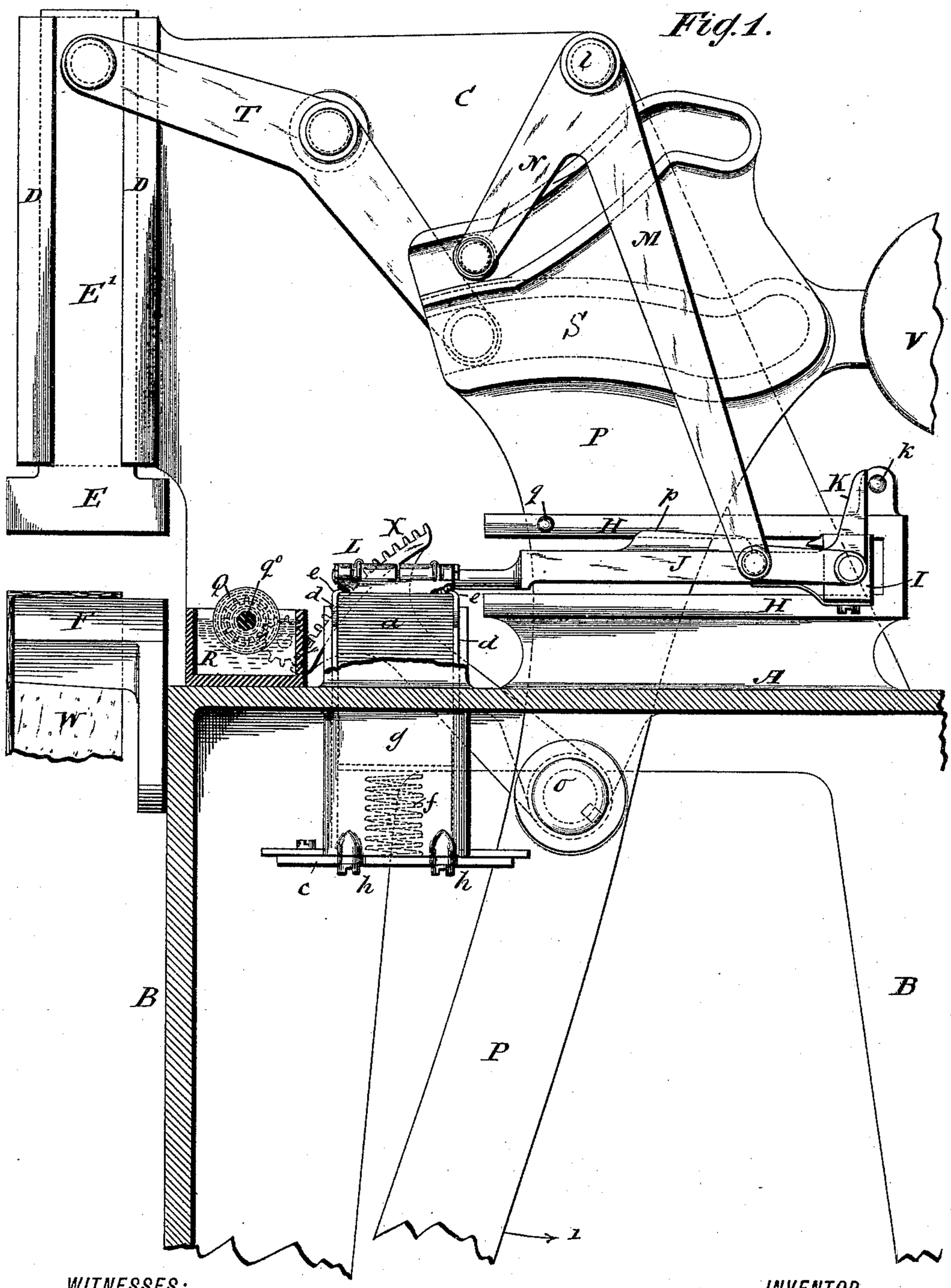
(No Model.) 3 Sheets—Sheet 1.

