

No. 10,285. Improvements on Bark Cutting Machines. (*Perfectionnements aux machines à couper l'écorce.*)

William Chicken, Boston, Mass., U. S., 22nd July, 1879, for 5 years.

Claim.—1st. A cutting cylinder F, composed of cutting discs *f f* having their teeth alternately inclined to the right and left and located side by side on an arbour, forming alternate V-teeth and clearing spaces; 2nd. The screen consisting of the parts *u u* having perforations *v v v* and intermediate inwardly projecting ribs *w w w*.

No. 10,286. Improvements in Car-Couplings. (*Perfectionnements aux attelages des wagons.*)

James B. Safford, Buffalo, N. Y., U. S., 22nd July, 1879, for 5 years.

Claim.—1st. In a draw-bar, the pallet F, having a practically straight bearing face and having its pivotal end projecting rearward; 2nd. A coupling pin provided, near its lower end, with a stop or projection A arranged on the rear side of the pin; 3rd. A coupling pin provided with two intersecting horizontal bores or cavities *a o* and having a rivet A secured therein.

No. 10,287. Improvements on Bricks or Stove Linings. (*Perfectionnements aux briques ou doublures des poêles.*)

Elijah Stilwell, Montreal, Que., 22nd July, 1879, for 5 years.

Claim.—The plate A with projections B, either cast on the plate, A, or on the stove plates, in combination with the fire clay C.

No. 10,288. Improvements on Grain Binders. (*Perfectionnements aux lieuses à grain.*)

Alexander G. McIntosh, Atalissa, Iowa, U. S., 22nd July, 1879, for 5 years.

Claim.—1st. The combination, in a harvester, of the knife X and the elevator U O; 2nd. The combination, with the fixed tooth bars O O, of the median movable bar W V operated by the cams T T and spring W; 3rd. The combination of the two straps O, wound in opposite directions, with the hinged bar of the rake L M, for raising and lowering the rake teeth and for pressing down the gavel, while being bound; 4th. The combination, in a harvester, with the elevator and knife, of a knotting or binding mechanism that ties two knots between each sheaf.

No. 10,289. Improvements on Furniture Castors. (*Perfectionnements aux roulettes de meubles.*)

John H. Schlott, Freeport, Ill., U. S., 22nd July, 1879, for 15 years.

Claim.—1st. The two half-balls D and the central plate B, pivoted in the castor frame and having the axles *a* cast upon its opposite sides; 2nd. The centre plate B, having hollow axles *a*, in combination with the half-balls D and axle *i*; 3rd. The hollow half-balls D; 4th. The centre plate B mounted, in the castor frame, on pivots which are placed slightly out of the true centre of the plate.

No. 10,290. Improvements in Torpedo Boats. (*Perfectionnements aux bateaux à torpilles.*)

John L. Lay, Paris, France, 22nd July, 1879, for 5 years.

Claim.—1st. In a torpedo boat, the provision for using quicklime in, or with, the gas generator or reservoir B, and for conducting water by the tube B₁, or their equivalents, to the line in the spaces C; 2nd. The utilization of a portion of the hull or body A of the same, to serve as a gas chamber by securing therein the tube plates A₂ and fitting the same with tubes B₂; 3rd. The improved method of heating the carbonic acid gas, in the gas generators or reservoirs, by the combination of alcohol, or its equivalent, and supplying the same with air for maintaining its combustion; 4th. The apparatus consisting of the flasks B^{*}, receptacle E, the tubes F F^{*}, D^{*} H, reservoir I, piston and cylinder J J^{*}, and valve H^{*}, or the equivalent of these parts, in which apparatus alcohol is burned, while air is admitted to the same to maintain its combustion, and is ignited and extinguished; 5th. The arrangement of the gas flask or reservoir B₁ in the hull or body A of the same, so that there is an annular space A^{*} between the said flask and hull, for the combustion of the alcohol for heating the said gas; 6th. The guide rods L^{*} provided with a light or lamp L and arranged in combination with the apparatus or mechanism for adjusting the said rods, or equivalent mechanism; 7th. In combination with the conductor or cable, whereby an electric current is sent from a shore or other station to a torpedo boat not otherwise connected with the said station, the employment of mechanism or apparatus whereby to employ a cable consisting of a single wire, (or of two wires) for effecting the transmission of the current between the shore or other station and the torpedo boat, for causing the operation or adjustment of all the various devices on the said boat, for controlling, steering, firing or otherwise manipulating or manoeuvring the same; 8th. The apparatus or mechanism consisting of the commutator d on the index spindle *a*, in combination with the springs d₃ and block d₄, arranged in connection with the said cable or conductor and co-operating with the index finger or pointer *a*; 9th. In the said apparatus or mechanism, the combination of devices comprising the circuit closing lever *e*, lever *f* and spring plate *g*, posts *h g*, or their equivalents, for closing and breaking the circuit and thereby adjusting the said apparatus to send either a powerful or weak current, from the shore or other station, to the torpedo boat; 10th. In an apparatus for controlling or working a torpedo boat and in combination with the peculiar kind of cable or conductor above described, the commutator d, in the apparatus at the shore or other station, connected with the dial and index or pointer *a* and the commutator *l*, in the boat, arranged in connection with the various parts of the apparatus, whereby the various operations of the boat are effected in obedience to the movements of the said index or pointer; 11th. In the said apparatus and in combination with the cable or conductor consisting of one wire (or of two wires), the device consisting of the pivoted three-armed lever *s*, the notched disk *a₃* and ratchet wheel *a₂* on the index shaft *a*, or the equivalents of these parts, and the lever *e*, or other parts, operating in connection therewith for preventing premature firing of the torpedo boat; 12th. The arrangement of the exhaust pipe or pipes in combination with the

tube through which the cable passes from the boat, in such a manner that the exhaust gas, or other fluid from the engines, passes out through the said tube.

