

(No Model.)

H. A. INMAN.

MACHINE FOR APPLYING FLIES TO PAPER BOXES.

No. 566,583.

Patented Aug. 25, 1896.

Fig. 1.

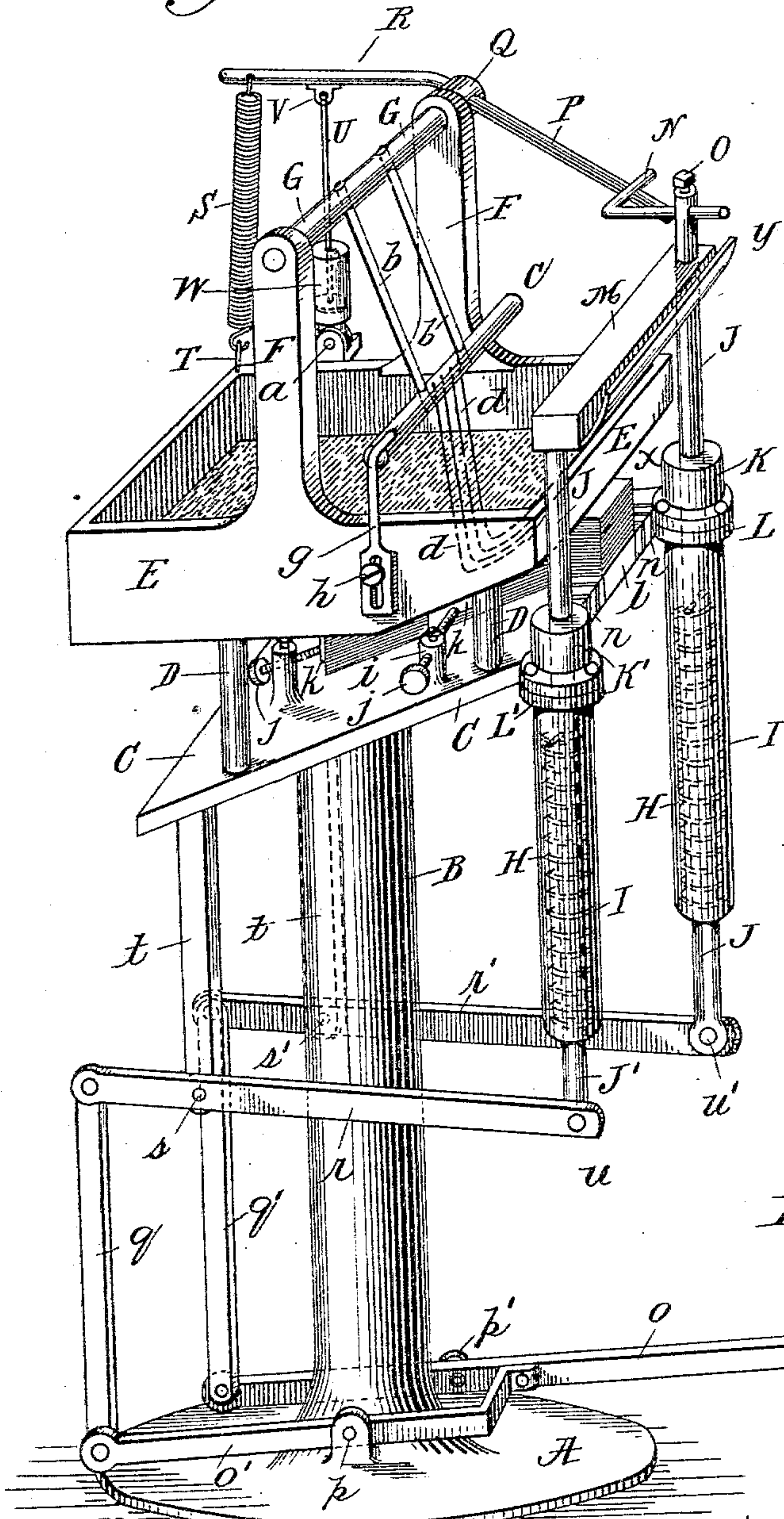


Fig. 2.

