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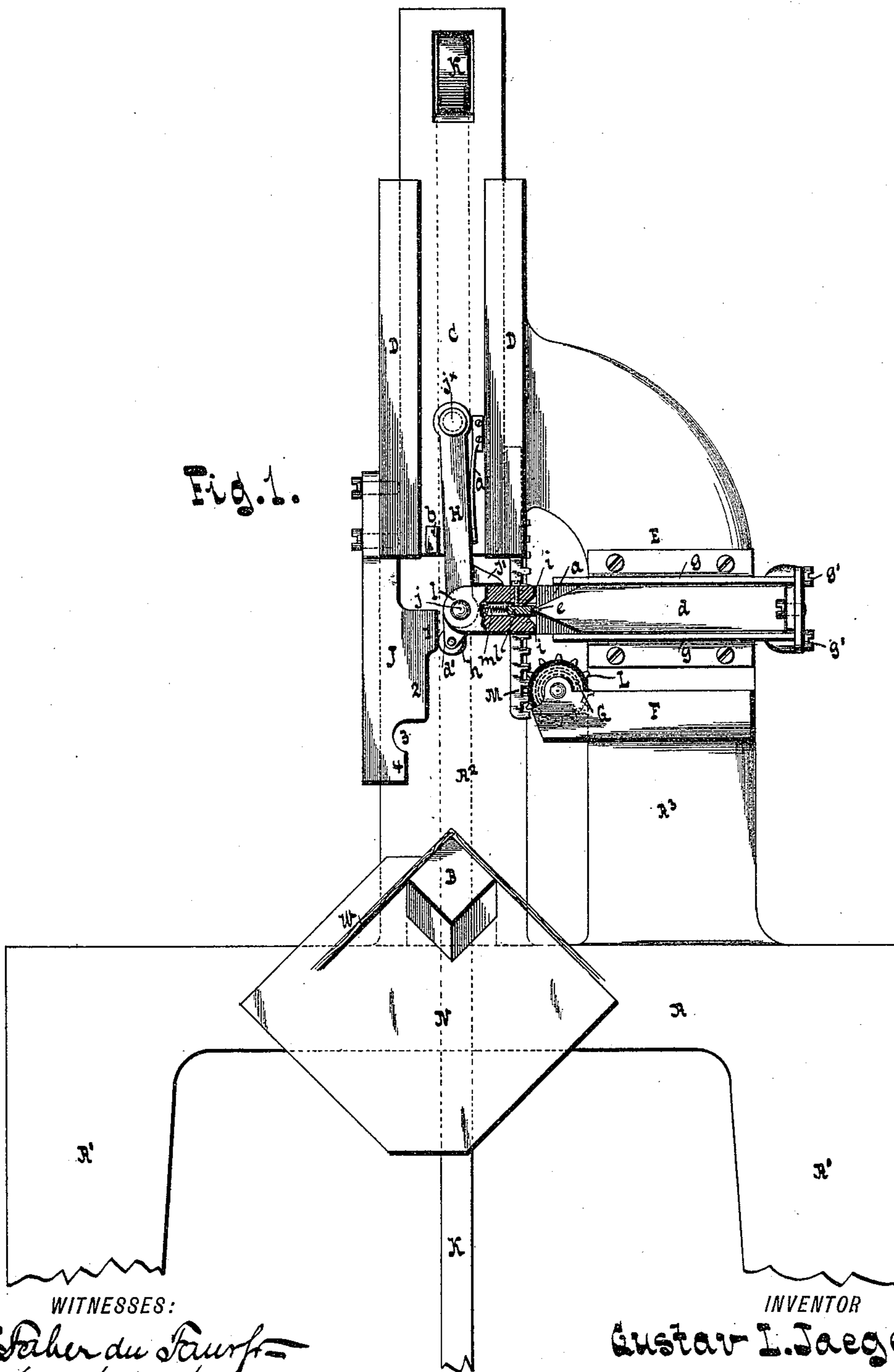
G. L. JAEGER.

