

(No Model.)

2 Sheets—Sheet 1.

B. RÖMER.

MACHINE FOR APPLYING STRIPS OF PAPER OR CLOTH TO BOXES OF
CARDBOARD, &c.

No. 580,958.

Patented Apr. 20, 1897.

Fig. 1.

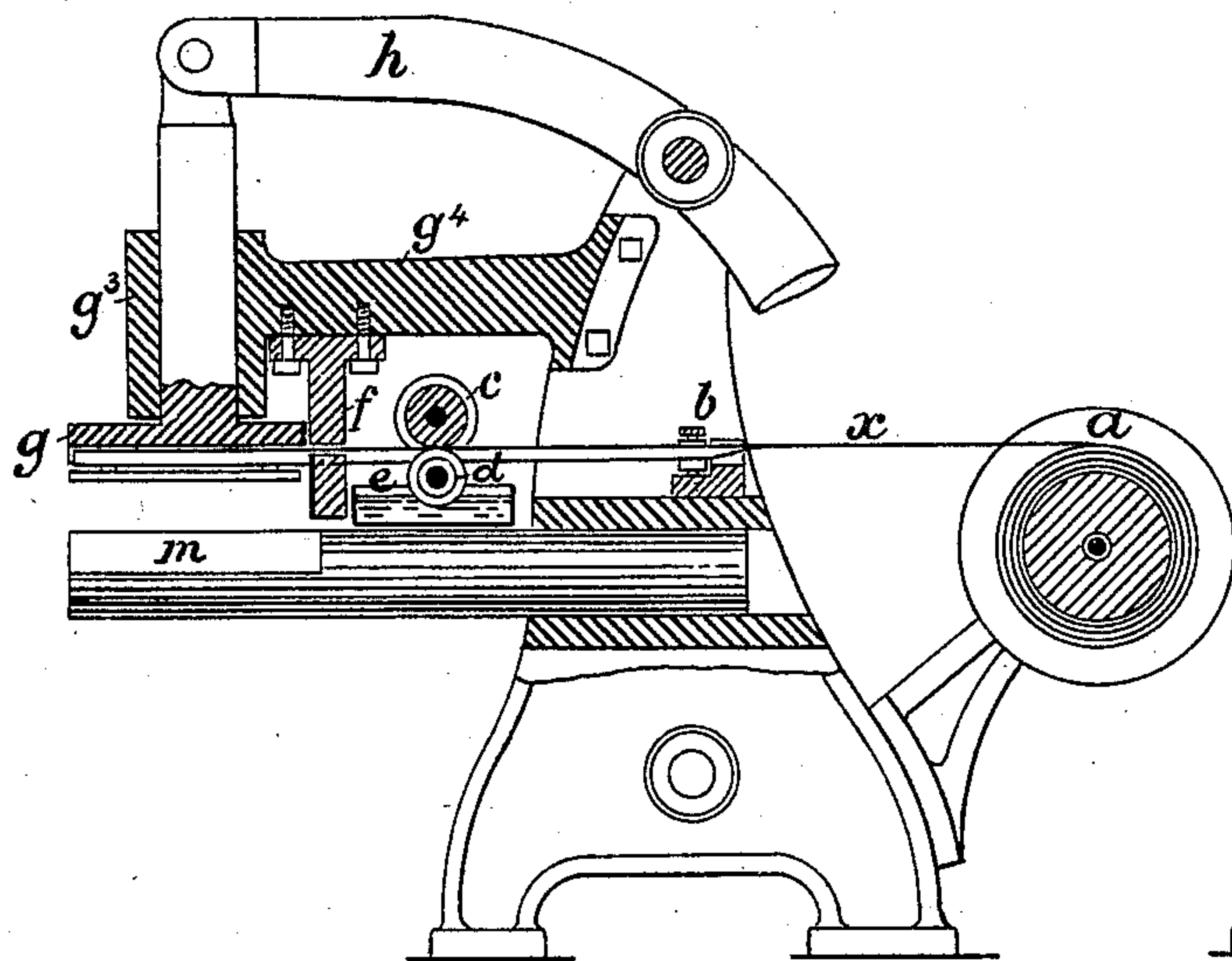


Fig. 2.

