

(Model.)

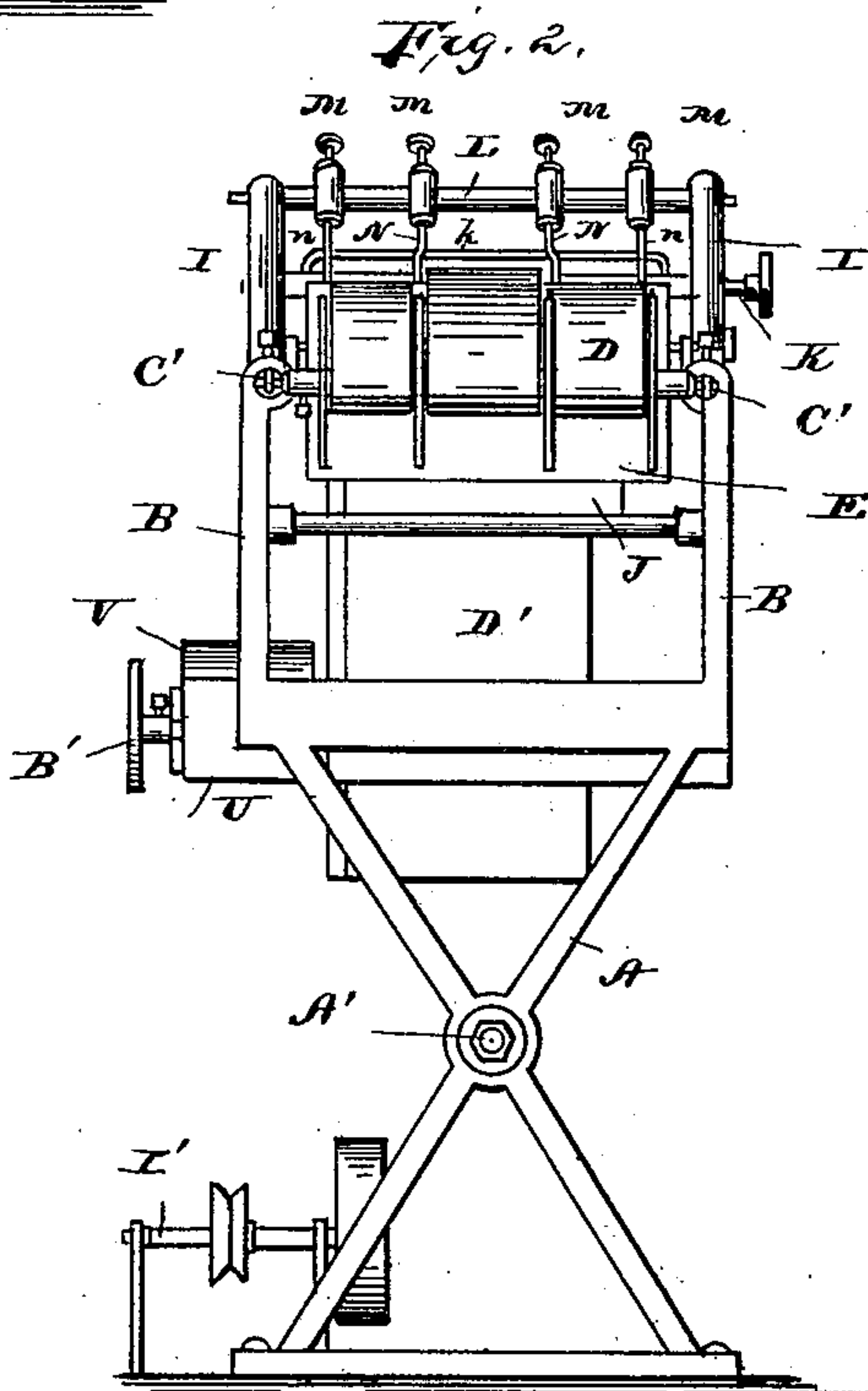