MACHINE FOR APPLYING CORNER STAYS TO BOXES.

No. 438,547.

Patented Oct. 14, 1890.

Fig. 1.



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(No Model.)

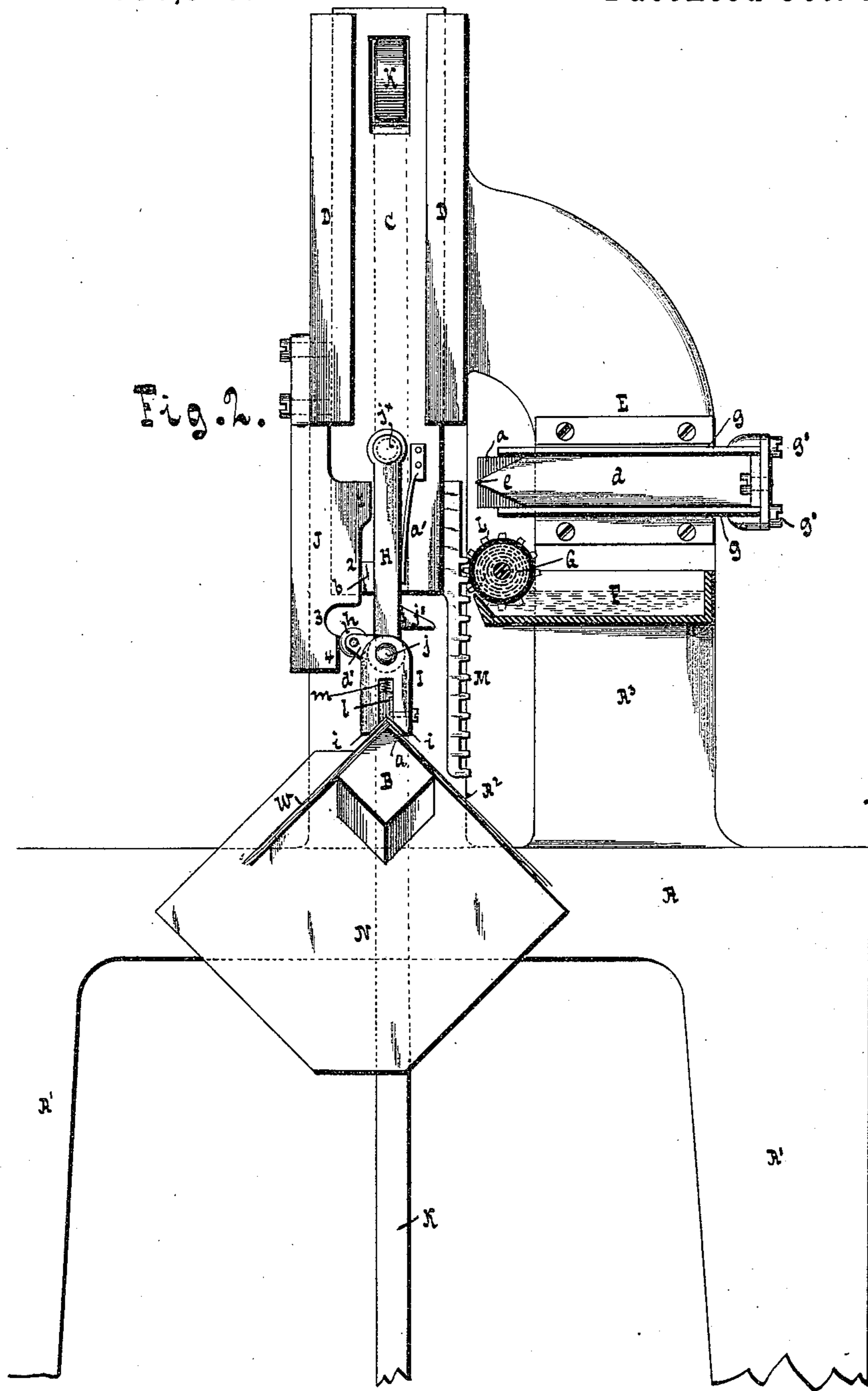
