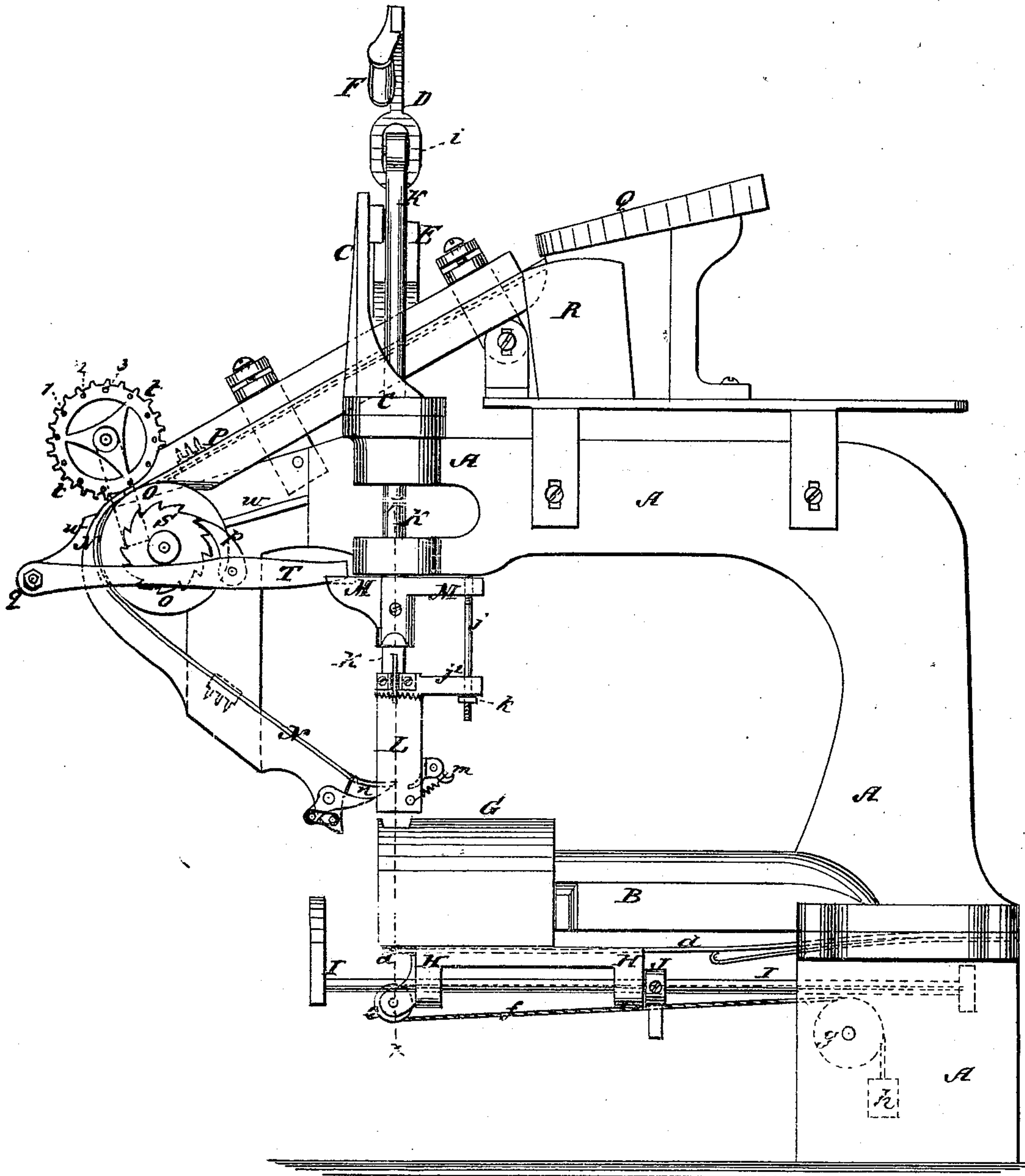


J. COHN.

Machines for Inserting Corner-Clasps of Boxes.
No. 148,416.

Patented March 10, 1874.

Fig. 1.