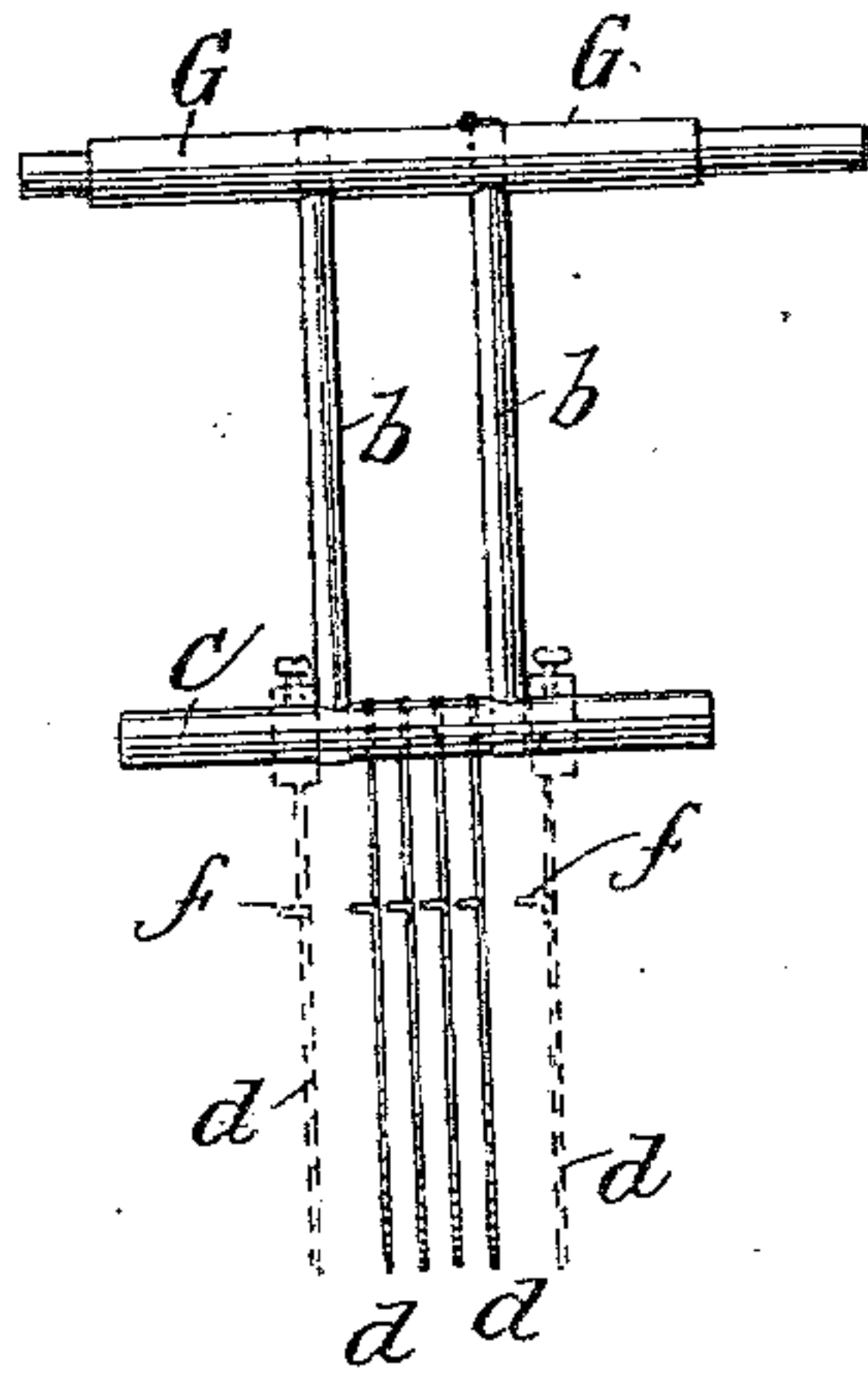


Fig. 3.