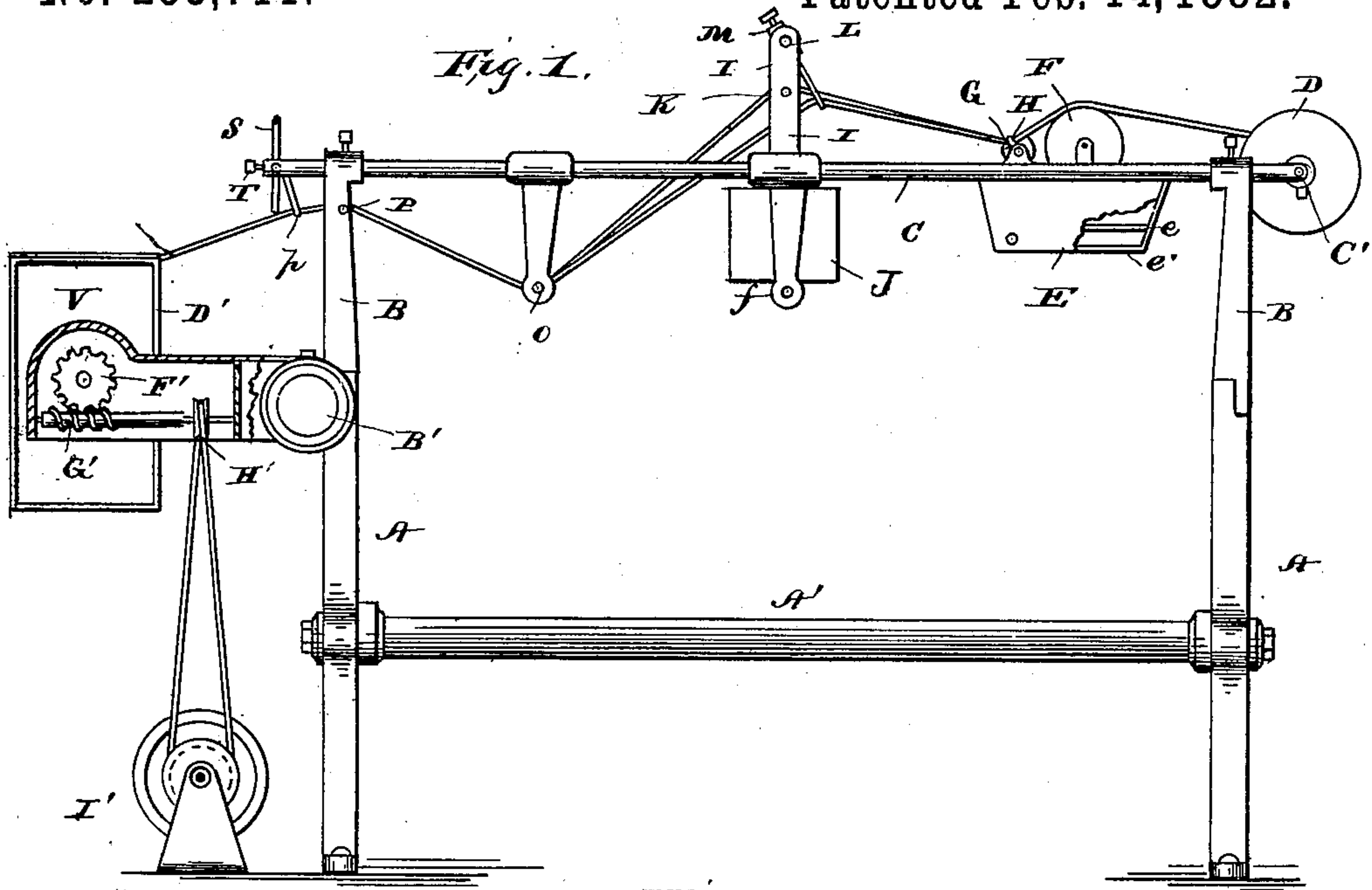
2 Sheets—Sheet 1.