Witnesses:
E. Wolff
Jacob Kellner

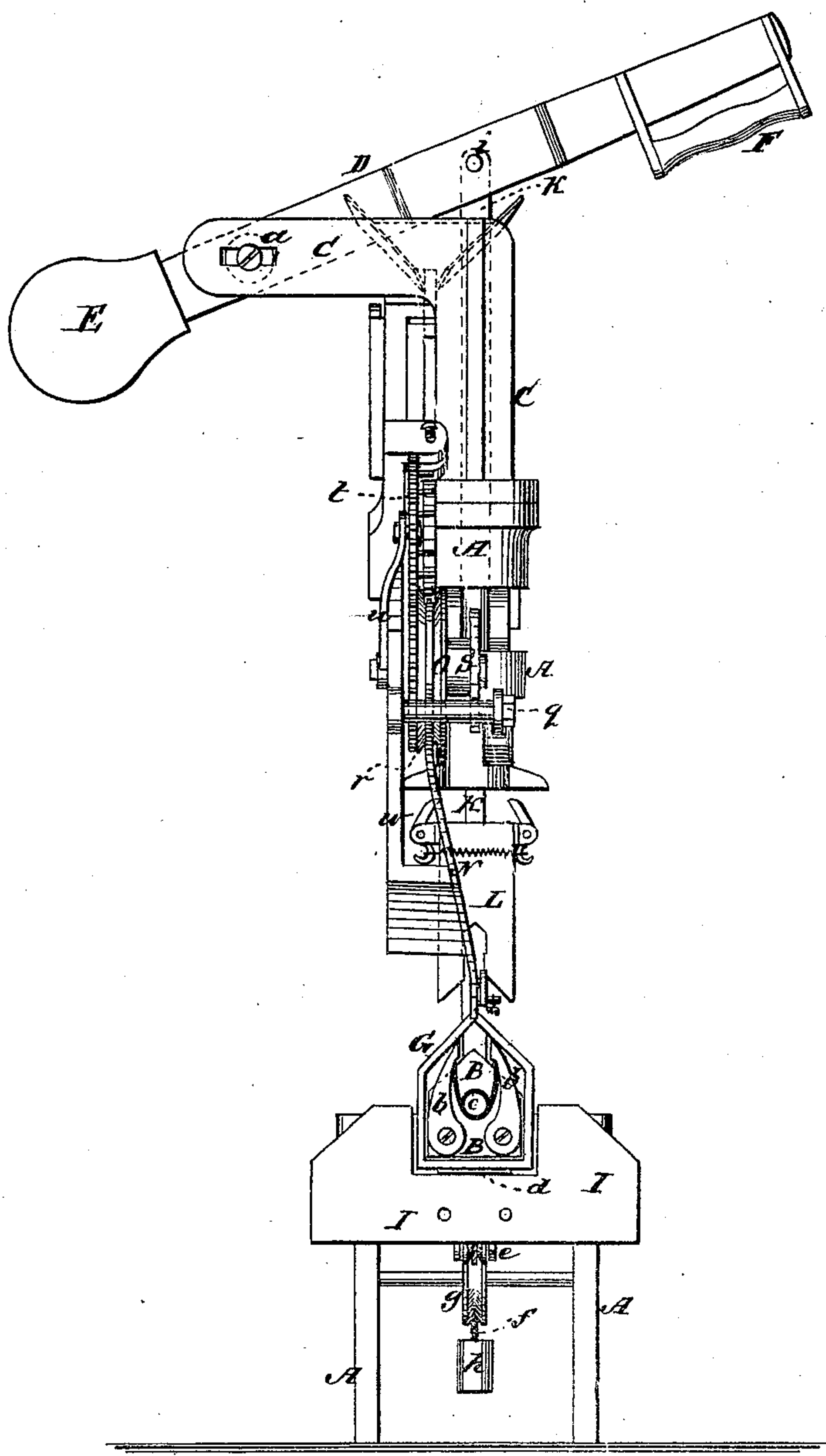
Inventor:
Joseph Cohn
By att.
J. M. Lutz

J. COHN.

Machines for Inserting Corner-Clasps of Boxes.
No. 148,416.

Patented March 10, 1874.

Fig. 2.



