No. 639,395. Patented Dec. 19, 1899.

C. G. BIEDINGER.

C. G. JENNER, Guardian.

MACHINE FOR MAKING BOTTLE WRAPPERS.

(Application filed Nov. 20, 1895.)

(No Model.)

Fig. 1.

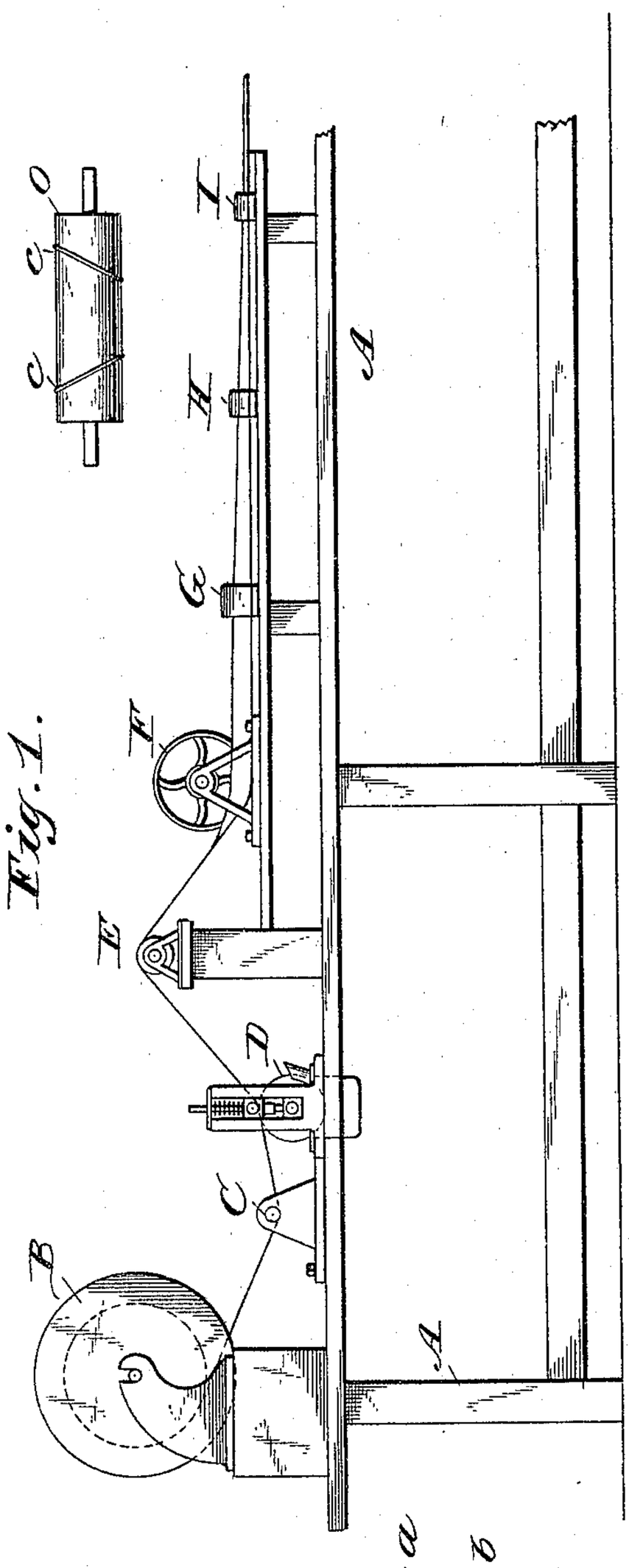


Fig. 1a

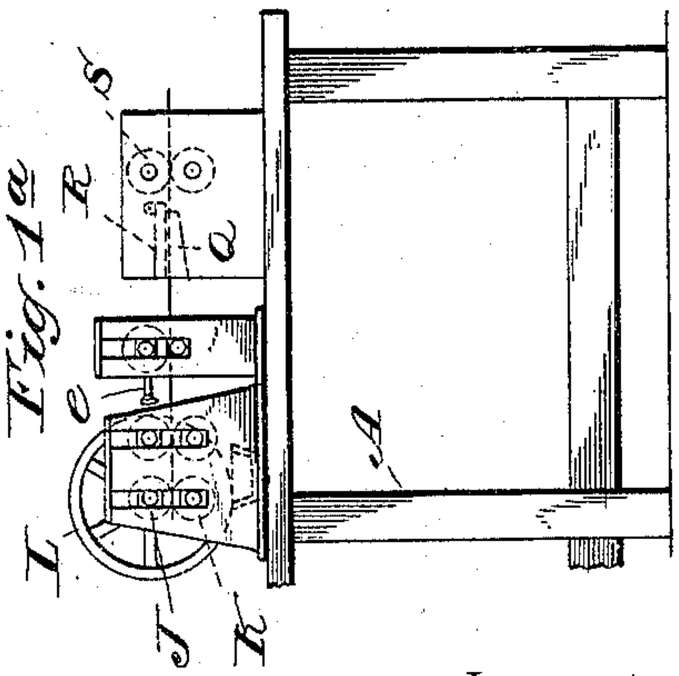


Fig. 2.