H. INMAN.

PAPER BOX COVERING AND TRIMMING MACHINE.

No. 253,711.

Patented Feb. 14, 1882.



Witnesses,
Edwin L. Jewell,
J. J. McCarthy.

Inventor,
Horace Inman,
by C. M. Alexander,
his Attorney.

(Model.)

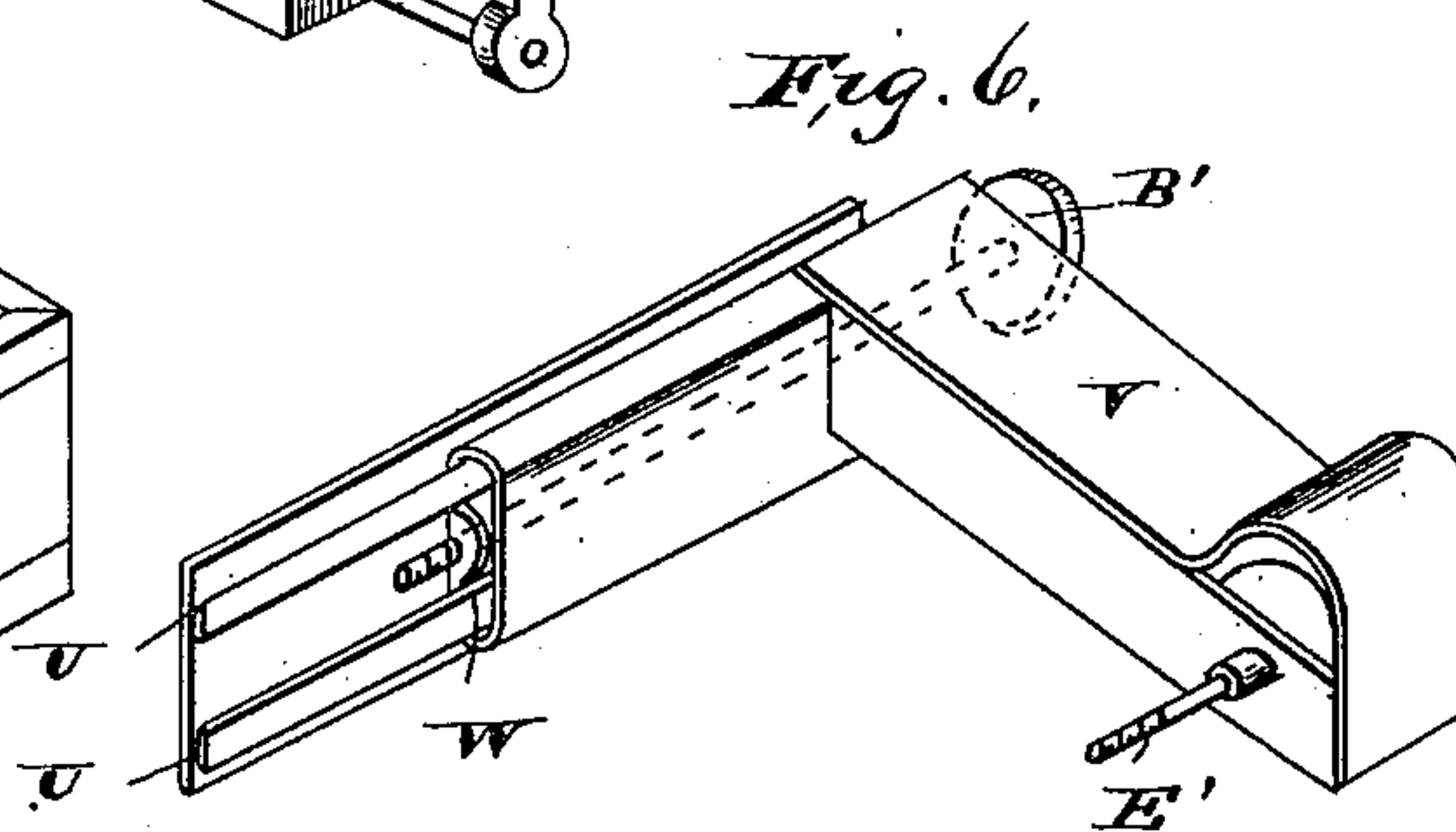
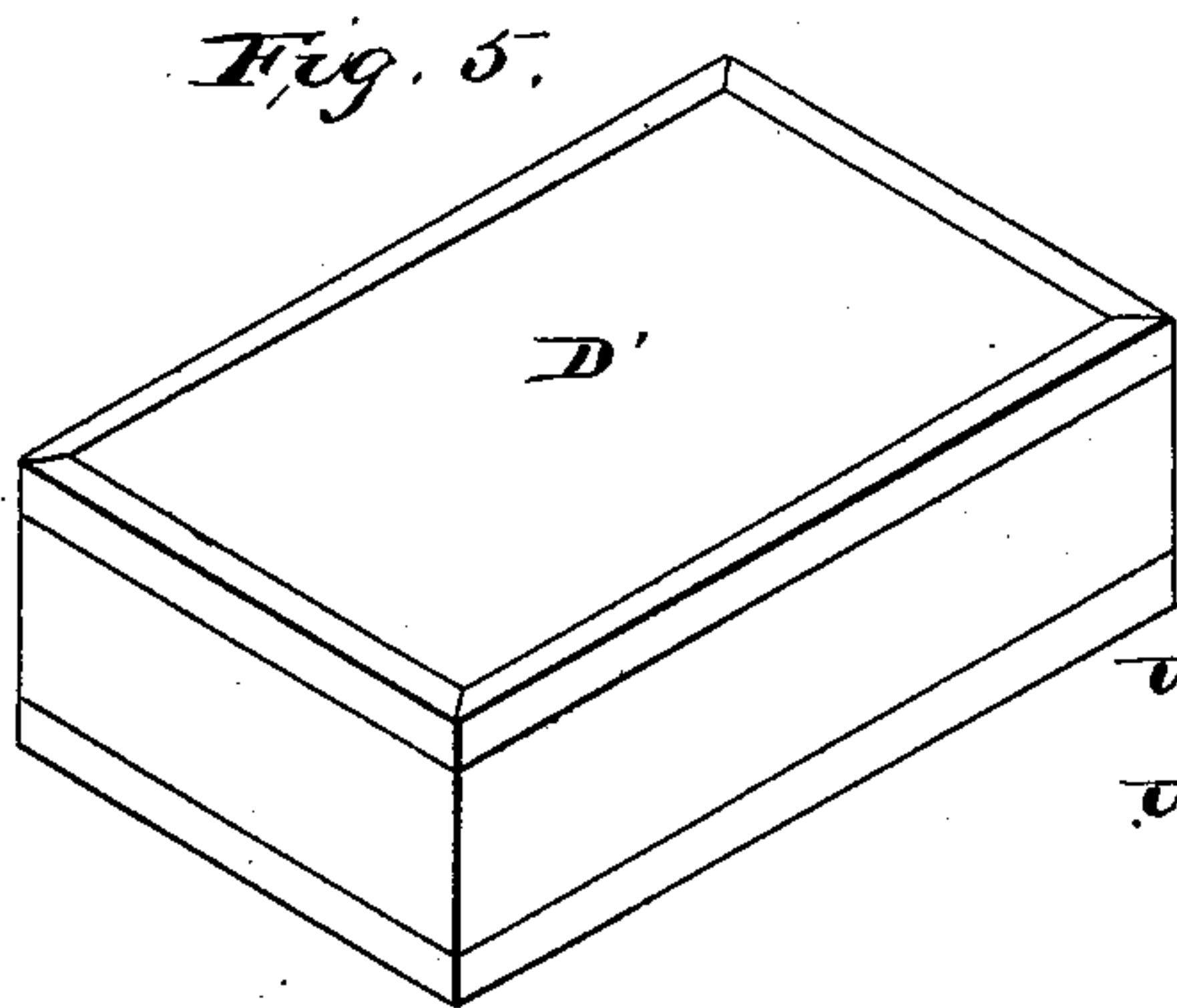
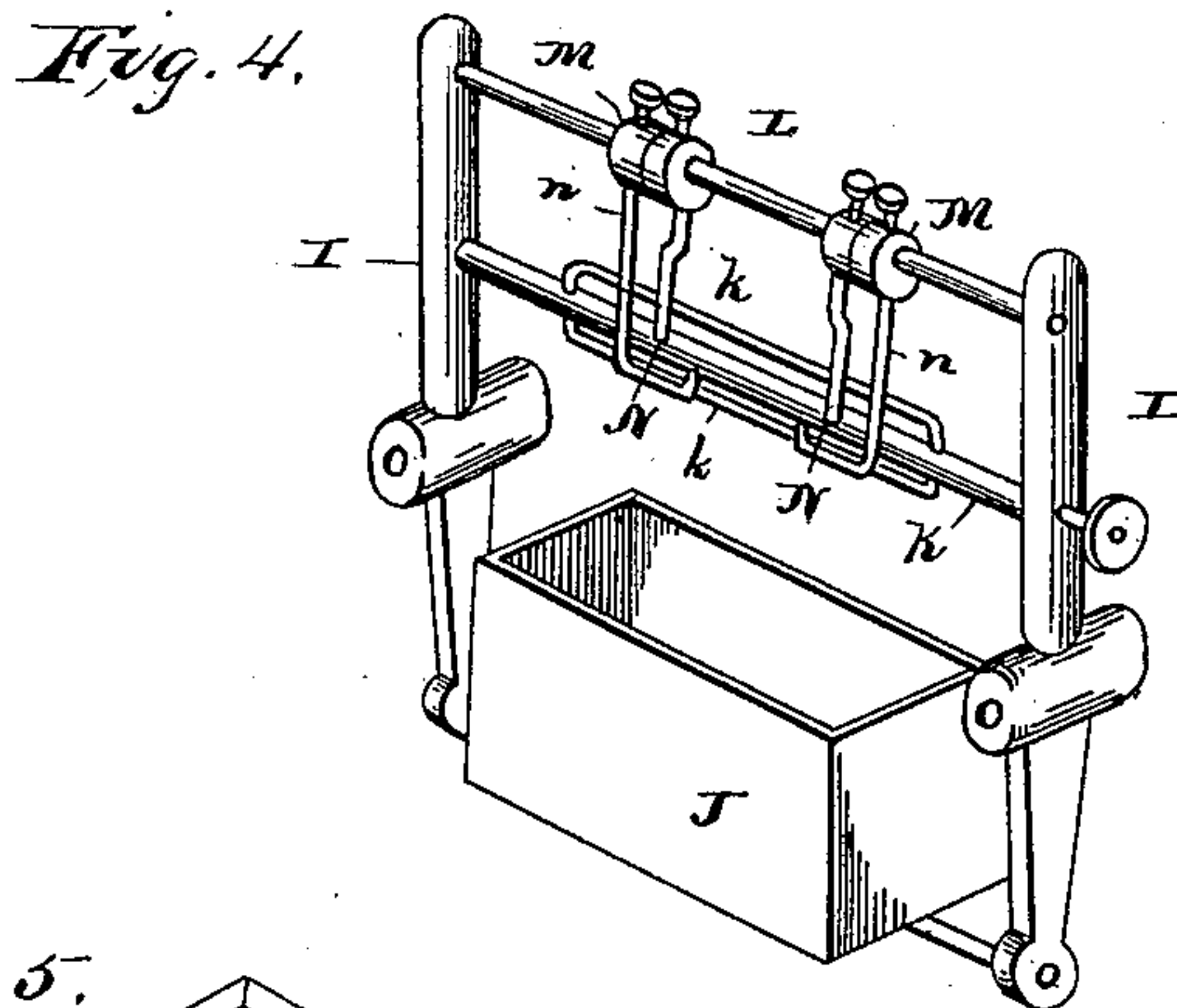
