No. 688,285. Patented Dec. 10, 1901.

H. B. BLACKINTON.

MACHINE FOR COVERING BOXES.

(Application filed Aug. 12, 1901.)

(No Model.) 3 Sheets—Sheet 1.

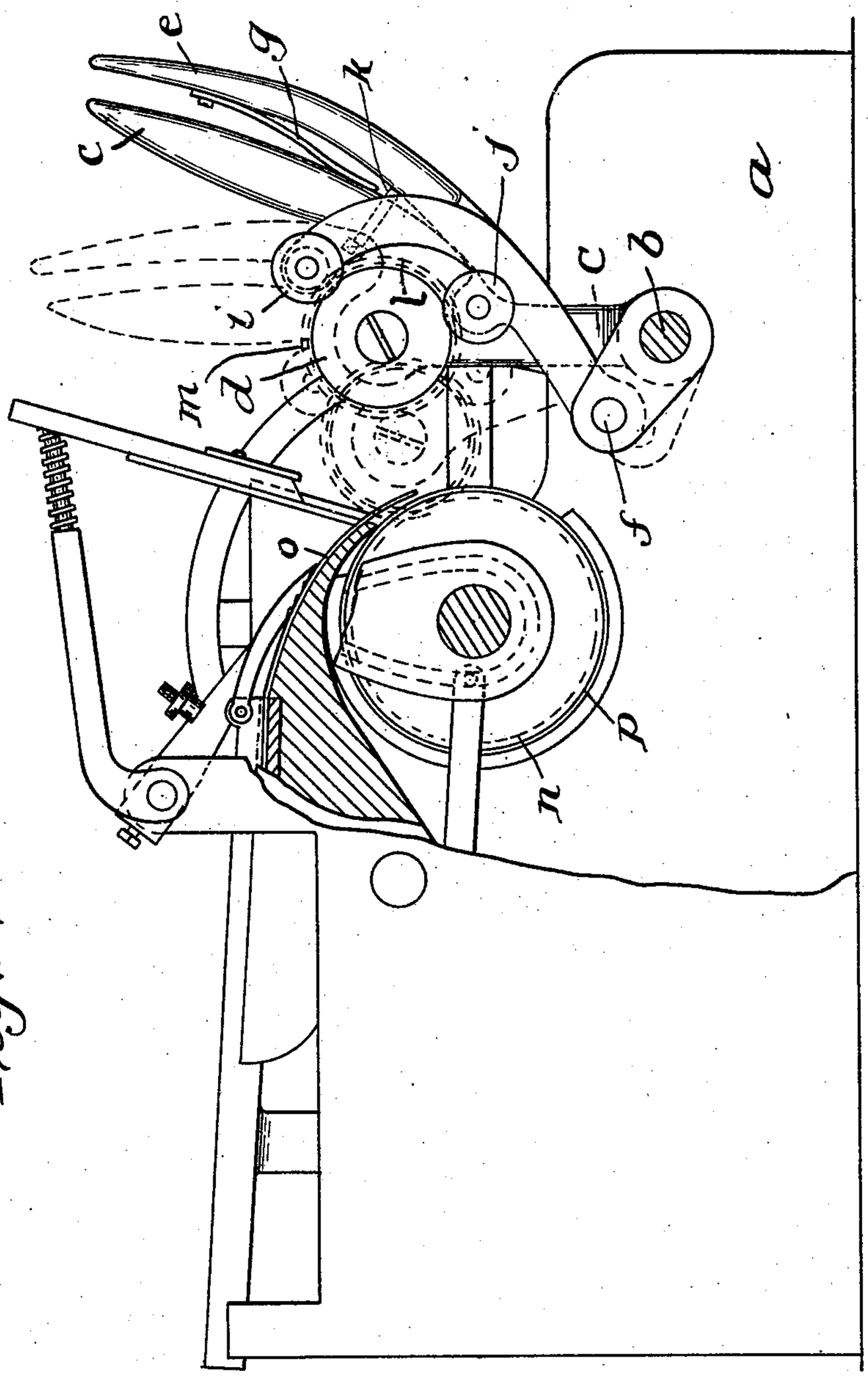

Fig. 1.

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Fig. 2.