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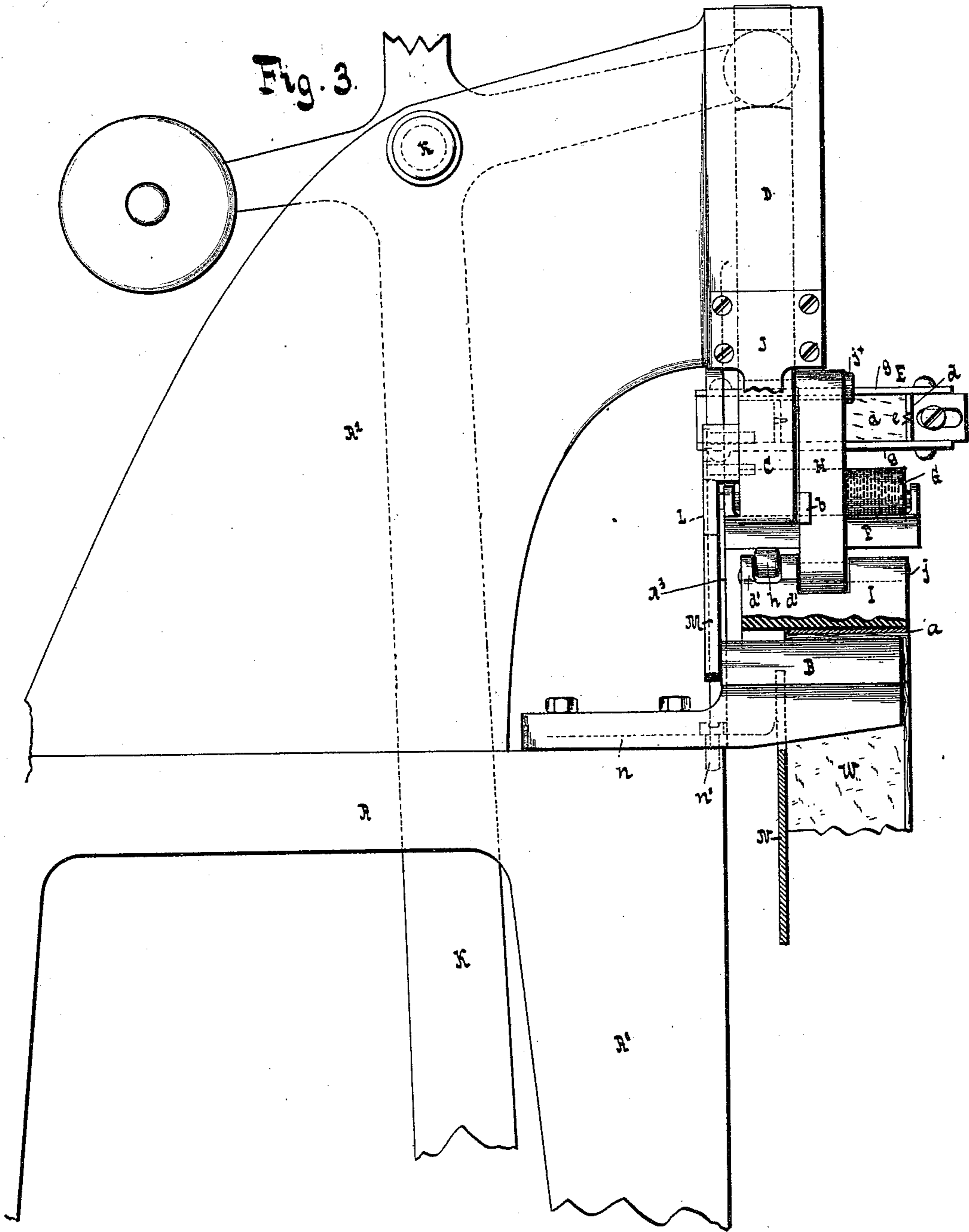
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MACHINE FOR APPLYING CORNER STAYS TO BOXES.

