

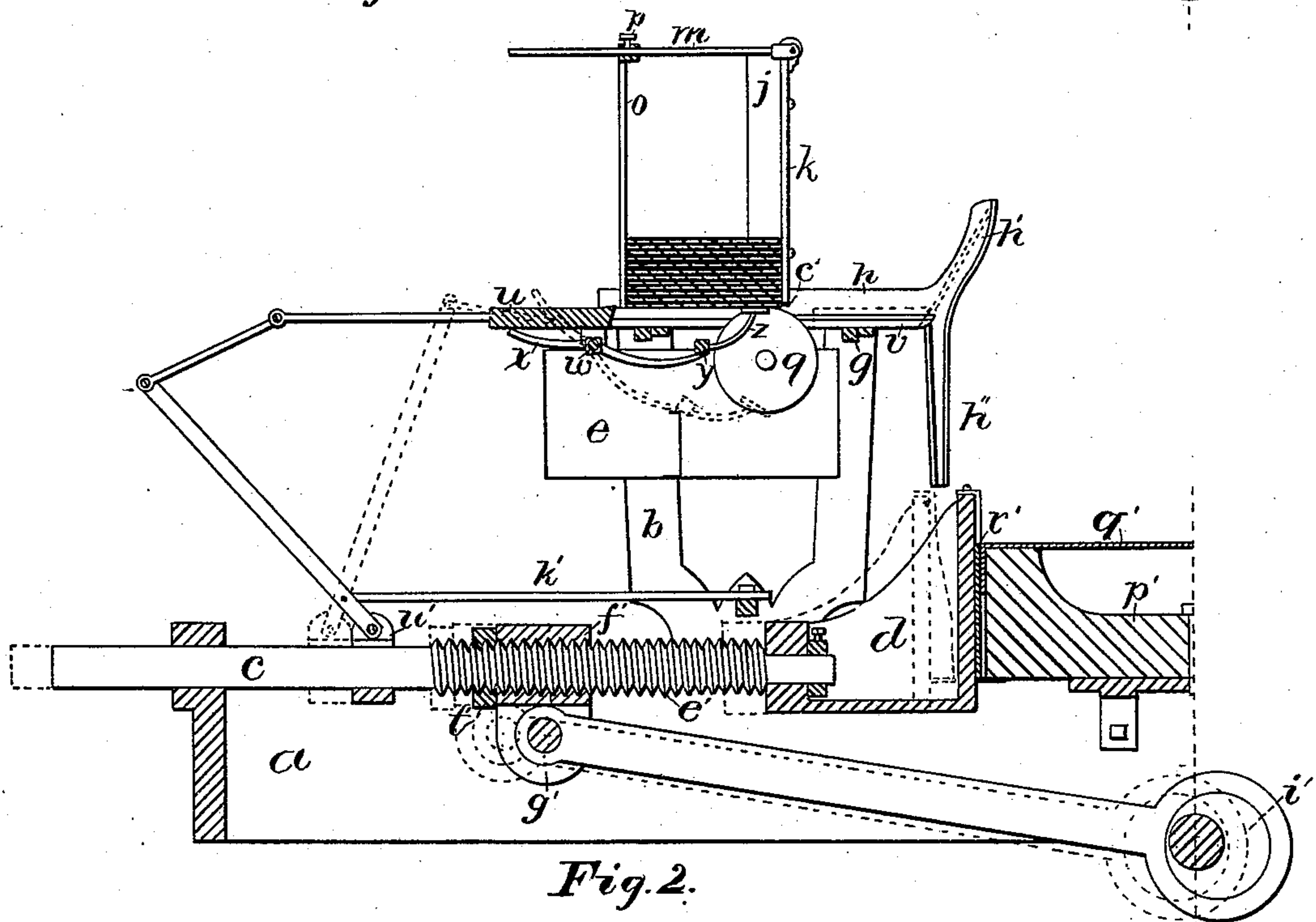
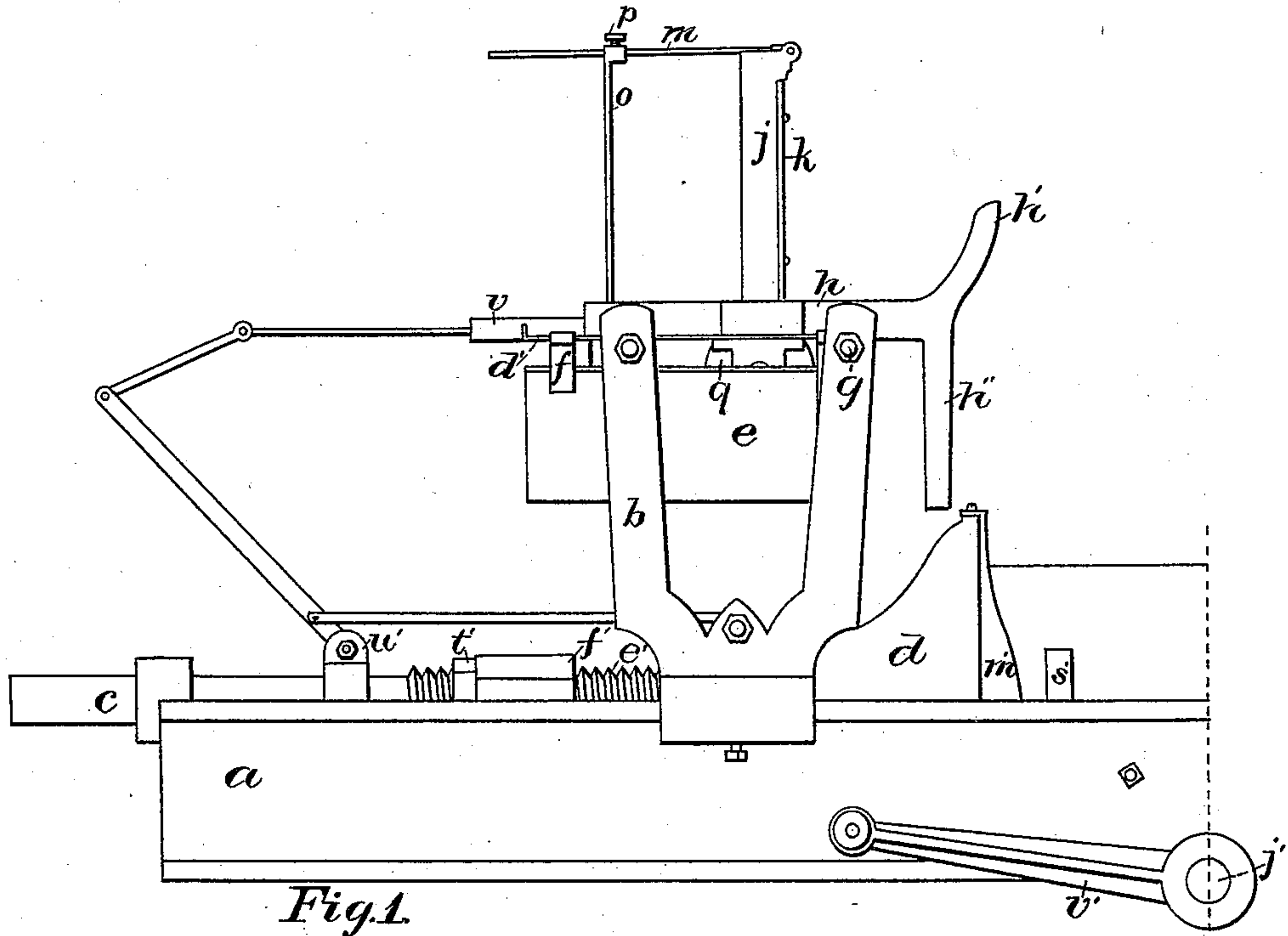
(No Model.)

