

No. 652,623.

Patented June 26, 1900.

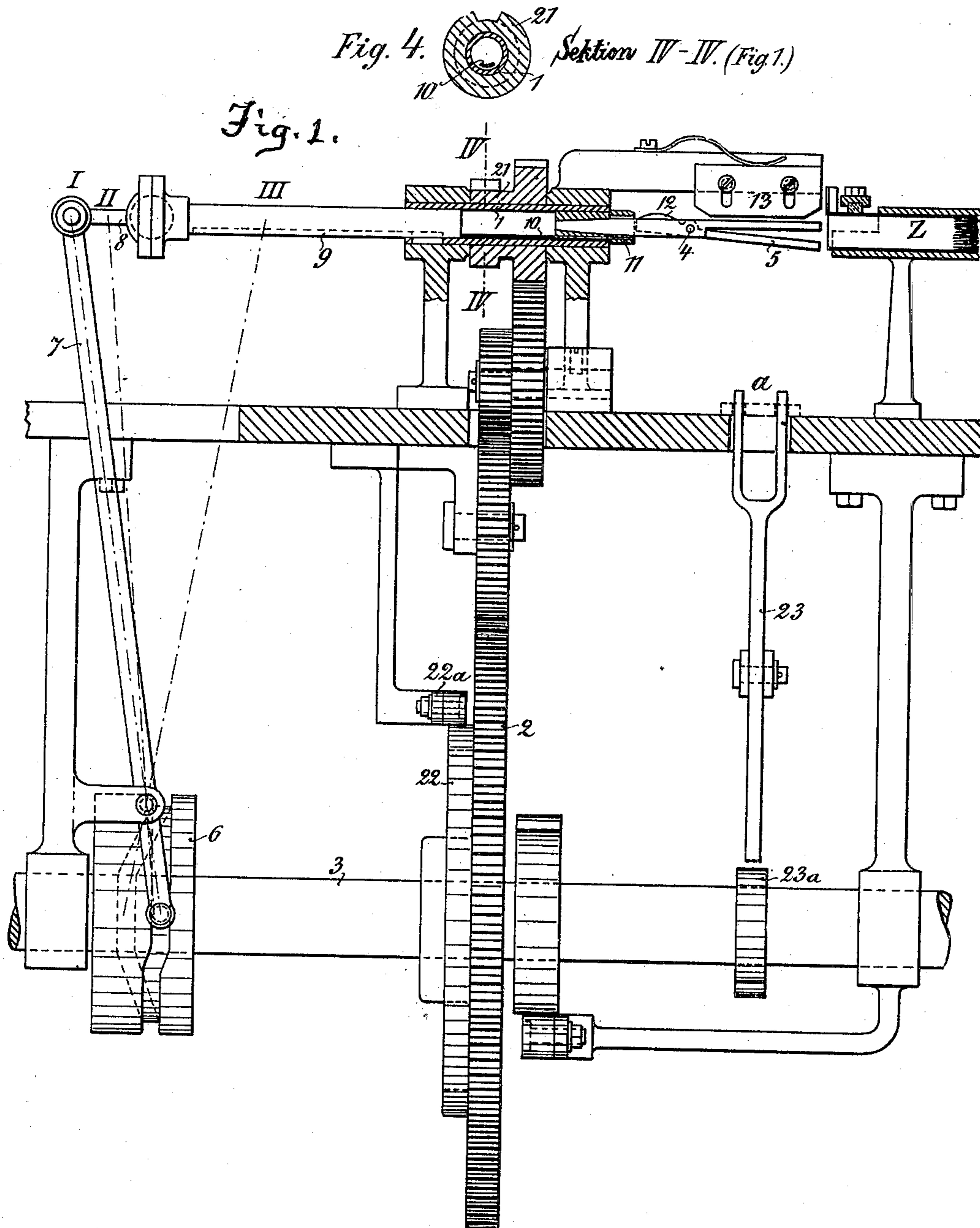
C. R. MARTIN.

APPARATUS FOR MAKING AND INSERTING CIGARETTE MOUTHPIECES.

