Sheet 2-2, Sheets.

T. Piper.

Stitching Pins.

No. 86,317. Patented Jan. 26, 1869.

Fig. 3.

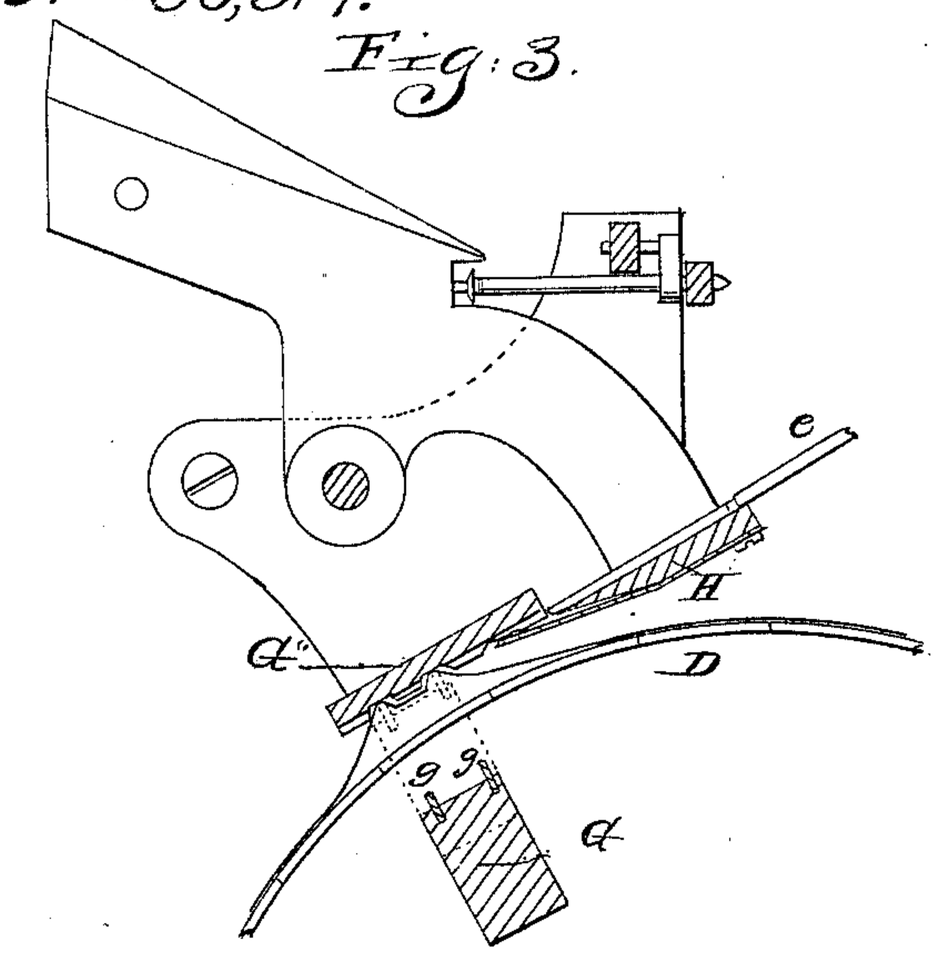


Fig. 4.

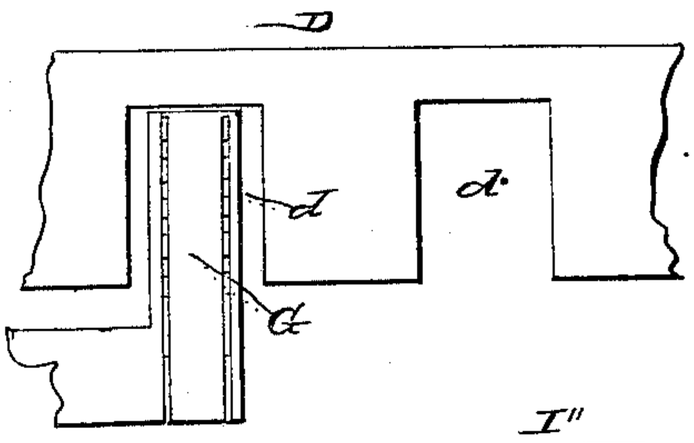


Fig. 5.

