No. 4207. FREDERICK. P. MACKELCAN, Montreal, Que., 28th December, 1874, for 5 years: "Machine for Pulling Stumps." (Arrache-souche.)

Claim.—The combination of the wheels A, A axle B, the capstan heads with sockets C, C, the handspikes D, D, and the chain E, as set forth

No. 4208. WALTER G. P. CASSELS, Toronto, Ont, 28th December, 1874, for 5 years: "Improvements in Stoves." (Perfectionnements aux Poeles.)

Claim —The water receptacle D, when placed in the space F, between the coal reservoir B, and outer shell of stove A1, arranged as described.

No. 4209. MARY G. WILSON, Sherbrooke, Que., 28th December, 1874, for 5 years: "Vegetable Boiler." (Bouilloire à légumes.)

Claim.—The combination of the boiler A, with spout B, strainer C, and lid D, the cover E, and handles F, F, as described.

No. 4210. HORACE D. GIBBS, Batavia, N. Y., U. S., 29th December, 1874, for 5 years: "Device for connecting the Neck Yoke with the Draft Poles of Vehicles." (Appareil à ajuster les jougs aux limons des voitures.)

Claim.—The elliptical concavo-convex metallic ring H, with the inner edges turned in, and elastic ring or packing *f*, united and connected to the clasp A, B, by means of the pivot bolt C, having oblong head E, countersunk ring E, and screw or rivet *e*, all combined as specified.

No. 4211. FREDERICK H. C. MAY, Buffalo, N.Y., U. S., 29th December, 1874, for 5 years: "Grain and Malt Drier." (Séchoir pour le grain et la drêche.)

Claim.—1st. The vibrating pans C, having hooks *c*1 combined with guards D, in the manner set forth; 2nd The vibratory pans C, having air compartments *c*, inclined perforated diaphragms *c* and opening C1, at its outer end. 3rd. The expansion joints or connections F, attached to and combined with the vibratory pans C, at opposite ends in each series thereof, by means of the nozzle *c*, of pipes E, and openings *c*1, as described.

No. 4212. GEORGE WHITE, London, Ont., 29th December, 1874, for 5 years: "Improvements on Carriages." (Perfectionnements aux voitures.)

Claim.—1st. The axle A, formed in one piece of round or square iron or steel; 2nd. The mode of securing the hub F1, and axle box E, by means of the shoulder G, and inner nut B, working against the inner side of end of nut D; 3rd. The continuous spring *a* formed without joints at ends, 4th. The iron jack H, with the taper hole L1, using the natural spring of shaft bar K; 5th The tire M, M1, when constructed with a series of notches or teeth P, in the ends, and bolts N, O, as set forth.

No 4213. THOMAS GAVIN, Montreal, Que., 29th December, 1874, for 5 years: "Screen for Coal Cinders." (Crible pour les cendres de charbon de terre.)

Reclâme.—1o. L'habitacle sasseur A, à fermeture hermétique et à ferrure. 2o. La boîte à sas C; 3o. Le tiroir H, qui reçoit les cendres tamisées, 4o. L'application des pieds semi-circulaires sasseurs P; 5o. Les poignées *q* du sasseur; 6me. Les anses F, tel que décrit.

No. 4214 DARIUS W. SIPRELL, Riviere-du-Loup en bas, Que., 29th December, 1874, for 5 years: "Rock Reamer." (Fleuret-alésoire de mine.)

Claim—1st. In combination with a supporting frame a tubular reaming shaft F, having a rod G, therein for ejecting or retracting the cutters H; 2nd In combination with a supporting frame and tubular reaming shaft F, the tubular screw shaft L, for rotating the shaft F, and cutters H; 3rd. In combination with the screw shaft E and reaming shaft F, a supporting frame having adjustable extension and contraction screw legs B, anchor feet C, and guide tube D 4th The combination of the rotating tubular screw shaft E, rotary toothed collar N and endless screw shaft M, for rotating the reamer shaft; 5th In combination with the reamer shaft F, and central rod G, the nut and screw mechanism J, K, L; 6th In combination with the hollow reaming shaft F, and tubular screw shaft E, the set screws I, or a suitable clamping device for retaining the shaft F adjustably at any desired height.