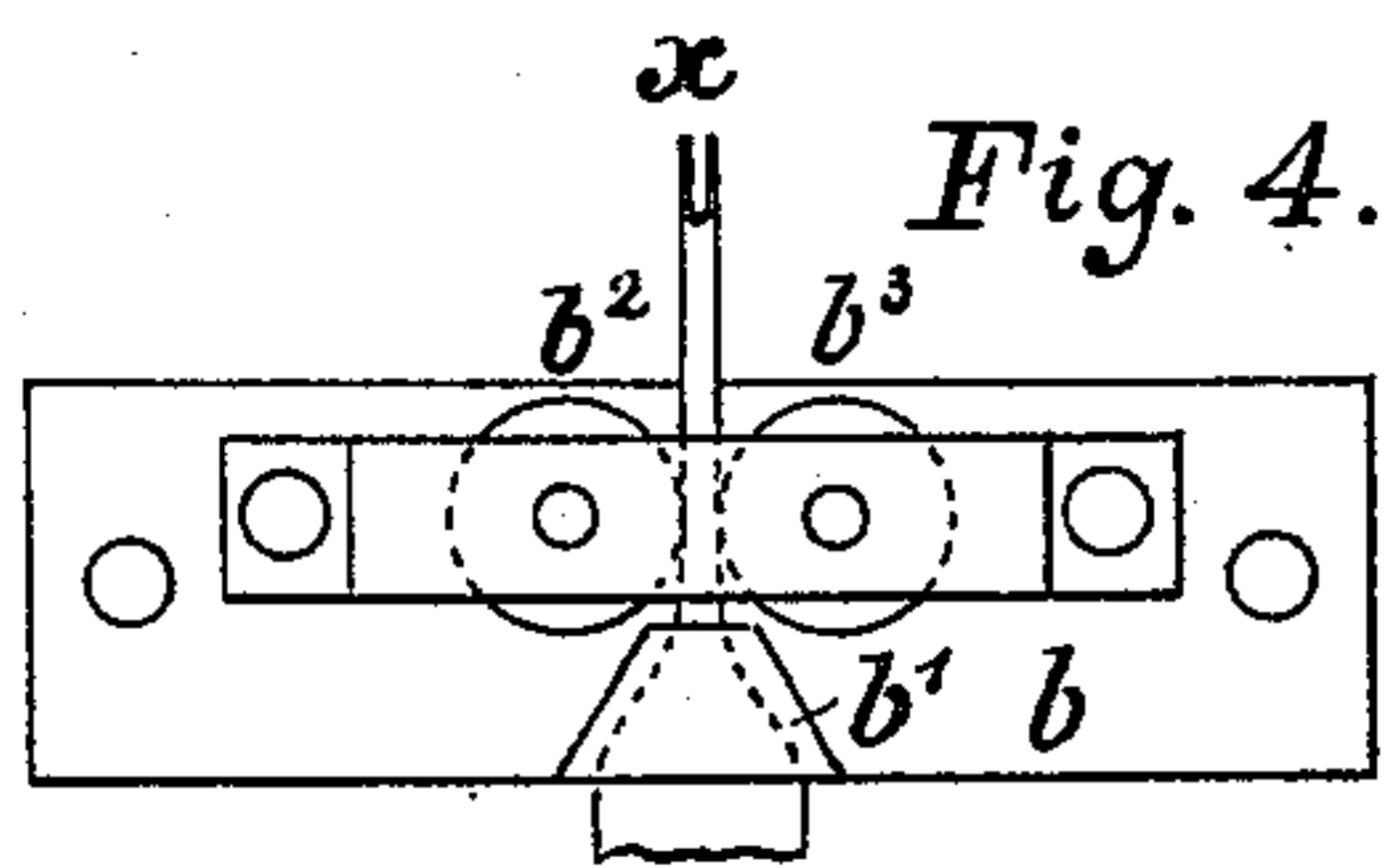
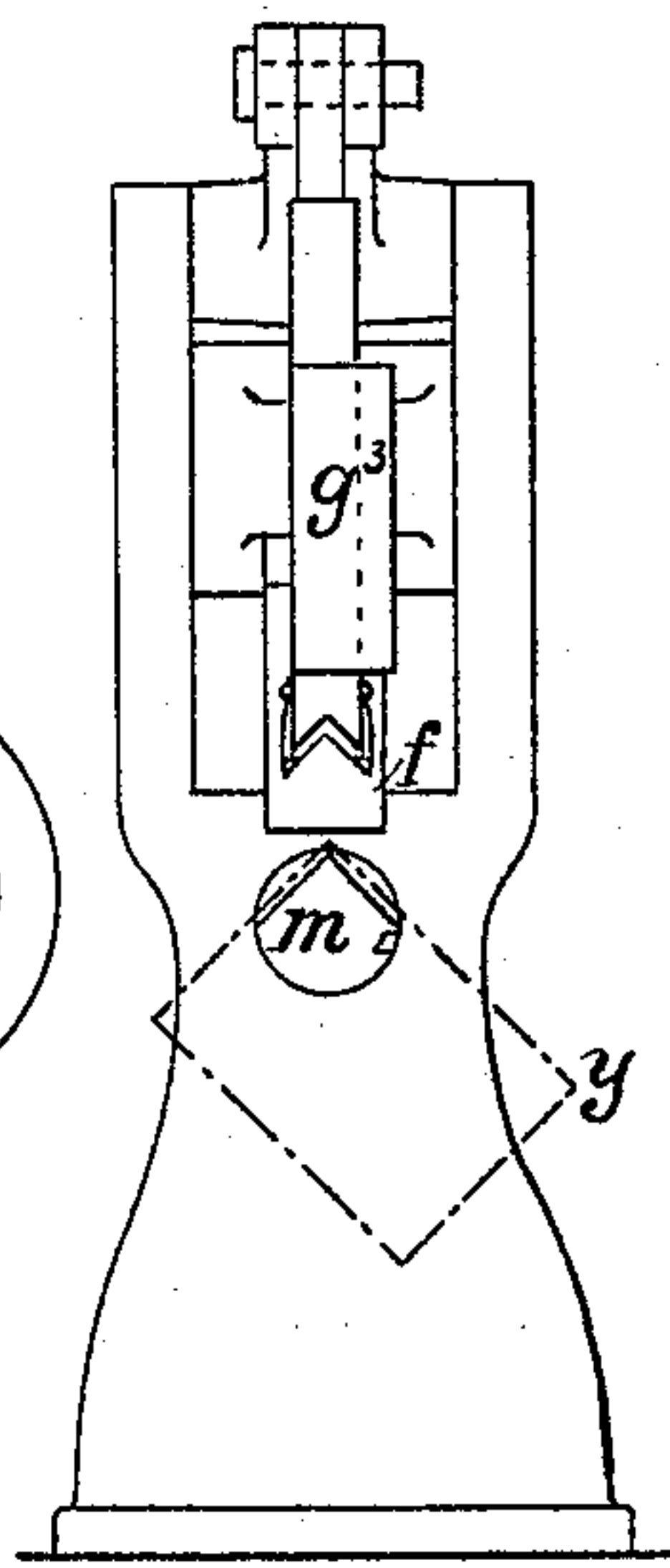


