

with the cut-off valve and its connecting link, of a spring attached to the valve and acting on said link, substantially as and for the purpose set forth. 4th. The combination, with a shell having both cut-off and exhaust valve-seats, of a reinforcing rod, substantially as described. 5th. The combination, with the sliding valve, driving shaft, and crank supported on said shaft, of a stiffening rod, substantially as described. 6th. The combination, with a shell containing a sliding valve and its driving-shaft and crank, of a bushing supporting said shaft within the head of the shell, and a collar on said shaft whereby an air tight joint is formed between collar and bushing, substantially as described and for the purpose set forth. 7th. The combination, with the driving-shaft or stem and cranks, of means, substantially as described, to secure said cranks on said shaft, as and for the purpose set forth. 8th. The combination of a shell containing seats for cut-off and exhaust valves, with a channel formed within the head of said shell and registering at its outlet with the end of a drip-pipe, substantially as described. 9th. The combination, with a shell containing the cut-off and exhaust-valves, of shafts for operating said valves, said shafts being provided in the bearings with a mantle of habbit or other anti-friction metal, substantially as described and for the purpose set forth. 10th. The combination, with the exhaust-valve arm, and a latch-link for operating the cut-off valve arm, of an eccentric bolt supported within an eccentric bushing which is adapted to be firmly held in the exhaust-valve arm, substantially as described. 11th. The combination of a slide valve with a spring actuating directly against said valve, substantially as and for the purpose set forth. 12th. The combination, with a slide-valve, a rock shaft provided with a crank and a link connecting said crank and valve of a taper pin firmly secured within the lugs of the valve, substantially as and for the purpose set forth. 13th. The combination, with a slide valve, a rocker-shaft provided with a crank and a link connecting said crank and link, and a pin firmly secured within the lugs of the valve with a removable bushing, constructed substantially as described and held upon said pin, substantially as set forth. 14th. In a slide-valve, as above described, the combination of a link having a tapering bushing held stationary by means of a pin and the lug upon the valve, as described, and adapted to be removed therefrom, as and for the purpose set forth. 15th. A latch-block with two holes through it at right angles, in combination with a bolt firmly fastened to the operating of the cut-off valve and the link, substantially as described and for the purpose set forth. 16th. The combination of a slide-valve link and rocker-arm with a crank, the travel of which is on the side opposite the lugs on the valve, substantially down to a line passing through the rock-shaft and center of lugs, as and for the purpose set forth. 17th. The combination with one or more trip-cams completing one forward and backward movement during the revolution of the main shaft, and means for operating said cams of the governor, whereby the path of the travel of said cams is controlled, substantially as described. 18th. The combination of one or more trip-cams making a complete forward and backward movement during each revolution of the crank-shaft, with a governor whereby the path of such movement is controlled, substantially as and for the purpose set forth. 19th. The combination of one or more trip-cams with means, substantially as described, for imparting to the trip-cams a complete forward and backward movement during one revolution of the crank-shaft, and a movable fulcrum controlled by a governor, whereby the path of travel of the said cams is controlled, as and for the purpose set forth. 20th. The combination of one or more trip-cams, an eccentric for imparting to the same a complete forward and backward movement during one revolution of the crank-shaft, and a governor whereby the path of such movement is controlled, substantially as and for the purpose specified.

No. 33,643. Drill Hoe and Seeder Tooth Attachment for Grain Drills and Broad Cast Seeders. (*Couvre et tube semeur pour les semoirs en ligne et à la volée.*)

Walter Bristow, Ottawa, Ont., 10th February, 1890; 5 years.

Claim.—1st. A drill hoe and seeder tooth attachment for single drag bar grain drills and broad cast seeders, constructed substantially as hereinbefore shown and described and as and for the purposes set forth. 2nd. The combination, in a drill hoe and seeder tooth attachment for single drag bar grain drills and broad cast seeders, with the head block K having the pin c and the slotted hole L, of the herein described catch A having the spring D, and the point F to engage with the recessed of the lug G, substantially as set forth.

No. 33,644. Wire Rope Machine.
(*Machine à câble de fil de fer.*)

James Wilson, Merriton, Ont., 10th February, 1890; 5 years.

Claim.—1st. In a compound wire rope strand machine, the combination of a rotary plate A having a series of apertures P and i, and an opening a in its center, the longitudinal rods B, i, the adjustable guide c provided with apertured flange J, with cone F having tapered aperture G, and the adjustable die support D' provided inbefore set forth. 2nd. In a compound wire rope strand machine die D and cap D', arranged and devised substantially as hereinbefore set forth. 3rd. In a compound wire rope strand machine die D in its support, the rotary plate A, guide c with apertured flange and cone fanged cone m secured in position by the studs n', and having a tapered apertured end a to conform to diameter of cable, all substantially combined by the longitudinal rods B, B, as specified and set forth.