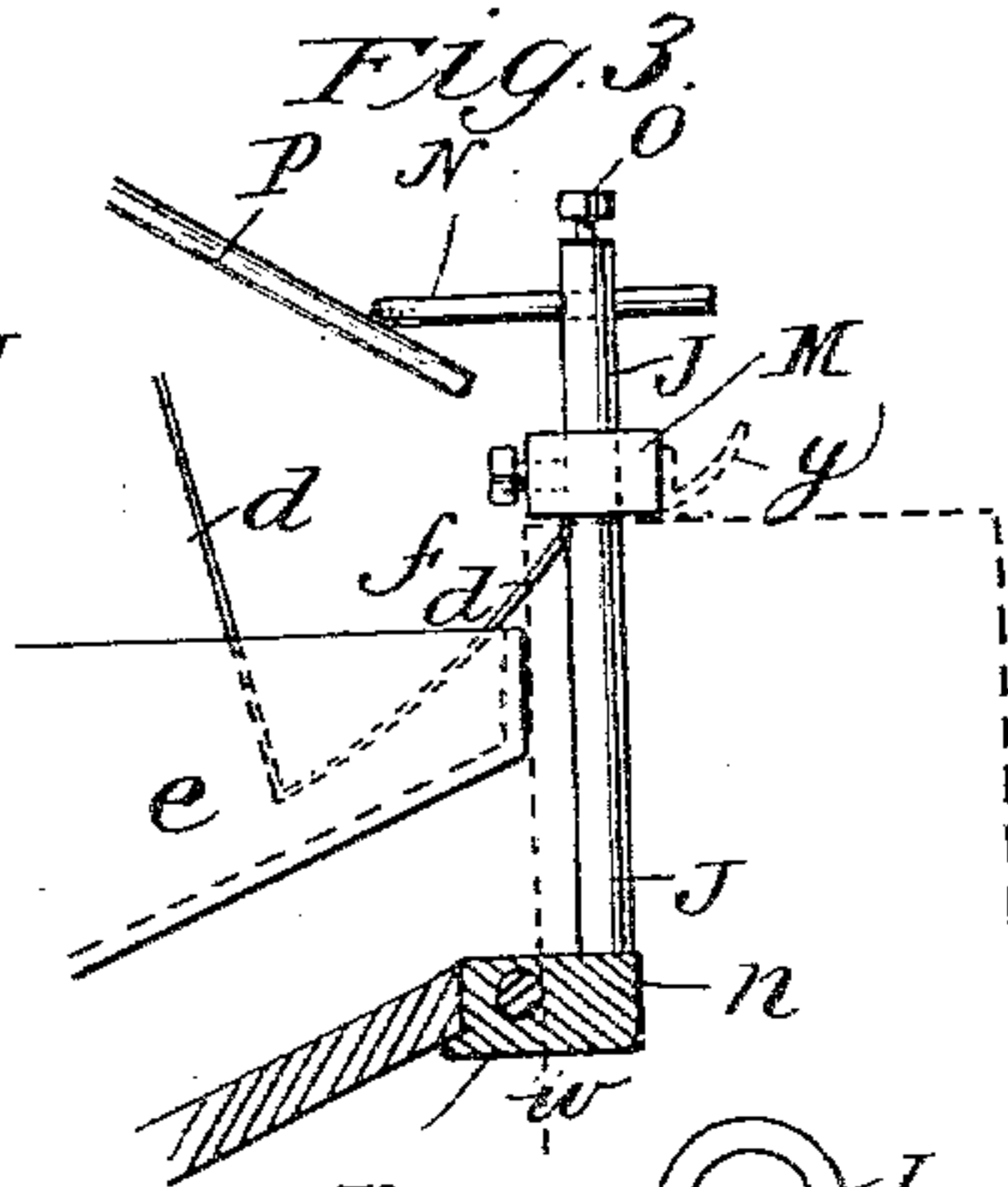
