

having radial arms or scrapers, a sleeve sliding upon the lower end of the said shaft, and having a screw and a bell-shaped diaphragm mechanism for adjusting the said sleeve and suitable operating mechanism, substantially as and for the purpose set forth.

No. 24,411. Coal Scuttle. (*Seau à Charbon.*)

William Murphy, St. John, N.B., 3rd July, 1886; 5 years.

Claim—1st. The combination of the coal-scuttle and ash-sifter, as herein specifically set forth and described. 2nd. A coal-scuttle having a triangularly perforated bottom, for the purpose substantially as described. 3rd. A coal-scuttle having a triangularly perforated bottom, and a circular grate fitted thereto for the purpose, substantially as described. 4th. A coal hod with a triangularly perforated bottom, a grate fitted thereto and a base-plate with perforations corresponding to those in the bottom of the coal hod, and having a handle attached for the purpose, substantially as described. 5th. In a coal-scuttle or hod having the triangularly perforated bottom, the movable grate, and the perforated base-plate with the handle moving in a slot for the purpose, substantially as described. 6th. In a coal-scuttle having the triangularly perforated bottom, the movable grate, the perforated base-plate with handle, the square bolt for the purpose, substantially as described.

No. 24,412. Grain Elevator.

(*Élévateur à Grain.*)

William J. Ross, Montreal, Que., 3rd July, 1886; 5 years.

Claim—In an elevator, the combination, with the lower pulley or tightener travelling belt and buckets, of a false bottom fitting closely in the boot and suspended from the slide, as and for the purposes set forth.

No. 24,413. Lubricating Device.

(*Boîte à Graisse.*)

Joseph Lauboff, Detroit, Mich., U.S., 3rd July, 1886; 5 years.

Claim—1st. A lubricating device for journals consisting of a journal-box, having an oil-cavity, and a collar *C* encircling the journal, with a spiral spring *D* upon its periphery to dip into and lift the oil, substantially as described. 2nd. In a lubricating device for journals, consisting of a journal-box having an oil-cavity, and a collar *D* encircling the journal made in two parts, and secured together by a spiral spring *D* upon the peripheries thereof, said springs also serving to dip into and lift the oil, substantially as described. 3rd. A journal-box, provided with a cavity *C*, and groove *C'* at each side thereof near the ends of the boxing, extending entirely around the interior surface of the boxing, forming a continuous annular channel with a returning-duct *C'* located in the lower section of the box below the surface thereof, and connecting the channels *C'* and cavity *C*, so that oil passing along the shaft or journal will be carried back to the central cavity through said channels and duct, substantially as described. 4th. The journal-box, provided with an oil-cavity *C*, and grooves *C'* at each side thereof near the ends of the boxing, and extending entirely around the interior surface of the boxing, forming a continuous annular channel of an enlarged bore a between said channels and the ends of the boxing, substantially as and for the purpose described. 5th. The combination, with the boxing, provided with central cavity *C*, and grooves *C'* at each side thereof near the ends of the boxing, extending entirely around the interior surface of the boxing, forming a continuous annular channel, of a longitudinal channel adjacent to the surface of the shaft, substantially as described.

No. 24,414. Machine for Flattening Tobacco Stems. (*Machine pour Ecraser les Tiges de Tabac.*)

Frank Lauhoff, Detroit, Mich., U.S., 3rd July, 1886; 5 years.

Claim—1st. A tobacco stem flattening machine, comprising the frame *A*, the crushing rolls *B*, *B'*, one of which is geared to rotate faster than the other, the side brackets *A'*, *A'* forming a chute, and the moistening roller *E* supported by said brackets or chute, and engaged with the faster crushing roll, substantially as described. 2nd. A tobacco stem flattening machine, comprising the supporting frame *A*, having side brackets *A'*, *A'* forming a chute, the crushing rolls *B*, *B'*, one of which is adjustable and geared to rotate faster than the other, the apron *F* for feeding the material to the chute and crushing rolls, the yielding scrapers *D*, *D'* and a moistening roller *E* supported by the chute and engaged with the faster crushing roll, substantially as described.

No. 24,415. Bilge Water Indicator.

(*Indicateur de l'Eau dans les Maillies.*)

John F. Smethells, Chicago, Ill., U.S., 3rd July, 1886; 5 years.

Claim—1st. The combination of the base *G*, having an oil chamber therein, the pipe *E* screwed into its bottom from below, and the pipe *F* screwed into the same from above, with an open passage between the adjacent ends of the two pipes, and the hollow cylinder *H* having air-tight cap *I* on its upper end, and its lower end screwed into the base *G* adapted to conduct the compressed air forced up by the bilge water down upon the oil in the chamber in the base *G*, substantially as described. 2nd. The described base, having an oil chamber therein, provided with two branches, and also with a vertical hole through, its bottom for the pipe *E*, and a hollow projection *O* situated over said hole and provided with an opening therein continuous with said hole, and a socket for the lower end of the pipe *F*, substantially as and for the purpose described. 3rd. The combination of the screw-cap *I*, having the flange *I'*, which is provided with suitable openings through it for the upper ends of the graduated plate *L* and glass tube *K*, and the base *G* provided with said plate *L* and tube *K*, and also furnishing bearings for their lower ends, substantially as described.

No. 24,416. Flux for Metallurgical Purposes.

(*Flux pour des Fins Métallurgiques.*)

James Webster, Birmingham, Eng., 3rd July, 1886; 5 years.

