bination with the roller E, spring tension bar F, and registering apparatus composed of pinion *h* on pivot *f*, of roller E, and toothed wheel *h*¹ whereby, as the material is rolled on reel A, the tension thereof rotates roller E, and this operates through pinion *h*, the measuring wheel *h*¹. 2nd. In combination with the reel roller E, spring tension bar F, pinion *h* and measuring wheel *h*¹, the pointer K adapted to move over dial *l*, and intermediate toothed wheels and pinions, whereby the rotation of the roller E, by the material rolling on reel A, gives motion to said pointer and causes it to record the quantity rolled on the reel. 3rd. The key I, running on rod H, and provided with a rotary cutter *m*, in combination with roller E and reel A, for the purpose of cutting the cloth or other material, when held between these rollers. 4th. The spring bar F, supported on bow spring G, the roller E, and the rod H, carrying key I and cutter *m*, in combination with a reel and mechanism.

No. 11,941. Milk Cooler. (*Garde-lait.*)

François X. Blais, St. Rémi, Que., 7th November, 1880; for 5 years.

Résumé. La combinaison des plats A B et C avec le tuyau D.

No. 11,942. Improvements in Compounds for Soups. (*Perfectionnements dans les Conserves pour la soupe.*)

John F. Tyrrel, New York, U. S., 7th November, 1880; for 5 years.

Claim.—A compound for soup composed of dried vegetables, meat, and seasoning, put up in tight vessels or cans.

No. 11,943. Improvements in Oil Cups. (*Perfectionnements aux godets à huile.*)

Henry R. A. Boys, Farrie, Ont., 7th November, 1880; for 5 years.

Claim.—1st. The combination of the metal casing with the porous cement in the gas escape. 2nd. The combination of the metal band or scum breaker with the top of the centre tube. 3rd. The combination of the indicator tube for receiving the glass gauge with the cup, together with its glands and caps. 4th. The combination of the tube, connecting the condensing chamber of the cup with the steam pipe of the engine, and also its branch tube.

No. 11,944. Improvements on Thread Cases. (*Perfectionnements aux boites pour le fil.*)

Eugene L. Fitch, Breda, Iowa, U. S., 7th November, 1880; for 5 years.

Claim.—1st. A case providdd with an inclined floor and a series of drawers provided with series of springs at the ends, for holding the rows of spools, and with wire or cord, with a button at the end for depressing said springs, to permit the end spool to drop on to the inclined floor and roll to the rear of the case. 2nd. The combination with the drawer F, of the springs F, the transverse piece H, the projection J and the cord or wire L. 3rd. The floor C with an inclination from front to rear, and extending beyond the rear of the case so as to form the space D, into which spools roll. 4th. The combination, with the case A, of the inclined drawers E, the inclined floor C extended the rear end of the case to form the space D.

No. 11,945. Improvements on Pumps. (*Perfectionnements aux pompes.*)

William M. Wilcox, Port Perry, (Assignee of John S. M. Wilcox, Whitby), Ont., 7th November, 1880; for 5 years.

Claim.—1st. The use of the cones B, on the semi-circular head of the pump handle working in the corresponding sockets in the piston rod. 2nd. The use of the bolts E and nuts F, for retaining the head of the handle close to the piston rod. 3rd. The friction rollers D behind the piston rod.

No. 11,946. Improvements in Spring Vehicles. (*Perfectionnements aux voitures à ressorts.*)

George White, Greenville, Pa., U. S., 8th November, 1880; for 5 years.

Claim.—1st. In a vehicle, the cross springs E connected thereto and made adjustable, so as to adapt the springs to different weights. 2nd. The combination of the seat B connected to the side bars *a*, by elliptic springs C, with the foot board D connected to the said side bars by adjustable cross springs E.

No. 11,947. Improvements on Feed Water Heaters. (*Perfectionnements aux chauffeurs d'eau d'alimentation.*)

James Argall, Mineral Point, Wis., U. S., 8th November, 1880; for 5 years.

Claim.—1st. The combination of the annular feed water heater and the central pipe for conveying the water from the heater to the boiler. 2nd. The combination of the annular feed water heater, the surrounding smoke stack, and the central pipe for conveying the water from the heater to the boiler. 3rd. The combination of the annular feed water heater, the central pipe for conveying the water from the heater to the boiler and the leaky check valve.

No. 11,948. Improvements on Sewer Traps. (*Perfectionnements aux trappes des égouts.*)

Electus B. Ward, Detroit, Mich., U. S., 8th November, 1880; for 5 years.

Claim.—1st. A sewer trap wherein the inlet pipe secures a ring gasket in its annular seat. 2nd. An annular recess in the neck thereof to receive a gasket ring. 3rd. The inclined or curved pipe B provided with the neck D having an annular recess *d*, in combination with the gasket ring E and ball valve F. 4th. The chamber H terminating in a neck D, provided with an annular recess *d*, in combination with a gasket E and with a ball valve F for closing the inlet. 5th. The combination of the curved pipe B, having inlet and outlet necks C D, the former being provided with an annular recess *d*, the chamber H formed by the bulged lower end of said pipe, the guard G, the gasket E and the ball valve F.

No. 11,949. Process for Manufacturing Gas. (*Procédé de fabrication du gaz.*)

James Stoneman and William A. Lloyd, Eldred, Pa., U. S., 8th November, 1880; for 5 years.