Fig. 4.

Fig. 7.

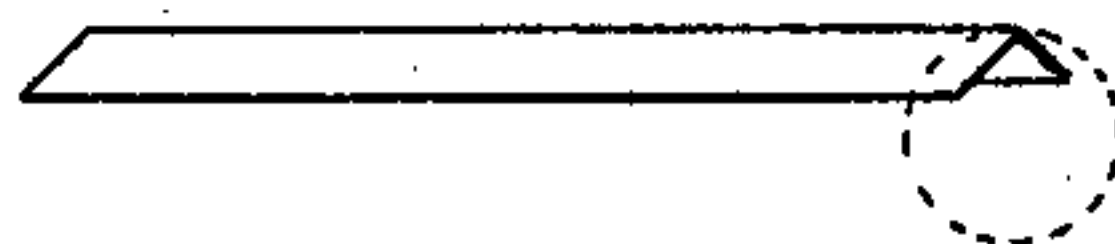


Fig. 8.

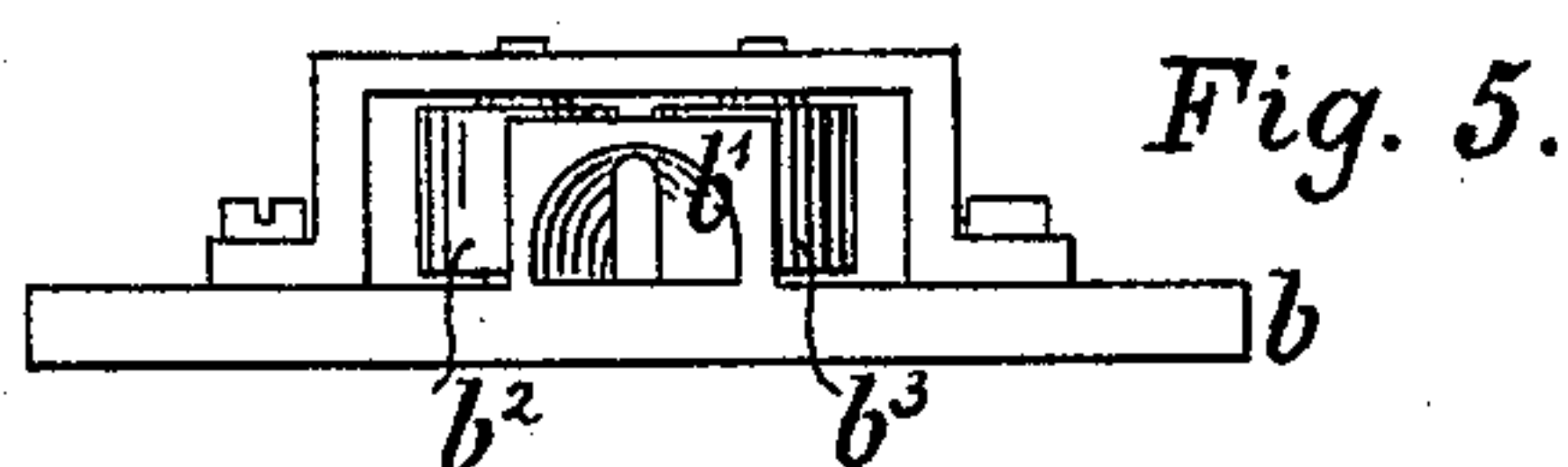


Fig. 5.

