

E. K. COOLEY.
Machines for Making Bottle-Covers.

No. 156,913.

Patented Nov. 17, 1874.

FIG. I.

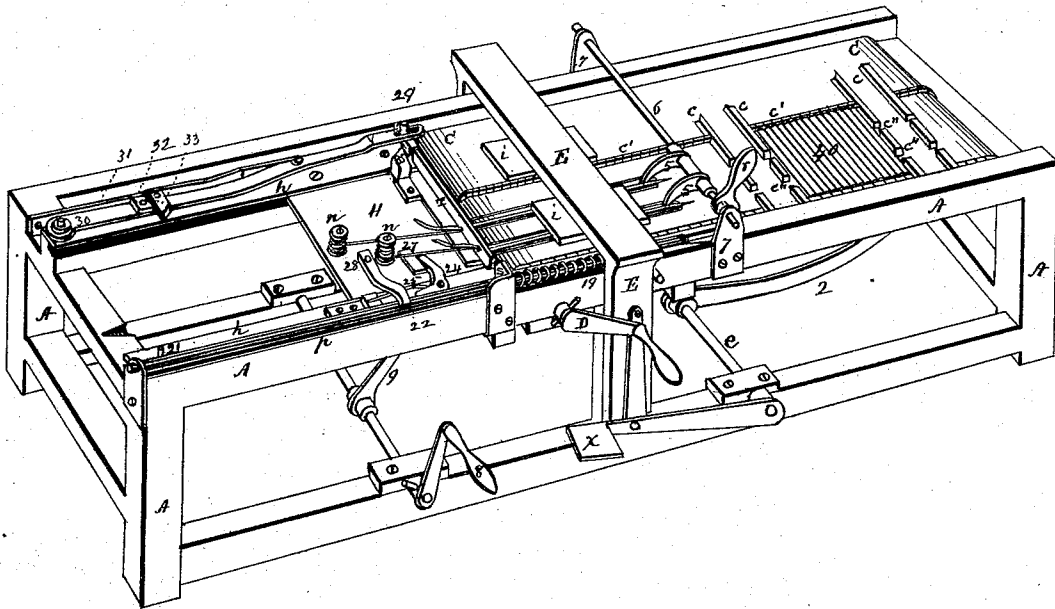
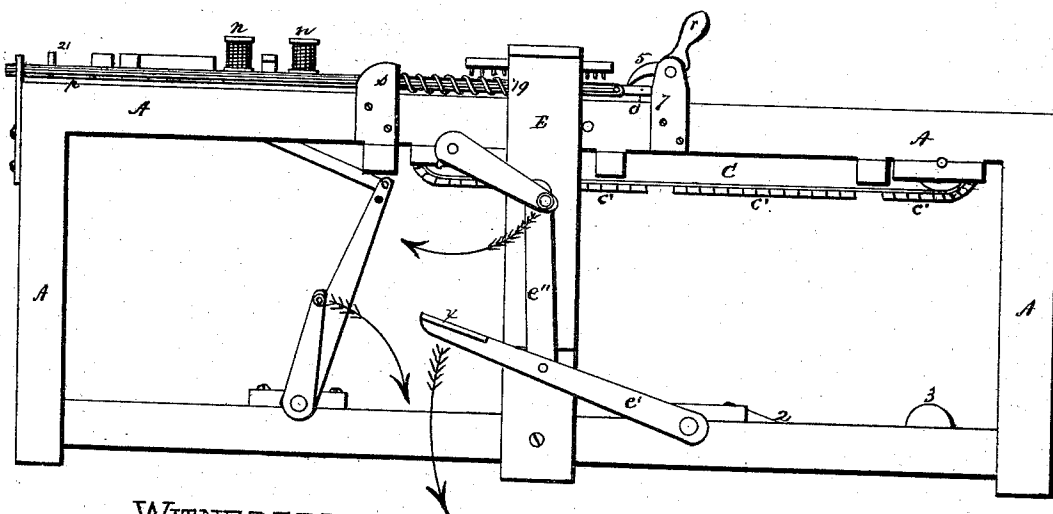


FIG. II.