Witnesses:

E. Wolff

Jacob Felbel

Inventor:

Joseph Cohn
By attorney
J. M. Lurie

J. COHN.

Machines for Inserting Corner-Clasps of Boxes.

No. 148,416.

Patented March 10, 1874.

Fig. 3.

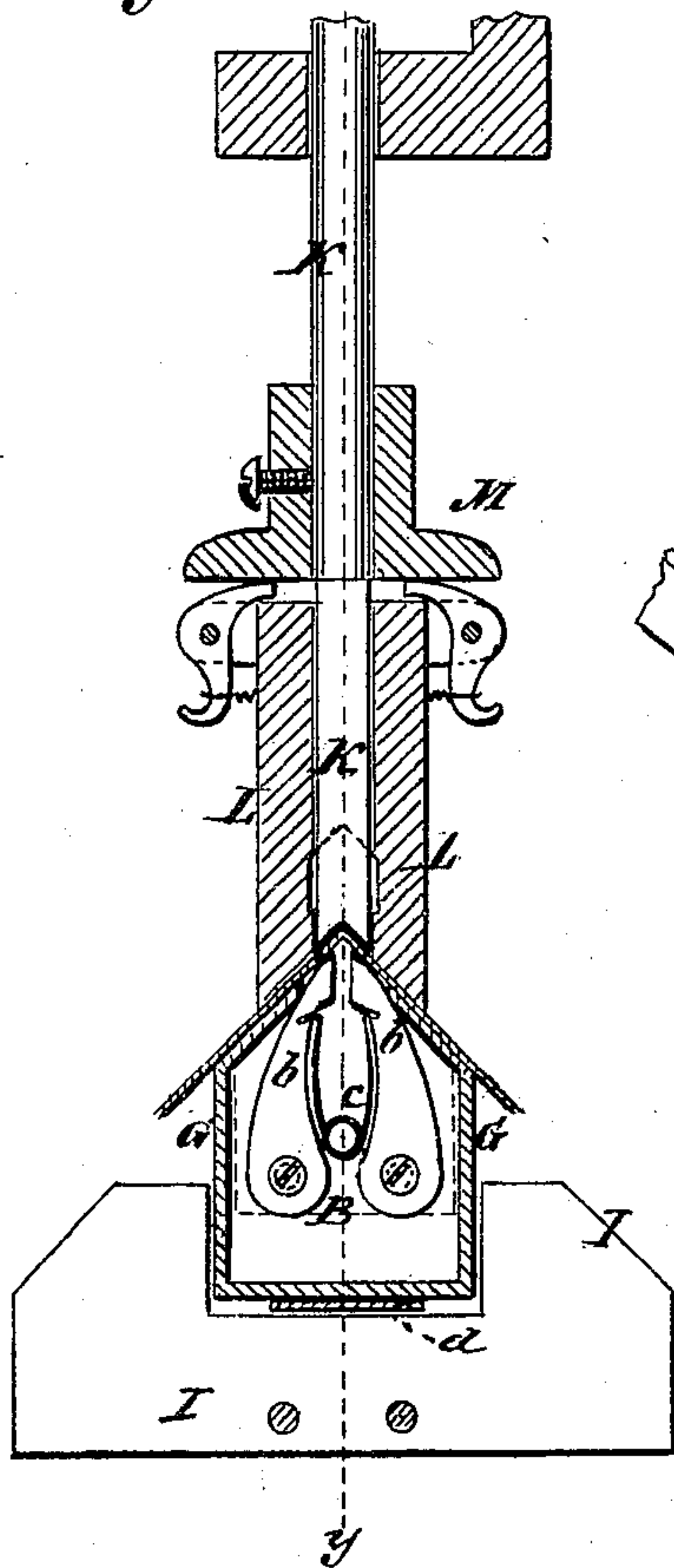


Fig. 4.

