

*Claim.*—As an improved article of manufacture, a skeleton strip of metallic belt fasteners, consisting of a skeleton body provided with teeth at opposite points along its edges, which stand at an acute angle to the body, and having enlarged openings along its centre at points opposite the spaces between said teeth, whereby the strip may be readily cut into fasteners of suitable lengths on transverse lines passing between the teeth and the aforesaid openings, substantially as described.

#### No. 24,210. Conveyor. (*Vit sans fin*)

Charles H. Morgan, Buffalo, N.Y., U.S., 2nd June, 1886; 5 years

*Claim.*—1st. The combination, with a conveyor shaft, of reversible flights, angular bearings or supports, which determine the angular position of the flights on the shaft and fastenings, whereby the flights are detachably secured in either or several predetermined positions, substantially as set forth. 2nd. The combination, with a conveyor shaft provided with angular openings *h*, of the flights *B* provided with fastening bolts *d*, having angular shanks *c* which enter the angular openings *e* and hold the flights in the desired inclined position, substantially as set forth.

#### No. 24,211. Steam Engine. (*Machine à Vapeur*)

Benjamin T. Webb, Beaufort, N.C., U.S., 2nd June, 1886.

*Claim.*—In a steam engine, the combination, with the main cylinder piston and piston-rod of the engine, of a yoke embracing a friction wheel on the main shaft of the engine, and one or more steam-actuated pistons for bringing the yoke into engagement with the sides of the friction wheel, substantially as herein specified. 2nd. The combination, with the steam cylinder *A* and its piston and piston-rod, of a yoke *I* having parallel side bars *J*, *J*, and connected movably with the piston-rod, steam-cylinders *N*, *N*, pistons *O* and friction rollers *Q*, and steam pipes *g*, *g*, connecting the cylinders *N*, *N* with opposite ends of the main cylinder *A*, as herein specified. 3rd. The combination, with the cylinders *N*, *N* and steam-pipes *g*, *g*, leading thereto, of cross-pipes *i*, *i* and valves *h*, *h*, substantially as herein shown and described. 4th. In a steam engine, the combination of the main cylinder *A* and its piston and piston-rod, the yoke *I*, friction-wheel *L*, cylinders *N*, *N*, pistons *O* and friction rollers *Q*, the pipes *g*, *g*, cross-pipes *i*, *i* and the valves *h*, *h*, as herein specified. 5th. In a steam engine, the combination, with the main cylinder *A* and its piston and piston-rod, of the standard *F*, yoke *I*, friction-wheel *L*, cylinders *N*, *N* and their piston pipes *g*, *g*, connecting the cylinders *N*, *N* with opposite ends of the main cylinder *A*, and the tappet *R*, valve-rod *S* provided with collars *k*, *k*, the lever *T* and slide-valve *C*, substantially as specified.

#### No. 24,212. Swinging Centre Board for Vessels. (*Semelle de Dérive à Pentures pour Bateaux.*)

James A. Deering, Gloucester, Mass., U.S., 2nd June, 1886; 5 years.

*Claim.*—1st. The same and having their upper ends screw-threaded, a screw-threaded gear-wheel *f* through which the said rods pass, the gear-wheel *f* meshing with the gear-wheel *d*, the centre board *B* hinged to the lower ends of said rods, and means for guiding the centre board as it is raised and lowered, substantially as shown and described. 2nd. The combination of the rods *c*, having their upper ends screw-threaded, the screw-threaded gear wheels *d* through which the said rods pass, the gear-wheels *h* meshing with the gear wheels *d*, the centre board *B* hinged to the lower end of the rods *c*, and the tubes *e* surrounding the said rods, substantially as herein shown and described. 3rd. The centre board *B* hinged to the rods *c*, in combination with the guide-rods *a* and jointed rods *e* attached to the lower edge of the centre board *B*, and passed through the eye *e* for staying the lower edge of the centre board, substantially as shown and described.

#### No. 24,213. Wood Working Machine.

(*Machine à Travailler les Bois.*)

Delphis Picard, Montreal, Que., 2nd June, 1886; 5 years.

*Claim.*—In a wood-working machine, the combination of shafts *L*, *M*, *N*, wheels *T*, *W*, table *J*, feeder *O*, clutch *Q*, and weight *e*, with frame *K*, table *G*, the whole as above described and for the purposes set forth.

#### No. 24,214. Piston Packing.

(*Garniture de Piston.*)

William C. McTyre, Hatochabbee, Ala., U.S., 2nd June, 1886; 5 years.

*Claim.*—The improvement in pistons, substantially as herein described, consisting of the body formed in a single piece provided with an annular peripheral groove, the ring seated in the annular groove and made in sections, the ends of which are formed parallel with the line of motion of the piston, and are connected by interlapping tongue joints, and springs held within the groove of the body and engaging the ring sections directly below the joints of the said sections, all arranged, substantially as and for the purposes specified.

#### No. 24,215. Rotary Engine for Steam or Water Power. (*Machine Rotatoire à Vapeur ou à Eau.*)

Charles Dawson, Peterborough, Ont., 2nd June, 1886; 5 years.