No. 438,547.

Patented Oct. 14, 1890.



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4 Sheets—Sheet 4.

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Fig. 4.

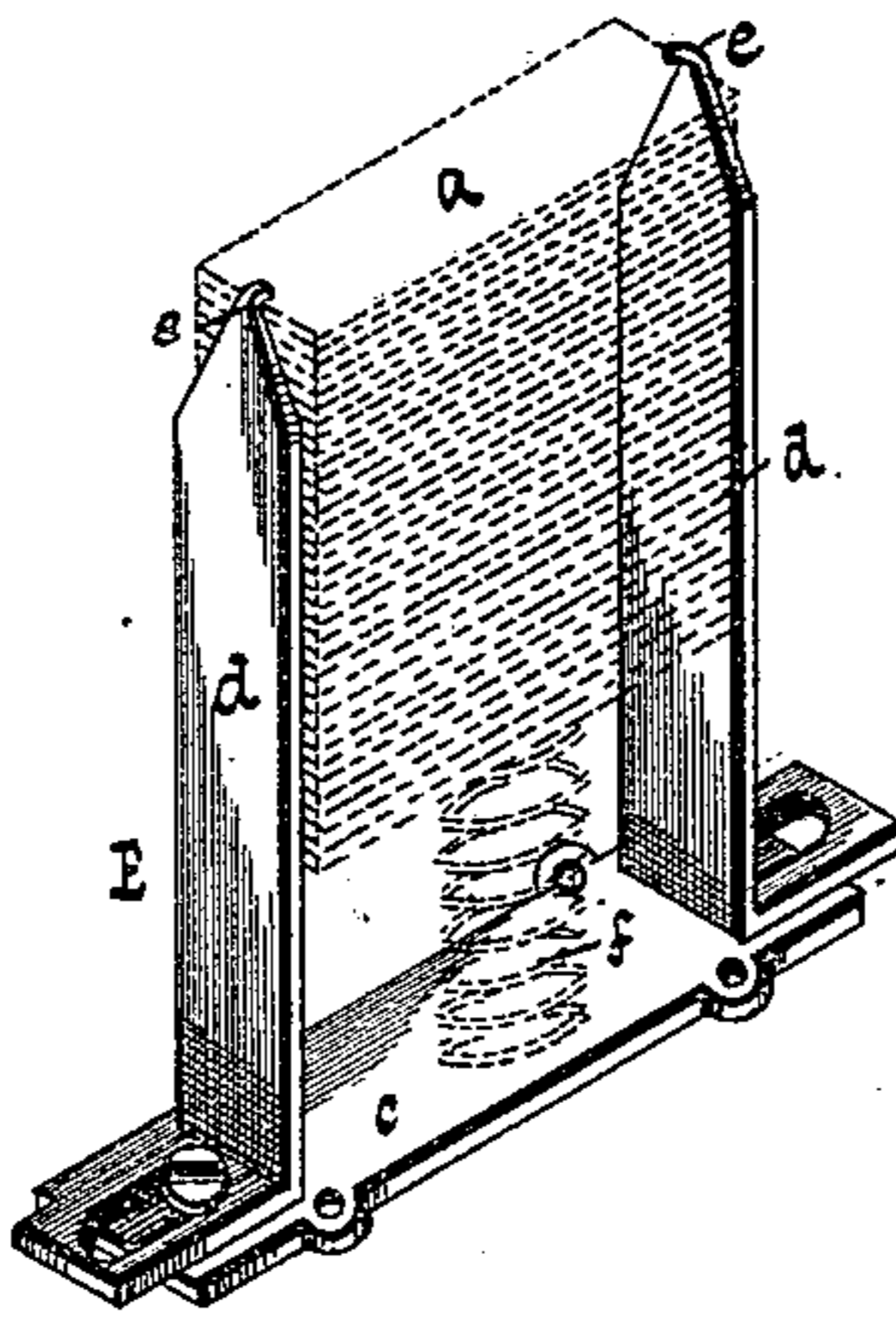


Fig. 7.