G. I. JAEGER.

MACHINE FOR APPLYING CORNER STAYS TO BOXES.

No. 395,567. Patented Jan. 1, 1889.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

G. I. JAEGER.

MACHINE FOR APPLYING CORNER STAYS TO BOXES.

No. 395,567. Patented Jan. 1, 1889.

Fig. 2.

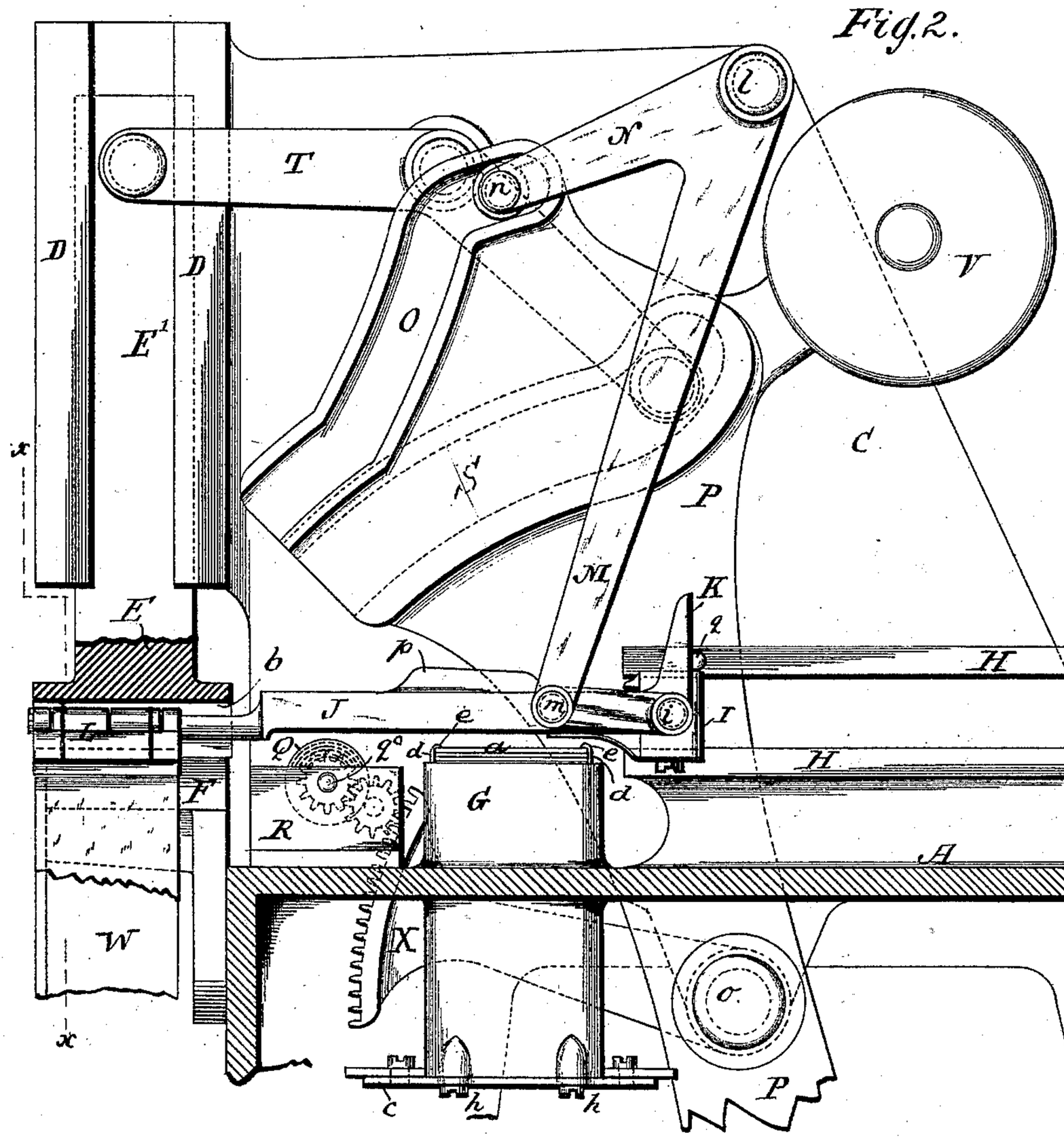


Fig. 3.