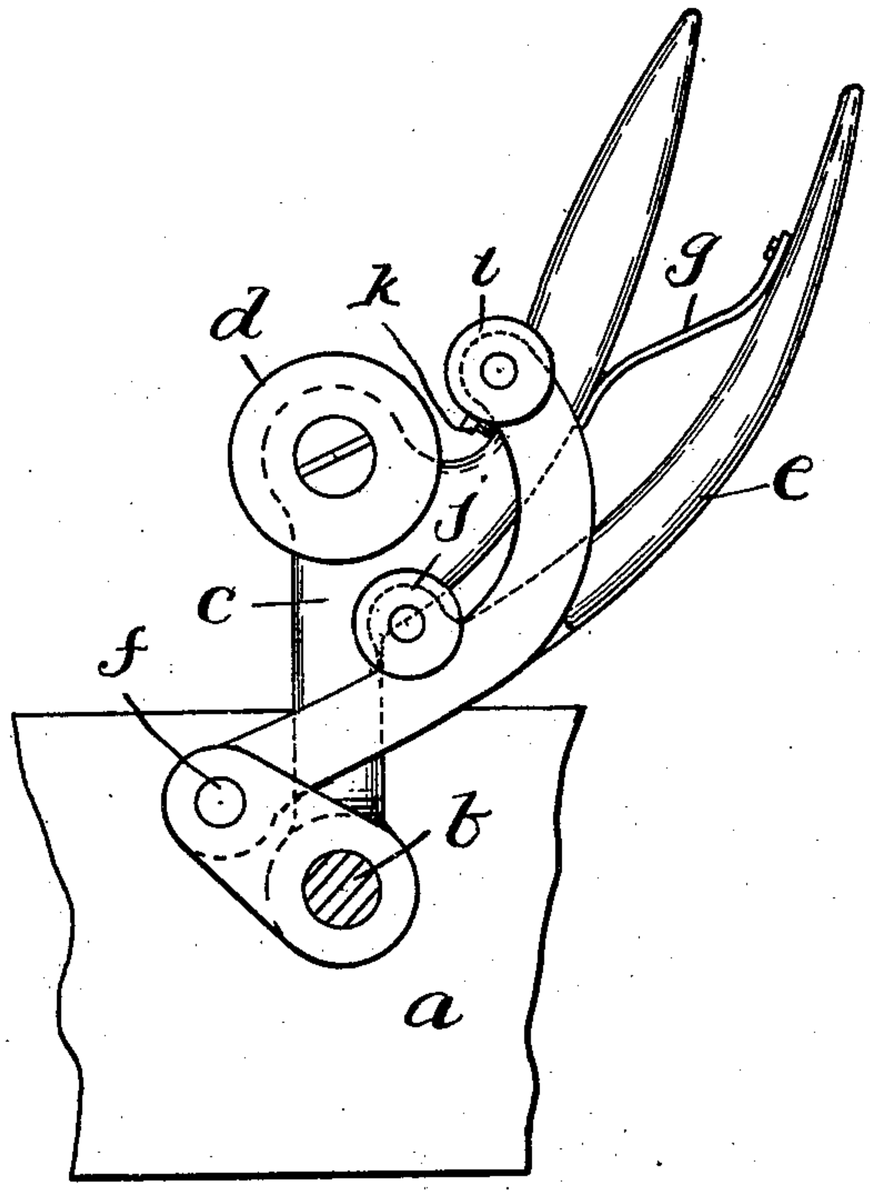

Fig. 3.

