

and provided with a suitable lock to prevent movement of the sleeve when the lock is closed. 2nd. In combination with a padlock of the class named, a combination or permutation lock adapted to prevent endwise movement of the sleeve upon the arm. 3rd. The lock composed of the spring impelled lever or latch *cl* pivoted within a chamber in the arm *l* and operating with a notch or groove in the sleeve, to prevent endwise movement of the lat *er*. 4th. The combination or permutation lock composed of the sleeve *B* with its spline or spur, the rings *C D*, etc., with their peripheral notches and stops, and the stop *o* upon the arm, the sleeve being provided with its scale of divisions and a zero mark being added to the arm.

No. 11,774. Improvements on Carriage Spring Fastenings. (*Perfectionnements aux ajustages des ressorts de voitures.*)

Robert McLaughlin, Oshawa, Ont., 17th September, 1880; for 5 years.

Claim. The concave clip *D*, and the form of end of side spring *A*, both in combination with the rubber *C C*.

No. 11,775. Improvements in the Manufacture of Sewing Thread. (*Perfectionnements dans la fabrication du fil à coudre.*)

Lysander Flagg, Central Falls, R. I. U. S., 17th September, 1880; for 5 years.

Claim.—As a new article of manufacture, a thread for sewing purposes manufactured from asbestos or amiantus.

No. 11,776. Improvements on Machines for Upsetting Wheel Tires. (*Perfectionnements aux machines à refouler les bandages des roues.*)

Daniel Feindel, Middleton, N. S., 17th September, 1880; for 5 years.

Claim.—1st. The cast iron bed *A*, sides and slots *C C*, with steel keys *B B*, as per *F* figure 3. 2nd. The combination of the machine *A*, and the keys *B B*.

No. 11,777. Improvements on Boiler Washing Machines. (*Perfectionnements aux machines à laver avec chaudières.*)

Julia C. Smith, Ashton, Ill., U. S., 17th September, 1880; for 5 years.

Claim.—1st. The boiler *A*, reel *C* composed of the strips *d d*, pivoted strips *ee*, catches *i i*, discs *f f* and axles *h h* of the reel. 2nd. In combination with the pivoted slats or bars *ee* of the reel, the spring fingers attached thereto by claps and adapted to be adjustable thereon.

No. 11,778. Improvements on Apparatus for Obtaining Cream from Milk. (*Perfectionnements aux garde-lait.*)

William E. Lincoln, Warren, Mass., U. S., 17th September, 1880; for 15 years.

Claim.—1st. An enclosing tank for the milk containing vessels, combined with an ice receptacle having an arched or inclined bottom, serving as a roof to cover the milk vessels. 2nd. A water tank to contain vessels of milk combined with a removable cover having an ice receptacle, the bottom of the cover being adapted to dip into the water in the tank, and thus form a closed air chamber. 3rd. A water containing tank and a connected ice receptacle extended below the level of the water in the said tank. 4th. A milk containing vessel and a surrounding auxiliary vessel to permit the circulation of air about the milk containing vessel, combined with a water-holding tank in which the auxiliary vessel is partially immersed and with an ice receptacle, and a roof to cover the milk vessel. 5th. In a creaming apparatus, a vessel to receive the milk to be cooled, provided with a channel *b* in its lower portion, to be placed in contact with cooling material, the said channel allowing the cooling material to circulate freely and act on the body of milk *n* the vessel and affording an increased cooling surface.

No. 11,779. Improvements on Nut Locks. (*Perfectionnements aux arrête-noix.*)

Almon B. Richmond, Meadville, Pa., U. S., 17th September, 1880; for 5 years.

Claim. 1st. An L-shaped lock provided with an opening in its side, for the passage of the link which connects the latch with a knob spindle arranged in the angle of the lock, whereby the roses may be secured upon the solid wood. 2nd. The combination with the latch bolt, of a link hinged to its inner end, for the purpose of connecting it with the knob spindle. 3rd. The combination with a lock, of the roses provided with cylindrical sockets which constitute bearings for the knob spindle.

No. 11,780. Improvements in Rock Drilling Apparatus. (*Perfectionnements aux appareils à forer le roc.*)

Henry Richmann and Uriah K. Arnold, San Francisco, Cal., U. S., 17th September, 1880; for 5 years.

Claim. 1st. A feed screw provided with two or more V-shaped flanges *c* fitting in corresponding grooves whereby more than one bearing to overcome longitudinal jar is obtained. 2nd. In combination with the feed screw *C*, provided with two or more V-shaped flanges *c*, the grooved box *a* fitting in the feed screw chamber *A* against the shoulder *ar*, said box being provided with a key *b*, whereby wear is taken up and jar of the screw is prevented. 3rd. In combination with the case or carriage *A* adapted to carry the cylinder *D*, and drill operating mechanism, the supplemental chamber or feed screw cover *A* adapted to carry the screw *C* with its flanges *c*, and the box *a* with its regulating key *b* and set screw *bi*, whereby said screw and its parts are protected from accident. 4th. The method of attaching the drill tool to the head consisting in forming a tapering recess in said head, and providing a tapering clamp, made in two or more pieces, for the drill, and interposing between said clamp and head, an oppositely threaded sleeve