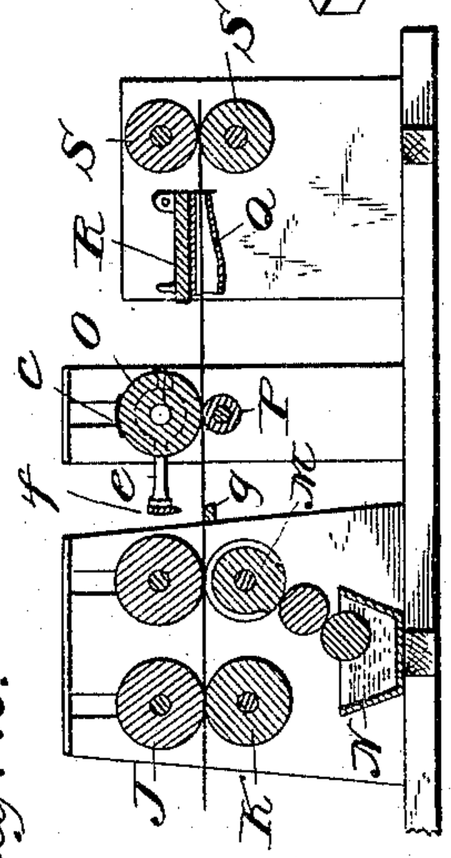


Fig. 3.

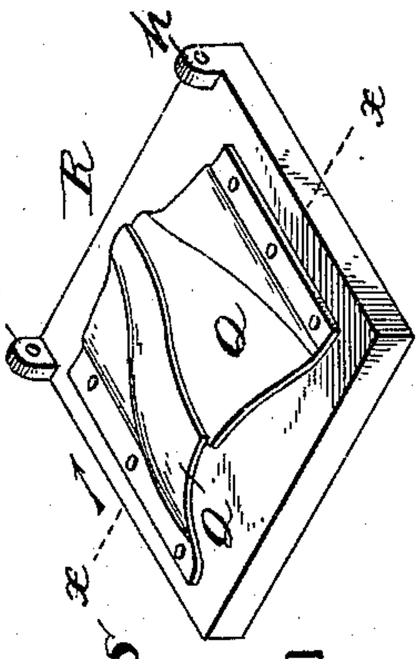


Fig. 5.

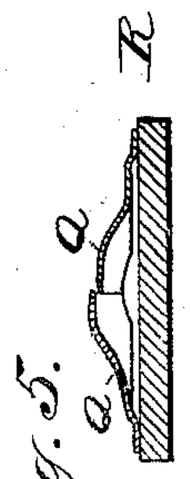
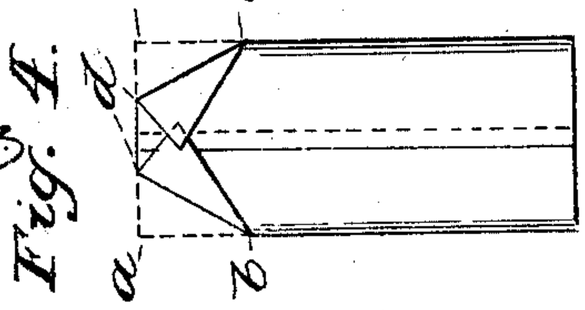


Fig. 6.

Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES G. JENNER, OF CINCINNATI, OHIO, GUARDIAN OF CHARLES G. BIEDINGER, OF CARTHAGE, OHIO.

MACHINE FOR MAKING BOTTLE-WRAPPERS.

SPECIFICATION forming part of Letters Patent No. 639,395, dated December 19, 1899.

Application filed November 20, 1895. Serial No. 569,509. (No model.)

To all whom it may concern:

Be it known that CHARLES G. BIEDINGER, a citizen of the United States, residing at Carthage, in the county of Hamilton and State of Ohio, has invented certain new and useful Improvements in Machines for Making Bottle-Wrappers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to automatic machinery for forming a bottle-wrapper of paper to approximate the form of the bottle, in tubular form, open at both ends and contracted at the neck; and it has for its object the provision of novel means whereby the paper tube in its passage through the machine is first pasted at the neck portion and then properly creased and finally folded over on the creased lines and compressed so that the pasted portions may adhere to the body of the wrapper proper, and finally severed from the tube and delivered from the machine in a completed condition ready for use.