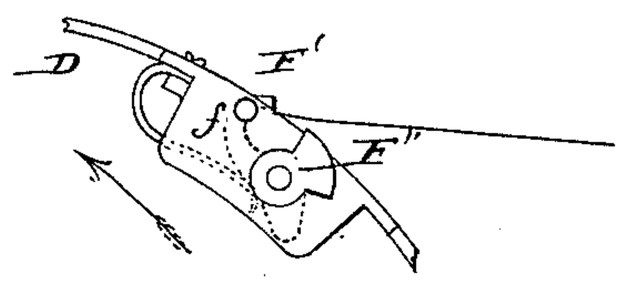


Fig. 6.

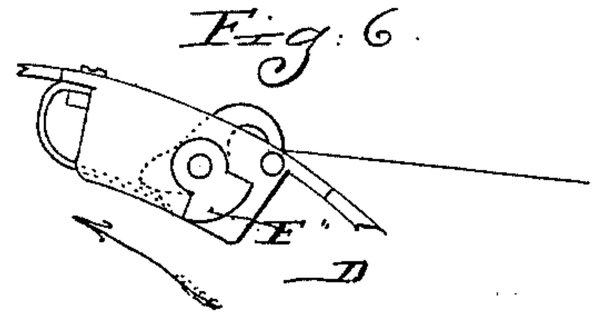


Fig. 7.

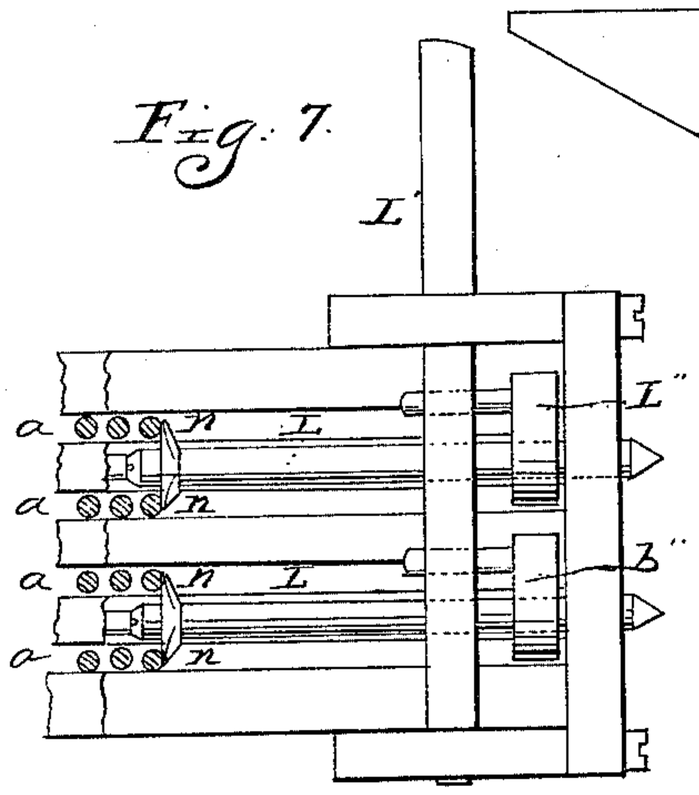
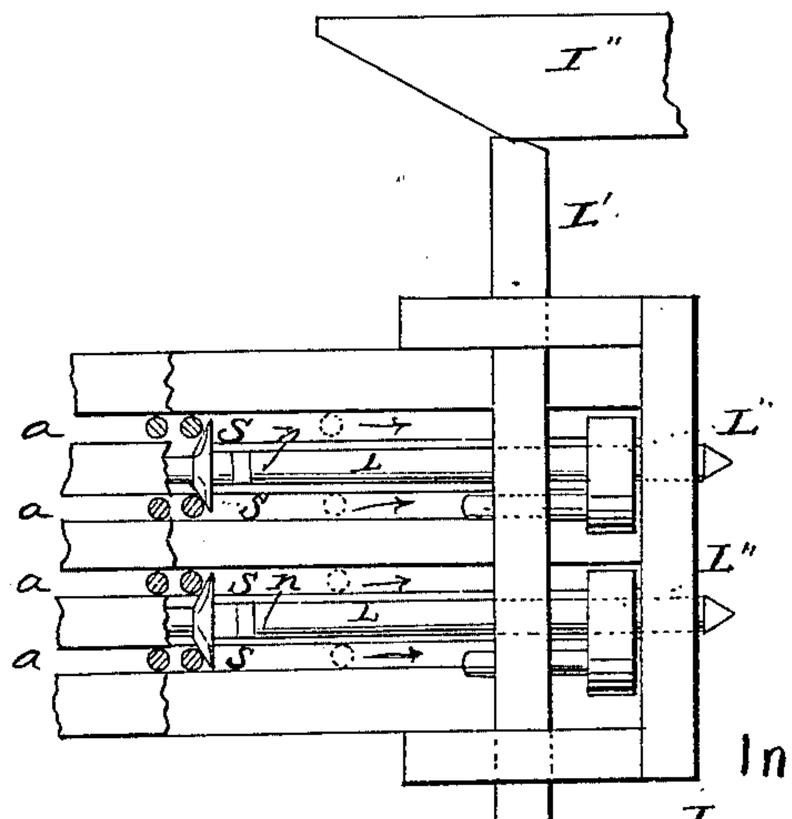