No. 10,291. Improvements on Grain Binders. (*Perfectionnements aux lieuses à grain.*)

Charles L. Travis, Minneapolis, Minn., U. S., 23rd July, 1879, for 5 years.

Claim.—1st. The combination of the binder arm shaft having the arm I, the vibrating lever H and the crank or wheel G; 2nd. The combination of the knottor operating shaft provided with crank G, the binder arm shaft provided with arm I and the connecting lever H; 3rd. In a rotary tying head, the combination of a recessed rotary block or head, a finger or nipper c, arranged to close therein, and a second finger or nipper *c*, arranged to close within the outer side of finger c; 4th. In combination with the rotary finger c, the rotary head or block recessed to admit the finger and provided with the groove K, to retain the cord in place at the centre of the head; 5th. In combination with the rotary finger c, the finger *f* seated and pivoted at its middle in a recess in the outer side of finger c; 6th. The combination of the rotary head or socket, the rotating and sliding shaft *a*, having the recessed finger c, the finger *f* pivoted within the finger c, and the sliding bar *h*, mounted in the shaft and connected to finger *f*; 7th. The combination of the hollow rotary head or socket, the two laterally movable fingers *c f*, arranged to rotate with the head and mechanism arranged to first draw the fingers into the head, then rotate the head and open the finger *f* outward, and then close the finger *f* and move both fingers outward from the head while the rotation continues and finally open finger *f* a second time; 8th. As an improvement in the construction of knotting or tying heads, the combination of a round shaft *a*, having one end flattened and fashioned into a finger c, a flattened and recessed block *i* seated in the side of the shaft, and an encircling ring *l* secured to the block; 9th. A rotary knotting or tying head, a straight round shaft *a*, having one end cut away so as to form a flat face and an upright finger thereon; 10th. In combination with a rotary head or socket, two knotting fingers rotating therewith and arranged to close within the head during the first revolution, and then move outward and stand in front of the head during the second revolution; 11th. The combination of the knotting head, the binder arm and the retaining spring P, to hold the severed ends of the applied band; 12th. The combination of a knotting head and a device P below the same, adapted to retain the severed ends of the applied band with a frictional or yielding hold thereon during the formation of the knot, in order that the slack formed by the knot shall be taken up towards the bundle; 13th. In combination with the tying head and the retaining device P, a knife or cutter arranged to sever the ends of the applied band in rear or outside of the retaining device prior to the formation of the knot; 14th. The combination of the knotting head revolving in a vertical plane and provided with the fingers or nippers at one end, and the vertically moving binder arm provided with the projection *a*, having two notched edges arranged to carry the cord to the centre of the tying or knotting head; 15th. In combination with the knotting head rotating in a vertical plane, the guard *i*, located directly above the same; 16th. In combination with the binding or cord carrying arm, the rotary cutting and clamping knife arranged to discharge the waste ends of the cord; 17th. The rotary tying shaft mounted on the sliding plate *m*, in combination with the cam O; 18th. The combination of the tying shaft *a* mounted on the sliding plate, the rotary head or socket *i* secured against end movement, and finger *f* connected with sleeve *u* having cam *w* arranged to act in a bearing on plate *m*; 19th. The combination of the rotary knife spring N, spring arm *d*, lever *e* and cam *f*.

No. 10,292. Improvements in Paper Bags and Bag Machines. (*Perfectionnements aux sacs de papier et aux machines pour cet objet.*)

Otis E. Davidson and I Washington B. Mitchell, Clarksville, Tenn., U. S., 23rd July, 1879, for 15 years.

Claim.—1st. The rotating feed-roll, the segments for applying paste to the paper strip, a vertically acting knife for severing the pasted piece, the toothed segment and the cam for depressing and spring for raising the knife; 2nd. The cylindrical feed-roll, the segments C C, for pasting the edges of the paper strip, the segment *m*, for intermittently engaging the pinion *a* and the rotating shaft *n*; 3rd. The vertically reciprocating former F, consisting of a flat metal plate, the hinged vibrating folders I I, so constructed as to receive or embrace the former, and the hinged table H, adapted to maintain a horizontal position when the former descends and the said folders act on the blank; 4th. The hinged side folders I I, the flaps V V, the hinged table H, and toothed arms *h* for acting on the pinion fixed on the rock shafts *f f* of the flaps; 5th. The vertically acting former having a slotted shank F, and the hinged table having an arm *h*; 6th. The spring arms *j*, pivoted to the base of the folders I and the fingers or studs *k* projecting from the folders I; 7th. The combination of the vertically acting former having the slotted shank F, the hinged table having arm *h*, racks *h* and the corner folders V; 8th. The combination of the hinged spring arms W and table H, having arms *h* *h*, with the former F and the slotted shank F; 9th. The seamless bottom bag, having oppositely disposed lapped side seams and bottom corners which are folded and secured exteriorly upon said seamless bottom.

No. 10,293. Improvements on Nut Locks. (*Perfectionnements aux arrête-noix.*)

Conrad G. Bacon (Assignee of Edward C. Smith), Middletown, Conn., U. S., 23rd July, 1879, for 5 years.

Claim.—The combination, with a screw bolt and its ordinary nut H, of the flexible locking nut J, having a reversed thread fitted upon a reduced screw-threaded continuation of the shank of the bolt.

No. 10,294. Electric Railway Signal. (*Signal électrique de railroute.*)

Stephen C. Hendrickson, Brooklyn, N. Y., U. S., 23rd July, 1879, (Extension of Patent No. 3,734), for 5 years.