2 Sheets—Sheet 1.

J. A. PRATT.
PAPER BOX MACHINE.

No. 414,822.

Patented Nov. 12, 1889.



Witnesses
W. L. Perham
Geo. T. Spear

Inventor
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(No Model.)

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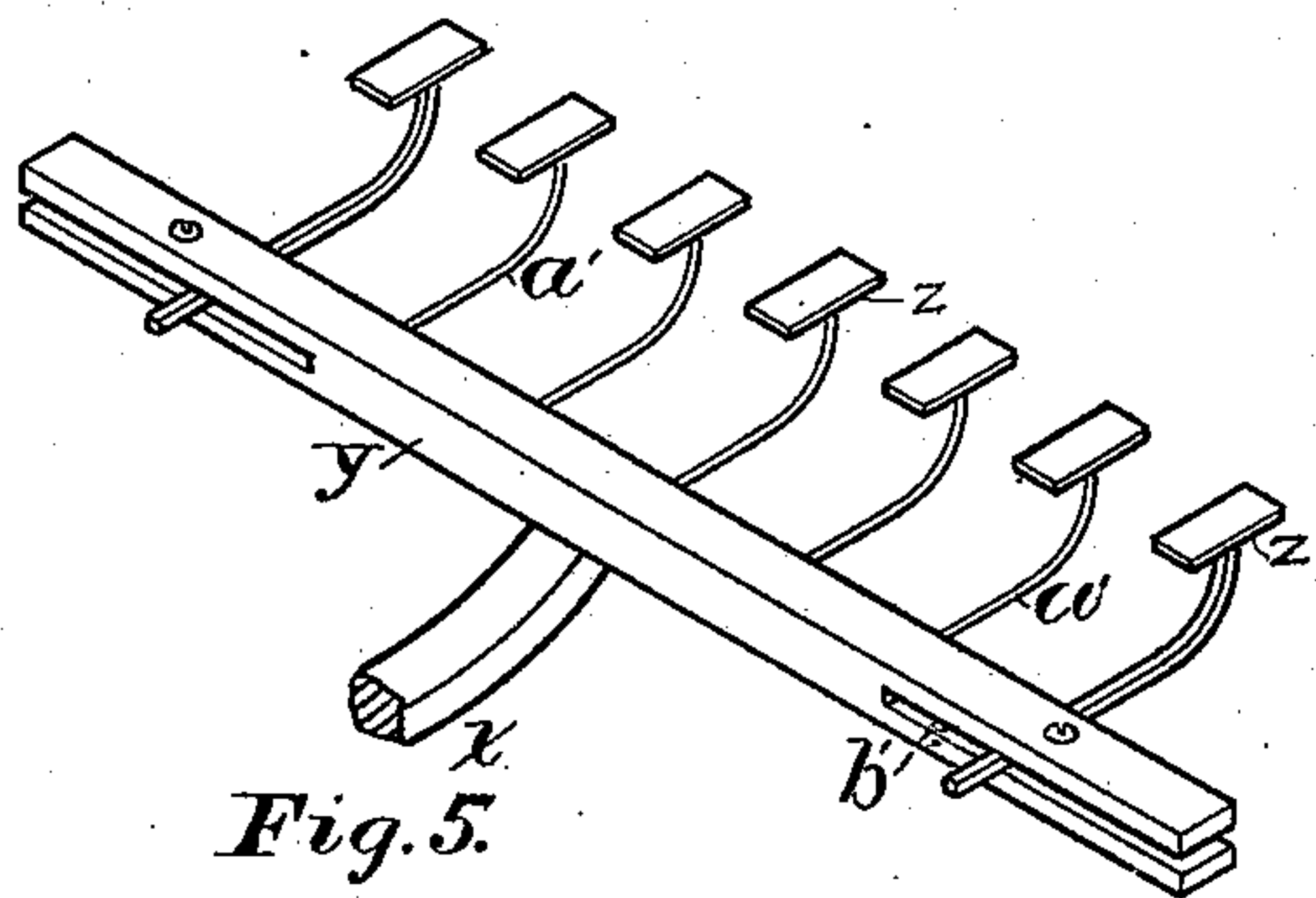