Fig. 8.



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By his Attorney.

John C. Earl

Sheet 1-2 Sheets.

T. Piper.

Sticking Pins.

No. 86,317. Patented Jan. 26, 1869.

Fig. 1.

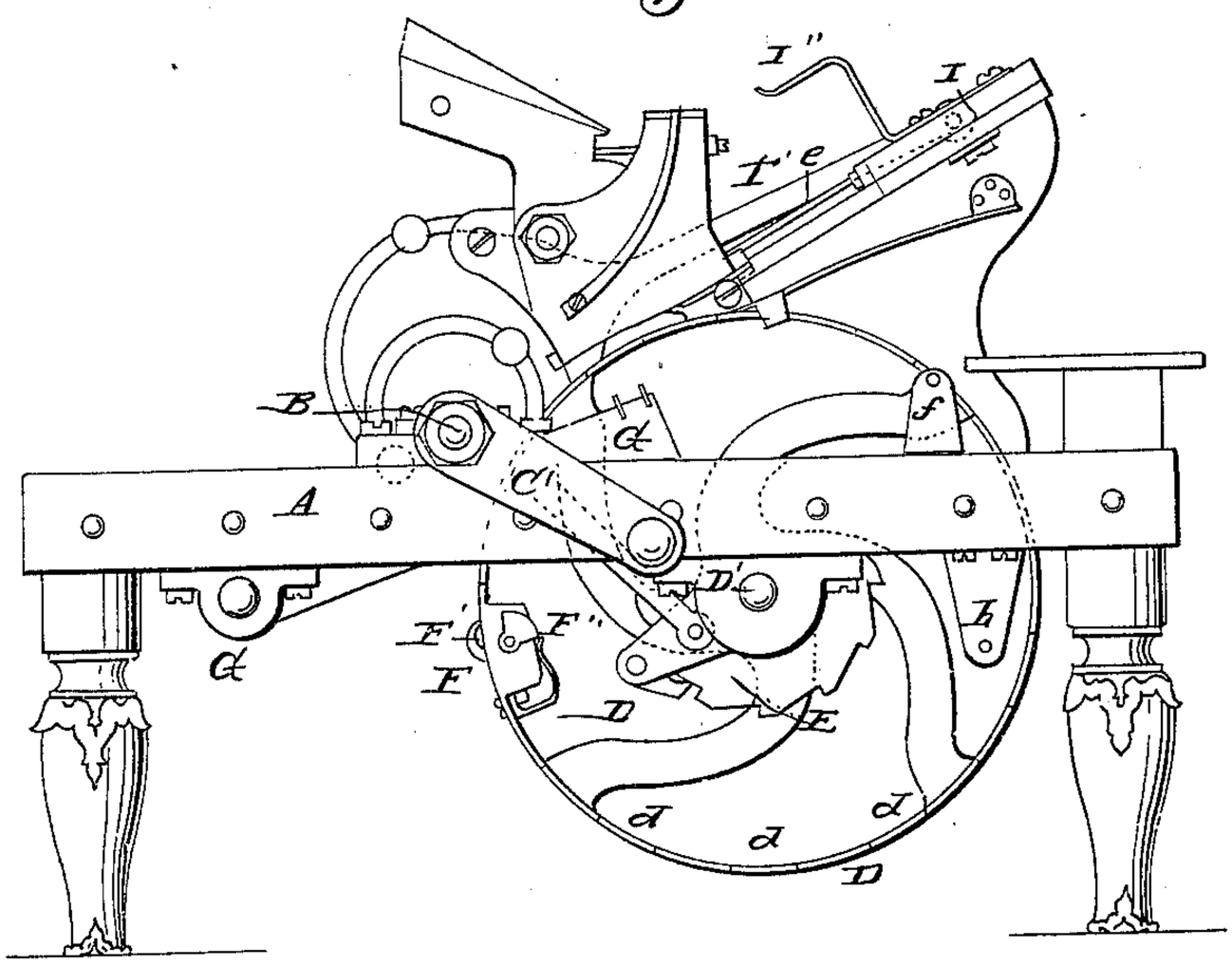


Fig. 2

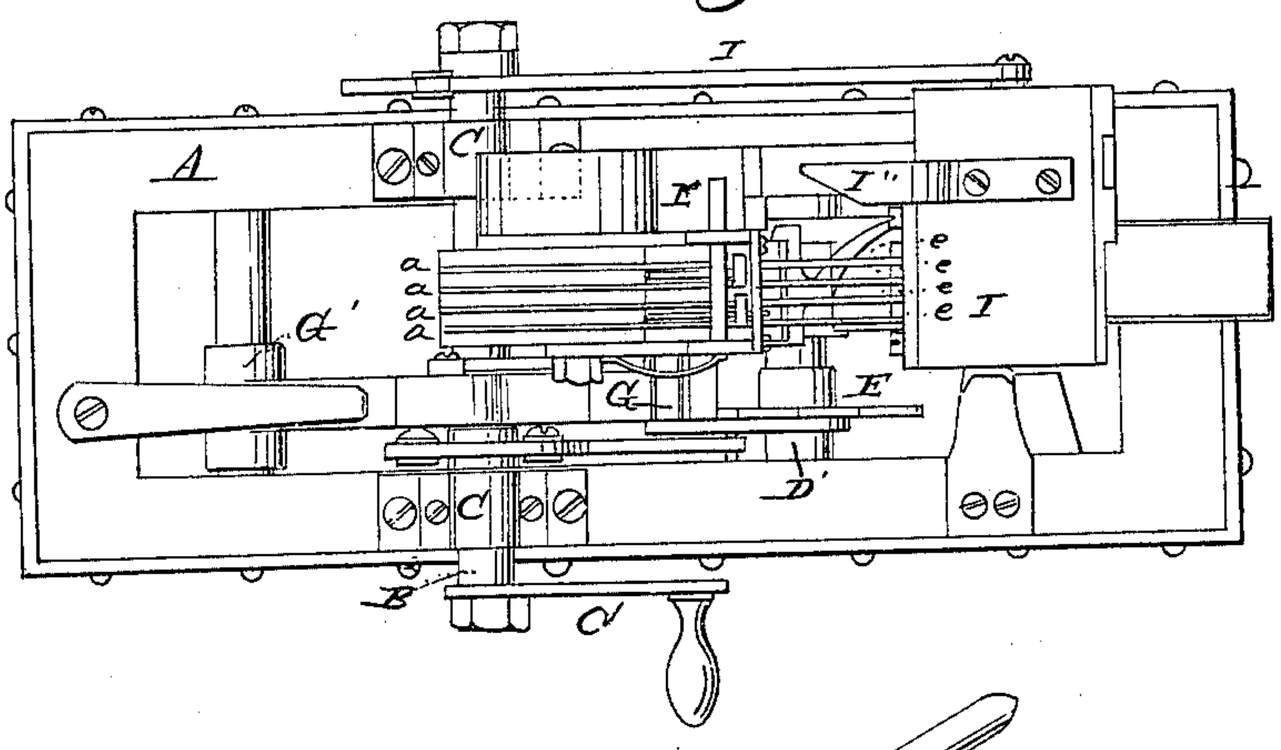
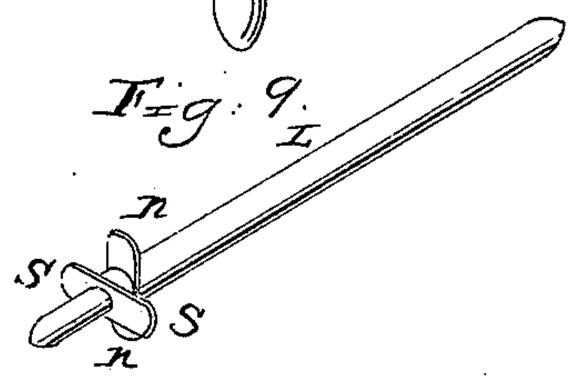


Fig. 9.