Fig. 8.

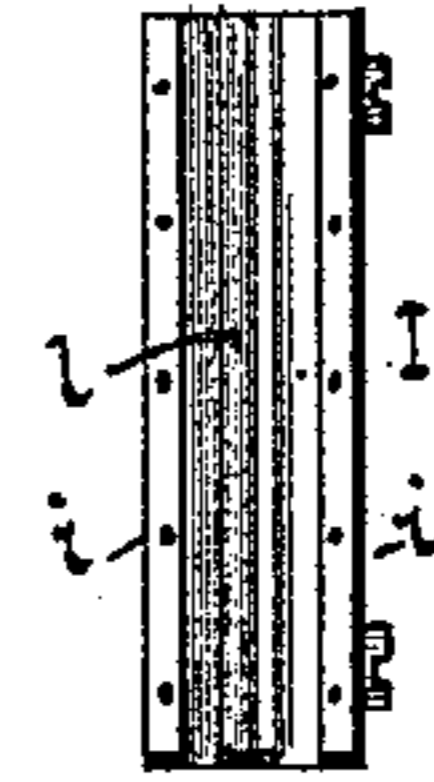


Fig. 9.

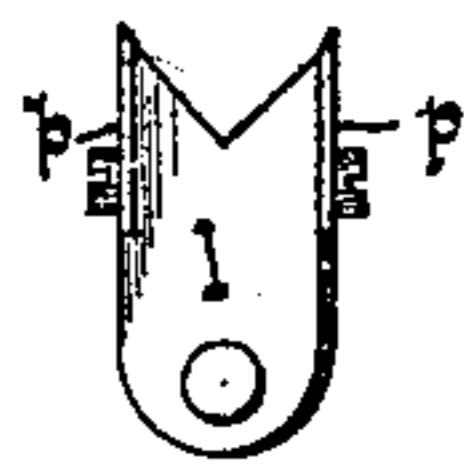
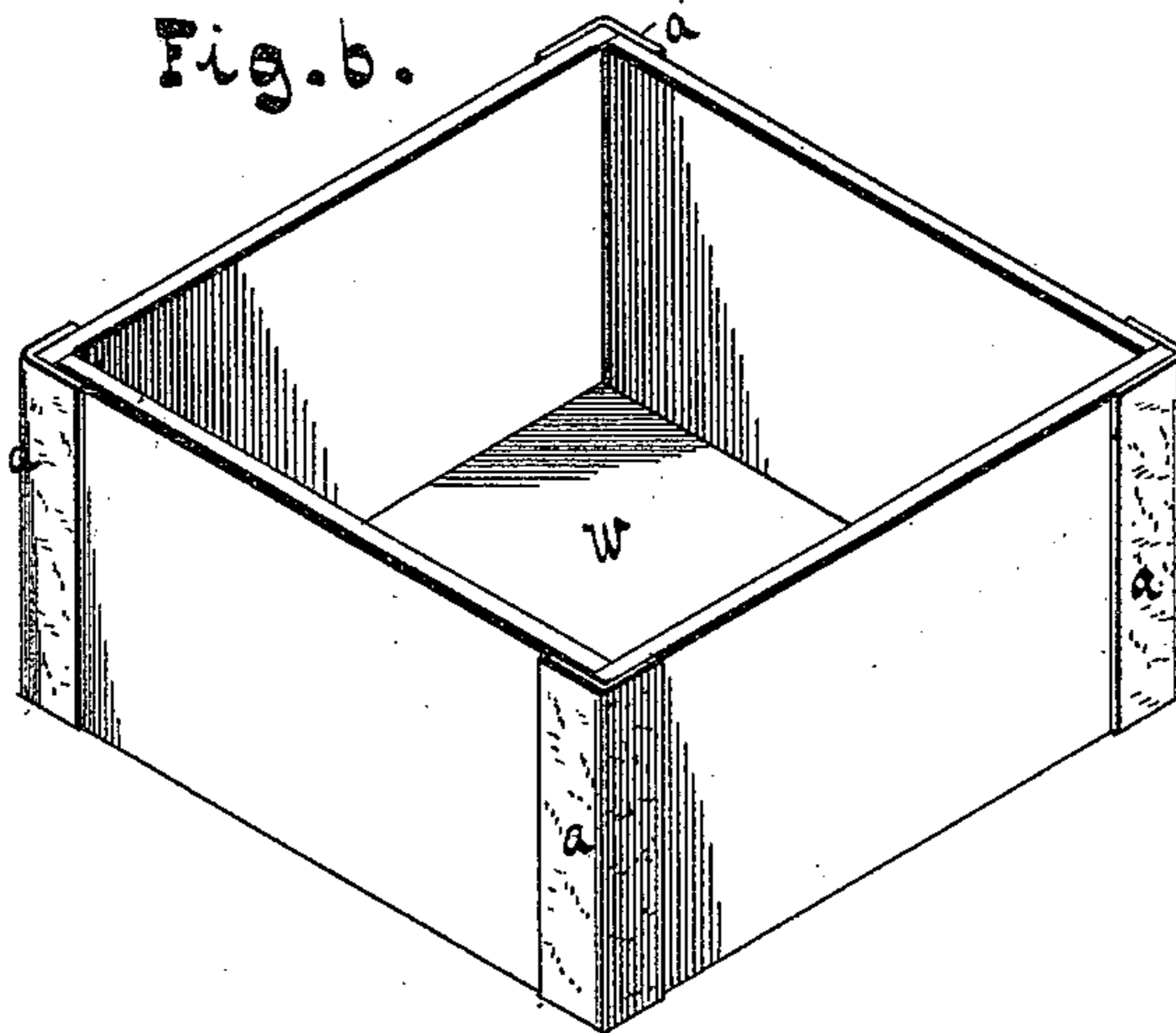