Fig. 5.

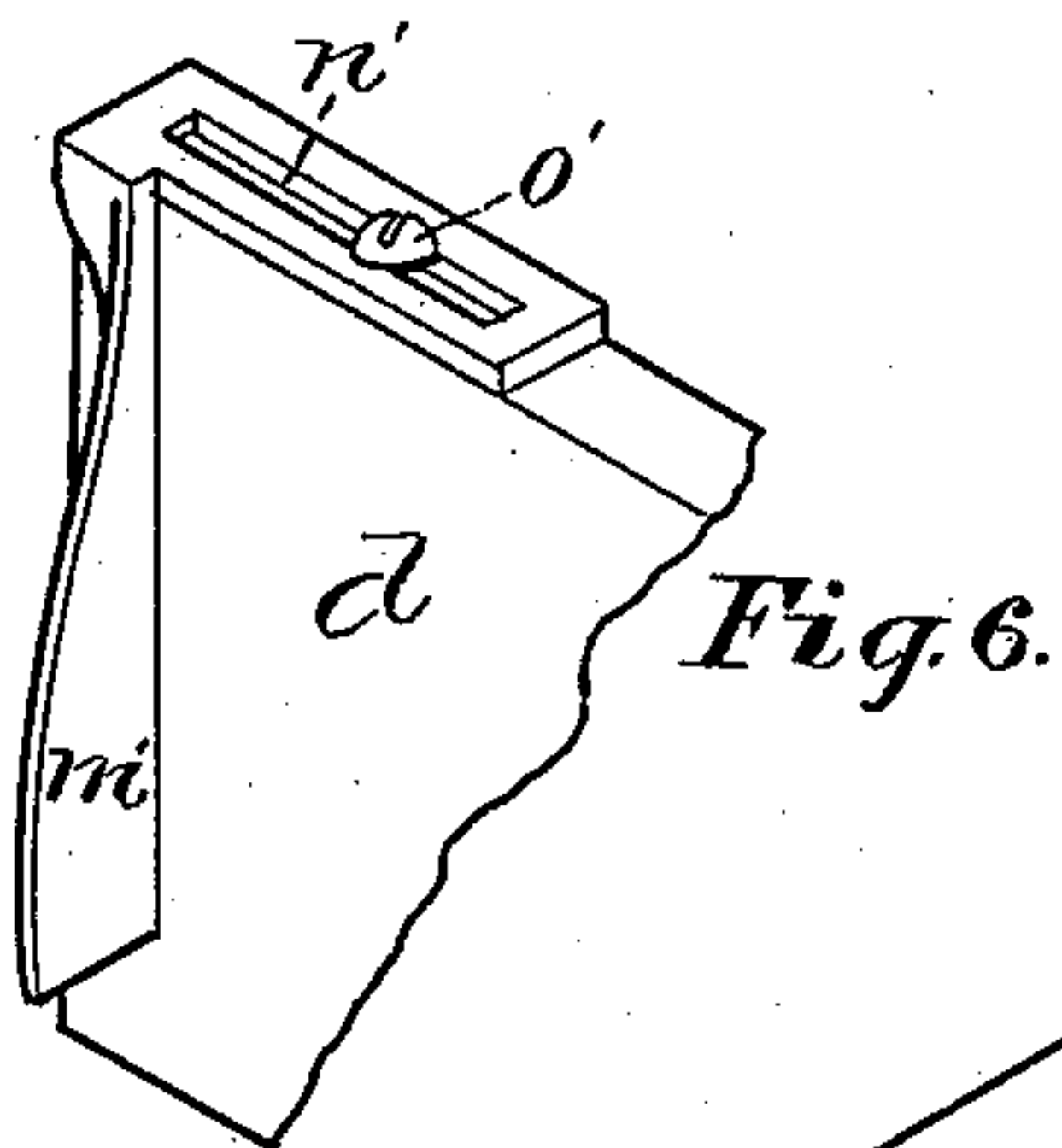


Fig. 6.

