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INVENTIONS PATENTED.

No. 4190. WILLIAM IRVINE, Rochester, N. Y., U. S., and SAMUEL TREES, Toronto, Ont., 18th December, 1874. for 5 years: "Horse-Collar." (Collier de cheval.)

Claim.—1st. The lower plates A, A, set screws b^1, in combination with the upper plates B, B, with holes b, arranged as described; 2nd. The plates B, B, set screws c, and studs c^1, in combination with the hinged plates C, arranged as described: 3rd. The combination of the perforated strap G, plates A, A, studs g, and g^2, and thong H, as described; 4th. The combination of the draught eye D, breast ring E, lugs a, and plates A, as set forth.

No. 4191. GEORGE D. CHISHOLM and SUMMERFIELD DOUGLASS, East-Flamboro, Ont., 18th December, 1874, for 5 years: "Device for Preventing Horses from Jumping, Kicking and Running Away." (Appareil pour empêcher les chevaux de sauter, ruer et de s'emporter.)

Claim.—1st. The arrangement of the leggins D, with straps a, strap E, ring F, strap B, rings G, G, in combination with the split hook strap C, C, and girt A, all arranged as specified; 2nd. The sliding strap H, passing through a loop in the girt A, provided with rings d, d, said rings secured by pins e, e, for the straps B, and E, to operate in for driving a horse as specified.

No. 4192. HENRY S. COLE, Milwaukee, Wis., U S., 18th December, 1874, for 5 years: "Water Regulator and Alarm for Steam Boilers." (Régulateur d'eau et indicateur de chaudière à vapeur.)

Claim.—1st. The combination of the float G, connected levers K, and K^1, and balanced puppet valve o, o; 2nd. The combination of the float G, connected levers K, and K^1, balanced puppet valve O, O, and cylinder R; 3rd. The combination of the float G, connected levers K, and K^1, balanced puppet valves O, O, and P, P, connected levers K^{11}, and K^{111}, link W, cylinder R, and whistle U, as described.

No. 4193. JAMES F. GORDON, Rochester, N. Y., U. S., 19th December, 1874, for 5 years: "Self-Binding Harvester." (Moissonneuse-lieuse.)

Claim.—1st. A reciprocating binder frame or table constructed to operate in the manner set forth; 2nd. The oscillating binder-arm pivoted on the reciprocating binder-frame or table, in combination with the twisting mechanism arranged to operate conjointly as set forth; 3rd. The automatic locking device J, or its equivalent, constructed or arranged to operate conjointly with the binder-frame and binder-arm for the purpose of controlling the intermittent reciprocations of the binder frame or table, so as to permit the binder arm to compress the gravel and return to its open position alternately as set forth: 4th In combination with the crank arms which actuate the binder-arm shaft, the latter being journaled to the reciprocating binder-frame or table, the open sockets or stops S^3, for the purposes set forth; 5th. The revolving cranks C^1, or their equivalent, and the connected rods C^2, in combination with the crank C, and the stops S^3, for the purpose of imparting to the binder-arm a reciprocating and an oscillating movement as described; 6th. The take up lever T, pivoted to the binder-arm B, in combination with the cam governing plate I, arranged to operate conjointly, upon the binding wire as set forth; 7th. The adjustable tie-rod T^1, in combination with the binder-arm and take up lever T; 8th. The relative arrangement of the wire reel W^1, pulleys m^2, m^3, and take up lever T, in combination with the pulley m^1, on the binder arm B, whereby the slack afforded in the wire when said arm is in its upper position, may be taken up when it descends, in the manner set forth; 9th. The grain supporting slats D, secured to the suspension bracket D^1, on the cross-bar D^{111}; 10th. The supporting slat hinged to the upper ends of the slats E^2, in combination with the detachable cross-bar D^3, to permit of their being folded with the binding mechanism: 11th. The divider fingers, arranged to operate conjointly with the binder-arm B; 12th. The grain supporting slats D, curved at their lower end and extending horizontally over the reciprocating binder-frame or table; 13th. The fender belt B^1, secured to the reciprocating binder frame or table: 14th. The wire clamping jaw N^2, constructed with or without the point a^1, and finger f^2, as shown: for joint operation with the fixed jaw; 15th. The pivoted guard bar b, constructed to operate as described, for the purpose of preventing the binding wire from coming in contact with the twister hook, during the reverse movement thereof; 16th. The elevator roller R, provided with a yielding spur or bolt o, constructed and arranged to operate in combination with the cross bars t^2, of the elevator belt E; 17th. The supporting fingers Q^1, or their equivalent secured to the reciprocating binder-frame for the purpose of retaining the bundle until the next gavel is compressed; 18th. In combination with the binder-arm B, the spring guard o^2, operating to shield the projections r^2, while passing through the grain; 19th. The hanger S^2, fixed to the stock M^1, constructed and arranged to operate conjointly with the plate d, when the latter is provided with track t; 20th. The rack o^1, movably suspended from the stock M^1, or between the bars L, and L^1, and arranged to operate the pinion r^1, on the twister shaft in the manner described; 21st. In combination with the roller e^1, and main track t, the switch track t^2, in the manner set forth; 22nd. The star wheel switch j, arranged to operate on the roller e^1, to change its position to the opposite side of the track t, preparatory to a return movement in its path; 23rd. The cam shaped projection on the track t, and t^1, fig. 2, in combination with roller e^1, and its lever, pivoted to the end of the spindles N, and N^1, for the purpose of opening the lower wire clamping jaw N^2; 24th. The timbers G, supporting the reciprocating binder-frame and binding mechanism, pivoted to the main frame of the harvester, to permit of their being folded vertically, with the binding mechanism; 25th. The bracket d^1, or their equivalent, on the reciprocating frame or table constructed and arranged to operate as set forth; 26th. In combination with the wire-clamping jaws N^2, and a, and the wire-twister, the centering jaws v^2; 27th. The spring compressing arm y, in combination with the binder-arm and binding mechanism for the purposes set forth.

No. 4194. DAVID BISSELL, Detroit, Mich., U. S., 19th December, 1874, for 15 years: "Leg Splints." (Eclisses pour les jambes.)

Claim.—1st. The combination of the extensible and adjustable leg rest t, u, and the foot rest i, and p, the leg rest being itself extensible and the foot rest being extensible relatively to the leg rest; 2nd. The foot plates p, adjustable laterally together and to and from each other on the pivot u, having a fastening screw p^2; 3rd. The foot rest i, p, connected to the upright k, by the swivelled adjustable screws j, and provided with the binding screw r; 4th. The combination of the bar d^1, and adjusting screws e^1, with the leg rest t, u; 5th. The combination of the side spring pressure pads h^1, with the leg rest t, u; 6th. The combination of the top spring pressure pad i, with the leg rest t, u; 7th. The combination