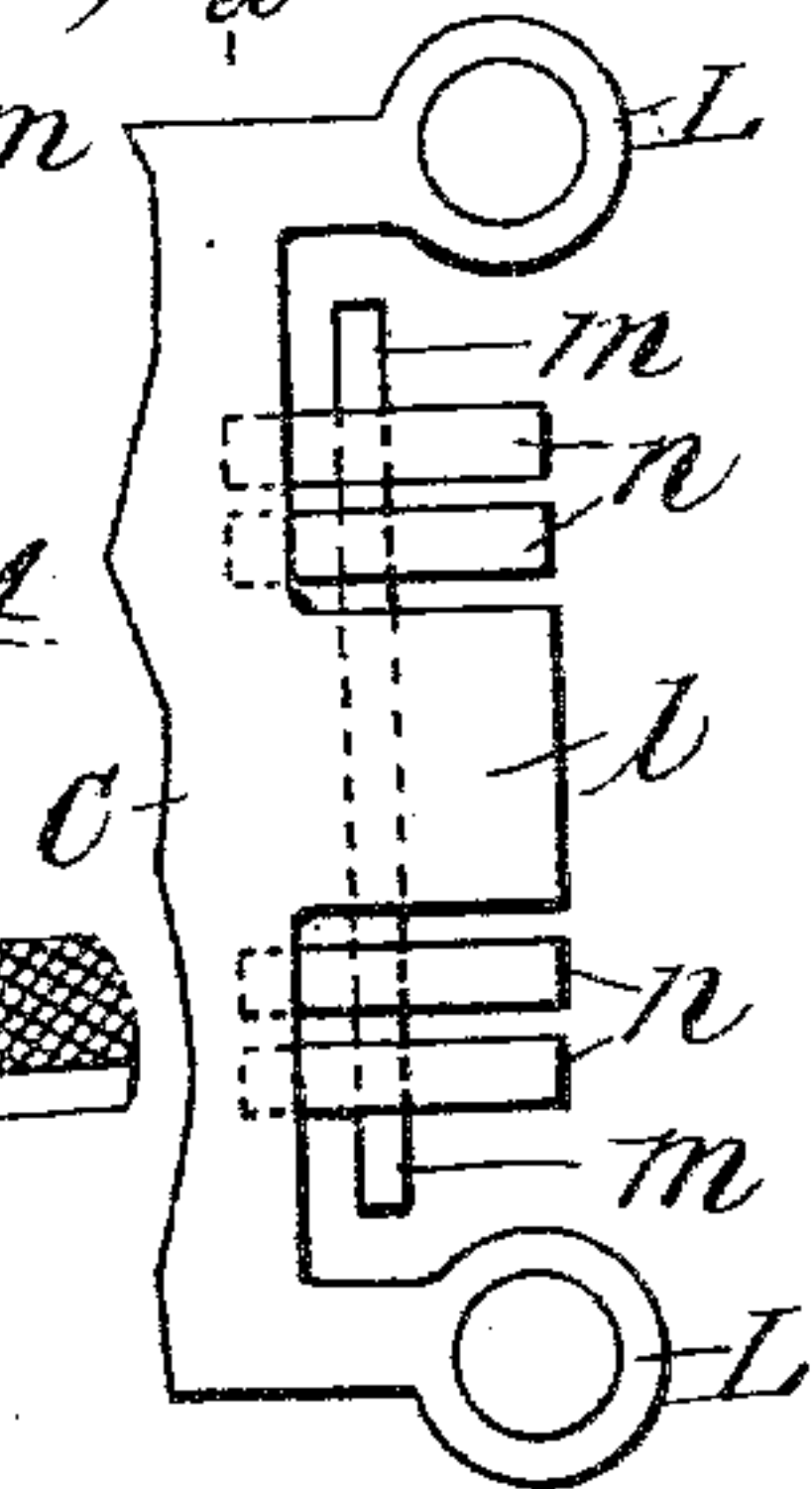