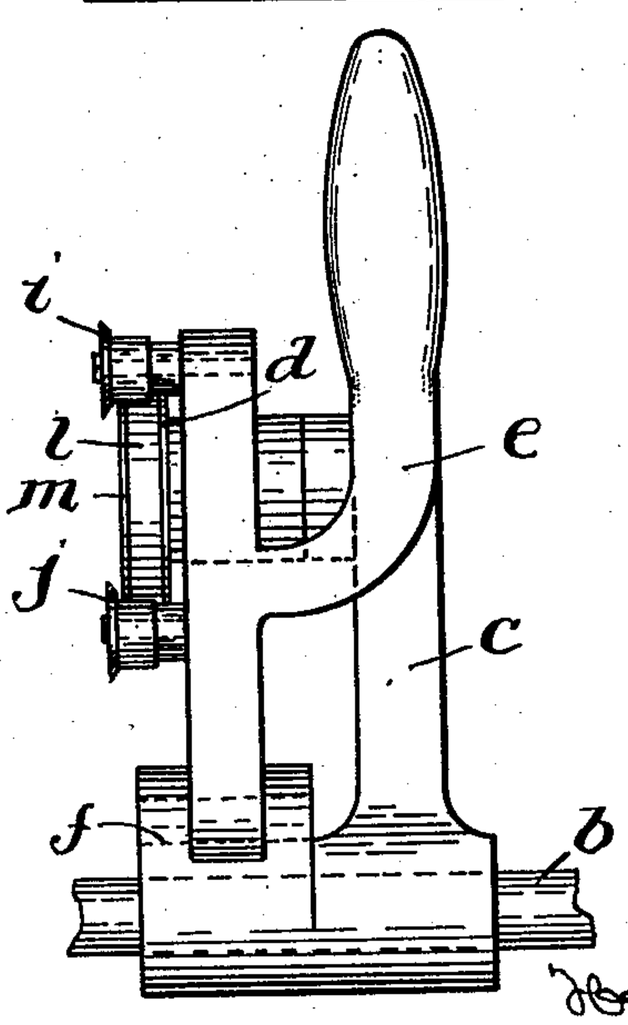

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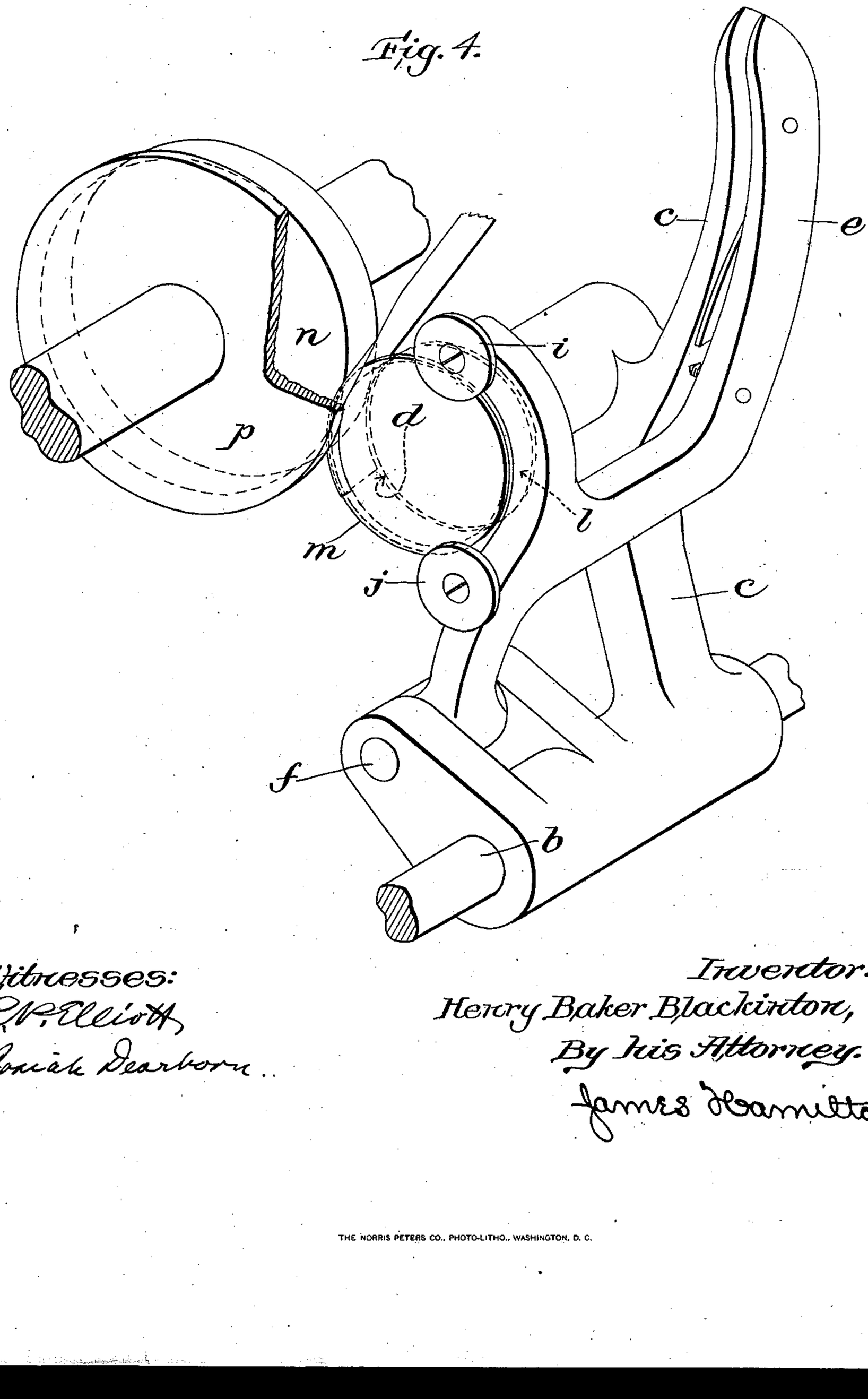
Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY BAKER BLACKINTON, OF WINTHROP, MAINE, ASSIGNOR TO COX AND COMPANY, INCORPORATED, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