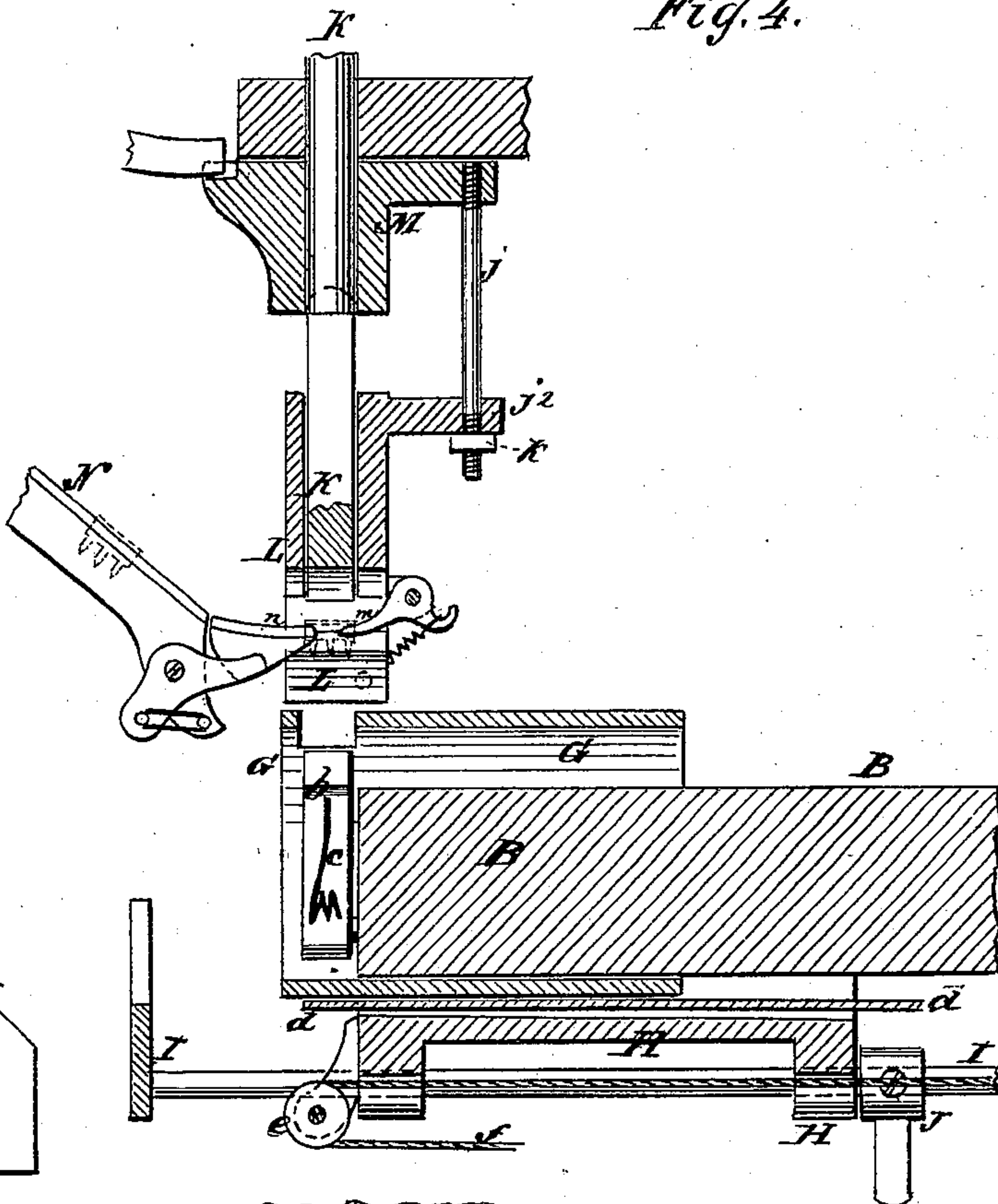