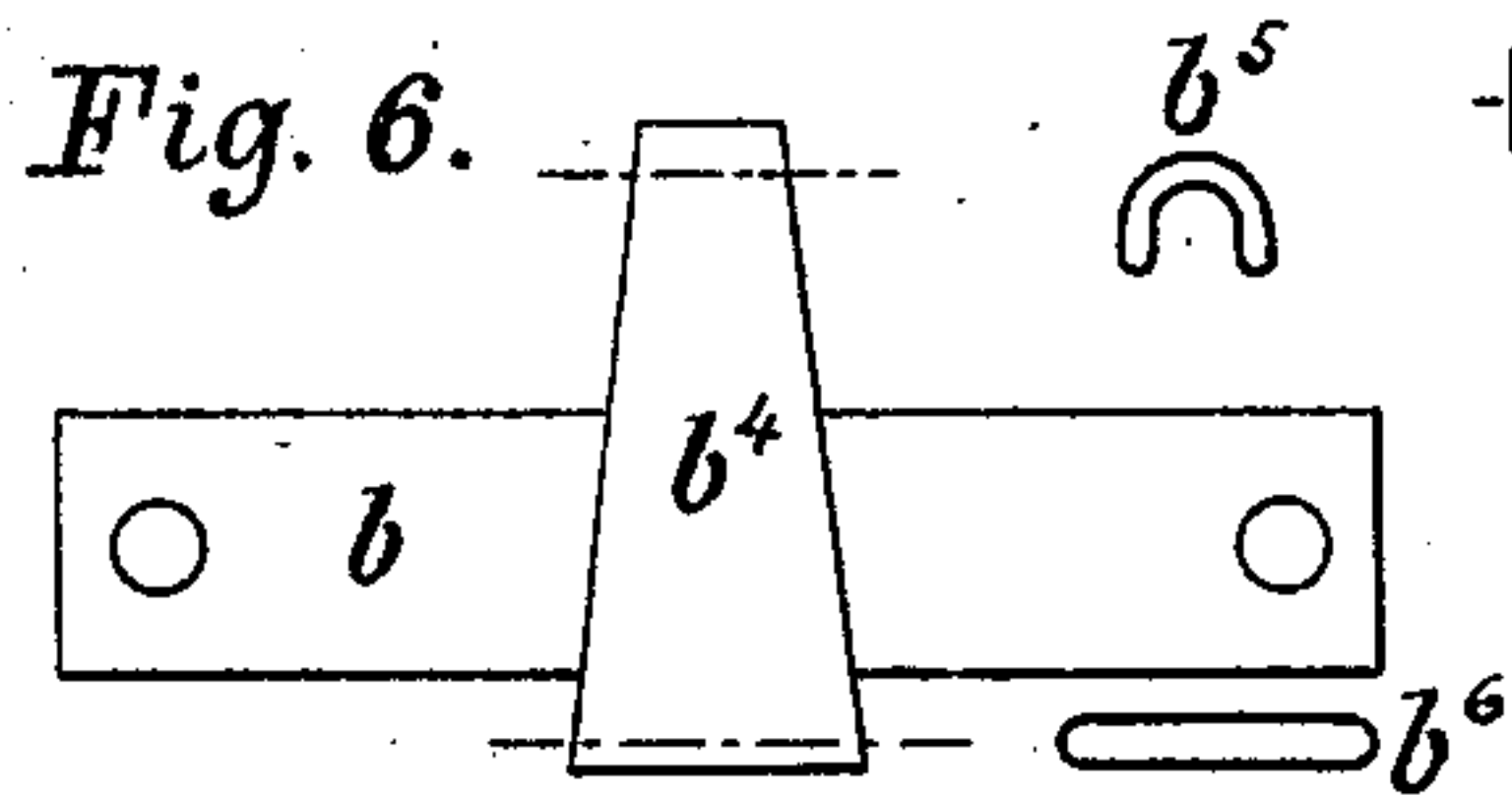


Fig. 6.