MACHINE FOR COVERING BOXES.

SPECIFICATION forming part of Letters Patent No. 688,285, dated December 10, 1901.

Application filed August 12, 1901. Serial No. 71,708. (No model.)

To all whom it may concern:

Be it known that I, HENRY BAKER BLACKINTON, of Winthrop, in the county of Kennebec and State of Maine, have invented a new and useful Improvement in Machines for Covering Boxes, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a box-covering machine fitted with my new holder. Fig. 2 is a side elevation of my new holder. Fig. 3 is a front elevation of my new holder, and Fig. 4 is an isometric view showing how the box-bottom is supported against the box-body during the pasting of the covering-strip.

My invention relates to improvements in machines for covering boxes; and the object of my invention is to provide means for holding the disk to the body portion or walls of the box during the operation of pasting the covering-strip upon the box. The disk referred to forms the top of the cover or the bottom of the box and may be of such size as to project beyond the side walls of the box, thereby forming a flanged edge. When the disk is held against the side walls, as described, the operation of gluing the side walls or body previous to pasting on the covering-strip is needless, for the covering-strip is of itself sufficient to hold the disk to the side walls in the finished box.

In the drawings illustrating the principle of my invention and the best mode in which I have contemplated applying that principle, (see Figs. 2 and 3,) *a* is the supporting-frame, mounted in which is the shaft *b*, that carries the box-holder rotatably mounted thereon. The box-holder is made up of two principal members—to wit, a swinging arm *c*, that is pivoted on the shaft *b* and on which is rotatably mounted the box-form *d*, and a lever *e*, fulcrumed at *f* in the hub of the swinging arm *c*. A spring *g* is interposed between the arm *c* and the lever *e*. In the lever *e* are rotatably mounted the flanged rollers *i* and *j*. During the pasting of the covering-strip these rollers support the bottom of the box against the side walls. A stop-screw *k* in the swinging arm *c* limits the movement of the lever *e* so that the edge of the bottom *m* of the box which rests upon the rollers *i* and *j* is concentric and against the side walls *l* of the box. It results that the flange of the bottom *m* is of the uniform width desired.

The operation of my machine is as follows: The lever *e* and swinging arm *c* are held by the operator in the right hand, and the operator with the left hand places the cylindrical portion or body *l* of the box upon the box-form *d* and presses against it the pasteboard disk *m* that is to form the bottom of the box. The lever *e* is by the closing of the hand pressed against the stop-screw *k* in opposition to the tension of the spring *g*. This brings both the rollers *i* and *j* against the edge of the bottom *m* of the box, and the flange of these rollers prevents the outward movement of the bottom *m* during the operation of pasting on the covering-strip. The rollers *i* and *j* are so placed in the lever *e* that when the lever *e* is rotated about its fulcrum *f* both rollers simultaneously contact with the edge of the bottom *m* on a circle struck from the axis of the shaft of the rotary box-form *d* as a center. A flange of uniform width around the bottom of the box is thus secured. The rollers *i* and *j* serve as two points of support for the bottom *m*. The parts are now in the position shown in full lines in Fig. 1. The operator next moves the swinging arm *c* and the lever *e* into the position shown in the dotted lines in Fig. 1. The walls or body *l* of the box is thus pressed into contact with the press-roll *n*, the strip *o* being between the latter and the walls of the box and with its glued side against the walls of the box. The edge of the bottom *m* of the box enters the space between the rotary disk *p* and the press-roll *n* (see Figs. 1 and 4) and engages an edge portion of the strip *o*. This edge portion is by the rotary disk *p* bent over upon the outside of the bottom *m*, while the press-roll *n* pastes the strip *o* securely upon the side walls *l* of the box. The strip *o* by its engagement with the edge of the bottom *m* (see Fig. 4) forms the third point of support for the bottom *m*, the rollers *i* and *j*, as before stated, forming the other two points of support. Thus the bottom *m* is securely sup-

ported during the pasting of the covering-strip, and is by that strip tightly bound to the side walls of the box.