No. 33,645. Attachment for Bedsteads for Invalids. (*Disposition aux lits des invalides.*)

George G. Rambo, Easton, Penn., U. S., 10th February, 1890; 5 years.

Claim.—1st. An attachment for bedsteads comprising the rod 15, having the vertical arm 6 and the swinging arm 16, the table swiveled to the end of the swinging arm, the bracket having a bearing to receive the vertical arm 6 and provided with a horizontal plate, to engage the upper face of the side rail, and having a depending rack bar, the slide vertically movable on the rack bar and arranged to engage the lower face of the slide rail, substantially as described. 2nd. In an attachment for bedsteads, the combination of the rod 15 having the vertical arm and provided with a table or tray swiveled thereto, the bracket having the tubular bearing and provided with a horizontal plate and the depending curved rack bar, and the slide arranged upon the rack bar and provided with lugs engaging the teeth of said bar and having a thumb screw, substantially as described. 3rd. In an attachment for bedsteads, the combination of the rod 15 having a table or tray swiveled thereto, the collar 17 provided with a set screw 18, the bracket having the tubular bearing and provided with the horizontal plate having the corrugated rubber secured to its lower face, said bracket being provided with the depending curved rack bar, and the slide arranged upon the rack bar and provided with lugs adapted to engage the teeth thereof and having a thumb screw, substantially as described. 4th. In an attachment for bedsteads, the combination of the rod, the table or tray swiveled thereto, the bracket having a tubular bearing and provided with a clamp composed of sections hinged together and provided with oppositely disposed curved portions, one of said sections being formed integral with the bracket, and a bolt adapted to secure the sections of the clamp together, substantially as described. 5th. In an attachment for bedsteads, the combination of the rod 15, the table or tray swiveled thereto, and the bracket having the tubular bearing the horizontal plate, and the L-shaped arm having a perforation and provided with a thumb screw, substantially as described.

No. 33,646. Combustible Substance.

(*Corps combustible.*)

Moses H. Day, Brookline, Mass., U.S., 10th February, 1890; 5 years.

Claim.—A combustible substance consisting of a base of ordinary merchantable fuel impregnated with a chemical salt in a crystalline or anhydrous state, which, when acted upon by fire in the destruction of the base by fire, will give a distinctive color to the flame produced, substantially as set forth.

No. 33,647. Wheel. (*Roue.*)

John B. Lott, Kittaning, Penn., U.S., 10th February, 1890; 5 years.

Claim.—1st. The combination, with the axle and the sleeve, of the hub formed with spoke sockets, and a yielding bearing between the end of the spokes and the sleeve, substantially as described. 2nd. The combination, with the hub and the spoke fitted in a socket therein, of the felly, a cap arranged to bear upon the spoke, and a fastening device for securing the parts together, substantially as specified. 3rd. The combination, with the sleeve having annular flanges B' and B'', of the hub formed with an interior annular flange C' between the flanges B' and B'' being of different lengths with the longer ones innermost, and the flanges on the hub being of different lengths with the longer ones outermost, substantially as shown and described and for the purpose specified. 4th. The combination, with the axle sleeve and hub, of the spring E surrounding the sleeve and confined between the flanges thereon, the said hub being formed with interior flange arranged opposite said spring, substantially as described. 5th. The combination with the hub formed with interior spoke receiving sockets, of the spokes fitted in said sockets and having slight endwise play thereon, and the transverse bolts passed through the walls of the sockets within the hub and through elongated slots in the spokes, and serving to limit the play of the spokes, substantially as described. 6th. The combination, with the hub formed with interior spoke receiving sockets, of the spokes fitted in said sockets and having slight endwise play therein, and the transverse bolts passed through the walls of the sockets and through elongated slots in the spokes, and the spring within the sockets between the bottom thereof and the lower ends of the spokes, substantially as described. 7th. The combination, with the substantially U-shaped felly, of the filling block of substantially reverse shape to that of the felly, and secured therein between the said spoke sockets, and having inwardly curved sides, substantially as and for the purpose specified. 8th. The combination, with the axle and the sleeve formed with flanges B', B'', B'' and B', of the hub formed with interior flange C', the spring E between the flanges B', B'', the spring between the flanges B'', B', and the springs at the end of the sleeve, substantially as shown and described. 9th. The combination with the hollow spoke, the plug fitted therein, the substantially U-shaped felly and the tire of the transverse bolt passed through the felly, spoke and plug, and the screw passed through the tire and into the plug at right angles to said bolt, substantially as shown and described. 10th. The combination, with the axle the sleeve and the hub formed with inwardly extending spoke sockets, of the spokes, the springs within the sockets behind the inner ends of the spokes, and the springs encircling the sleeve between the same and the spoke sockets, substantially as shown and described.