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INVENTIONS PATENTED.

No. 9673. Improvements on Car Replacers.

(*Perfectionnements aux enrailleurs des wagons.*)

David Russell, London, England, 18th February, 1879, for 5 years.

Claim.—A car replacer made of tapered channel iron, "Bell Mouth" shaped, with sides splayed or bevelled back and rounded inside about three inches deep, with solid lugs B_1 C_1 to clip rail of track, and at the same time to have a solid bearing both on head and flange of rail at narrow end; also the mechanical arrangement of a support D_1, to rest on cross ties, in addition to having wide end supported by another cross tie and fixed by solid studs E when in use.

No. 9674. Improvements on Bed Slat Couplers.

(*Perfectionnements aux attache-barres des lits.*)

Lares J. A. Roswall, Clarence, Mo., U. S., 18th February, 1879, for 5 years.

Claim.—The combination, with the side rails of a bedstead and the slat, of the hooked latch D pivoted in a plate or frame E secured to the slat, and the frame F secured to the rail and provided with the pivoted bottom I.

No. 9675. Improvements on Corsets.

(*Perfectionnements aux corsets.*)

Electa A. Waterhouse, Chatham, Ont., 18th February, 1879, for 5 years.

Claim.—In an abdominal or ordinary corset, the front lacings A A, side lacings directly over the hips B B, the cords C C and the opening flaps D D fastened with buttons *a a* immediately over the breasts.

No. 9676. Improvements on Grain Binders.

(*Perfectionnements aux lieuses à grain.*)

John H. Gordon, Rochester, N. Y., U. S., 18th February 1879, for 5 years.

Claim.—1st. The binder frame E F sustained, at both top and bottom, from the two bars C D of the harvester frame; 2nd. In combination with the harvester having the elevating apron or conveyor B, the binder frame E F connected thereto at two points, one below and the other above the delivery end of the conveyor; 3rd. In combination with a harvester provided with a grain elevator B, a binding machine having an overhanging arm F sustained at its upper end by stays or braces *b* connecting with the harvester frame at a point above the delivery end of the elevator; 4th. In a grain binding machine, an overhanging arm F to sustain the binder arm held and sustained at its upper end by braces *b*; 5th. The binder frame E F, having its base provided with arms *a* engaging upon the harvester frame, and its standard or bracket provided with the braces *b* having rollers *c* mounted on a track or rail *d* on the harvester frame; 6th. The binder frame, consisting of a metal base frame E adapted to sustain the twisting devices Q R_1 S_1, and an overhanging arm F mounted rigidly upon the base frame; 7th. The combination of the sliding binder frame E F and the sliding deflectors I, sustained independently of each other, with the shifting mechanism *f g h i J l* arranged to move them simultaneously; 8th. In a grain binding machine, the combination of a binder frame E F and grain deflectors I, mounted on separate independant supports, and shifting mechanism *f g h i J l* connected with both the frame and deflector, so as to move them together; 9th. The sliding binder frame, provided with the rack bar F, in combination with the fixed pinion *g*, having its shaft *h* extending upward and provided with a crank *i* within reach of the driver; 10th. In combination with the fixed pinion *g*, the rack bar *f* jointed to the binder frame E; 11th. In combination with the movable or wire carrying arm L of a binding machine, a take up device T adapted to take up the slack wire as the binder arm is raised or retracted without affecting the tension of the wire during the binding operation; 12th. In a grain binding machine, a spring device T to take up the slack wire adapted to yield under the ordinary strain of the wire, so as not to affect the tension or strain of the wire upon the grain; 13th. In a grain binding machine, a binding or wire carrying arm L and a twisting mechanism Q R_1 S_1, in combination with an adjustable driving mechanism connecting the two and permitting the movement of the one to be quickened or retarded in relation to the other; 14th. In combination with the driving chain *n* controlling the movement of the binder arm L in relation to the twisting mechanism Q R_1 S_1, the wheel *m* having the serrated hub in combination with the serrated disk *w*, on the binder arm shaft O and the tightening nut; 15th. A grain binder or wire carrying arm L and twisting mechanism Q R_1 S_1 connected with each other through the medium of an adjustable clutch *w*, so that the arm may be moved forward or backward in its course of movement; 16th. In a grain binding machine having a horizontal table or receiver K, an intermittently acting arm or kicker W to ensure the delivery of the bound bundles and prevent them from clinging to each other; 17th. The reciprocating rod or arm W arranged to slide outward beyond the grain table or receiver; 18th. A twister head Q, having an upper peripheral hook a^1 and a lower hook or shoulder a^2 slightly in rear of the upper one; 19th. The twister head Q, having the upper hook a^1 and the lower shoulder or hook a^2; 20th. A rotary twister head having a long upper hook a^1 and a short lower hook or shoulder a^2; 21st. In combination with the throat plate Y and the sliding jaw R_1, the binder arm L having a projection or rib on its side to force the wire over within reach of the jaw; 22nd. The cam wheel P, constructed and arranged to operate both wire clamping jaws R_1 S_1 and the twister head Q, by means of intermediate mechanism; 23rd. In combination with the single cam wheel P, having eccentric or cam faces, both above and below the levers h_1 i_1 k_1 m_1, arranged to operate the two jaws R_1 S_1, the twister Q and the kicker or delivery arm W; 24th. In combination with the crank M, arranged to operate the binder arm L, a compression arm R, mounted thereon, and a fixed guide S to control the movement of the compression: 25th. In combination with the two guides N S and the crank M, the binder and compression arms L R; 26th. In a grain binding machine, the combination of a driving crank M, a fixed slotted guide N and a binder arm L, mounted directly on the crank M and arranged to slide in the guide; 27th. In a grain binding machine, the combination of a rotating driving crank M, a binder arm L, mounted at or near its middle thereon, and a fixed bent guide N by which the movement of the binder arm is controlled and its nose caused to travel in a straight line, driving the whole or the greater part of its backward movement; 28th. The combination, in a grain binder, of the table K, the fixed overhanging standard F provided with the rigid guide arm N S, the crank M, having its shaft O mounted in the standard F, and the binder arm L sustained and carried by the crank and guide arm 29th. The combination of the rotating crank M, the binder arm L, mounted thereon, and a fixed elongated guide N having the end of the arm, arranged to slide, to and fro, therein or thereon, the distance between the crank pin and the bearing of the arm on the guide remaining the same during the entire movement of the arm; 30th. In a grain binding machine, the combination of a rotating driving crank M, a fixed sinuous guide N and an arm L adapted and arranged to carry the binding wire around the grain mounted directly on the crank M and controlled in its movement by the guide N.

No. 9677. Improvements on Silk Cleaning Machines. (*Perfectionnements aux machines à nettoyer la soie.*)

Avah N. Belding (Assignee of Elisha J. Martin), Rockville, Ct., U. S., 18th February, 1879, for 5 years.

Claim.—1st. The combination of a series of cleaning spindles C_1 C_2 C_3 C_4 with the tension roller E and the drawing roller F; 2nd. The combination of the drawing roller F, the winding bobbin G and the friction pulley I with a pulley J upon the main shaft, constructed and arranged so that the circumference of the bobbin tends to run faster than the drawing roller to keep the thread tight; 3rd. The series of stationary spindles C_1 C_2 C_3 C_4, in combination with rollers E and F, bobbin G and friction pulley I for giving motion to a running thread passing around the spindles for the purpose of cleaning it; 4th. The trough K and oiling wire L within the box B for oiling the bearings of the spindles while in motion; 5th. A spindle for cleaning silk or other threads composed of a conical or curved part *a* and a cylindrical part *b*.