*Claim.*—1st. The revolving piston contained within a cylinder bored so that a line shall be formed on one side of the said piston, in combination with blades adjustably held in the piston, substantially as and for the purpose specified. 2nd. A revolving piston *A* provided with adjustable blades *F* radiating from its centre, the said piston being contained within a cylinder bored so as to leave a line on one

side of the piston, in combination with the cam or cams *G*, arranged substantially as and for the purpose specified. 3rd. A revolving piston *A* contained within a cylinder *C*, bored so as to leave a line *a* between the ports *D* and *E* on one side of the piston *A*, in combination with the blades *F* adjustably held in the piston *A*, and actuated by the stationary cam *G*. 4th. A revolving piston *A* contained within a cylinder *C*, bored so as to leave a line *a* between the ports *D* and *E* on one side of the piston *A*, in combination with the blades *F* adjustably held in the piston *A*, the springs *b* placed between the blades *F* and cam or cams *G*, substantially as and for the purpose specified. 5th. A revolving piston *A* contained within a cylinder *C*, bored so as to leave a line *a* between the ports *D* and *E* on one side of the piston *A*, in combination with the blades *F* and cam or cams *G*, the blocks *e* held against the blades *F* by the spring *f*, substantially as and for the purpose specified. 6th. The revolving piston *A* contained within the cylinder *C*, bored as specified, a flange *h* formed on the piston head *A* to butt against the cylinder *C*, in combination with the cylinder head *H* shaped so as to leave a space *g* between it and the piston, which space is connected to the steam port *D* by the small steam port *d*, substantially as and for the purpose specified. 7th. The revolving piston *A* provided with adjustable blades *F* radiating from its centre, the said piston being contained within a cylinder bored so as to form a line on opposite sides of the piston *A*, in combination with the cam or cams *G*, arranged substantially as and for the purpose specified.

#### No. 24,216. Grain Drill Attachment.

(*Appareil de Semoir en Ligne.*)

William C. Lathrop, Milton Centre, Ohio, U.S., 2nd June, 1886; 5 years.

*Claim.*—1st. An attachment for grain drills comprising a roller supporting frame, provided near its rear end with bearing for such roller, and a collar adapted to embrace the drill tooth and supported in the frame in advance of such bearing, substantially as set forth. 2nd. In an attachment for grain drills, a roller supporting frame provided near its rear end with bearings for the roller, a collar journaled in the frame in advance of the bearings and fitted to embrace the drill tooth, the frame being projected in advance of such collar to form a stop-extension, substantially as set forth. 3rd. The combination of a drill tooth, a collar embracing such tooth, and provided with a set-screw by which it may be held at and desired point thereto, and a roller journaled in the said frame in rear of the collar, substantially as set forth. 4th. In a roller attachment for grain drills, the combination, with the frame provided with the bearings for the roller, of a collar fitted to embrace the drill tooth, and provided with an internal binding point, and having opposite said point a threaded opening fitted to receive a clamping screw, substantially as set forth. 5th. The combination of the drill tooth, the roller supporting frame pivotally connected therewith, and provided with an extension forward of the pivotal support, and a roller journaled in the said frame in the rear of the tooth, substantially as set forth.

#### No. 24,217. Vehicle Gear.

(*Train de Voiture.*)

John N. Brown, New London, Ct., U.S., 2nd June, 1886; 5 years

*Claim.*—1st. A crank axle composed of axle-shanks provided at their outer ends with axle-spindles, and at their inner ends with perforated ears, a depressed axle-body and dependent arms connecting said body with said axle-shanks, said parts being integral and in the same vertical plane, substantially as described. 2nd. The combination of a crank-axle composed of shanks provided at their outer ends with axle-spindles, and at their inner ends with perforated ears, a depressed axle-body and dependent arms connecting said body with said axle-shanks, said parts being integral and in the same vertical plane, pivoted links connected to said ears, and a spring connected to said links and in the same vertical plane with said axle-body, substantially as described. 3rd. A vehicle gear consisting of a suitable axle, a semi-elliptic spring pivotally connected at each end with said axle, substantially as described, an inverted semi-elliptic spring secured centrally to said axle spring, side bars attached to the free ends of said inverted springs, and bars extending from side bar to side bar or similar means for supporting the body, all being combined substantially as and for the purpose specified.

#### No. 24,218. Car-Coupling. (*Attelage de Chars.*)

Henry S. S. Copland and James C. Gilmour, London, Eng., 2nd June, 1886; 5 years

*Claim.*—1st. The shackles *A*, *A* with their upper spurs *g*, *g*, lower spurs *f*, *f*, projecting shoulders *h*, *h* and lugs *i*, substantially as set forth and illustrated. 2nd. The shackles *A*, *A* with their upper spurs *g*, *g*, lower spurs *f*, *f*, projecting shoulders *h*, *h* and lugs *i*, combined with the shafts *e*, *e*, and the uncoupling device consisting of the levers *C*, *C*, *D*, *D*, *X*, *X*, and the operating handles *b*, *b*, substantially as set forth and illustrated. 3rd. The uncoupling device, consisting of the shafts *e*, *e*, levers *C*, *C*, *D*, *D*, *X*, *X*, and the operating handles *b*, *b*, substantially as set forth and illustrated.

#### No. 24,219. Tubular Lantern.

(*Lanterne Tubulaire.*)

George A. Kennedy, Coaticook, Que., 2nd June, 1886; 5 years.

*Claim.*—1st. The combination of the cistern *A*, post *A*, tubes *C*, *C*, joint *c*, chamber *C*, tube *D*, bracket *E*, plate *F*, globe *G*, clamp *H*, stop *I*, lug *J*, slot *d*, cover *K*, stem *k*, and spring *K*. 2nd. The combination of the cistern *A*, tubes *C*, *C*, chamber *C*, cover *K*, stem *k*, and spring *K*. 3rd. The combination of the cistern *A*, tubes *C*, *C*, joint *c*, and hot air chamber *C*. 4th. The combination of cistern *A*, tubes *C*, joints *c*, and tubes *C*. 5th. The combination of the cistern *A*, and post *A*. 6th. The combination of the hot air chamber *C*, wire *K*, tubular stem *k*, and globe cover *K*. 7th. The combination of a tube *C*, hinge tube *D*, slot *d*, bracket *E*, plate *F*,