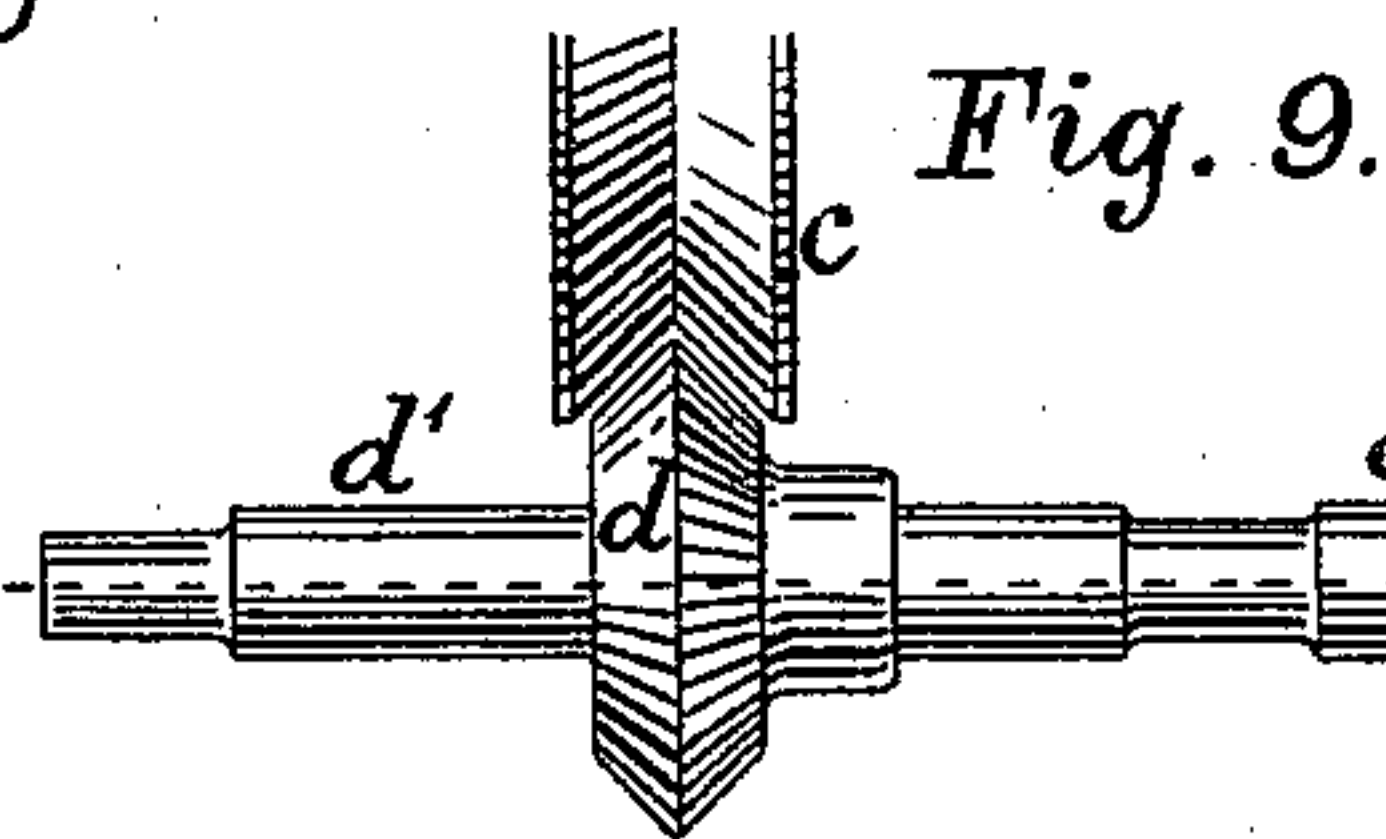
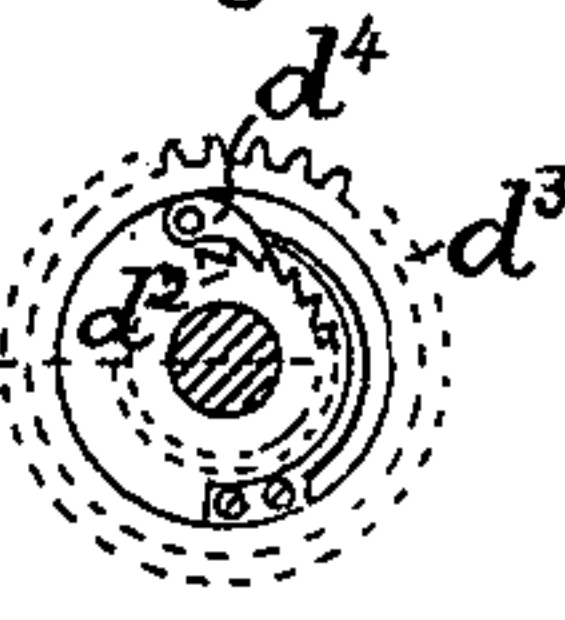