No. 4215. FREDERICK H. DATE, Niagara, Ont, 29th December, 1874, for 5 years: "Manufacture of illuminating Gas." (Fabrication du gaz d'éclairage.)

Claim.—1st. The process of manufacturing illuminating gas from solid or liquid hydrocarbons by first converting the volatile portions to vapour at any temperature below what is represented by iron heated to a cherry red colour, and then forcing or conducting the vapour or fumes so generated into contact with a red hot surface and instantaneously removing the gas so generated to prevent destructive decomposition, 2nd Combining the gas derived from and produced by the destructive distillation of wood with the vapor or fumes obtained from hydrocarbons, and conducting the gas and vapor combinedly into passing contact with such red hot surfaces in a retort or any suitable decomposing chamber and from thence to a condenser station meter and gas holder for the purpose set forth; 3rd. Combining the gas derived from the destructive distillation of wood with the hydrocarbon gas produced as herein described at any point within the retort and gas holder for the purpose set forth; 4th The use of wood gas produced as described to assist the conversion of the dense vapours of hydrocarbons into a permanent gas for diminishing the liability of such dense vapours to deposit carbons in the retort or decomposing chamber; 5th The combination of the process of making a permanent or fixed gas from the vapour of hydro-carbons either solid or liquid as described, with the gas derived or obtained or produced from the destructive distillation of woods in retorts as set forth. 6th. In illuminating gas produced by the combination of hydrocarbons gas manufactured as described and wood gas produced by the destructive distillation of wood as set forth: 7th. A fixed or permanent gas produced by passing hydrocarbon against a red hot surface or through a red hot retort as described: 8th The manufacture of wood gas in the process described by passing the gas through a series of connected retorts whereby undecomposed elements of gas escaping from one retort are brought into contact with an increased amount of red hot surface of the connecting retort or retorts for the production of incondensible gas as set forth: 9th. The employment of a series of connected or contiguous retorts for the manufacture of wood gas, as set forth.

No. 4216. CHARLES M. CLINTON, LYNFRED MOOD, Ithaca, ERASTUS C. GREGG and CHAUNCEY P. GREGG, Trumansberg, N. Y., U. S., 29th December, 1874, for 15 years: "Horse Rake." (Râteau à cheval.)

Claim.—1st. A wheeled horse rake in which the shaft to which the teeth are attached may be acted upon directly by the draught power for the purpose of oscillating the rake teeth: 2nd. A wheeled horse rake in which the power of the team may be exerted upon the rake mechanism without tending to rotate the wheels and draw the machine: 3rd. A wheeled horse rake in which the power may be utilized to hold the rake teeth down to their work; 4th A wheeled horse rake in which the draught power may be employed both to hold the rake down and lift it up at the pleasure of the driver. 5th. A wheeled horse rake in which the teeth are all attached to an auxiliary shaft or rake head that has a rocking motion to oscillate said teeth. 6th. In combination with the shaft to which the teeth are attached, the geared sector plates (or their equivalents) and suitable levers, whereby the said shaft may be partially rotated with a uniform leverage and motion; 7th A wheeled horse rake in which the teeth are maintained in place while gathering solely by means of their attachment to the rake head; 8th. As a means for utilizing the draught power both to hold down and lift the rake teeth in a sliding draught rod, lever arm and rake head combined and operating together as set forth; 9th. A tooth holder device by means of which the tooth is attached to the rake head so formed as to constitute both a socket for the reception and detention of the root of the tooth and a clamp to grip and make fast to the rake head 10th. A wheeled horse rake in which each tooth has a limited capacity of vibration about a centre of motion near its root and all the teeth vibrate or oscillate about a different centre or axis of motion in dumping. 11th. A tooth holder adapted to be secured to the rake head and formed with a socket for the reception and retention of the root of the tooth when so made as to permit the tooth a desired amount of play up and down in said socket, and about a center of motion or pivotal attachment. 12th In combination with the rake mechanism and a means for lifting the rake by the power of the driver, the jointed or flexible draught rod *n*, *n*1, and a locking pin or device whereby the power of the team may be brought into or kept out of action at pleasure, as set forth; 13th. A wheeled horse rake