

the joint *f*, for the purpose of holding the coupling link in a horizontal or vertical position. 7th. A coupling link *C* provided with a tail piece pivotally connected to the draw-head, in combination with the rod *D* connected at one end directly to the link *C*, and at the other end to the ball crank *E* pivoted upon the end of the *e* r.

No. 15,297. Improvements on Crushers and Pulverizing Mills. (*Perfectionnements aux broyeurs et aux moulins à pulvériser.*)

Robert McCully, Philadelphia, Penn., U. S., 12th August 1882: for 5 years.

Claim.—1st. In an organized machine for crushing and pulverizing ore, a jaw, or jaws, adapted and designed to be simultaneously reciprocated longitudinally and transversely. 2nd. In a jaw, or jaws, and mechanism for moving said jaw, or jaws, simultaneously in two different directions. 3rd. The combination, with jaws having flaring and vertical corrugated working faces, of mechanism for imparting to one or both of said jaws a simultaneous longitudinal and transverse movement. 4th. The combination of the following elements, viz.: a jaw, or jaws, mechanism for imparting to one or both of said jaws a simultaneous longitudinal and transverse movement, and means for taking up the wear of said jaws. 5th. A fixed jaw and a movable jaw, in combination, with mechanism for imparting to said movable jaw a simultaneous movement in two different directions. 6th. A housing or frame, adapted for use as a jaw holder and mechanism for imparting to said jaw a simultaneous reciprocating movement in two different directions. 7th. The combination, with jaws, of means for reciprocating the same in one direction, a spring or springs, for holding said jaws apart, and means for reciprocating them laterally. 8th. The combination, with the jaws, of means for holding the same out of contact with each other, means for reciprocating one or both simultaneously in different directions, and means for taking up the wear of jaws. 9th. The combination of a fixed jaw and a movable jaw with means for reciprocating the latter longitudinally and transversely. 10th. The combination, with a fixed jaw, of a jaw designed and adapted to move, to and fro, said fixed jaw, and to reciprocate across the face of the same. 11th. The combination, with a jaw or jaws, adapted and designed to reciprocate longitudinally only, of friction rollers between said jaw or jaws, and the frame of the machine. 12th. The combination of a longitudinally reciprocating jaw, or jaws, with friction rollers between said jaw or jaws, and the frame of the machine and mechanism for adjusting the jaws to and from each other. 13th. The combination of grinding disks *B* *B* mounted on unaligning shafts *C* *C* with the frames *D* *D*, and interposed friction rollers between said disks and frames. 14th. In a grinding mill, the combination of two disks or plates mounted on separate and unaligning shafts, with a frame or carriage back of each disk having a bearing for one of said shafts, and friction rollers interposed between said frames and disks. 15th. The combination of two plates or disks mounted on unaligning shafts and provided with mechanism for moving said disks and shafts vertically and laterally. 16th. The combination of a frame *A* provided with blocks *E* *E*, the frames *D* *D* having bearing *d* *d*, the shafts *C* *C* out of line with each other, the bearing *O*, disks *B* *B* and friction rollers *f* *f*. 17th. The combination of disks *B* *B*, shafts *C* *C*, frames *D* *D* having bearings *d* *d*, and mechanism for moving said frames towards said disks, the latter bearing upon friction rollers interposed between the disks and frames. 18th. The combination of disks *B* *B* with shaft *C* *C*, friction rollers *f* *f*, frames *D* *D* having bearing *d* *d*, and mechanism interposed between said frames *D* *D* and the mill frame for adjusting the frames *D* *D* to and from the grinding disks. 19th. The combination of disks *B* *B* with shafts *C* *C*, friction rollers *f* *f*, the frames *D* *D* having bearings *d* *d*, and collars *N* *N*. 20th. The combination of frame *A* with secondary frames *A* *A* designed and adapted to be moved vertically, the shafts *C* *C* having bearings *O* *O*, the frames *D* *D* having bearings *d* *d*, and adjusting mechanism *H* *H*, friction rollers *f* *f* and disks *B* *B*. 21st. In a grinding mill composed of two grinding disks or plates mounted on unaligning shafts, the combination therewith of friction rollers *f* *f* with frames *D* *D* adapted to slide upon blocks *E* *E*. 22nd. The combination, with disks *B* *B* and shafts *C* *C* of the frames *D* *D* having bearing *d* *d* and slotted ends *d* interlocking with blocks *E* *E* secured to the frame of the mill. 23rd. The frame *D* having slotted ends *d* *d*, bearing *d* *d* and screw nut *G*. 24th. The disks *B* having flange *b* *b*, ring *b* *b* with inclined face. 25th. The combination of disks *B* *B* with shafts *C* *C*, frames *D* *D*, friction rollers *f* *f* and screw rods *H* *H*. 26th. The combination of disks *B* *B* with shafts *C* *C*, friction roller *f* *f*, frames *D* *D*, bearings *O* movable upon plates *O* provided with screw *a*, the adjustable blocks *E*. 27th. The combination of grinding disks, friction rollers, supporting frames therefor, and mechanism for adjusting said frames to and from said disks. 28th. The combination, with the grinding or pulverizing surfaces, of an adjustable frame or frames therefor, with interposed rollers between said frame and surfaces. 29th. The combination, with grinding disks, or plates arranged vertically or horizontally, of adjustable frames therefor, an interposed friction roller and an adjustable feed mechanism. 30th. The combination, with grinding disks, or plates arranged vertically, or horizontally, the axis of which may, or may not, align with each other, of adjustable or sliding frames therefor, an interposed anti-friction roller mechanism between said disks and adjustable frames, and a centrally located feed therefor operated by a screw to form a force or screw feed.