Claim—1st. For the purpose of producing a flux for use in metallurgical operations, repeatedly immersing lime in waste liquor containing calcium chloride, letting it remain therein till it cannot absorb any more liquor, drying it at a limited temperature, and finally melting it as hereinbefore described. 2nd. For the purpose of producing a flux to be used in the refinement of iron, or in the production of steel from pig iron, mixing a manganese oxide with the flux produced by the melting of lime repeatedly immersed in calcium chloride waste liquors, the percentage of which manganese oxide is regulated according to the nature and purity of the iron to be refined or converted as hereinbefore described.

No. 24,417. Check Valve. (*Soupape de Déclente.*)

John H. Berry, Montreal, Que., 3rd July, 1886; 5 years.

Claim—The combination, in a check valve, of a bent bar with foot set in seat in the bottom of valve body, and the upper end kept in place by cap, said bar being perforated for the sliding spindle which carries the disc, all as herein set forth and for the purposes described.

No. 24,418. Pneumatic Machine.

(*Machine Pneumatique.*)

James S. McCoy, Brooklyn, N.Y., U.S., 3rd July, 1886; 5 years.

Claim—1st. In a pneumatic tool or motor the striker or piston made of less diameter than the cylinder in which it moves to form the space *s*, substantially as and for the purposes set forth. 2nd. In a pneumatic tool or motor, the striker or piston formed with a transverse valve chamber, in combination with a cylinder having ports *h*, *h'*, the valve chamber being formed in the striker or piston, a distance from its lower end somewhat less than the distance from the port *h'* in the cylinder to the head of the cylinder or spindle, whereby a cushion of air will be maintained at the end of the cylinder, substantially as described. 3rd. The combination, with the pneumatic tool, of the tube *l* leading from the air inlet or exhaust to the point of the cutting implement, substantially as described. 4th. The combination, with the pneumatic tool, of a pipe connected with the exhaust port, substantially as and for the purposes described. 5th. The pneumatic tool, formed with the brace or shoulder piece *K* at the end of the tool, substantially as and for the purposes set forth. 6th. The induction port *a*, made at the breast of the tool, in combination with the pipe *j*, so the latter will tend to hold the tool with the port *a* lowermost, substantially as described. 7th. A striker, in combination with a tool-holding spindle, whose working implement is in contact with the material being wrought upon. 8th. A striker, in combination with a tool-holding spindle acted upon by a spring, the working implement being held by the spindle being in contact with the material wrought upon. 9th. A tool-holding spindle, whose working implement is in contact with the material being wrought upon. 10th. A striker and the cylinder which contains it, formed with an appreciable difference in their diameters, thus having an anti friction air cylinder between them, in combination with a tool-holding spindle whose working implement is in contact with the material wrought upon. 11th. The piston *A*, connected rigidly to the piston rod *N*, and formed with air passages, and carrying the slide valve *L*, in combination with the cylinder having inlet and exhaust ports, the piston rod *N* being connected by a rod and cross-head to the crank shaft, substantially as described. 12th. The piston *A*, formed with air passages, as described, and carrying a transversely arranged slide valve *L*, and made of smaller diameter than the interior of the cylinder to form the space *s* around the piston, in combination with the cylinder having inlet and exhaust ports, formed at or near the centre of the piston stroke, whereby the piston is surrounded and cushioned with compressed air, substantially as and for the purpose set forth. 13th. In an engine, the exhaust *b*, made of the same size as induction port *a*, in combination with said induction port *a*, and the several induction ports and channels, as described, for the purpose of properly filling space *s* with air, so as to prevent contact between the piston and cylinder. 14th. The combination of the induction ports *a*, *b*, *f*, *a'*, *b'*, and induction channel *d*, *d'*, in cylinder of such size and position in relation to induction ports *a*, *b*, *f*, *a'*, *b'* in the cylinder as to detain the exhaust air, so as to counteract the upward pressure of the air on the piston sufficiently to prevent frictional contact of the piston and cylinder at the opposite side from the induction port *E*. 15th. The piston *A* made smaller in diameter than the cylinder bore, to form the surrounding space *s*, and provided with slide valve *L* and formed with ports controlled by the valve *L* to admit air to and its exhaust from both ends of the cylinder, in combination with the cylinder having medial exhaust ports, and the medial bottom air inlet port *e*, whereby the pressure of air entering the port *e* will lift the piston in space *s* and prevent friction, substantially as described.

No. 24,419. Harness. (*Harnais.*)

Franklin L. Henry, Corning, Ohio, U.S., 5th July, 1886; 5 years.

Claim—1st. In a harness, the breeching arranged to pass over the rump of the horse, in combination with the back-strap divided at the hips of the horse, and having its branch straps connected with the breeching, substantially as and for the purpose set forth. 2nd. The back strap *E*, having the breeching *F* connected thereto and formed with the straps *e*, adapted to be attached to the hames, substantially as described. 3rd. The hames *A*, provided with the rings or eyes *a*, in combination with the back strap *E*, formed or provided with the short straps *e*, substantially as and for the purposes set forth. 4th. In a harness, the breeching provided with straps *f*, *j*, joined by a curved plate, in combination with the two-part back-strap, substantially as and for the purpose set forth. 5th. In a harness, the back-strap formed with straps *e*, *e'* and *e''*, in combination with the hames having rings or eyes, the hip-strap made in two parts joined together, and to the strap *e'*, *e''* by the arch-piece *j*, and the breech-