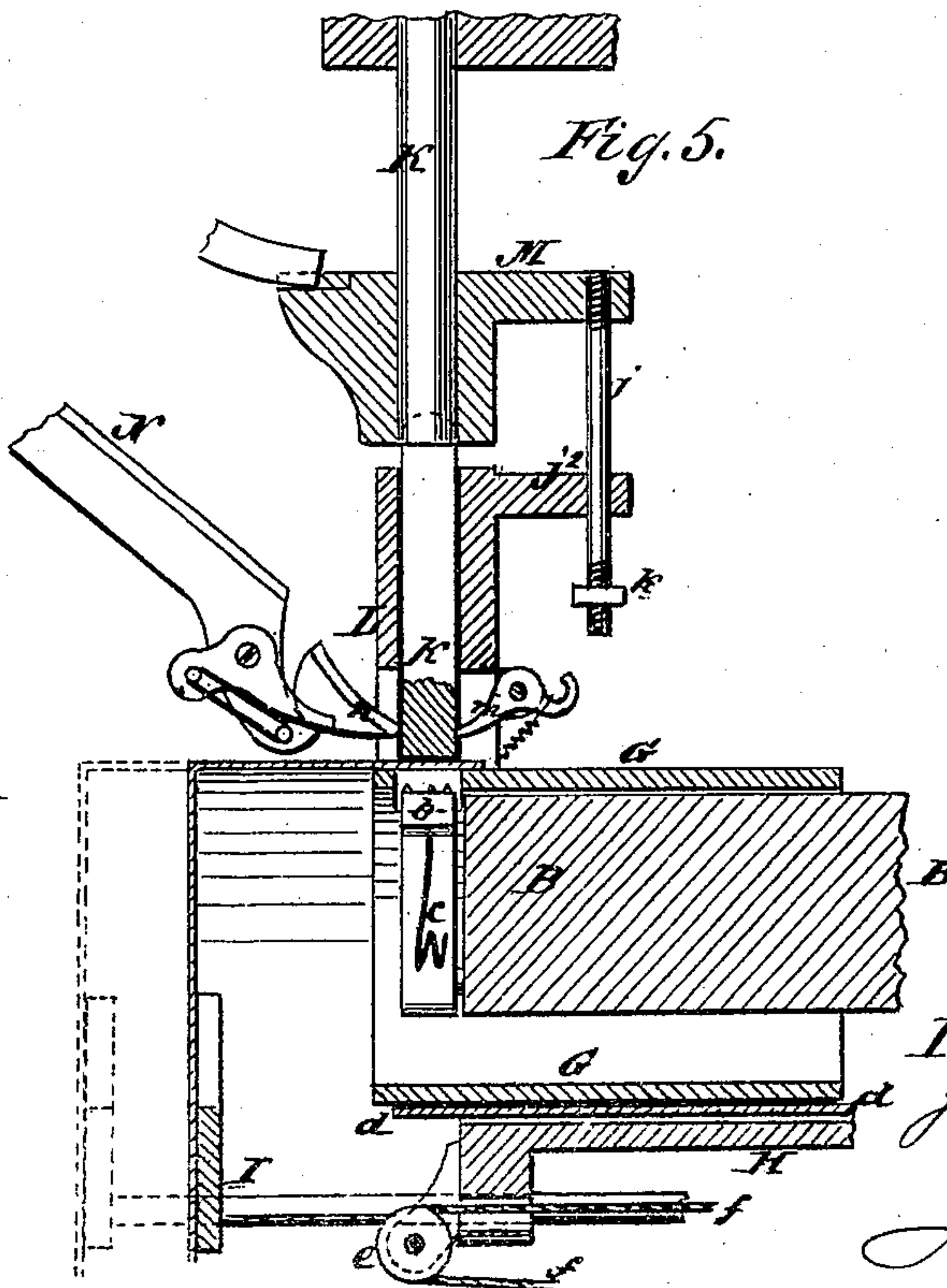