The novelty of the invention will be hereinafter set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of that part of the machine embodying the invention which forms the paper tube. Fig. 1ª is a side elevation of the remainder of the machine of Fig. 1 embodying the invention. Fig. 2 is an enlarged central sectional side elevation of the mechanism of Fig. 1ª. Fig. 3 is a still further enlarged inverted perspective of the neck-folding mechanism. Fig. 4 is a plan view of the bottle-wrapper as formed by the improved machine. Fig. 5 is a diminished sectional view on the dotted line *x x* of Fig. 3 looking in the direction of the arrow. Fig. 6 is an elevation of the neck-creasing roll.

The same letters of reference are used to indicate identical parts in all the figures.

That part of the machine illustrated in Fig. 1 for forming the paper from the feed-roll into a continuous tube is old and constitutes no part of the present invention. In describing it it is only necessary to say that A is the framework or table, having journaled thereon at one end the feed-roll B, from which the web of paper is led under a guide-roller C and then has paste applied by a roller D on one edge, and is then conducted over a second guide-roller E to a creasing-roller F narrower than the web, which creases and turns up the sides of the web in the commencement of the formation of the tube. From the roller F the paper is conducted under turning-in formers or plates G H I of gradually-diminished heights, which fold over the turned-up sides and bring them together, so that they overlap, and then it is delivered to feeding and presser rolls J K, Figs. 1ª and 2, one of which is positively driven as by a pulley L, belted to any suitable driving-pulley. (Not shown.) Adjacent to the rolls J K are a pair of paste-rolls M to take up paste from a pan N and apply it to the under sides of the tube at its edges for the distance that the neck portion is to be folded over, as from the points *a* to points *b*, dotted lines in Fig. 4. From the pasting-disks the tube is passed between a positively-driven creasing-roll O, having diagonal creasing-ribs *c* on its face, Fig. 6, and a soft-rubber roll P, serving as a matrix for the ribs *c* and by which the tube is creased on the lines *d b*, Fig. 4. The trunnion or shaft of the roll O carries side arms *e*, to which are secured a shearing-bar *f*, that acts against a stationary shearing-bar *g*, over which the tube passes and by which it is cut into equal and proper lengths to form the bottle-wrappers. From the rolls O P and before it is severed the tube, with its end creased diagonally on each side, is passed between the folding-plates Q, Figs. 3 and 5, which at the entering end are enlarged and curved and are gradually contracted and brought close to the bed-plate R at the opposite or leaving end. These plates, as seen in Figs. 3 and 5, are secured at their edges to the plate R and are arch-shaped in form, the one partially overlapping the other at the middle, and while they are sufficiently wide at the entering end of the folded tube they are gradually contracted both in width and depth at the discharging end, and because of the one plate being higher than the other, owing to the overlapping, first one edge of the forward end of the tube is turned over and then the other end is turned over, both being turned diagonally

and so as to overlap each other, and as the tube leaves the plates Q the end of the tube thus creased and folded over is caught between a pair of positively-driven rolls S just before the severing-bar *f* comes into contact with the tube to sever it, as shown by the position of the parts in Fig. 2. The rolls S in addition to feeding the severed bottle-wrapper out of the machine also serve to press the pasted flaps down to hold them secured to the body of the wrapper. The plate R, carrying the folding-plates Q, is hinged to the framework, as by lugs *h*, so that it can be raised to clean the plates of any adhering paste. From the rolls S the finished bottle-wrappers may be fed on through steam-heated drying-rolls (not shown) to effectually dry the paste both at the joint forming the tube and at the overlapped neck portions.

Having thus fully described the invention, what I claim as his guardian is—

1. In a machine for making bottle-wrappers, the combination of a pair of creasing-rolls provided with diagonal creasing-blades to form diagonal flaps at the neck end of the wrapper-tube, a severing-bar, folding devices for turning over said flaps, and means for pressing down the flaps and means for delivering the finished wrappers from the machine substantially as described.

2. In a machine for making bottle-wrappers, the combination of means for applying paste to the edges of the paper tube at its end, a pair of creasing-rolls provided with diagonal creasing-blades to form diagonal flaps at the neck end of the wrapper, a severing-bar, folding devices for turning over and lapping the said flaps and means for delivering the finished wrappers from the machine, substantially as described.

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Witnesses:
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