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United States Patent Office.

TRUMAN PIPER, OF BIRMINGHAM, CONNECTICUT, ASSIGNOR TO HOWE MANUFACTURING COMPANY, OF SAME PLACE.

Letters Patent No. 86,317, *dated January* 26, 1869.

IMPROVED MACHINE FOR STICKING PINS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, TRUMAN PIPER, of Birmingham, in the county of New Haven, and State of Connecticut, have invented a new Improvement in Machine for Sticking Pins; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view.

Figure 2, a top view.

Figures 3 to 9, inclusive, detached views to illustrate the construction and operation of my improvements.

This invention relates to an improvement in machines for sticking pins upon papers preparatory for market.

Heretofore the paper used for the purpose has been fed to the machine from a roll, and cut after sticking. This necessitates a complication of machinery, which by my invention is avoided, inasmuch as I am enabled to introduce the paper after it has been cut into sheets, printed, and the edges finished, and deliver the papers with the pins stuck thereon, each paper independent and complete in itself; and

The invention consists in the arrangement of a cylinder, or its equivalent, so as to receive and conduct the sheets of paper, and present the same to the sticking-apparatus; also, in the arrangement of the crimping device, so as to operate through the surface of the said cylinder lying upon the surface of the paper, the crimper being upon one side, and the die upon the other, so that the crimper passes up through the cylinder against the paper, to press or form the crimps preparatory to sticking the pins; also, in the cut-off for delivering the pins to the sticking-device, which is a shaft arranged centrally between each two channels, and provided with wings, two upon opposite sides, and two others distant from the first a little more than the diameter of the pins, the last two being upon the opposite side, but at right angles to the first two, so that a pin will fall against each of the two first wings, then by a quarter turn of the shaft, the other wings pass between the first pins and the next, and the first pins, being released, run down the channel to the sticking-apparatus.

To enable others skilled in the art to construct and use my invention, I will proceed to describe the same as illustrated in the accompanying drawings.

A is the bed-plate.

B, the driving-shaft, resting in bearings C, and caused to revolve by the application of power thereto in any known manner, here represented as by a crank, C′.

D is a cylinder, shown enlarged in figs. 3 and 4. The diameter of the said cylinder should be so that the circumference be a little greater than one or more lengths of the sheet of paper into which the pins should be stuck, and has through its surface openings *d*, arranged so that the said opening, will come upon the surface of the paper at that point where the crimps are to be formed; and the said cylinder arranged upon a shaft, D′, is caused to revolve by a pawl, D″, operated from the driving-shaft B, upon the ratchet E, as seen in fig. 1; and upon the said cylinder, at the proper point F, fig. 1, I arrange an apparatus for catching and holding the paper, as seen in figs. 5 and 6, so that when the cylinder is turned, the sheet so caught, will be held and drawn into the machine, and this is done by a jaw, F′, which is operated by a cam, F″, coming in contact with a stud or projection, *f*, as the cylinder is turned, and operates as follows:

The end of the paper, represented by the blue line, fig. 5, is placed near the periphery of the cylinder; then, as the cylinder turns, the cam F″ strikes the projection *f*, and throws over the jaw F′ to the position in fig. 6, grasping the end of the sheet, and is thus held until drawn through the machine, the pins stuck as hereafter described, and until the cam F″ reaches another projection *h*, when the cam is returned to the position in fig. 5, opening the jaw for another sheet.

I arrange as many of these jaws upon the cylinder as there are to be sheets introduced to each full revolution of the cylinder.

I would here remark that while I believe the cylinder, as shown, to be the best mode of construction of this carrying-device, yet an endless band, or chain, recessed in the proper manner, and provided with similar catches for the sheets, and with a positive movement, would answer the same purpose, as readily seen, and which I wish here to be understood I claim as an equivalent for the cylinder.

