Butchart, Owen Sound, Ont., 6th March, 1883; for 5 years.

Claim.—1st. The sectional separable tubes E G E1 G1 having a sliding or telescopic connection and provided with a locking connection. 2nd. The combination of the upper and lower sections, the upper section supporting the globe D pendently and the lower section, the lamp portion, both sections connected by tubes E E1 G G1 sliding telescopically, and the conjoined sections of the tubes locked adjustably by a suitable fastening.

No. 16,443. Improvements in Stoves. (*Perfectionnements dans les poêles.*)

John W. Elliott, Toronto, Ont., 6th March, 1883; (Extension of Patent No. 8504.)

No. 16,444. Method of Securing Railway Ties to the Rails. (*Manière d'assurer les traverses aux rails.*)

George L. Putnam, Mount Vernon, N.Y., U.S., 6th March, 1883; for 5 years.

Claim.—1st. A metallic fastening for railway ties consisting of spikes or bolts, which may be forced up through the tie and secured to the rail, by either of the methods herein described. 2nd. A metallic tie for railway use of the shape herein shown, in combination with a fastening as herein described, to hold the rail in position. 3rd. A fastening for railway ties, consisting of the slotted plate D placed either above or below the tie and spikes A, in combination with the tie B and rail E.

No. 16,445. Improvements on Stone and Root Diggers. (*Perfectionnements aux arrache-pierres et arrache-souches.*)

Manlius Holbrook, Eaton, Que., 6th March, 1883; for 5 years.

Claim.—The beam A with the iron plates E and F for strengthening it, also the iron claws B and the handles C and swivel H.

No. 16,446. Improvements in Spring Motors. (*Perfectionnements aux moteurs à ressort.*)

Amos Burkholder and David J. Burkholder, Barton, Ont., 6th March, 1883; for 5 years.

Claim.—The combination of wheel C, spring D, shaft B, wheel J, ratchet wheel E, pawl F, spring G, pin H, shaft B, cog wheel J, pinion K, shaft L, wheel M, pinion N, shaft B, cog wheel V, pinion W, cog wheels Y and A, fan C1, shafts O X and B1, clutch device S T, spring U, holes b in wheel M, lever R and bolt Q.

No. 16,447. Improvements on Spark-Arresters. (*Perfectionnements aux arrêto-flammèches.*)

David Groesbeck, Joseph A. Sterling, Charles A. Ball, New York, N.Y., and Daniel P. Wright, Norwood, Mass., U.S., 7th March, 1883; for 5 years.

Claim.—The combination, with the smoke box of a locomotive boiler, of the spark deflecting partition p, extending out from the fue sheet over the flues and over the floor of the smoke box, with the water tank h depending below the floor of the smoke box in front of said partition, and the downwardly turned hood or end r of said partition, discharging over the water of said tank and made adjustable vertically to, or from the water level. 2nd. The combination, with the smoke-box of a locomotive boiler and with a vertically adjustable spark-de-