No. 15,298. Improvements on Adjustable Hames. (*Perfectionnements aux attelles mobiles.*)

Edward D. Cole, Macon, Ill., U. S., 12th August, 1882: for 5 years.

Claim.—1st. The sleeve or socket *A* having set screws, or equivalent devices, to hold firmly therein the two parts *B* *C* of the hame. 2nd. The combination, with the two halves or part of the hame *B* *C*, of the sleeve *A* fitting the central ends of the said parts. 3rd. A hame being in two parts, the central ends fitting a sleeve or socket *A* in which they are adjustably held.

No. 15,299. Improvements on Flexible Shafts. (*Perfectionnements aux arbres de couche flexibles.*)

Frank A. Cortis, Meriden, Ct., U. S., 12th August 1882: for 5 years.

Claim.—1st. As an article of manufacture the flexible shaft consisting of the non-metallic core, wrapped with a fabricated covering. 2nd. The flexible shaft consisting of the non-metallic core, wrapped with a fabricated covering, the fabricated surface fabricated, by wire wound thereon.

No. 15,300. Improvements on Trolling Hooks. (*Perfectionnements aux hameçons pour trôler.*)

Charles R. Buck, Dover, Ont., 12th August, 1882: for 5 years.

Claim.—The combination of protecting wires *A* with a trolling hook.

No. 15,301. Improvements on Barrel Trucks. (*Perfectionnements aux camions pour les barils.*)

Joseph J. Swain, Montebello, Ala., U. S., 12th August 1882: for 5 years.

Claim.—The combination of cant hook *E*, sliding block *G*, ratchet *I* and pawl *J* with a barrel truck.

No. 15,302. Improvements on Trace Carriers. (*Perfectionnements aux porte-traits.*)

William H. Main, Boscobel, Wis., U. S., 12th August, 1882: for 5 years.

Claim.—1st. The seat or socket *C* extending across the frame and carrying the spring bolt *E* and adapted to be actuated alternately, or simultaneously, in rotation with the side hooks *G*. 2nd. In combination with a trace carrier frame having a socket *C* and side hooks *G*, the spring bolt *E* made in two parts, so that said parts can slide on each other. 3rd. The frame *A* provided with two side bars, which are extended to form the hooks *G*, and having bolt *E* surrounded by spring *F*, the ends of the bolt adapted to engage with the said hooks. 4th. A trace carrier having side hooks and a transverse spring bolt.

No. 15,303. Improvements in Fanning Mills. (*Perfectionnement dans les turars cribleurs.*)

James W. Russell, (Assignee of John Courtman,) Ottawa, Ont., 12th August 1882: (Extension of Patent No. 7791.)

No. 15,304. Improvements on Rotary Churns. (*Perfectionnements aux barattes rotatoires.*)

James Burbank, (Assignee of Maxime Caissé,) Danville, Que., 12th August, 1882: (Extension of Patent, No. 7787.)

No. 15,305. Improvements in the Means of Operating Microphones. (*Perfectionnements dans les moyens de faire fonctionner les microphones.*)

François Van Rysselberghe, Schaerbeck, Belgium, 14th August, 1882: for 5 years.

Claim.—The means of increasing the intensity of the variations of an induction current, arising out of the variations in the resistances of microphone contacts, and which consists in employing for the microphone, either a secondary battery, or a thermo-electric pile.

No. 15,306. Improvements on Time Locks. (*Perfectionnements aux serrures à mécanisme d'horlogerie.*)

Henry F. Newbury, Brooklyn, N. Y., U. S., 14th August, 1882: for 5 years.

Claim.—1st. In combination with a time lock, a flexible or supplemented support or supports therefor, to prevent it from being thrown out of operative relation to the door bolts of the safe or vault, in which it is used, by the force of an explosion, or other sudden or heavy shock directed against the exterior of such structure, and means connected therewith, and constructed and arranged to prevent the retraction of the lock bolt in the event of the clock work being broken. 2nd. The combination in a time lock, of the shafts of the clock work and secondary or supplemental bearings, to prevent the disengagement of the train in case the shafts become broken. 3rd. In combination with the time mechanism of a chronometric lock, a device pivoted, or otherwise secured, to one of the wheels, or other revolving parts thereof, and arranged to be moved from the normal position by centrifugal action, whenever the speed of the time movement is unduly accelerated, and a device arranged to be acted upon by such centrifugal device, when thus moved from its normal position. 4th. In combination with a device pivoted, or otherwise secured, to one of the wheels or other revolving parts of a chronometric lock, and arranged to be moved from its normal position by centrifugal force, whenever the speed of the time movement is unduly accelerated, a device arranged to be acted upon by such centrifugal device when thus moved from its normal position, and supplemental or auxiliary bearings, for the shafts of the wheels composing the clock train, whereby the continuity of the train between the main spring and the centrifugal device will be preserved.