Claim.—An air pump A, provided with suitable outlets, in combination with the oil tank B, pipes D E and outlet pipe G, provided with suitable check valves and cocks.

No. 11,950. Improvements on Grain Binders. (*Perfectionnements aux lieuses à grain.*)

Ole O. Storle, Milwaukee, Wis., U. S., 8th November, 1880; for 5 years.

Claim.—1st. The combination of the cutting plate having guard or stop arm, with the plate having radial arms. 2nd. The combination of the cutting plate, plate having radial arms, and the elastic holding plate having an arm for clearing the radial arms of the cord ends, as they revolve. 3rd. The combination of the cutting plate C having guard or stop arm *c*, the plate B having radial hooked arms, and the elastic plate D having cleaning arm.

No. 11,951. Improvements on Spring Tooth Harrows. (*Perfectionnements aux herses à dents à ressort.*)

Horatio Gale, Albion, Mich., U. S., 8th November, 1880; for 15 years.

Claim.—1st. A sulky harrow provided with two or more series of spring teeth I, each of said series being secured to a separate bar H, and adapted to be simultaneously changed in their position by a single motion of the lever M. 2nd. In combination with a sulky harrow having spring teeth I, the plate E carrying the arm F, or axles of the traction wheels arranged and operating to allow of an elevation or depression of the frame A. 3rd. The combination of a frame D vertically adjustable on the wheels G, with a harrow composed of a series of bars H, journalled in the frame D, and carrying spring teeth I, and connected together by a rod O, for adjusting the inclination of the teeth, and the two adjustments being independent of each other, whereby the frame can be raised and lowered, as desired, and the angle of inclination of the teeth be raised.

No. 11,952. Improvements on Hay Rakes, (*Perfectionnements aux râteaux à foin.*)

Charles F. Anderson, London East, Ont., 8th November, 1800, for 5 years.

Claim.—1st. The front bar B and rear bar G for carrying the teeth A, connected by suitable metal or wooden arms F F D, pivotted eccentrically to axle C and oscillating independently thereof. 2nd. In combination with the above, the arrangement of chain L and eccentric J. 3rd. In combination with oscillating bar B, the holding lever S having a fulcrum at U. 4th. In combination with front bar B oscillating as described, the ratchets H H, dogs I I, rods K K¹, eccentric J, chains L L¹ and lever N.

No. 11,953. Improvements in Bridges. (*Perfectionnements dans les ponts.*)

William Mc Lary, London, Ont., 8th November, 1880; for 5 years.

Claim.—1st. The girder plate H, having upper and lower flanges *d* I, and attached by bolts *e e*, passing through slots in said plate to sides of timbers B C. 2nd. The construction of parts, as a new device for preventing the strains in wooden bridge cords, &c., at their point of intersection with the other timbers, and removing the strain to the abutment, consisting of the combination of metallic shoe E, tye rods F G, girder plate H, having flanges *d* I, and bolts and slots *e e*, abutment plate K, screw bolts J, top plate L, and strut plate M.

No. 11,954. Improvements on Pitman Connections. (*Perfectionnements aux raccordements des bielles.*)

William Young and Andrew Young, Almonte, Ont., 8th November, 1880; for 5 years.

Claim.—The combination, with the pitman E and disk F or its equivalent, of the bars or pivoted arms G H, at their conjunction, operating to describe an arc of a circle, for the purpose of giving a double end motion to the pitman.

No. 11,955. Improvements on Grain Separators. (*Perfectionnements aux séparateurs des grains.*)

Neil Smith, Lucknow, Ont., 8th November, 1880; for 5 years.

Claim.—1st. The sieve F, placed below the hopper for distributing the grain falling on the separator sieves H. 2nd. The fan C, air ducts D and sieve F combined in a grain-cleaner, whereby the lighter foul matter is separated from the grain, in falling into the sieves, by the suction of the fan. 3rd. In a sieve having two grades of mesh, two divided bottoms separated by a deflector *d*¹ for carrying off impurities through slots in both sides of the sieves. 4th. The combination of two or more sieves having side discharge slots *f* and deflector *d*, and a shoe having side grooves *e h* for the downward passage of the separated matter. 5th. The combination, with the sieve, of movable deflectors *d* dividing the grain to both sides of the sieve, said sides having slots *f* for the passage of the grain. 6th. In combination with the shoe, a series of sieves having sides raised above the ends and mesh and bearing one upon the other.

No. 11,956. Improvements on Barrel and Box Castors. (*Perfectionnements aux roulettes des barils et des boites.*)

James R. McCall and Henry E. Duncan, Schoolcraft, Mich., U. S., 8th November, 1880; for 5 years.

Claim.—1st. A saddle A formed with the hook B B, and provided with the tooth *a*, studs C and wheels D D. 2nd. In combination with a box or barrel, the saddle A, with wheels D D, the hooked strap F, with pink and be hollow post I.

No. 11,957. Oil Stove. (*Poêle à l'huile.*)

Richard F. Carter, Clifton, Charles E. Lacey, Drummondville, Ont., and George H. Kendall, Montreal, Que., (Assignees of Abram Q. Allis, and Hugh McConnell, Cleveland, Ohio, U. S.,) 8th November, 1880, (Extension of Patent No. 5,528).