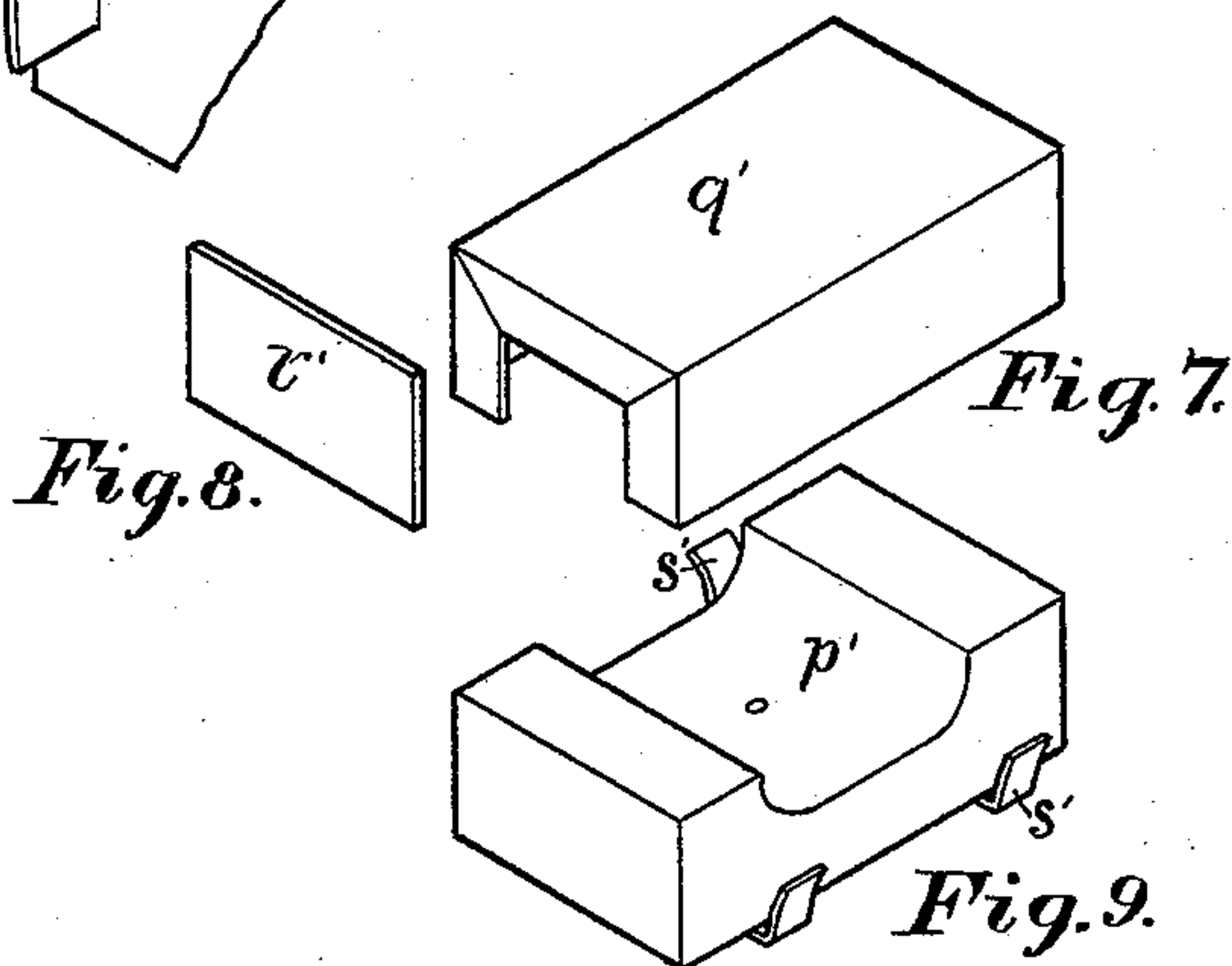


Fig. 7.

Fig. 8.