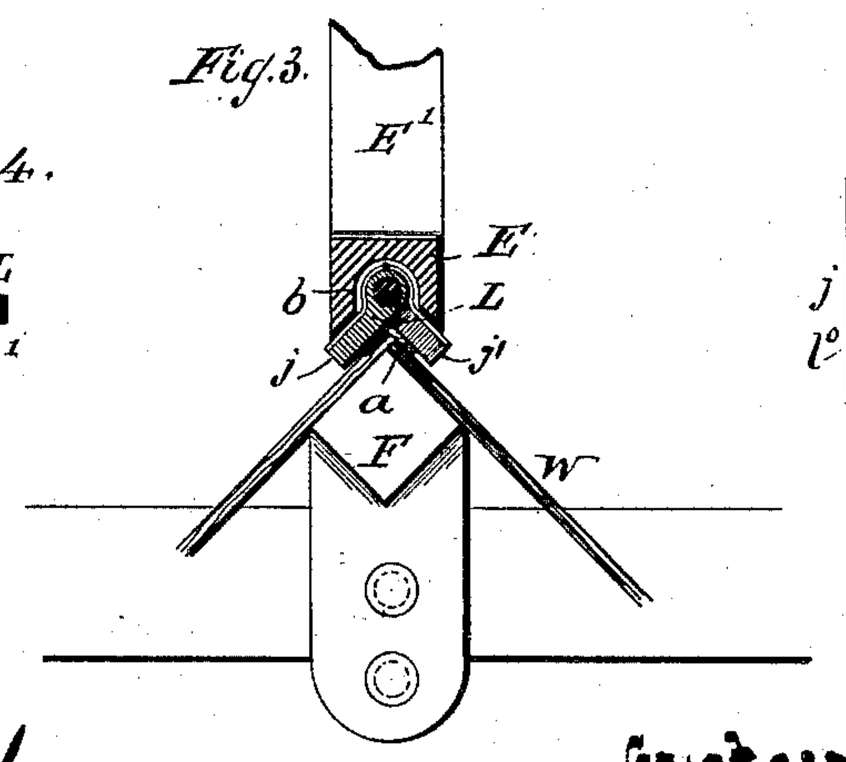


Fig. 4.

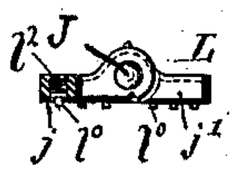
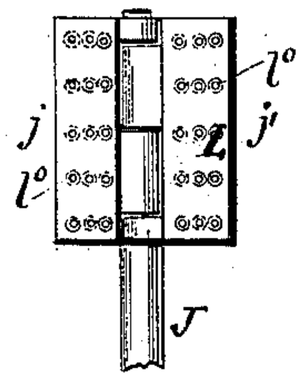


*Fig. 4.**



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(No Model.) 3 Sheets—Sheet 3.

G. I. JAEGER.

MACHINE FOR APPLYING CORNER STAYS TO BOXES.

No. 395,567. Patented Jan. 1, 1889.

Fig. 5.

