nation therewith. of a reciprocating curved hook or looper actuated by the means above described, such looper serving to take the loop of the needle thread when the needle is below the work, and present it to the needle on its next descent for the purpose of its receiving and being secured by the thread of the next formed loop. 2nd. In combination with the vertically reciprocating needle of an over-seaming machine, the eye pointed thread needle actuated by the mechanism described. 3rd. In combination with a curved looper or curved eye-pointed needle acting in conjunction with a reciprocating needle, as described, the elastically mounted finger *e* which puts an elastic tension on the loop of the thread taken up by the looper or curved needle for the purpose of retaining that loop on the looper or curved needle,until the thread lapped over the edge of the work is secured by the descent of the vertical needle. 4th. The arrangement of tension apparatus as above described, whereby an intermittent bite is put upon the thread supplied to the vertical needle. 5th. The application to an over-seaming machine of the device above described, for taking up the slack as each loop is secured by the descent of the vertical needle. 6th. The arrangement of feeding device above described in which the feed plate is actuated by two excentrics, the one being capable of sliding transversely over the other to adjust the length of feed to the requirements of the work.

No. 31,053. Vacuum Arrow. (*Flèche à vide.*)

Philip W. Pratt, Abington, Mass., (assignee of Frank White, Philadelphia, Penn.), U.S., 8th April, 1889; 5 years.

Claim.—1st. The combination of an arrow shaft, and a vacuum or pneumatic arrow head secured to one end thereof. 2nd. The combination of a vacuum arrow head, an arrow shaft, and a connecting device secured to one end of the arrow shaft, and having a flange or head secured in the vacuum arrow head, as set forth. 3rd. The combination of a vacuum arrow head, an arrow shaft, a shank connecting the same and a ferrule surrounding the head of the arrow shaft, as set forth. 4th. An elastic arrow head having a concave front side, a yielding level edge, and an attaching device whereby it may be secured to a shaft, as set forth.

No. 31,054. Folding Door Lock.

(*Serrure de porte brisée.*)

Hugo Bonninghausen, Detroit, Mich., and CharlesL. Spier, Brooklyn N.Y., (assignees of Charles Bouchard, Detroit, Mich.), U.S., 8th April, 1889; 5 years.

Claim.—In a lock for folding-doors, the bolt C, and crank H in the path of the second door, substantially as described.

No. 31,055. Lubricating Apparatus.

(*Appareil graisseur.*)

Henry O'Connell and Stephen A. Cahill, Manistee, Mich., U.S., 8th April, 1889; 5 years.

Claim.—1st. A lubricating apparatus having the reservoir and feeding devices stationary, and connecting the jointed or fixible pipe or pipes with the wrist or other part of a moving member to be lubricated. 2nd. The above, in combination with devices for automatic operation of the feed. 3rd. In combination with an engine, a stationary grease cup for feeding thick lubricant, and jointed pipes leading therefrom to the crank pin. 4th. In combination with an engine, a stationary lubricator thereon, a pipe connected with the crank pin and supported on the cross-head, and jointed pipes connecting the same with the grease cup, substantially as set forth. 5th. The combination of grease cup 1, jointed pipes 14 and 16 connected thereto and supported on cross-head 17, pipe 18 connected with the crank pin, and the pipe 16, and also supported on said cross-head, and a branch pipe 19 connected with the cross-head pin, substantially as set forth. 6th. The combination, with the engine, of grease cup 1, pipe 4, stationary joint 7, connecting said pipe 4 with pipe 14 and supporting same, swing joint 15 connecting pipes 14 and 16, stationary joint 71 fixed to cross-head 17, connecting and supporting pipes 16 and 18, and the branch pipe 20 from pipe 10, all arranged and adapted to operate substantially as and for the purposes set forth.

No. 31,056. Oil Feed for Lamps.

(*Alimentateur de lampe.*)

Christian Sieghold and Moses O. Meyer, Salinas, Cal., U.S., 8th April, 1889; 5 years.

Claim—1st. The combination, with the lamp body or vessel A having an inlet in its bottom, of the float D within the body, a depending tube *d* extending down through the said inlet and having an opening *g* through one side, and a cup on its lower closed end, substantially as set forth. 2nd. The combination, with a lamp body A having a depending tube *b*, of a float D within the body, a pipe *d* closed at its lower end suspended from the float passing down through the tube *b*, and provided in its side with an opening *g*, said opening being below the lower end of the tube *b* when the float is lowered, substantially as set forth.

No. 31,057. Urethal Powder Applier.

(*Cathéter à poudre.*)

Carlton E. Sage and Chelius S. Pixley, Elkhart, Ind., U.S., 8th April, 1889; 5 years.

Claim.—1st. In a urethal powder applier, the combination, with shell A, of the interchangeable devices D and E, and a retaining device for the same. 2nd. In a urethal powder applier, the combination, with shell A, of the rod D, and a retaining device for the rod. 3rd. In a urethal powder applier, the combination, with the shell A, of a conveyer E provided with a groove, and a retaining device permitting rotary motion, but not longitudinal motion of the conveyor. 4th. In a urethal powder applier, the combination, with the shell A, and head B, of the conveyor E provided with an agitator or stirrer F.

No. 31,058. Toy. (*Jouet.*)

Ebenezer F. Lane and George W. Willis, Swansey, N.H., U.S., 8th April, 1889; 5 years.