Fig. 4.



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MACHINE FOR APPLYING FLIES TO PAPER BOXES.

SPECIFICATION forming part of Letters Patent No. 566,583, dated August 25, 1896.

Application filed April 20, 1896. Serial No. 588,254. (No model.)

To all whom it may concern:

Be it known that I, HARRY A. INMAN, a citizen of the United States, and a resident of Amsterdam, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Machines for Applying Flies to Paper Boxes, of which the following is a specification.

My invention relates to a machine for applying paper and cloth "flies," so called, to boxes; and it consists, generally stated, in mechanism for supporting a pile of flies, mechanism for guiding and depressing the box, mechanism for pasting the inside of the box at or near its open edge, and mechanism whereby all of the operations are done by the operation of a treadle or equivalent power.

Referring to the drawings, Figure 1 illustrates a perspective of the machine as a whole. Fig. 2 illustrates a detail of the gluing apparatus. Fig. 3 illustrates a detail of the gluing apparatus, taken at right angles to Fig. 2. Fig. 4 illustrates a detail of the box-adjusting devices.

My machine may be made of such material as desired. I prefer to make it all of metal, the base, standard, and inclined table being preferably all cast iron. The paste-tank may be of cast iron, but, in order to avoid corrosion, rust, &c., it may preferably be of copper or brass. The other parts of the machine will, most of them, be constructed of iron or steel. As before stated, however, the material forms no essential part of the invention.

A is the base of the machine, adapted to be bolted or otherwise fastened to the floor.

B is the standard, preferably made integral with the base.

C is the table, which is preferably inclined, as shown. D are standards or supports on the table. There are preferably three or more of them.

E is the glue pot or tank.

F are uprights upon it, preferably at the sides of the glue-tank, at the upper end of which a cross-shaft G is journaled.

H H are two tubular casings, which encircle springs I I. These springs engage with rods J J', which pass through the tubular casing H and through cap-pieces K K, which are bolted to the casings H. The casings are

fastened to the table by flanges L L', which may be cast integral with the table.

M is a cross-bar, which connects the upper ends of the rods J J'.

N is an arm clamped by a set-screw O to the upper end of the rod J, which passes through the bar or cross-head M. The end of the arm N is bent at right angles, or otherwise arranged so as to connect with a lever P, which is attached to a hub Q, located on the end of the shaft G, and from the other side of this hub Q another rod R extends rearwardly. These two rods P and R may be a continuous rod, if preferred, and attached to the end of the shaft G in any preferred manner.

S is a spring connected at one end to the extremity of the rod R and at the other end to an eye T, formed on the glue-tank or other suitable part.

U is a rod pivoted at V to the rod R, having a piston on its lower end, which works in a dash-pot W, which is pivoted, as at *a*, to a suitable support.

b b are two rods, which are rigidly fastened to the shaft G at one end and at the other under a cross-bar *c*, to which the glue-fingers *d* are rigidly attached. These fingers *d* are made of stiff although resilient wire, and are bent, as at *e*, sharply upward, and they are also bent at their very ends *f*. (See Fig. 2.)

g is an adjustable stop device to limit the upward swing of the bar *c*, which carries the pasting-fingers *d*. This stop *g* is adjustable by being slotted at one end, as shown, and by a set-screw *h*, which passes through the slot and enters the side of the glue-tank.

i i are lugs on the table C, which are provided with threaded adjusting-screws *j j*, which have plates *k k* on their ends for the adjustment of the flies upon the table, as will be hereinafter explained.

The front edge of the table is shown in Fig. 4.