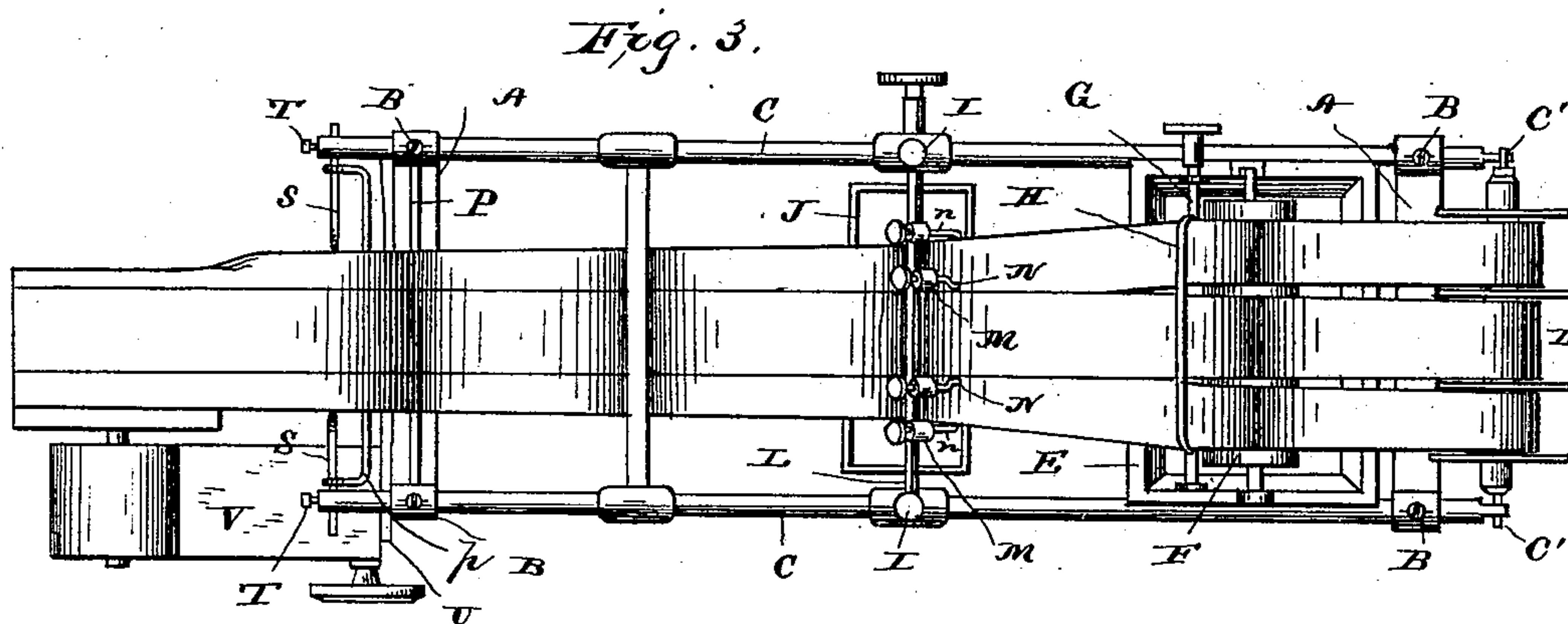
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UNITED STATES PATENT OFFICE.