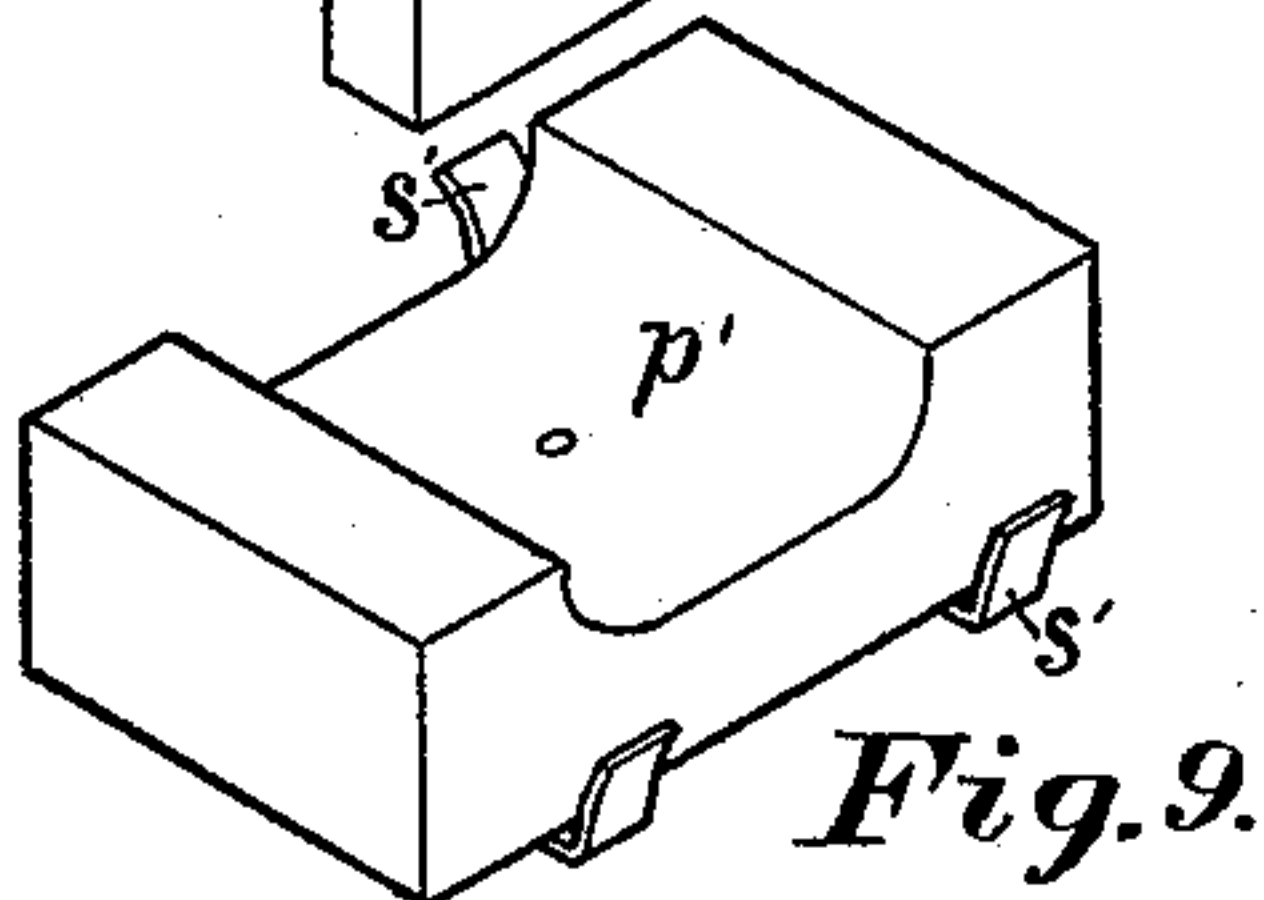


Fig. 9.