which connects the head and clamp, whereby a long grip or bearing is obtained on the drill tool. 5th. A clamp for holding the drill tool made in two or more sections, and with a tapering end to fit into a corresponding socket in the drill head, and adapted to be held in position by an internally threaded sleeve which shall draw said tapering clamp into the tapering drill head hole, whereby the tool will be gripped tight, but may readily be released. 6th. In combination with the externally threaded drill head *I* provided with a tapering recess *i*, and the threaded drill clamp *J* made in two or more parts, tapered as shown and having a slot *j* for securing the screw *J*, the sleeve *K* with its internal threads formed half right and half left or of different pitch, said sleeve being interposed between the clamp and head, whereby the clamp is connected to the head without liability of jamming, and the sleeve acts as a jam nut as well. 7th. In an engine for actuating rock drills in which the drill tool is connected direct to the piston rod, the method of obtaining an equally effective piston area at both ends, consisting in forming the piston of two diameters, the front end larger than the rear, whereby as much power may be exerted on the backward as on the forward stroke. 8th. A rock drill cylinder carrying a piston *L* formed of two diameters, the forward end *L* larger than the rear to account for loss of piston area due to the presence of the piston rod, the port or orifice *li* at the edge of the offset in said cylinder and behind the enlarged piston head, whereby the formation of a vacuum in the compression of air within the cylinder is prevented. 9th. The improvement in the rotating mechanism of rock drills consisting in forming the ratchets which engage with the ratcheted sleeve having the diagonal slots in which the lugs of the drill head move in two or more sections, so placed that only one of said sections of teeth will engage with those of the sleeve at the same time, whereby a very slight turn may be given to the drill tool, and at the same time the teeth may be large enough to take a firm hold. 10th. In combination with the drill head having lugs which move in the diagonal slots of the ratcheted sleeve, two or more ratchet sections *V* encircling the extension head *S* and held between the circle breaking pins *Si*, said sections *V* being provided with the springs *s* to keep them in contact with the teeth of the sleeve. 11th. In combination with the ratchet teeth *v* of the rotary mechanism of a rock drill, the interposing deepened slots *vi* whereby the wear of the teeth is automatically taken up. 12th. A rock drill having the drill tool connected with the piston rod, the ring *W* encircling the channelled drill head and provided with a key *w* and set screw *W*, whereby a free reciprocation is allowed, but any desired friction may be maintained to the rotary motion of the drill, to effect a sure action of the ratchets. 13th. An engine having a piston and valve adapted to be moved in the same direction by air, gas or vapour under pressure, the ports *M N* having the supplemental ports *m n* *mi ni* and plates *oo*, in combination with the main piston *L* and the valve *d* with its heads *K K*, 14th. In combination with the piston *L* and the valve *d* with its pistons *K K*, moving in an independent chamber, the ports *t t r r*, whereby the valve is made to travel in the same direction as the piston and operated to admit or exhaust the air. 15th. The valve *d* with its double heads *K K* operating in an independent chamber, having the inlet port *H*, double exhaust ports *Q Q*, and inlet and discharge passages *M N*, in combination with the piston *L*, said valve having its heads so arranged as to allow a smaller opening for the admission than the emission of air or steam from the cylinder. 16th. The drill tool connected direct to the piston rod, the piston *L* provided with the groove *l* for automatically connecting the passage *r t r t*, whereby the valve is operated in the same direction as the piston. 17th. In combination with the valve *d* provided with the opening *p p*, the chamber head *f* having the recess *fi*, whereby the valve is cushioned, and high speed may be attained without the valve striking the head of the chamber. 18th. The valve *d* having the head *K* with the extension provided with the hole *pi*, said valve moving in a chest having the chamber head *f* to receive the valve extensions and to cushion the valve at each end of the stroke, said chamber *f* also serving to close the passage *p p* so that the air admitted through the passage *h h* may act upon the head *K* to start the valve. 19th. The piston actuated by air or steam admitted and exhausted alternately at each end of the cylinder, the valves or plates *oo* placed in passages provided with shoulders *X* at opposite ends of the cylinders, and so shaped as to allow the ingress, but not the egress of air or steam, whereby the starting and cushioning of the piston is accomplished. 20th. The piston *L* actuated by air or steam admitted alternately at each end of the cylinder by means of ports and valves, the valve *d* provided with double heads *K K* and moving in the chamber having the open ports *Q Q* situated between the heads, whereby said ports *Q Q* always remain open for the exit of air, and exhaust valves are dispensed with.

No. 11,781. Improvements in Iron Upsetting Machines. (*Perfectionnement aux machines à refouler les fers.*)

François R. Dubuc and Moïse Patenaude, L'Ange Gardien, Que., 17th September, 1880; for 5 years.

Résumé.—1o. Les pièces *T* avec les dents *V* et les peignes *O O*. 2o. Les mains *N N* avec les dents *U* et les peignes *O O*. 3o. Les pièces *T T* et *N N* en combinaison avec les plaques *X X* de recharge, dont une avec biseau *A*, la vis *G*, le levier *E E* et la roue *K*, formant avec les jambes *A* et *B* un étai à louter les fers ou autres métaux.

No. 11,782. Improvements on Lubricating Bearings for Millstones. (*Perfectionnements aux coussinets graisseurs pour les meules.*)

Joseph W. Batty and Garland H. Davison, Baltimore, Md., U. S., 17th September, 1880; for 5 years.

Claim. 1st. In combination with the stone *C* and with the spindle *E*, the bushing *D* provided with a central opening *d* and with *n* its upper end with oil recesses *di* and notches *du* that extend between the latter and said opening, and the collar *G* fitting around said spindle and over said bushing. 2nd. In combination with the oil recesses *di*, the bushing *D* and with the spindle *E*, the wicks *F* extending from said recesses, through the notches *du* to said spindle. 3rd. In combination with the stone *C* and the spindle *E*, the collar *G* provided with the grease cup *g* and secured to said stone, and the cap *H* attached to and revolving with said spindle and fitting over said grease cup. 4th. In combination with the stone *C* and the spindle *E*, the bushing *D* provided with the oil recesses *di*, the wicks *F*, the collar *G* having the grease cup *g*, the gasket *L* and the cap *H*.