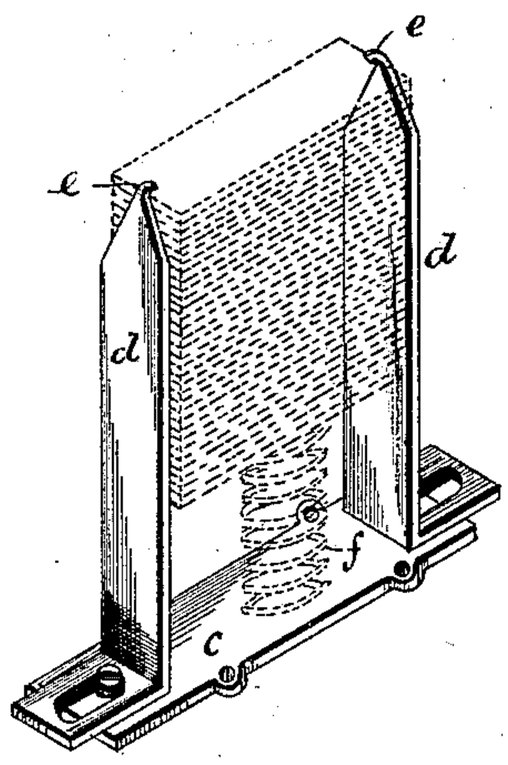
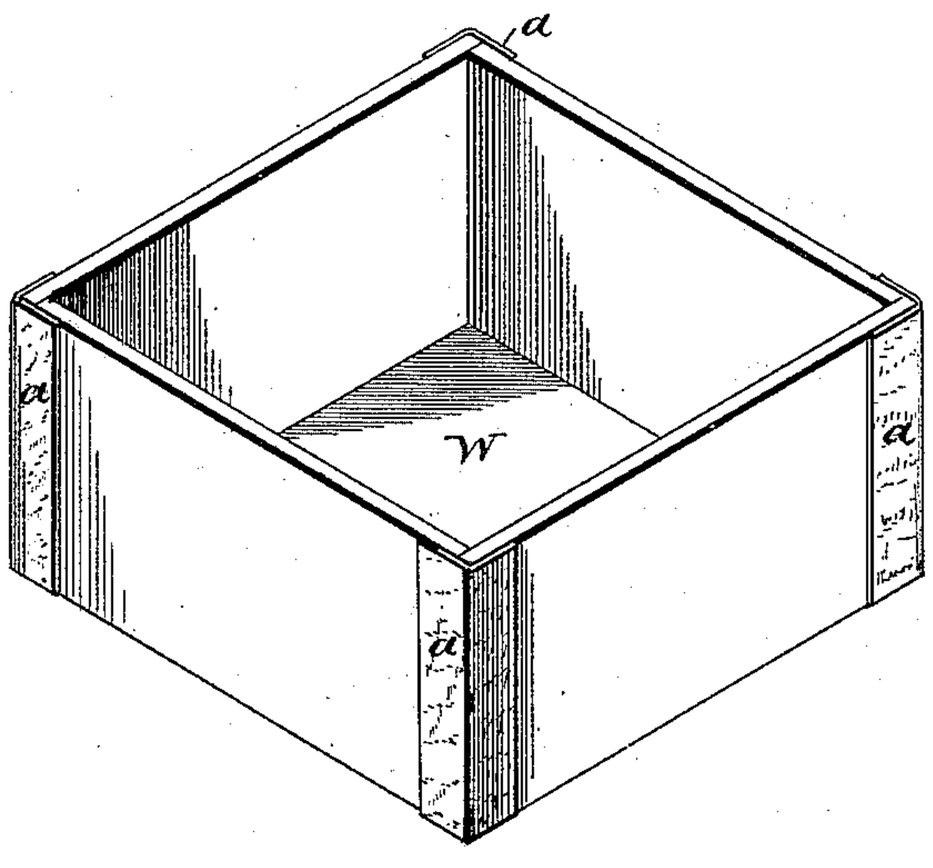


Fig. 6.

Fig. 7.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GUSTAV L. JAEGER, OF NEW YORK, N. Y.

MACHINE FOR APPLYING CORNER-STAYS TO BOXES.

SPECIFICATION forming part of Letters Patent No. 395,567, dated January 1, 1889.

Application filed April 12, 1888. Serial No. 270,427. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV L. JAEGER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Machines for Applying Corner-Stays to Boxes, of which the following is a specification.