Fig. 9.

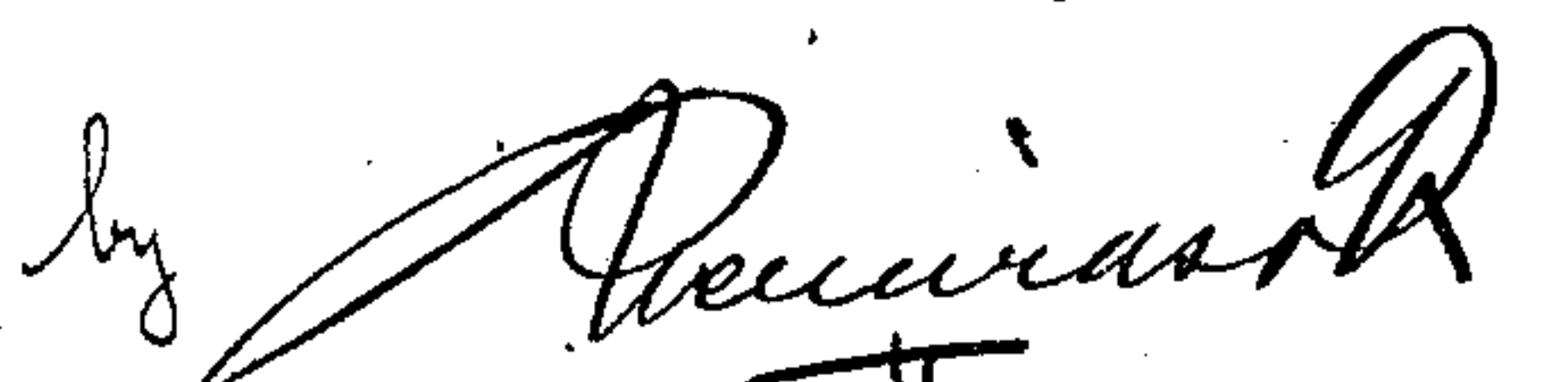
Fig. 10.