Fig. 5.



Witnesses:

E. Woff

Jacob Felber

Inventor:

Joseph Cohn

By atty.

J. M. L. L.

UNITED STATES PATENT OFFICE.

JOSEPH COHN, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR INSERTING THE CORNER-CLASPS OF BOXES.

Specification forming part of Letters Patent No. **148,416**, dated March 10, 1874; application filed January 20, 1874.

To all whom it may concern:

Be it known that I, JOSEPH COHN, of New York city, in the county of New York, in the State of New York, have invented Machines for Inserting the Corner-Clasps of Boxes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

My invention relates to a machine for automatically inserting and securing the metallic corner-clasps in that kind of boxes for which Letters Patent were granted to me on the 21st day of November, 1871; and consists, first, in the combination, with a plunger or follower for forcing in the clasps, and a feed mechanism for supplying the clasps, one at a time, at the proper place to receive the action of said plunger, of yielding fingers, to support and steady the clasp during its descent into the box, and a holder or presser to hold in place and press upon the box-corner during the insertion of the clasp; second, in the combination of a yielding bed or saddle, on which the box is rested, with clinching-jaws pivoted to a stationary supporting arm or frame, the whole arranged to operate so that said yielding bed supports the box-corner during the insertion of the clasp, and is then forced downward by the continued action of the inserting-plunger, to effect the upsetting or clinching of the points of the clasp; third, in a sliding and variable box-support and gage, which serves to support the material being operated upon, and to gage or regulate the location of the inserted clasps at the proper and regular distances from the top and bottom edges of the box, as will be hereinafter more fully explained.

To enable those skilled in the art to make and use my invention, I will proceed to more fully describe the construction and operation of my clasp-inserting machine, referring by letters to the accompanying drawings, in which—

Figure 1 is a side elevation; Fig. 2, a front view of my clasp-machine. Fig. 3 is a ver-

tical cross-section at the line *x x*, Fig. 1, on an enlarged scale; and Figs. 4 and 5 are sections on a similarly enlarged scale at the line *y y*, Fig. 3.

In Fig. 4 the parts of the machine are drawn as they appear when the plunger is in its uppermost position, as seen at Figs. 1 and 2, while in Figs. 3 and 5 it is drawn with the plunger in its lowermost position, (as when the clinching of the inserted clasp is about effected.)

In the several figures the same part will be found designated by the same letter of reference.

A is the main frame or stand of the machine, to the upper forward part of which is bolted a vertical stand, C, in which is pivoted, at *a*, the power-lever D, which is provided at one end with a handle, F, and at the other with a heavy weight, E. The main frame has a horizontally-projecting arm portion, B, upon the end of which are arranged the clinching-jaws *b b*. These jaws are hung on horizontal pivots at the end of arm B, and are held open or in a distended condition by a spring-wire, *c*, placed between them. G is a yielding bed or saddle, which surrounds the forward portion of arm B, and the bottom of which rests on and is secured to the forward end of a strong spring-bar, *d*. Secured to the bottom of this saddle G, and to the same spring-bar *d*, is a stand, H, which carries the sliding box-supporter and the gage I, and also a pulley, *e*, round which passes the cord *f*, that is fastened at one end (in the rear) to the gage I, and has at its other end, just below the pulley *g*, a weight, *h*. This supporter and gage I is free to slide in its bearings in the stand H, and, by the gravity of weight *h*, is kept outward or distended, so that its stop *j* comes to a bearing against the back end of stand H. In the upper forward portion of the main frame A is arranged, in suitable bearings, a vertical reciprocatory shaft or plunger, K, the upper end of which is pivoted, at *i*, to the power-lever D, and the lower end of which is adapted to force in the clasp to be inserted.

L is a presser-foot and guide-box, which surrounds the lower square portion of the plunger K, and which, when the plunger ascends, is lifted up by a rod, *j*. *k* is a nut, by the adjustment of which the lifting of the presser-foot L is regulated. In the lower portion of the presser-box L is arranged a spring-finger, *m*, which, in conjunction with a spring-finger, *n*, on the lower end of feed-bar N, serves to support the clasp fed down until it is forced into the box by the plunger. This feed-bar N extends upward and partially round a guiding pulley or wheel, O, the periphery of which has in it a V-shaped groove, and from the upper portion of which runs off, at a tangent, the feed-trough P, to which the clasps are supplied from the hopper Q, (the surplus clasps falling into a box, R, very much after the fashion of the same devices in a spangling or in an eyeletting machine.) On the same shaft to which wheel O is keyed is fastened a ratchet-wheel, S, into the teeth of which takes a pawl, P, pivoted near the middle of a lever or arm, T, one end of which is hung on a pivot at *q*, and the other end rested on the stand M, (see Fig. 1,) and on this same shaft is keyed also a spur-gear, *r*, which meshes with a similar gear, *t*, mounted in the upper end of an arm, *u*, bolted to the forward projecting portion *w* of the frame of the machine. On one side of the wheel *t* are numerous projections or pins, 1 2 3, &c., arranged equidistant, and just far enough apart to pass successively between the points of the clasps as they come down in the trough P, and by the intermittent motion of this wheel *t* these pins 1 2 3, &c., feed the clasps one at a time to the bar N, on which said clasps slide down to the fingers *m n*. (See Figs. 1 and 4.)