Fig. 5.



Fig. 6.



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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. 438,547, dated October 14, 1890.

Application filed April 4, 1890. Serial No. 346,514. (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 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, such corner-stays being first cut into the required length and width, then placed into a holder, then rendered adhesive one after the other, and finally secured to the 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 sectional front elevation of the machine, showing the parts in their position of rest. Fig. 2 is a similar view showing the parts in their position differing from that shown in Fig. 1. Fig. 3 is a sectional side elevation of Fig. 2. Fig. 4 is a perspective view of the corner-stay holder. Fig. 5 is a perspective view of a corner-stay. Fig. 6 is a perspective view of a box provided with corner-stays. Fig. 7 is a face view of the picker. Fig. 8 is a face view of a picker provided with teeth or spurs. Fig. 9 is an end view of a modified form of picker.

Similar letters and figures indicate corresponding parts.

In the drawings, the letter A designates a table supported upon legs A', and from which rises the standard A<sup>2</sup>. In the outer end of this standard are formed guides D D, between which is fitted the driver C.

B is the box-support, which is firmly secured to the table A, and the sides of which are inclined to fit the corners of the box W.

The stays *a*, Figs. 1, 2, and 4, are made of paper, muslin, or any other suitable material, and they are cut out to correspond in length and width to the size of the box to which they are to be applied. 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 stay with a suitable adhesive—such as mucilage—which is left to dry, and if such "previously-prepared" strips are used they are af-

terward rendered adhesive by the application of moisture. The stays, whether plain or previously prepared, are formed into a pile and introduced into a holder E. A perspective view of this holder is shown in Fig. 4. 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 an arm A<sup>3</sup>, rising from the table, are cast or otherwise secured two horizontal plates *g g*, to which the holder E is attached by screws *g' g'*.