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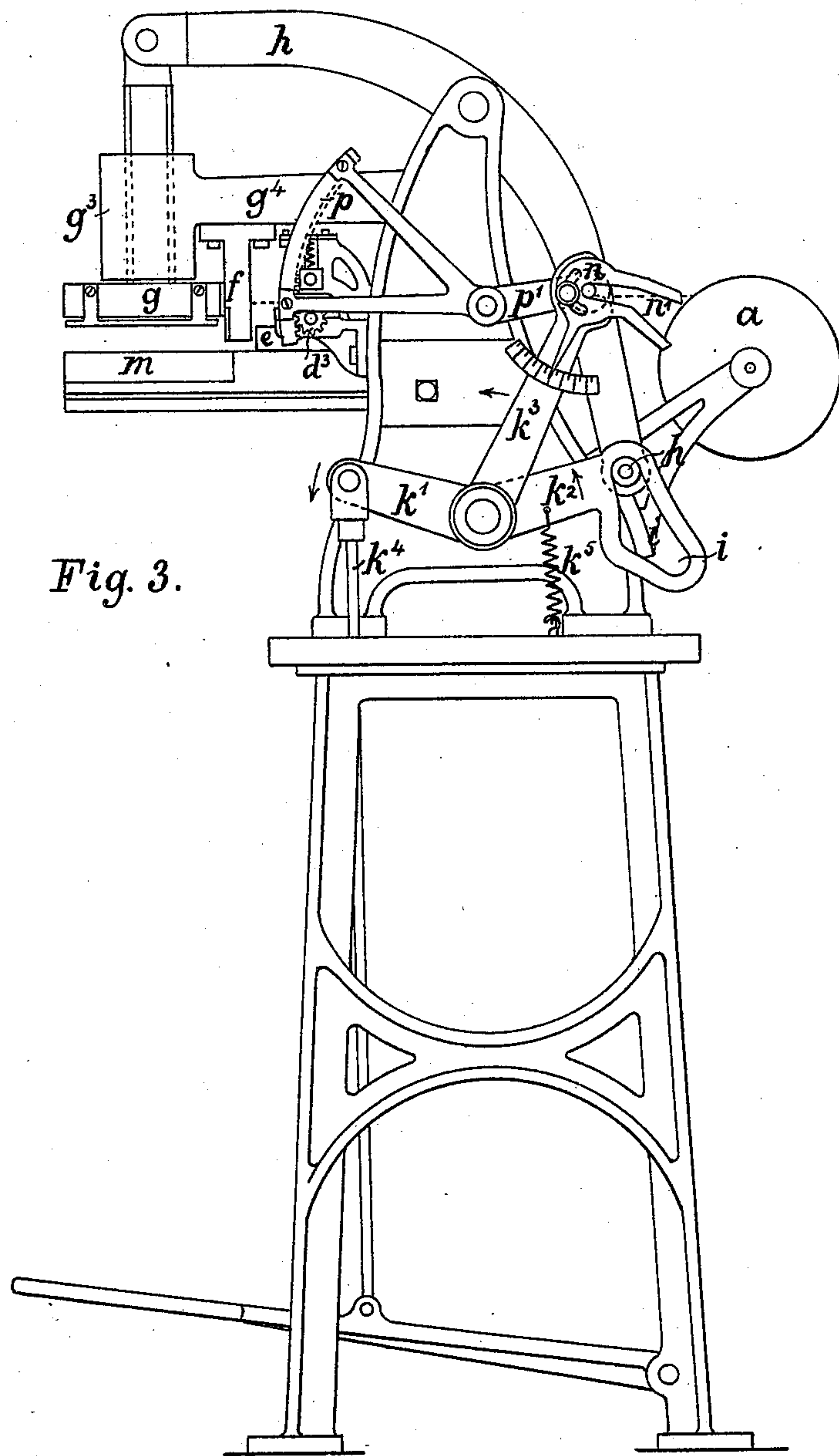


Fig. 3.

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UNITED STATES PATENT OFFICE.

BRUNO RÔMER, OF SIEGMAR, GERMANY.

MACHINE FOR APPLYING STRIPS OF PAPER OR CLOTH TO BOXES OF CARDBOARD, &c.

SPECIFICATION forming part of Letters Patent No. 580,958, dated April 20, 1897.

Application filed June 30, 1896. Serial No. 597,635. (No model.) Patented in Germany June 28, 1895, No. 87,140; in Italy November 12, 1895, No. 152; in Belgium November 30, 1895, No. 11,835; in Austria December 2, 1895, No. 4,605; in England January 4, 1896, No. 243; in France February 11, 1896, No. 251,301, and in Spain February 13, 1896, No. 18,247.

To all whom it may concern:

Be it known that I, BRUNO RÔMER, a subject of the Emperor of Germany, residing at Siegmarsdorf, Saxony, in the German Empire, have made certain new and useful Improvements in or Applicable to Machines Used in Applying Strips of Paper or Cloth to Boxes of Card-board and the Like, of which the following is a specification.

The invention has been patented in Germany, No. 87,140, dated June 28, 1895; in England, No. 243, dated January 4, 1896; in Italy, No. 152, dated November 12, 1895; in Austria, No. 4,605, dated December 2, 1895; in Belgium, No. 11,835, dated November 30, 1895; in Spain, No. 18,247, dated February 13, 1896, and in France, No. 251,301, dated February 11, 1896.

My invention relates to improvements in machines or appliances used for applying strips of paper to boxes or box-lids made of cardboard or the like materials.

In the accompanying drawings, Figure 1 is a sectional elevation of the machine; Fig. 2, a front view; Fig. 3, a side elevation, and Figs. 4 to 10 show details.

The machine is constructed in the following manner: The strip α is wound in a flat state on a roller a , Fig. 1, whence it runs to the folding apparatus b , in passing through which the strip is bent angularly or round, and thereby acquires greater resistance to deflection.