The operation of the press-roll *n* and the rotary disk *p* is the same as is described in my pending application, Serial No. 42,458, filed January 7, 1901.

The gluing of the side walls of a box to the disk that forms its bottom before the pasting on of the covering-strip is a slow and laborious operation. Again, it is very difficult to center accurately the body or side walls on the disk—that is, to glue the body portion to the bottom, so that the two are concentric. When this centering is imperfect, the flange is not of uniform width, thereby making the box not only poor in appearance, but very difficult to cover. The lack of uniformity in the width of the flange causes the covering-strip to break in the operation of pasting it on. In my new machine this gluing of the box-body to its bottom is unnecessary and its difficulties are obviated. The bottom is by the mechanism accurately centered on the side walls, and the number of boxes turned out is larger, the quality of the box is better, and one operation—a slow and laborious one—is done away with. The result is a better box produced at less cost.

My new machine is of course adapted to cover boxes which are formed without a flange around the bottom edge, as well as those which are so formed.

What I claim is—

1. The combination of a box-form adapted to receive the body portion of the box; retaining mechanism for holding the end-forming disk in position against said box-form; and a movable support for said box-form and said retaining mechanism.

2. The combination of a rotary box-form adapted to receive the body portion of the box; retaining mechanism for holding the end-forming disk in position against said box-form; and a swinging arm in which is mounted said box-form and said retaining mechanism.

3. The combination of a box-form adapted to receive the body portion of the box; retaining mechanism for holding the end-forming disk in position against said box-form; a support for said box-form and said retaining mechanism, said support being movable to and from a strip-pasting mechanism; and said strip-pasting mechanism.

4. A box-holder for a box-covering machine comprising the combination of an arm in which is mounted a box-form; said box-form adapted to receive the body portion of the box; and retaining mechanism mounted on said arm for holding the end-forming disk against said box-form.

5. The combination of a supporting-frame; a press-roll; a driving mechanism for rotating said press-roll; a rotary box-form adapted to receive the body portion of the box; a retaining mechanism for holding the end-forming disk in position against said box-form; mechanism for turning an edge portion of the covering-strip over upon the outside of said end-forming disk; and mechanism for carrying the box-form and disk-retaining mechanism to and from said press-roll; said press-roll driving said box-form by frictional contact and pressing the covering-strip upon the body portion of the box.

6. The combination of a supporting-frame; a driving mechanism; a press-roll; a box-form disconnected from said driving mechanism adapted to receive the body portion of the box; a retaining mechanism for holding the end-forming disk in position against said box-form; mechanism for turning an edge portion of the covering-strip over upon the outside of said end-forming disk; and mechanism for bringing said box-form and press-roll together to press the covering-strip upon the box.

7. The combination of a supporting-frame; a driving mechanism; a box-form adapted to receive the body portion of the box; a retaining mechanism for holding the end-forming disk against said box-form; a rotary disk that turns over and presses an edge portion of the covering-strip upon the outside of the end-forming disk to bind said end-forming disk to the body portion of the box; a press-roll that presses the covering-strip upon the body portion of the box; and mechanism for centering said end-forming disk against the covering-strip between said rotary disk and said press-roll and against the body portion of the box.

8. A box-holder made up of the combination of a supporting-frame; a swinging arm pivotally mounted in said frame; a rotary box-form mounted on said swinging arm and adapted to receive the body portion of the box to be covered; a lever fulcrumed on said swinging arm; and retaining means mounted in said lever for holding the end-forming disk of the box in position against said box-form.

9. A box-holder made up of the combination of a supporting-frame; a swinging arm pivotally mounted in said frame; a rotary box-form mounted on said swinging arm and adapted to receive the body portion of the box to be covered; a lever fulcrumed on said swinging arm; a stop-screw for limiting the movement of said lever toward said arm; and rollers journaled in said lever to hold the end-forming disk against said box-form.

In testimony whereof I hereunto set my hand this 8th day of August, A. D. 1901.

HENRY BAKER BLACKINTON.

Witnesses:
E. J. A. LANDIN,
JAMES HAMILTON.