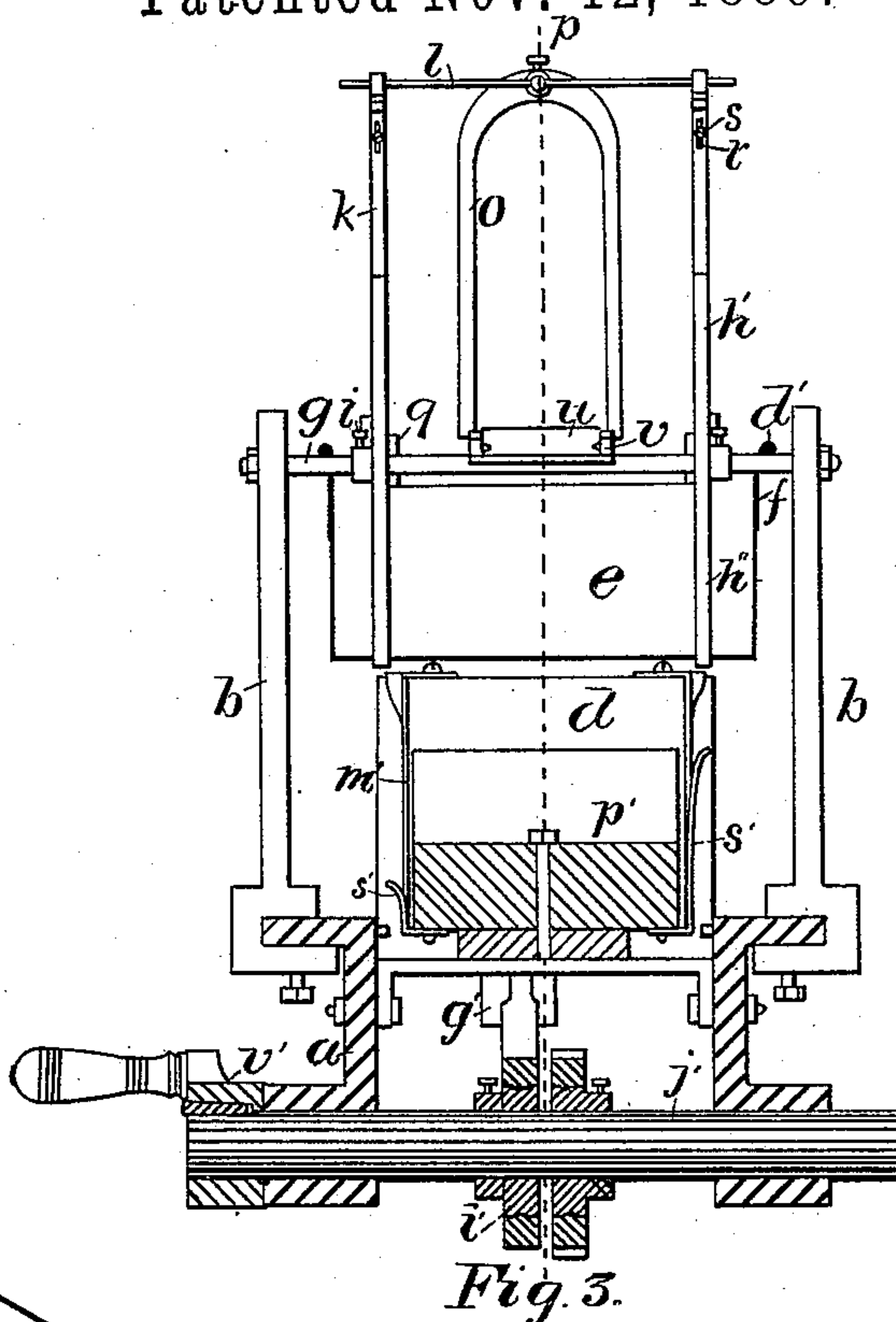


Fig. 3.