L L are the ears or flanges, already mentioned, upon which the casings H H are hung. The front edge of the table in between these flanges is made as follows: A central projection *l* is permanently present thereat, the width of which is substantially the same as the width of the smallest box to which the

flies are to be attached. *m* is a metallic bar, which extends horizontally through the projecting part *l*, upon which sections *n n* may be arranged by being passed over the end of the bar *m*, the sections being suitably bored to allow them to slip on and move easily along the rod *m*, and they, being shoved up close against the side of the permanent central projection *l*, will, of course, widen it to the extent of their thickness. *o* is a lever having a foot-plate upon its free end. *o'* is a rectangular portion of this lever, and it, as a whole, is pivoted at *p p'* to lugs on the base *A* or other suitable part of the apparatus. *q q'* are two links pivoted to the ends of the treadle-bar *o*, and at their upper ends they are pivoted to other links *r r'*, which are respectively pivoted at *s s'* to downwardly-extending supports *t t'*; and at their front ends these links *r r'* are pivoted to rods *j j'*, as shown at *u u'*. The blocks or sections *n*, which slide upon the bar *m*, are, as shown in Fig. 3, supported against displacement by the edge of the table *C*, and also by the set-screws. *y* is a guide-plate, which curves upwardly and forwardly from the lower edge of the cross-head *M*.

As shown in Fig. 2, additional pasting-fingers may be applied to the bar *c*, as may be desired, to extend the series to coincide with any length or width of box.

The operation of the machine is as follows: A pile of flies (shown at *X* in Fig. 1), is placed upon the table *C*, and is properly centered by the adjusting-screws *j j'*, and having the plates *k k* on their ends, in a manner now well understood. A box is then placed by the operator in the machine, so that its open face is presented toward the machine and with the side or end upon which the fly is to be pasted close up against the under side of the cross-head *M*, and in so placing the box the guide-plate *y* materially aids, because all the operator has to do is to move the box toward the machine until the edge engages with the guide-plate *y*, and then the box, being moved still farther inwardly toward the paste-tank, will be automatically guided by the plate *y* until it slips under the cross-head *M*, assuming its proper position, and the box is adjusted crosswise of the machine and properly centered in that relation by the central projection *l* from the front of the table, or by the added sections *n n*, more or less of them being used as occasion requires and it will be observed that the front edge of the glue-tank will prevent the box from moving too far rearwardly. The stop *g*, which limits the upward swinging of the pasting-fingers *d*, is so adjusted that the open ends of these fingers will be separated some distance from the under side of the cross-head *M*, so that the edge of the box to which the fly is to be attached will slide in between the upper ends of these pasting-fingers and the under side of the cross-head.

With the parts in the position just described, the foot is applied to the treadle,

whereupon, through the instrumentality of the treadle-bars *o* and *o'* and the links *q q'* *r r'* and the rods *J* and *J'*, the cross-head will be brought down, pressing the box down with it, and in its passage the upper ends of the spring pasting-fingers *d* come in contact with the inside of the box near the open edge, and the ends of the fingers apply the paste thereto at frequent spots, and as the cross-head and bars *J* and *J'* still further descend the arm *N* comes in contact with the bar *P* and depresses it, thus rocking the shaft *G*, and through the instrumentality of the rod *R* the spring *S* is put under tension and the dash-pot *U* is operated. The rocking of the shaft *G* causes the cross-bar *c* and the spring-fingers *d* to be swung rearwardly, so that the upper ends of the spring-fingers *d* are immersed in the glue or paste. The descending box, after having the glue or paste applied as stated, comes in contact with the uppermost fly in the pile, and is squeezed down upon that fly by the action of the treadle. Thereupon the foot-pressure is removed from the pedal, and through the instrumentality of the springs *I I* and the spring *S* the parts may be returned to their normal elevated position; but the dash-pot *W* prevents the spring-fingers *d* and the parts connected with them from moving so rapidly as to spatter or throw the adhesive material about. The dash-pot may be made to operate with oil, water, or glycerin, or with air alone, if preferred. The operator then turns the box over and goes through the same operations upon the other side or end of the box, whereby another fly is attached in the same manner as before.

The operation of the machine is exceedingly rapid, and I so adjust the machine that the spring-fingers engage with the sides of the box near the edge at such places or points that there will be no adhesive material squeezed out upon the other flies in the pile, so that there is never more than one fly picked up at a time.