Between the holder E and the box-support B is located a fount F, which is secured to the arm A<sup>3</sup> and contains suitable means for transmitting a liquid to the stays. The device employed, which I shall hereinafter term the "transmitter" G, is shown in this example in the form of a roll; but it may be in the form of a pad of sponge or other suitable material.

If the corner-stays *a* are plain, the fount is supplied with paste; but if the corner-stays are previously prepared it is supplied with water to moisten the stays and thereby render them adhesive, or it is supplied with a thin solution of mucilage, for a purpose hereinafter described.

From the driver C is suspended by means of a link H a picker I, which is intended to remove one corner-stay at a time from the holder E to bring the said stay into contact with the transmitter, and finally to lay the adhesive stay upon the box W. To this end the picker is provided with internal faces corresponding to the box-support and with the surfaces *i i*, which may be provided with small teeth or spurs, Fig. 8, to penetrate the corner-stay nearest the hooks *e*, thereby causing the same to adhere to the picker when the latter is withdrawn from the holder. Instead of having teeth or spurs on the picker, the surfaces *i i* may be left smooth, Fig. 7, and the fount supplied with thin mucilage, as before stated, which renders the surfaces *i i* adhesive when the picker comes into contact with the transmitter G on its return-stroke from the box-support B.

From the picker I project short arms *d' d'*, which carry a roller-stud *h*. This roller-stud

$h$  bears against a vertical cam J, which is rigidly secured to the arm A, the outline of this cam being such as to turn the picker about the pivot  $j$ , which secures it to the link H when the driver is reciprocated. A spring  $a'$ , secured to the driver C, tends to keep the link in a vertical line against the stop  $b$  on the said driver. A stop  $j'$ , which projects laterally from the link H, serves to check the motion of the picker I after the same has assumed a horizontal position.

A weighted foot-lever K, pivoted at  $k$  to the arm A<sup>2</sup> and engaging with the driver C, may be used to actuate the driver C.

In Fig. 1 the machine is shown in its position of rest. The picker I is in a horizontal position and is in contact with a corner-stay  $a$ . If the driver C is caused to descend by vibrating the foot-lever K, the roller-stud  $h$  on the picker is moved away from the projecting portion 1 of the cam J and falls into a depression 2. Consequently the picker I is moved away from the holder E and carries with it a corner-stay  $a$ . The picker still retains its horizontal position, owing to the fact that the spring  $a'$  forces the link H into a vertical position against the stop  $b$ , and thereby prevents the picker from turning about its pivot  $j$  on said link. On the further movement of the driver C the corner-stay on the picker I is brought into contact with the transmitter G and is rendered adhesive on its exposed side. After the corner-stay has passed the transmitter the roller-stud  $h$  enters a recess 3 in the cam J, and the picker turns about its pivot  $j$ , owing to gravity. The picker having assumed a vertical position is forced down upon the box-corner by the driver and lays the stay thereon. During the latter movement of the picker the roller-stud  $h$  is in contact with a straight portion 4 of the cam J and is guided in a vertical line thereby. On the return-stroke of the driver C the picker I is lifted clear from the box-corner while in a vertical position. Then the roller-stud  $h$  engages with the top of the cam-recess 3. Its motion being thereby arrested, the picker is turned about the roller-stud as a pivot and assumes a horizontal position as the driver continues its upward movement. When in a horizontal position, the picker comes in engagement with the stop  $j'$  on the link H. As the picker has no teeth or spurs on its surfaces  $i i$ , the cam-surface 2 is so arranged that the picker is forced into contact with the transmitter G and the surfaces  $i i$  are coated with the adhesive. On the continuation of the upward movement of the driver the roller-stud  $h$  engages the portion 1 of the cam, and since the picker is in contact with the stop  $j'$  on the link it cannot turn about its pivot  $j$ . Consequently the picker turns about the pivot  $j^*$  of the link H. This causes the picker to move directly toward the holder E, and it is brought squarely into contact with the corner-stay. The adhesive on the surfaces  $i i$  causes the corner-stay to adhere to the

picker, and on the withdrawal of the latter the stay is pulled from the holder.