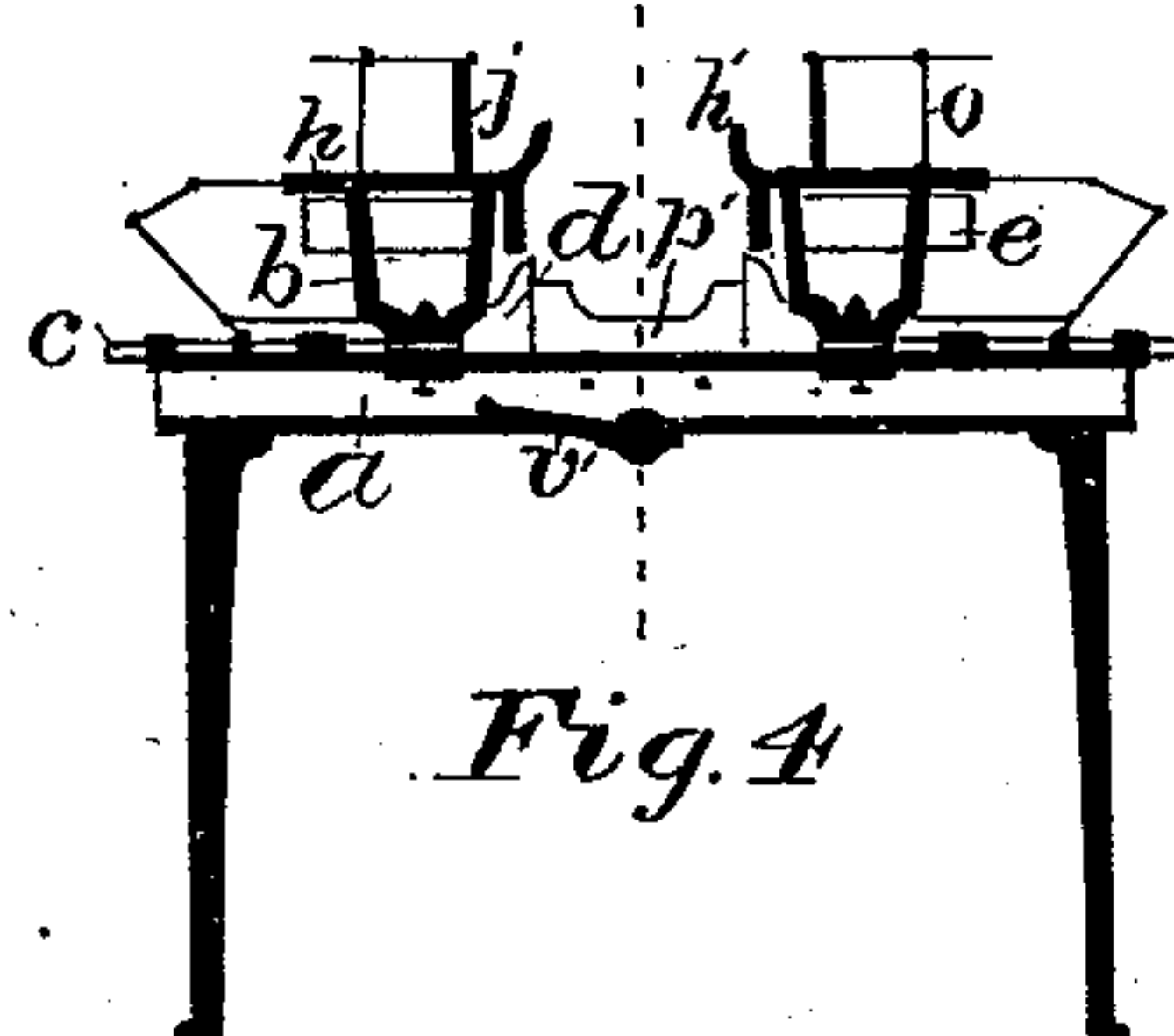


Fig. 4.

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UNITED STATES PATENT OFFICE.

JEDEDIAH A. PRATT, OF PORTLAND, MAINE.

PAPER-BOX MACHINE.

SPECIFICATION forming part of Letters Patent No. 414,822, dated November 12, 1889.

Application filed May 21, 1889; Serial No. 311,632. (No model.)

To all whom it may concern:

Be it known that I, JEDEDIAH A. PRATT, of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Paper-Box Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in paper-box machines, and especially to that class of machines which applies the paste to the end blanks, then carries the blanks thus pasted to the body-blanks and presses them upon said body-blanks. My machine is designed to paste and attach both ends at one time. For this purpose the mechanism on either side of the block upon which the body-blank is placed to receive the end blanks is the same, operating in opposite directions by means of eccentrics.

It consists of a hopper adapted to contain a quantity of end blanks, a paste-pan located below said hopper, pivoted pasters adapted to sink into said pan to apply the paste to the bottom of the blank, and disks journaled at the sides within said pan to apply the paste to the sides of the blank, a guideway leading from beneath the hopper, thence curving upward and thence vertically downward, along which the blanks may slide, after being pasted, to the end of the block, a reciprocating feeding-plunger to raise pivoted pasters and carry the blanks forward on the guideways, a reciprocating presser-plunger to press the end blanks against the body-blank, and means for adjusting these several parts, substantially as hereinafter described.

In the drawings herewith accompanying and making a part of this specification, Figure 1 is an elevation showing mechanism on one side of the body-blocks. Fig. 2 is a longitudinal section of same; Fig. 3, a cross-section; Fig. 4, an elevation of entire machine. Fig. 5 is a detail of pivoted pasters. Fig. 6 is a detail showing adjustable flanges on the presser-plungers. Fig. 7 is a detail showing body-blank. Fig. 8 is a detail showing end

blank. Fig. 9 is a detail showing block and its ears.

Same letters refer to like parts.

In the drawings, *a* shows the base, and *b* adjustable standards or supports attached thereto and adapted to slide thereon. Connecting these standards *b* are bars *g*, upon which rest rods *d'*. A paste-pan *e* is suspended from rods *d'* by means of hangers *f*. Upon the transverse bars *g* are arranged guideways having horizontal part *h*, the upwardly-curved part *h'*, and the vertical part *h''*, said vertical part extending down in front of the presser-plunger. These ways are made continuous and capable of lateral adjustment on bars *g*, and have set-screws *i* to hold them in any given position.

Above the paste-pan is a hopper adapted to contain a quantity of end blanks, having sides *j* and flanges *k* to serve as stops, the sides *j* attached to and moving with said ways. Journaled in the sides *j* is a rod *l*. Rigidly attached to rod *l*, at right angles thereto, is a rod *m*. Adapted to slide on rod *m* is a tongue *o*, which may be held in any given position by set-screw *p*, said tongue forming one side of the hopper. Thus the hopper is adjustable laterally by means of the guideways sliding on bars *g*, and longitudinally by means of the tongue sliding on rod *n*.

Journaled in the sides of the paste-pan are wheels *q*, the circumference extending down into the paste and up to the under side of the blank resting on the ways. The space between the circumference of the wheels and the bottom of flange *k* should be just sufficient to allow the blank to pass between and press hard enough to rotate the wheels. This space can be adjusted by means of a slot *r* in the flange and a set-screw *s*. The inner lower edge *c* of the flange may be beveled to facilitate the passage of the blank thereunder. Thus as the blank passes out in front of the plunger it rotates the wheels and the paste on the circumference thereof is transferred to the sides of the blank. The blanks are carried along the ways by a reciprocating feeding-plunger *u*, moving on a track *v*. Pivoted to track *v*, so as to swing in the paste-pan, is a lever *w*, having an arm *x*, extending up between the track *v*, and on the other end a transverse bar *y*, in which is set a

series of pasters z . These pasters may be set on the ends of elastic arms a' , and the bar y may have slots b' in the ends thereof, so that more or less pasters may be used, according to the size of the blanks. The weight of the bar and pasters will be sufficient to keep the pasters immersed in the paste when not raised by the feeding-plunger. When the pasters are raised, they each bring up a quantity of paste and deposit it on the under side of the lower blank in the hopper, near the edge, as shown in Fig. 2. These pasters are operated by action of the feeding-plunger on arm x . Located between the sides of the base is a presser-plunger bar c' , carrying jaw d on its end, adapted to press the end blank against the body-blank. The plunger-bar c' has a thread e' and a nut f' , having ears g' , and a lock-nut h' . The presser-plunger is given a reciprocating movement by means of the eccentric i' , connecting power-shaft j' and ears g' .