The operation of the machine is as follows: The hopper Q being supplied with clasps, the jar occasioned by the constant working of the weighted lever D causes said clasps to move along into the trough P, (those which happen to arrive at the mouth of the trough in a wrong position tumbling off into the surplus-box R,) and fill it full, the exit of the clasps from the lower end of trough P being regulated by the escapement-wheel *t*, with its pins 1 2 3, &c. Each time the plunger K ascends, the rear end of lever T is lifted by the projection or stand M, and the pawl *p* of said levers turns the ratchet-wheel S one notch or tooth, and thereby the grooved wheel O and gears *r* and *t* are each simultaneously rotated to a given extent, just sufficiently to cause the pins on wheel *t* to pass along or move out one clasp from the lower end of trough P. The clasp thus fed out is, during its passage between wheel O and the curved part of bar N, turned over and passes along down or rides straddle of the feed-bar N by gravity, and lodges astride of or pendent on the fingers *m*

n. This position of the clasp is illustrated by dotted lines at Fig. 4. As the plunger descends, the first operation is that of the presser box or foot L, which, losing its support by the rod *j*, comes down onto and holds the clasp in place on the spring-fingers *m n*. At the same time this presser-foot descends onto and holds in place the corner of the box, which is now supposed to have been placed over the saddle G. As the descent of the plunger K continues, the suspended clasp is carried or forced downward by its lower V-shaped end, and the points of the clasp are forced into and through the material of the box.

During this penetration of the points of the clasp into and their passage through the material of the box, the saddle G supports the box, the spring *d* (which supports said saddle) being stiff enough to withstand the pressure necessary to accomplish this insertion of the points of said clasp; but as the plunger continues to press down or descend it forces down the saddle G, (box inserted, clasp and all,) and, the oblique inner surface of the top sides of said saddles operating on the upper ends of the spring clinching-jaws *b b*, the latter, between which the downwardly-protruding points of the inserted clasp now depend, are forced together, and in their movement bend inward and upward and securely clinch the clasp-points on the inner surface of the box. This clinching of the points of the clasp (or upsetting them) between the top surfaces of the jaws *b b* and lower end of the plunger K is clearly illustrated at Figs. 3 and 5.

When the box or box portions are to be clasped, as just described, the operator places the corner in which the clasps are to be inserted over the saddle G and forward part of guide I, in such a manner that the bottom of the box or box-blank comes against the front board I, and thereby the placement of the inner portion or top edge of the box is regulated for the insertion of first clasp. He then forces along the box (pushing in the weighted guide I) until the desired point for the insertion of another clasp comes under the plunger K, and so on until the insertion of the last clasp, when the front board of guide I is pushed home against the forward end of saddle G.

It will be understood that on the position to which stop J is adjusted will depend the distance of the first-inserted clasp from the top edge of the box.

I have found, in practice, that, with the machine described, the clasps can be as rapidly inserted as the operator can manipulate the box and machine, and that in the operation of insertion and securement the adjacent parts of the box will be held perfectly together, and the clasp be perfectly clinched.

Having so fully described my invention that any one skilled can make and use my machine for inserting corner-clasps of boxes, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the inserting plunger or die and a clasp-supplying mechanism, the yielding holder-fingers *m n* and inclosing-case L, the whole arranged to operate substantially as described, for the purpose set forth.

2. In combination with the reciprocating plunger, a yielding supporting saddle or bed, and clinching-jaws pivoted to a stationary

post, the whole constructed and arranged to operate substantially as and for the purpose described.

3. The sliding box-support, in combination with the box bed or saddle, operating as and for the purpose set forth.

In testimony whereof I have hereunto set my hand and seal this 17th day of January, 1874.

JOSEPH COHN. [L. S.]

In presence of—

A. ASCHER,
JACOB FELBEL.