The details of the folding apparatus are shown in Figs. 4 and 5. The strip passes through a semicircular funnel b' , terminating in a slot. In front of the slot are two rollers $b^2 b^3$. The strip is thus folded or partly broken in half and adapted for use on boxes with sharp corners, for which the folding in half particularly fits it, inasmuch as the corners are thereby rendered clean and sharp and the strip does not get crooked on the corners. Further, the effect of the partial breaking of the strip is that the strip gets a set which causes it to tend to assume the folded shape and not to spring away from the corner as is usually the case when the strip is pasted flat.

For round boxes or boxes with rounded corners the folding appliances may take the form of a tube, as shown at b^4 in Fig. 6. The feed

end may in this case be shaped as shown in profile at b^6 and the delivery end as shown at b^5 . Other suitable shapes may be adopted for the delivery end of the tube b^4 , according to the shape of the object to which the strip is to be applied.

The folding device is usually applied in or to the pasting-machine itself, but the strips may nevertheless be drawn through the folding device placed outside the machine. Behind the folding device b , Fig. 1, is placed the feeding apparatus consisting of two rolls $c d$. If the strip is intended for use in a partly-doubled state for a box with sharp corners, the contact-surfaces of the feed-rolls $c d$ are angular in cross-section. (See Fig. 9.) If, on the other hand, the strip is for a round box or a box with rounded corners, the profiles of the rollers $c d$ are modified accordingly. The lower roll d runs in a receptacle e , containing a suitable adhesive preparation or water, as the case may require.

The strip is pushed by the feed-rolls through an aperture in the part f (of a shape corresponding to the part of the box to which the strip is to be applied) and under the die g . Owing to the rigidity imparted by the folding operation, the strip does not deviate from its horizontal position and may be pushed forward with accuracy and certainty.

The descending die g , which presses the strip on the box, at the same time cuts off the required length from the continuous strip. To effect this, the die works quite close to the part f , so that the die g and the part f together form a guillotine or shears.

The boxes y which are operated on are placed on a support or table m , Fig. 2, the upper part of which has the same profile as the corner or other part of the box resting thereon. The table m is longitudinally adjustable in order to take boxes of different depths.

In order that the length of strip to be used may be varied to correspond, the feed-rollers are driven in the following manner: The shaft d' of the lower feed-roll carries a ratchet-wheel d^2 , Fig. 9, with which engages a pawl d^4 , Fig. 10, mounted on a spur-wheel d^3 , which is free to revolve about the ratchet-wheel d^2 , so that if the wheel d^3 is caused to rotate backward and forward the shaft d' is only

taken in one direction. Gearing with the wheel d^3 is an oscillating toothed sector p , Fig. 3, having the arm p' . This arm is connected to the arm k^3 of a three-armed lever
 5 by an adjustable fork n' , adjustably secured to the arm k^3 and engaging with its fork a pin n on the arm p' .

According to the position of the fork n' , (which can be accurately set by means of an index,) the arm p' , and with it the toothed sector p , oscillates through a greater or less angle. The lever h , which operates the die g , is driven by the three-armed lever $k' k^2 k^3$, having its fulcrum at k , by means of a roller
 15 h' , mounted on the lever h , taking into a slot i in the arm k^2 .

To the arm k' is attached a rod k^4 , which is connected at its lower end to a treadle. On the descent of the latter the lever $k' k^2 k^3$
 20 turns to the left the toothed sector, and thereby the feed-rolls are first actuated so as to push the strip forward. Then the die g descends, cutting off the strip and pressing it onto the box. On the release of the treadle
 25 the resilience of the spring k^5 brings back the lever $k' k^2 k^3$, and with it the lever h , while

the die rises, and at the same time the sector p goes back to its first position without turning the feed-rolls.

Having thus described my invention, what I claim is—

1. In combination, the paper-roller, the feed-roller and the creaser comprising the guide b' and the rollers $b^2 b^3$ adjacent thereto.

2. In combination, the paper-roller, the feed-rollers, the creaser device, said feed-rollers having their peripheries conforming to the crease of the paper, the reciprocating die, the pawl and ratchet for the feed-rollers, the oscillating segment with the gear for operating
 35 the ratchet, the lever h for operating the die and the three-armed lever with connections therefrom to the lever h and the oscillating segment, substantially as described.

In testimony whereof I have hereto set my
 45 hand in the presence of the two subscribing witnesses.

BRUNO RÔMER.

Witnesses:

J. F. MONAGHAN,
 F. MOLVERN.