HORACE INMAN, OF AMSTERDAM, NEW YORK.

PAPER-BOX COVERING AND TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 253,711, dated February 14, 1882.

Application filed November 29, 1881. (Model.)

To all whom it may concern :

Be it known that I, HORACE INMAN, of Amsterdam, in the county of Montgomery, and in the State of New York, have invented certain new and useful Improvements in Paper-Box Covering and Trimming Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to that class of machines employed for automatically covering boxes with an outer coating or surface of paper, cloth, &c.; and it has for its object, first, to provide mechanical means for supporting, pasting, and conducting the material used for covering to the boxes, and, secondly, in providing means for sustaining and revolving the boxes while undergoing the process of covering. These objects I attain by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my apparatus; Fig. 2, an end elevation, looking toward the end of the machine carrying the reel on which the paper, cloth, or other covering material is wound. Fig. 3 is a plan or top view of the machine. Fig. 4 is a detail perspective view of the standards which sustain a paste or glue drippan or tank, the transverse bar for supporting the paper, and the guiding points or fingers. Fig. 5 is a perspective view of a box, showing the covering and trimming applied thereto; and Fig. 6, a detail perspective view of the carriage to which the form is secured and the track on which said carriage travels.

The letter A indicates a pair of legs or standards, which are made in any convenient or desirable form, and of any material found most suitable for the purpose, preferably of cast-iron, and which are connected or otherwise braced together about midway their height by a rod or bar, A', their lower ends being firmly secured to the floor. The upper extremities of these legs or standards are bifurcated or divided respectively into two vertical extensions, B. These extensions are provided with suitable apertures and set-screws for the reception and retention of the bars or ways C, one end of each of the latter being also bored out, as indicated at C', for the purpose of receiving the

journals of a reel, D. This reel is constructed of a series of disks strung on a shaft a short distance apart, forming deep grooves or passes, in which the several strips of covering material or paper are wound.

The letter E indicates a paste tank or vessel having a double bottom, for a purpose hereinafter named, made of any suitable material, resting at each of its sides on the said bars C. Immediately above said tank is journaled a paste-delivering roller, F, adapted to come down a short distance within the said tank and engage the glue or paste therein, for a purpose hereinafter more fully set forth. At one end, on the upper side of this tank E, is suitably journaled a cross-shaft, G, which is provided with a link, H, between which and the said bar the paper is adapted to travel, the object of which is to remove from the paper all surplus glue or paste, at the same time spreading and leaving a sufficient quantity for the purpose intended. About midway the said bars C, and fitting smoothly thereon, is a pair of standards, I I, connected at their lower extremity by a cross-rod, which serves to support a tank or pan, J, which catches any paste that may be removed or scraped from the paper during its passage between said standards. At a point above the bars C C another cross-shaft, K, is journaled to these standards, having a link, k, projecting from each side thereof, between the lower of which links and the shaft K the two outer strips of paper (or those known as "trimmings") are adapted to pass, while between this shaft and the upper link the covering proper travels. Near the top of these standards I I is a further cross-shaft, L, having strung thereon a series of heads or blocks, M M, the two inner of which carry depending fingers or guides N N, which embrace the edges of the covering material, and serve to guide the same over the said cross-shaft K, the latter being intended to separate the covering material from the side strips or trimming. The two outer heads or blocks are also provided with depending fingers or guides n n, having horizontal extensions which fit under the outer strips or trimming, for the purpose of guiding said strips in their proper course, and also for bringing them nearer together, in order to effect a lap between them and the covering. Each of these heads or blocks is provided with

a set-screw for firmly holding them in place. Along the bars C C is a further pair of standards, which are suitably bored to fit the bars, and which depend downwardly a short distance, supporting a rod, O, under which the covering and trimming pass, and at which point they are made to bear firmly against one another, thus serving to unite them together by means of the paste or glue with which the lower side of the covering is coated.