WITNESSES

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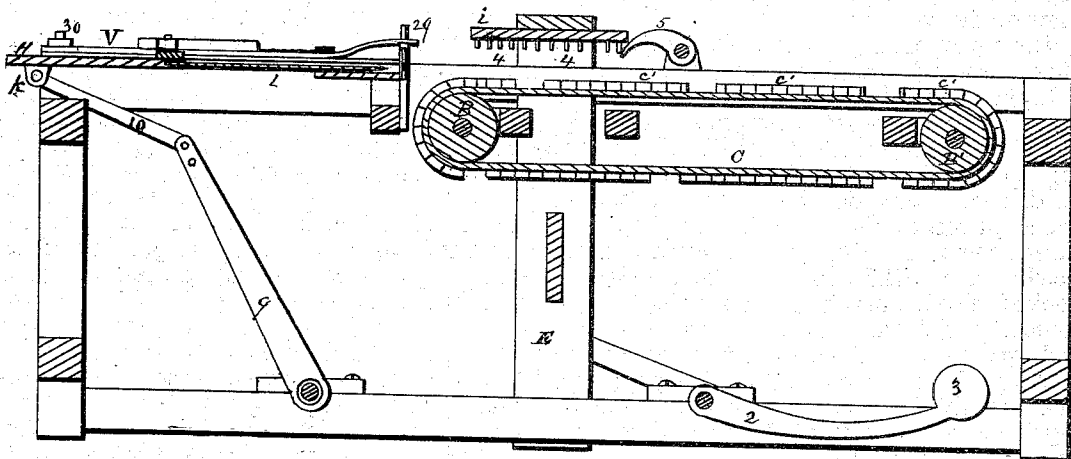
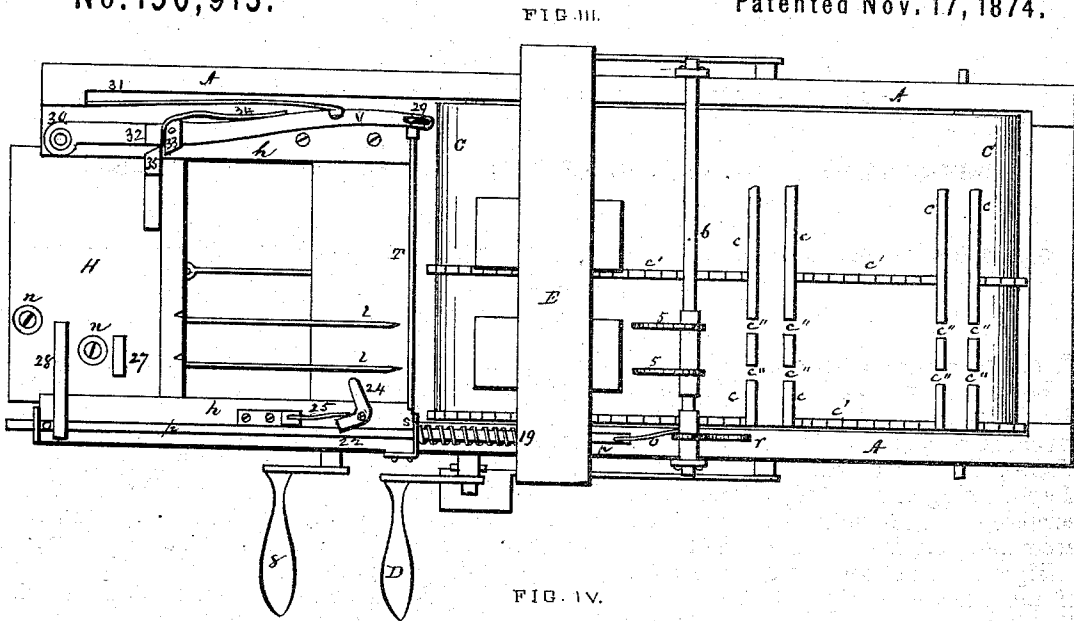
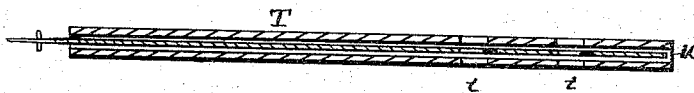


FIG. V.



WITNESSES.

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UNITED STATES PATENT OFFICE.

EARL K. COOLEY, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN MACHINES FOR MAKING BOTTLE-COVERS.

Specification forming part of Letters Patent No. **156,913**, dated November 17, 1874; application filed October 19, 1874.

To all whom it may concern:

Be it known that I, EARL K. COOLEY, of San Francisco, in the State of California, have invented a new and Improved Machine for Making Bottle-Covers; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is an isometrical perspective view of the machine. Fig. 2 is a side elevation. Fig. 3 is a plan view. Fig. 4 is a section on the line *x x* of Fig. 3. Fig. 5 is a sectional view of the cutting apparatus.

The object of my invention is to form jackets or covers for fragile ware out of tule-grass.

My invention consists in an endless belt, feeding to a clamp a series of lengths of the stalks of the tule-grass or other rush, the clamp seizing them and holding them until a series of needles with threads carried upon a sliding frame puncture them and string them, the thread remaining through the stalks as the needles are withdrawn. It also consists in hooked claws operating intermittently and conjointly with the needles to seize the thread and prevent it from being withdrawn by the needles. It further consists in a reciprocating knife, operated by the movement of the sliding frame to cut the threads in proper lengths as the needles recede.