It is obvious that the apparatus may be so constructed as to work by power instead of by hand or foot, and it is equally obvious that modifications may be made in the details of construction without departing from the essence of the invention. I therefore do not limit myself to such details.

I claim—

1. The combination of a support for the flies, a receptacle for adhesive material, a reciprocating cross-head and devices for applying the adhesive material to the box, actuated by the descent of the cross-head, for the purposes set forth.

2. The combination of a support for the flies, means to adjust the flies upon the support, a receptacle for adhesive material, a reciprocating cross-head and devices for applying adhesive material to the box, actuated by the descent of the cross-head, for the purposes set forth.

3. The combination of a support for the flies, a receptacle for adhesive material, a reciprocating cross-head, devices for applying the adhesive material to the box, actuated by the
5 descent of the cross-head, and means to center the box, for the purposes set forth.

4. The combination of a support for the flies means to adjust the flies upon the said support, a receptacle for adhesive material, a
10 reciprocating cross-head, devices for applying the adhesive material to the box, actuated by the descent of the cross-head, and means to center the box, for the purposes set forth.

5. The combination of a support for the flies
15 a reciprocating cross-head, devices for applying the adhesive material to the box, and means to center it, for the purposes set forth.

6. The combination of a support for the flies, means to adjust the flies upon the support, a
20 receptacle for adhesive material, placed above the flies, a cross-head adapted to vertical movement, and a rocking frame having spring-fingers, which upon the descent of the cross-head, dip into the adhesive material,
25 for the purposes set forth.

7. The combination of a support for the flies, means to adjust the flies upon the support, a receptacle for adhesive material placed above the flies, a cross-head adapted to vertical
30 movement, a rocking frame having spring-fingers, which upon the descent of the cross-head dip into the adhesive material, and means to control the movement of said rocking frame, for the purposes set forth.

8. The combination of a support for the flies,
35 a receptacle for the adhesive material, a reciprocating cross-head, a rocking frame which supports spring-fingers, and is provided with means which engage with some vertically-
40 movable part as it descends, said vertically-movable part itself and means to limit the movement of the spring-fingers toward the box, for the purposes set forth.

9. The combination of a support for the flies,
45 a receptacle for the adhesive material, a reciprocating cross-head, a rocking frame which supports spring-fingers and is provided with means which engage with some vertically-
50 movable part as it descends, said vertically-movable part itself means to limit the movement of the spring-fingers toward the box,

and means to control the rapidity of the movement of the rocking frame, for the purposes set forth.

10. The combination of a support for the
55 flies, a receptacle for the adhesive material, a spring-actuated, reciprocating cross-head, devices for applying the adhesive material to the box, and means to limit the forward movement of said devices, for the purposes
60 set forth.

11. The combination of a support for the flies, a receptacle for the adhesive material, a spring-actuated, reciprocating cross-head, devices for applying the adhesive material to
65 the box, means to limit the forward movement of said devices, and other means to retard the rapidity of their movement, for the purposes set forth.

12. The combination of a support for the
70 flies, a receptacle for the adhesive material which acts as a stop for the front edges of the box, a movable cross-head for the support of the box, and movable devices for applying the paste which are actuated by the descent
75 of the cross-head, and a guide upon the cross-head to aid in the adjustment of the box, for the purposes set forth.

13. The combination of a support for the flies, a receptacle for the adhesive material,
80 which acts as a stop for the front edges of the boxes, a movable cross-head for the support of the box, movable devices for applying paste which are actuated by the descent of the cross-head, a guide upon the cross-head,
85 and centering devices upon the support for the flies, which aid in locating the box, for the purposes set forth.

14. In a fly-applying apparatus, the combination of devices for applying paste to the
90 box, and other devices for supporting the box and pressing it against the flies, both actuated by a single downward movement of the cross-head, for the purposes set forth.

Signed at Amsterdam, in the county of
95 Montgomery and State of New York, this 17th day of April, A. D. 1896.

HARRY A. INMAN.

Witnesses:

H. B. WALDRON,
ROBT. N. CLARK.