This invention relates to a machine for applying corner-stays to boxes, the corner-stays being cut out to the required length and width and then rendered adhesive one after the other, each stay after having been rendered adhesive being carried over the corner of a box and then secured to said box by pressure, as fully pointed out in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation, partly in section, showing the machine in its position of rest. Fig. 2 is a similar view showing the working parts in a different position from that shown in Fig. 1. Fig. 3 is a transverse vertical section in the plane *x x*, Fig. 2. Fig. 4 is a detached side elevation of the picker, partly in section. Fig. 4* is a detached face view of said picker. Fig. 5 is a perspective view of the holder for receiving and retaining a pile of the corner-stays. Fig. 6 is a perspective view of one of the corner-stays. Fig. 7 is a perspective view of a box provided with corner-stays.

Similar letters indicate corresponding parts.

In the drawings, the letter A designates the table, which rests upon legs B, and from which rises the standard C. On the outer end of this standard are formed guides D D, between which is fitted the shank E′ ofthe punch E.

F is the box-support, which is firmly secured to the table A, and the sides of which are inclined, so as to fit the corner of the box W. (See Fig. 3.) The face of the punch E is formed to correspond to the inclined sides of the box-support F, and in said face is formed a cavity, *b*, the object of which will be presently explained.

The stays *a* are made of paper, muslin, or any other suitable flexible material, and they are cut out to correspond in length and width to the size of the boxes for which they are to be used. These stays may be introduced into the machine in a "plain" state and afterward rendered adhesive by the application of paste, or said stays may be previously prepared by coating one side of each with a suitable adhesive—such as mucilage—which is left to dry; and if such "previously-prepared" stays are used they are afterward rendered adhesive by the application of moisture. The stays, whether plain or previously prepared, are formed into a pile and introduced into a holder, G. A perspective view of this holder is shown in Fig. 5. It is composed of a bottom, *c*, and two end plates, *d*, which are adjustable on the bottom and the upper ends of which are provided with hooks *e*. On the bottom *c* is placed a spiral spring, *f*, which forces the pile of stays up against the hooks *e*. On the table A are cast or otherwise secured two plates, *g*, to which the holder G is attached by screws *h*.

Above the table A are situated two guides, H H, between which is fitted the cross-head I, and in this cross-head is firmly secured a stud, *i*, which forms the fulcrum for a bell-crank lever, J K. The inner end of the long arm J of this bell-crank lever is rounded and carries the picker L, which consists of two wings, *j j′*, Fig. 4, swinging upon the rounded end of the arm J and acted upon by a spring, which has a tendency to throw said wings open in the manner of a spring-hinge, so that they lie flat upon the uppermost stay in the holder G, Fig. 1.

When the bell-crank lever J K is in the position shown in Fig. 1, its short arm K bears against a stud, *k*, secured in a lug projecting from one of the guides H, and the picker L is depressed upon the uppermost stay in the holder G; but as soon as the bell-crank lever J K is moved forward toward the punch E the picker L and uppermost stay are withdrawn from the holder. In order to accomplish this purpose, the picker is provided with projections which are provided with an adhesive, as will be hereinafter described.

The movements of the bell-crank lever J K are produced by the combined action of an elbow-lever, M N, and a cam-groove, O. This elbow-lever has its fulcrum on a stud, *l*, in the standard C, and its long arm M is connected to the long arm J of the bell-crank lever J K by a pivot, *m*, while its short arm N carries a roller-stud, *n*, which engages the cam-groove

O. This cam-groove is formed in the outer surface of the foot-lever P, which extends down through the table and has its fulcrum on the stud *o*. A weight, V, has a tendency to throw this foot-lever into the position shown in Fig. 1. When the lower part of this foot-lever is pressed back in the direction of arrow 1, Fig. 1, the picker is raised, so as to lift the uppermost stay out of the holder G, and the cross-head I is moved toward the punch E, and, as the bell-crank lever J K has to follow the motion of the cross-head, a cam, *p*, formed on the upper edge of the long arm J of said bell-crank lever, strikes a stud, *q*, secured in one of the guides H, and by this stud the picker L is depressed, so that the stay carried by the same is brought in contact with a device, Q, which serves to transmit paste or moisture from the fountain R to the stay, and which I hereinafter term "transmitter." This transmitter is made of an absorbent material—such as sponge—and I prefer to make it in the form of a roller, which is mounted on the axis q°.