In the said drawings, A A A A is a framework forming a stand for the machine. Located at one end of the upper part is a roller, B', and near the center of the machine is another friction-roller, B, over which rollers is placed an endless belt, C, and the roller B is actuated by a crank, D. Upon this endless belt are certain partitions *c c'* running longitudinally and transversely, and dividing the belt into spaces, each adapted to hold enough lengths of the tule-grass to form one cover. The longitudinal partitions are flexible, and the transverse ones have narrow openings *c'' c''*, for a purpose hereafter described. Near the roller B, and extending above the apron, is a frame, E E, its vertical pieces rising and falling through the medium of a rod, *e*, and links *e' e''*, and rod 2, and weight 3. Under the cross-piece of the frame are clamps *i i* arranged to fit into the spaces between the partitions *c c'* when the frame is brought down by

the treadle *x*. The under side of the clamps *i i* are provided with short pins 4 4, or corrugated to present an uneven surface to the tule-stalks, to clamp them and prevent their slipping. Just in the rear of the frame E, and between it and the roller B', are two claws, 5 5, fastened to a shaft, 6, having bearings in the ears 7 7. These claws are for a purpose and operated as hereinafter set forth. At one end of the machine are ways *h h* in the side timbers A A, in which slides a reciprocating table or frame, H, actuated by a crank, 8; lever 9, and link 10, having its bearings at *k*. The forward edge of the table bears two spools for thread *n n*, and two needles, *l l*, having eyes. Along one of the upper frame timbers, parallel to and contiguous to the line of movement of the frame H, is a rod, *p*, having one end connected by a link, *o*, to a lever-arm, *r*, on the rod 6. A spring, 19, is coiled around the rod *p*, and fastened to it at one end, the other end bearing against an angular shoulder, *s*, through which the rod passes. The rod also has a projecting stop, 21, and a nicked stop, 22, at the points shown. On the edge of the frame, and between the rod *p* and the sliding table, is a pawl, 24, having a square end, which is kept against the rod *p* by a spring, 25, to enter the notch 22. On the sliding table H are two stops or projections, 27 and 28, for operating the stop 21 on the rod *p* and the pawl 24. Located between the table H and belt C is a stationary hollow bar, T, (see Fig. 5,) having openings *t t* for the passage of the needles. Within this bar slides a knife, U, having openings corresponding to those at *t t*, the edges of the openings being ground down so as to make a good cutting-edge. At one end the knife has a small standard, 29, rising from it, said standard passing through a slot in the end of a lever, V, the other end of the lever being pivoted to the frame at 30, and having behind it a flat spring, 31, as shown. A square projection, 32, on the lever has pivoted close against it a pawl, 33, having an angular end and a curved end, a spring, 34, bearing against the curved end, so as to keep it close against the projection 32. The pawl 33 is so pivoted that when a stop, 35, upon the carriage H, and having an angular face, comes in contact with its angular face,

the resistance will be such as to force outward the lever V, and thereby draw the sharp-edged openings in the knife U across the opening in the bar.

The operation of the machine is as follows: A series of lengths of the rushes having been laid in between the partitions *c c'*, upon the endless apron, as seen at 40, the apron is moved along by the crank D, till the rushes come under the clamps *i i*, which are brought down by the treadle *x*, and intermediate mechanism, so as to hold the lengths steady. The sliding table then being in the position shown in Fig. 3, the crank 8 is turned, and it is brought forward, the needles *l l* passing through the openings *t t*, and puncturing the rushes one after the other, and passing beneath the hooks or claws 5 5. At this moment the projection 27 strikes the arm of the pawl 24, and releases the rod *p*, and allows the spring 19 to come into play, and through the rod and link the claws 5 are brought down so as to seize the threads in the needles, and prevent the thread beings withdrawn. (See Fig. 1.) The lever 8 is then retracted and the needles are returned to their original position. At the moment the needles pass clear of the plate T, the stop 35 strikes the pawl 33, forcing it and the lever V backward, until the knife U is drawn over the openings *t t*, and the threads are cut. The stop then passes beyond the pawl 33, and the carriage proceeds until the projection 28 strikes the stop 21, and carries back the rod *p* until the pawl 24 slips into the notch 22, and the claws 5 are raised to release the thread. The belt is then moved on, the sewed rushes dropping beneath the machine, and a new compartment moving under the clamp. The openings *c'' c''* in the par-

titions *c* allow the needles to pass through to their work.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with an endless belt, C, the needles *l l*, reciprocating in a plane parallel with the belt, substantially as and for the purpose set forth.

2. The reciprocating table H carrying the needles *l l*, in combination with an endless belt, provided with the rigid transverse partitions *c*, and longitudinal flexible partitions *c'*, substantially as and for the purpose described.

3. In combination with the endless belt C, the rigid partitions *c'* and flexible partitions *c''*, as described.

4. The claws 5 5, link *o*, spring 19, and rod *p* with its stop 21, and notch 22, in combination with the sliding table H, and stops 27 and 28, all constructed and operated substantially as described.

5. In a machine for making covers for fragile ware, the sliding knife U, in combination with the hollow bar T having openings *t t*, as and for the purpose set forth.

6. The sliding knife U, lever V, projection 32, spring 31, pawl 33, and spring 34, in combination with the sliding table H and stop 35, all constructed and operated as described.

7. The clamps *i i* having their lower faces roughened and operated by the frame E E, in combination with a machine for making covers for fragile ware, as set forth.

EARL K. COOLEY.

Witnesses:

R. K. EVANS,
WILL H. MOXON.