In order to accommodate boxes of different lengths, the plunger-bar c' may be swiveled in the jaw d , so that by turning the bar c in nut f the adjustment may be effected, the ways being adjusted in the manner as before described to correspond.

The feeding-plunger u is given a reciprocating movement by means of a system of levers, the last of which is pivoted in a clamp u' , attached to plunger-bar c' and having a fulcrum in bar k' , said bar k' being elastic. The plunger-jaws have wings or guides m' , which are adjustable to the size of different blanks by means of the slot n' and set-screw o' .

In front of the presser-plunger jaws is rigidly set a block or form p' , upon which the body-blank q' is placed to receive its ends r' . To facilitate the placing of the body-blank, ears s' may be attached to the sides thereof. If those on the side farthest from the operator be somewhat longer than the others, coming near or just above the top of the block, the blank, when shoved across, will catch thereon and slide down into position. The shaft j' may be operated by a crank v' or by a wheel placed thereon, and either by hand or other power.

I have now described the mechanism for applying the paste to one end blank, for conveying the blank to the body-blank, and for attaching it thereto. Similar mechanism on the other side of the block on which the body-blank is placed, operated in a similar manner, simultaneously attaches a blank to the other end.

Having described the various parts of my machine and the method of adjusting the same to boxes of different sizes, I will now explain the principle of operation.

A quantity of end blanks are placed in the hopper, the several parts of the machine, being in the position shown in Fig. 2. As the power-shaft revolves, the presser-plunger is drawn back from the block and the feeding-plunger is driven forward, carrying be-

fore it an end blank until said blank passes to the vertical part of the way, when it falls down between the presser-plunger and the body-blank placed on the block, while the presser-plunger is drawn back. As the power-shaft continues to revolve, the presser-plunger is driven forward and presses the blank upon the body-blank. At the same time the feeding-plunger will be drawn back upon the arm of the pivoted paster, raising the pasters to the position shown in Fig. 2, and so on successively.

The great advantages of my improved machine are its certainty and rapidity of operation, its ability to put on both blanks at the same time, and the quality of the work, the paste being spread out evenly by the pressure of the plunger.

Having thus described my invention and its use, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a box-machine for pasting and attaching the end blanks to the body-blanks, the combination, with a hopper for containing a quantity of blanks, a reciprocating feeding-plunger, paste-pan, pivoted paster, rotating pasters, and reciprocating presser-plunger, of guideways for the blanks, having horizontal upwardly-curving and vertical parts, the latter extending downwardly in front of said presser-plunger, substantially as and for the purposes set forth.

2. In a box-machine for pasting and attaching end blanks to a body-blank, the combination, with a feeding-plunger, a presser-plunger, a paste-pan, and pasters, of guideways for the end blanks, having horizontal upwardly-curving and vertical parts, and means for adjusting said ways with respect to each other so as to take blanks of different sizes, substantially as and for the purposes set forth.

3. In a box-machine for pasting and attaching end blanks to a body-blank, the combination, with duplicate hoppers, paste-pans, pasters, guideways, and feeding-plungers, and a central block for the body-blank, of duplicate reciprocating presser-plungers arranged and operating one on either end of said block by eccentric connection with the power-shaft, and operating the said feeding-plungers by suitable lever-connection therewith, substantially as set forth.

4. In a paper-box machine, the combination, with a presser-plunger jaw, of adjustable side flanges, as and for the purposes set forth.

5. In a paper-box machine, the combination, with a pivoted lever, of a transverse bar on the end thereof, having pasters set thereon, and slots in the sides, in which supplemental pasters may be set, as and for the purposes set forth.

6. In a paper-box machine, the combination, with a pivoted lever, of a series of pasters connected to the end of the lever by elastic arms, as and for the purposes set forth.

7. In a box-machine for pasting and attaching the end blanks to a body-blank, a hopper

for holding a quantity of said end blanks, having adjustable side bars with flanges attached thereto, a cross-bar carrying a tongue journaled in said side bars, and a clamping-bar adapted to slide on said tongue, substantially as set forth.

8. In a box-machine for pasting and attaching the end blanks to a body-blank, guide-ways for said end blanks to slide upon, having the horizontal part extending from beneath a hopper containing a quantity of said blanks to a point nearly over the end of a block adapted to receive a body-blank, thence curving upward to give the end blank a ver-

tical position, and extending downward in front of the end of the said block, so that the end blank, when it reaches a vertical position on the ways, will fall by the force of gravity into position to be attached to the body-blank, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JEDEDIAH A. PRATT.

Witnesses:

ELGIN C. VERRILL,
GEORGE T. SPEAR.