If a plain stay is used, the fountain is supplied with a suitable adhesive, such as paste; but if a previously-prepared stay is used the fountain is supplied with water or with a thin solution of mucilage, so that one side of said stay on being moved along in contact with the transmitter Q is rendered adhesive. After the cam *p* has passed the stud *q*, the picker is slightly raised, and at the end of its forward motion it assumes the position shown in Fig. 2, carrying the adhesive stay over the corner of the box W, which has been placed upon the die or box-support F. As the picker approaches its forward position the punch E begins to descend, and when the stay carried by the picker has reached the required position, with its median line over the corner of the box W, it is depressed by the action of the punch E, the wings of the picker being thrown into the position shown in Fig. 3. The movement of the punch E is produced by the action of a cam-groove, S, upon a lever, T, as will be readily understood by referring to Figs. 1 and 2. When the punch E is depressed upon the picker, the cavity *b* in said punch affords room for the hinge portion of the picker, while the inclined faces of said punch serve to carry the wings of the picker into the position shown in Fig. 3.

When the foot-lever P is swung back to the position shown in Fig. 1, the picker L is caused to slide back over the transmitter Q, and in order to prevent the entire surface of said picker from being coated with paste it must be formed with projections, (see Figs. 4 and 4*,) and the paste adhering to these projections will be sufficient to lift the uppermost stay out of the holder in the same manner in which the picker of an ordinary envelope-machine takes up the envelopes.

In the example shown in the drawings the transmitter Q is made in the form of a roller, which is mounted on the axis q°, and a revolving motion is imparted to the same by any suitable means—such, for instance, as a toothed segment, X, which is geared together with the axis q°, and which swings on the stud *o* of the foot-lever P and moves with this foot-lever.

The projections l° in the picker are supported by springs l^{2}, (see Fig. 4,) so that they recede when the punch comes down upon the picker.

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

1. The combination, with the box-support F and punch E, of the holder G, the fountain R, the transmitter Q, the picker L, and mechanism, substantially as described, for imparting motion to the picker and to the punch.

2. The combination, with the box-support F and the punch E, of the holder G, the fountain R, the rotary transmitter Q, the picker L, and mechanism, substantially as described, for imparting motion to the picker and to the transmitter.

3. The combination, with the box-support F and the punch E, provided in its working-face with the cavity *b*, of the picker L, composed of two hinged wings, *j j'*, and mechanism, substantially as described, for imparting motion to the picker and to the punch.

4. The combination, in a machine for applying corner-stays to boxes, of a box-support, a reciprocating punch for pressing the stay on the box, a holder for containing the stays, a reciprocating picker for picking up the stays from the holder and carrying them to the box, and means, substantially as described, for operating the punch and the picker.

5. The combination, in a machine for applying corner-stays to boxes, of a box-support, a reciprocating punch, a holder for containing the stays, a reciprocating picker for picking up the stays from the holder, and means, substantially as described, for rendering the stays adhesive.

6. The combination, with a reciprocating punch, a box-support, and a holder for the corner-stays, of a picker for carrying the stays from the holder to the box, and means, substantially as described, for rendering the picker adhesive.

7. The combination, with the box-support F, the punch E, the fountain R, the transmitter Q, and the picker L, of yielding projections l°, fitted in the picker, and mechanism, substantially as described, for imparting motion to the punch and to the picker.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

GUSTAV L. JAEGER. [L. S.]

Witnesses:
W. C. HAUFF,
W. HAUFF.