Claim.—1st. In a toy of the character described, the body A provided with a series of wheels of different sizes arranged in regular gradation, as B, C, D, the stock E, and the double cord *m*, combined and arranged to operate substantially as set forth. 2nd. In a toy of the character described, a body, as A, provided with a series of graded wheels secured thereon, as B, C, D, said wheels being ornamented or provided with figures, etc., to adapt them to produce kaleidoscopic effects when rotated, in combination with a stock, as E, and a double string *m* connecting said body and stock, all being arranged to operate substantially as specified.

No. 31,059. Fireproof Gas Machine.

(*Appareil à gaz à l'épreuve du feu.*)

Perry Yarrington and Dudley S. McDonald, Boston, Mass., U.S., 8th April, 1889; 5 years.

Claim.—1st. In a gas-machine, the combination of a body or tank, a carbureter disposed therein and provided with a guard plate, a perforated pen for the gas generating material supported on said plate, and provided with guard flanges, a bell supported on said plate and enclosing said pan, a pipe from the carbureter opening into said bell, and a supply tube leading from said carbureter through said body, substantially as described. 2nd. In a gas-machine, the combination of a body, a reservoir for carbonaceous material so disposed in said body that it may be surrounded by fire-extinguishing liquid, a wooden guard plate on said reservoir, a perforated pan supported on said plate and provided with guard flanges, a bell supported on said plate and enclosing said pan, said bell having guard flanges, a pipe from the reservoir opening into the bell above said pan, and a supply tube leading from the reservoir through said body, substantially as described. 3rd. In a gas-machine, a body provided with a gutter near its mouth, a cover for said body, a carbureter disposed in the bottom of the body, a wooden guard plate on said carbureter, a perforated pan provided with guard flanges supported on said plate, a bell enclosing said pan and resting on said plate, guard flanges on said bell, a pipe from the carbureter opening into the bell above said pan, and a supply tube leading from said carbureter through the body wall, substantially as described. 4th. In a gas-machine, a carbureter so disposed in the body thereof that it may be surrounded by non-flammable acid solution, and provided with a wooden guard plate for supporting the gas generating apparatus, in combination with an induction pipe opening into said carbureter, and an eduction tube leading therefrom, substantially as described. 5th. In a gas-machine, the body A, in combination with the reservoir D, having the guard plate *h*, and legs *g*, the perforated pan K provided with legs *v*, and flanges *x*, the bell E provided with legs *k*, and flanges *l*, the pipe H opening into said reservoir, and the tube Z leading therefrom, substantially as described. 6th. In a gas-machine, the combination of the body A provided with the gutter *b*, the cover B, the reservoir D having legs *g*, the guard plate *h* on said reservoir, the perforated pan K provided with the legs *v*, guards *x*, and sleeve *w*, the bell E having legs *k*, and guards *l*, the rods *m* securing said bell to said body, the pipe H opening into said reservoir and bell, and the tube *z* leading from said reservoir through said body, all being arranged to operate substantially as described.

No. 31,060. Machine for Laying Electric Wires Underground. (*Machine à poser les fils électriques sous terre.*)

Alexander M. Brown and Archibald Wright, Winnipeg, Man., 8th April, 1889: 5 years.

Claim.—1st. An automatic machine for laying subterranean electric wire, operated by animal, steam, or other power, substantially as and for the purpose above set forth. 2nd. An automatic subterranean electric wire laying machine, coating the wire with indestructable composition, substantially as and for the purpose above set forth. 3rd. An automatic subterranean electric wire laying machine having plough share 1, with hole 2 for securing same to beam 3, pin for same 4, revolving pulley 5, axle pin 6, tubular aperture in plough share 1, 7, revolving colter 8, shank 9, axle pin 10, beam hinged to front axle tree 11, 11, covering disks, axle pins 12, 12, 13, colter gauge 14, lifting link 15, lifting lever 15½, lever beam 16, lever arm 16½, knuckle joint 17, 17, fulcra 18, lever rod 18½, knuckle joint 19, hand lever 20, fulcrum to same 21, waggon box 22, foot board 23, seat 24, 24, spring supports 25, slot in bottom of waggon box 21, 26, clamp for hand lever 19, 27, wire coil roller 28, 28, standards for same 29, connecting or tell tale pin 30, indicator 30½, standard for galvanometer and electric bell 31, shelf 32, striking arm with or without 33, tank for composition 34 34, apertures 35, spindle and roller 36, furnace 37 37, flue pipes 38, lid 39, furnace door 40, ash pit 41, door to same 42 42, grate bars 43, material non-conductive of heat 44, false bottom 45, insulated wire 46, revolving pulley 47, hole through beam 10, 48, roller 49 49, lifting levers 50, lever beam 51 51, fulcra 52, lever arm 52½, knuckle joint 53, connecting rod 54, hand lever for roller 54½, knuckle joint 55, fulcrum for same 56, guards for 53, 57, 57, front wheels 58, front axle tree 58½, bolster 59, hounds 60, rear axle tree 61 61, rear wheels 62, main reach 63 63, guide wheels 64, guide wheel reach 65, guide slots for colter beam 10, 66, guide slot attached to rear axle tree 60, 67, electric connector 68, pole 69, stays 70, axle tree for guide wheels 63, 63, 71, holder for hand lever 54, 72, indicator arm 73, fulcrum for indicator, substantially as and for the purpose above set forth.

No. 31,061. Cultivator. (*Cultivateur.*)

Ellen M. Gaylord, (assignee of Edwin Case), Ironville, Ohio, U.S., 8th April, 1889; 5 years.

Claim.—1st. In a cultivator, the combination, with the beam A provided with elongated slots, of jointed wings D pivotally connected to the beam, and parallel braces D_1 pivoted to said wings, and at right angles to the beam, the clips D_2 passing through the elongated