In order that the corner-stay may not be drawn from the picker while the same is in contact with the transmitter, the latter is made in the form of a roll and is caused to rotate in the same direction of the movement of the picker and with a superficial velocity equal to that with which the picker moves.

Any suitable means can be used to effect the rotation of the transmitter. For instance, as shown in the drawings, Figs. 1 and 2, a gear-wheel L is rigidly mounted on the shaft of the transmitter, which gear is engaged by a rack M, rigidly secured to the driver C.

In order to prevent the corner-stay from being torn from the picker if forced into the cavity in the same when the said stay is brought into contact with the transmitter for the purpose of rendering it adhesive, I sustain its central portion by a support  $l$ , which is fitted in a recess in the picker and rests upon the springs  $m$ . Suitable slot-and-pin connections with the body of the picker retain the support in the picker and limit its movement in both directions. The end of the support is recessed, and when the picker is brought down on the box-corner the said support yields until it finally lies flush with the picker and forms an operating part of the same, as the pins then engage with the ends of the slots, Fig. 2.

In Fig. 9 I have shown the picker I provided on each of the two longitudinal sides with extensions or jaws  $p p$ , that engage with the sides of the stays and draw it from the holder by friction alone. These jaws  $p p$  are slightly curved, so that the stay will be firmly wedged between them. They may be made integral with the picker or separate from the same and secured thereto by any suitable means.

A suitable gage N, consisting of a flat plate, is secured to the table A, Fig. 3, by a bar  $n$  and slot-and-screw connection  $n'$ . It is adjustable in the direction of the depth of the box-support and is used as a rest for the top of the box.

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

1. The combination, with the box-support, of the holder E, the fount, and its transmitter L, all located above and to one side of the box-support, and the picker I, mounted on a moving pivot  $j$  and made to turn about said pivot to bring it in line with the holder, the transmitter, and the box-support, substantially as shown and described.

2. The combination, with a box-support, the holder, the fount, and its transmitter, of the driver C, a picker I, pivotally connected with said driver, and a recessed cam J, engaging directly with a part of the picker for turning the same into different positions about its pivot as the driver advances and recedes, substantially as described.

3. The combination, with the box-support,

the holder, the fount, and its transmitter, of the reciprocating driver C, a link H, pivoted to the driver, a picker I, pivoted to said link, and a device for engaging with said picker and for turning the same about its pivot, substantially as shown and described.

4. The combination, with the box-support, the holder, the fount, and its transmitter, of the reciprocating driver C, a link H, pivoted to the driver, a picker I, pivoted to said link, and a cam having the surface 1, for imparting a motion to the picker in the direction of the holder, substantially as shown and described.

5. The combination, with the box-support and the holder, of the reciprocating driver C, a link H, pivoted to the driver, a picker I, pivoted to said link, a cam-surface 1, engaging with the picker, the spring *a'* and stop *b* for the link H, and the stop *j'* on the link for the picker, substantially as shown and described.

6. The combination, with a box-support, a

vertically-reciprocating driver, a corner-stay holder, a fount, and its turning transmitter, of a picker pivotally suspended from and rising and falling with the driver and swinging on its pivot into line with the holder to engage a corner-stay, means for swinging the picker, and mechanism for turning the transmitter as the picker descends, substantially as described.

7. A picker having the internal inclined faces, in combination with parallel jaws on its sides for engaging with the stay, substantially as shown and described.

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

GUSTAV L. JAEGER. [L. S.]

Witnesses:

WM. C. HAUFF,  
E. F. KASTENHUBER.