G is a jaw, extending into the cylinder, and hung at G′, or other convenient point, so as to have a vibratory or reciprocating movement up through the recesses in the cylinder, as seen in figs. 3 and 4.

Above the cylinder, and corresponding to the jaw G, I place a die, G″, corresponding to the jaw G, and in the jaw G, I arrange two tongues *g*, which, striking the paper upon the under side, press it up into the grooves in the die G″, as seen in fig. 3, the paper being denoted by the blue line.

It will be seen by the foregoing, that my invention is to employ the surface of the cylinder, or endless band or chain, as a support for the paper while passing through the machine, and at the same time feed or space the paper for each row of pins.

I believe the single jaw, operating through each successive recess in the cylinder, band, or chain, to be the best arrangement for crimping, yet a like result may be attained by arranging a separate jaw or crimper to each recess, and attaching the said several jaws to the cylinder or band, and so as to advance with the cylinder, each successive jaw or crimp preparing the paper to receive the pins.

The crimps thus formed, are to receive the pins, which are presented through the channels *a*, (as many chan-

nels as there are pins in each row,) or by any delivering-device, so as to fall into the proper position upon the plate H, (see fig. 3,) the pin denoted in red.

Above the said plate, and in line with its surface, the stickers or punches *e*, (as many as there are pins to be stuck,) are arranged in a slide, I, operated from the driving-shaft, through suitable connections I′, so that the said punches *e* are drawn down simultaneously against their respective pins, and press them through the crimps in the usual manner for the sticking-apparatus, the punches returning for a second set of pins to stick in the next crimp.

Various devices are employed for cutting off or delivering the pins properly to the stickers, but my improved device, which I illustrate enlarged in figs. 7, 8, and 9, I believe to be the best.

Centrally between each two of the channels *a*, I arrange a shaft, L, to which a quarter turn is given at the proper time, here shown as by connection with the slide I, so that when the said slide I descends, an incline, I″, will strike a sliding bar, L′, attached to the shafts L, by means of cranks L″, so that when the said slide is pressed in, as in fig. 8, the shafts are turned one-quarter over, or nearly so, and on the return of the said slide to the position in fig. 7, the shafts are returned to their first position.

Upon each of the said shafts, I arrange wings *n*, upon opposite sides, as seen in fig. 9, where one of the shafts is shown in perspective detached, so as to extend across the two channels between which the shaft is placed. Then immediately in the rear of the said wings, I arrange two other wings *s*, at right angles to the wings *n*, and distant from the wings *n* little more than the diameter of a pin, and the edges of the last-named wings formed nearly to a sharp edge. Therefore, when the said shafts lie in the natural position, as in fig. 7, the column of pins is supported by the wings *n*, as seen in fig. 7, but when the shafts are turned to the position in fig. 8, then the wings *s* pass between the first, or lowest pin, and the next, while the wings *n* turn up and release the first pair of wings *s*, in the mean time sustaining the column. The pins released by the turning up of the wings *n*, pass down the channel, as denoted in red, fig. 8; then, the shafts returning, the column falls, and the next pin comes against the wing *n*, and is there held, until, at the proper time, it is cut off and released, as before described.

It will be observed that it is not essential that the shaft should be made to control the two columns, for a separate shaft may be introduced for each column, in which case only one of each pair of wings would be required.

The shafts may be operated in any convenient manner, as will be readily seen and understood by persons skilled in this class of machinery; and it will also be readily seen that the sticking-apparatus is equally applicable to the use of any other cut-off; and also that this cut-off is alike applicable to other sticking-apparatus.

I do not wish to be understood as claiming any of the parts separately, except as hereinafter described.

Having fully described my invention,

What I claim as new and useful, and desire to secure by Letters Patent, is—

1. The arrangement of the cylinder or endless band D, constructed with recesses *d*, through its surface, and the crimping-apparatus which operates through the said recesses, substantially in the manner herein set forth.

2. In combination with the cylinder or band D, constructed as described, and the crimping-device, the jaw F′, or its equivalent for grasping and drawing in the sheets of paper, substantially as set forth.

3. The cut-off, formed by arranging the vibrating shaft L, provided with one or more wings *n*, and one or more wings *s*, at the outlet of the channels *a a*, as described, so as to cut off and deliver, substantially as herein set forth.

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