The letter P indicates another supporting bar or rod, located between upper extensions of one of the legs, which, in connection with the rod p, supports the covering and trimming, which have now become united, as they pass between the guides S S, adjustably journaled to the bars C C, the latter having set-screws T T for retaining the guides in proper place.

The outside of the legs is provided with a track or way, U U, upon which is adapted to reciprocate a carriage, V. The letter W indicates a screw-threaded lug, and the letter B' a thumb-bolt, the latter being suitably swiveled or journaled to the carriage V, and adapted to engage the said lug, by which the said carriage is given a positive transverse motion and brought in such position as to bring the form D' in line with the course of the covering. This form is secured to a transverse shaft, E', journaled in the carriage before mentioned, and is rotated by means of a spur-wheel, F', mounted on said shaft and meshing with a worm, G', which also has its bearings in the said carriage. The letter H' indicates a grooved wheel mounted rigidly on the shaft of this worm, which receives a rotary motion by means of belt passing over the same and connecting with a suitable driving mechanism, I', located in close proximity to the machine, and provided with such auxiliary appliances as to render it completely under the control of the operator, permitting him to start and stop the said form at will.

The operation of my machine may be readily understood by the following description in connection with the foregoing: The reel D being supplied with the covering and trimming material, (usually paper,) the free ends thereof are passed over the paste-roller F, and through the space between the shaft G and the link H, by which shaft and link the paste is properly spread. The covering is then passed between the shaft K and link k, and the trimming below said shaft, and over the lower link, k, after which they unite at the cross-bar O, having been caused to lap each other by means of the fingers n n pressing against the outer edges of the said strips of trimming, and thus continue on and over the supports P and p and between the final guides S S until the free end is attached or stuck to the box to be covered. The operator then rotates the form D', thus revolving the box and permitting of a continuous wind of the covering around the box, that part known as the "trimming" being pressed down over the edges of the said box.

It will be noticed that during the passage of the covering through the machine any surplus paste which may happen to adhere thereto, after having been applied by the paste-roller F, will be removed by the shaft K and links k, and caught by pan J.

The paste-tank is provided with a double bottom, e e', the space between which is charged with steam or other heating agent to prevent congealing of the paste.

The tension of the covering material and trimming is regulated by changing the relative position of the paste-roller F, standards I I, and rod O, each of which is adapted to slide independently of the other on the bars C C, their weight being such as to retain them in any fixed position without the aid of any further fastening. The covering and trimming may be of the same or different colors.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for covering boxes, the combination; with the bifurcated legs and the supporting-bars, of a feeding-reel bearing covering and trimming strips, the paste-tank and paste-roller, the standards with their guiding and supporting devices, and the cross-bar and guides for uniting, supporting, and guiding the covering and trimming strips, substantially as set forth.

2. In a machine for covering boxes, the supporting-frame, in combination with the paste-tank carrying a paste-roller, the standards with their guiding and supporting devices, and the cross-bar for uniting the covering and trimming, the said tank, standards, and uniting cross-bar being adapted to slide on the supporting-bars, whereby their relative distance is changed and a proper tension of the covering material maintained, substantially as shown and described.

3. In a machine for covering boxes, the combination, with the devices, substantially as described, for feeding, pasting, guiding, supporting, and uniting the covering material, of a lateral adjustable carriage carrying a revolving form, and provided with mechanism for automatically rotating the same, substantially as shown and described.

4. In a machine for covering boxes of the character herein described, adapted to manipulate a plurality of covering and trimming strips of paper, &c., the combination of the standards I I, shaft K, having link k, and shaft L, with heads M M and fingers or guides N n for guiding and lapping the strips, as shown and described.

In testimony whereof I affix my signature, in presence of two witnesses, this 17th day of November, 1881.

HORACE INMAN.

Witnesses:

H. AUBREY TOULMIN,
HARRY INMAN.