(Application filed Mar. 20, 1899.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses:

*Chas. H. Hock*  
*John H. Hock*

Inventor:

*Carl R. Martin*  
*by Charles H. Hock*  
*his atty*

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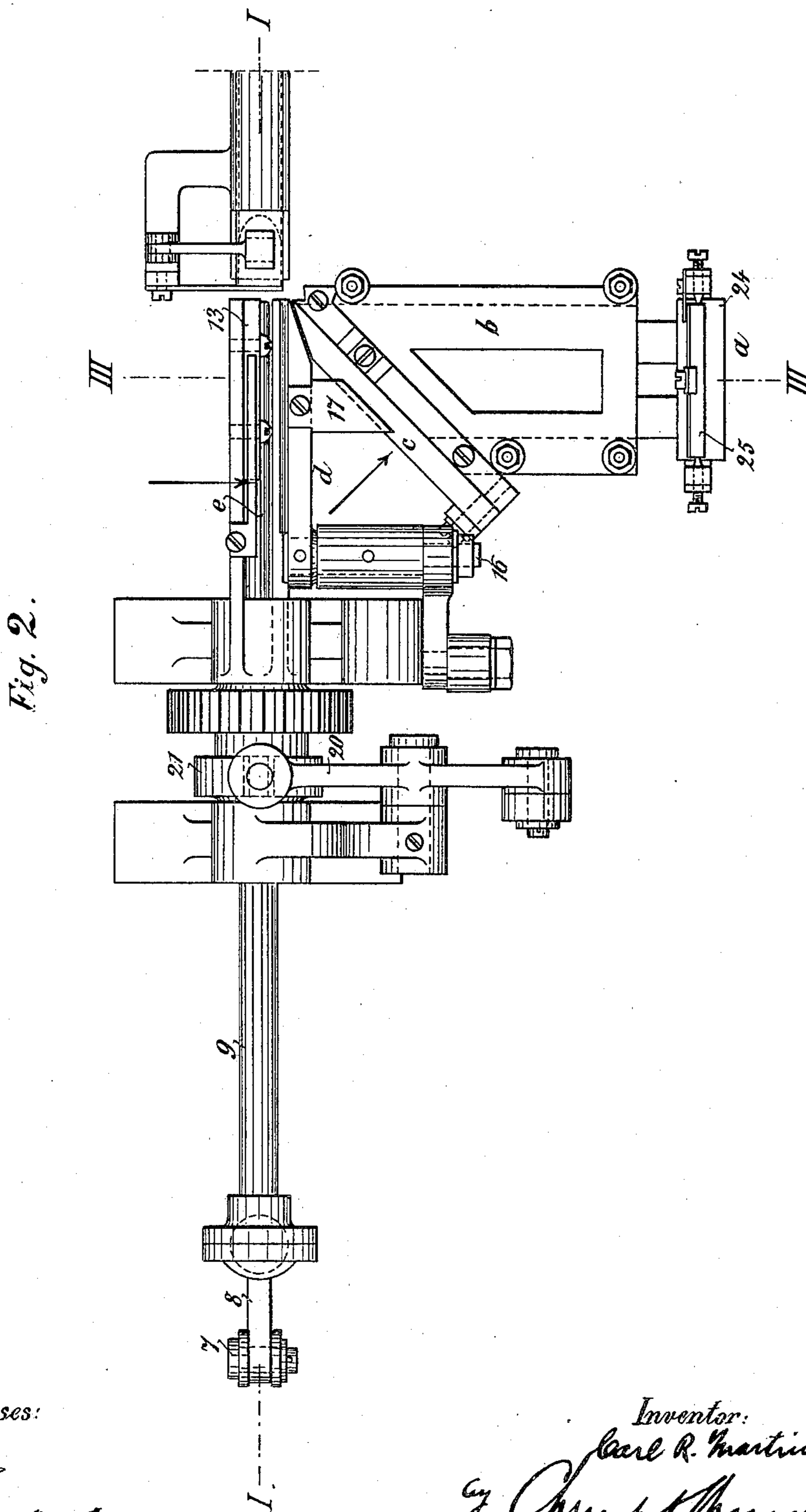
**C. R. MARTIN.**

## APPARATUS FOR MAKING AND INSERTING CIGARETTE MOUTHPIECES.

(Application filed Mar. 20, 1899.)

(No Model.)

**4 Sheets—Sheet 2.**



*Witnesses:*

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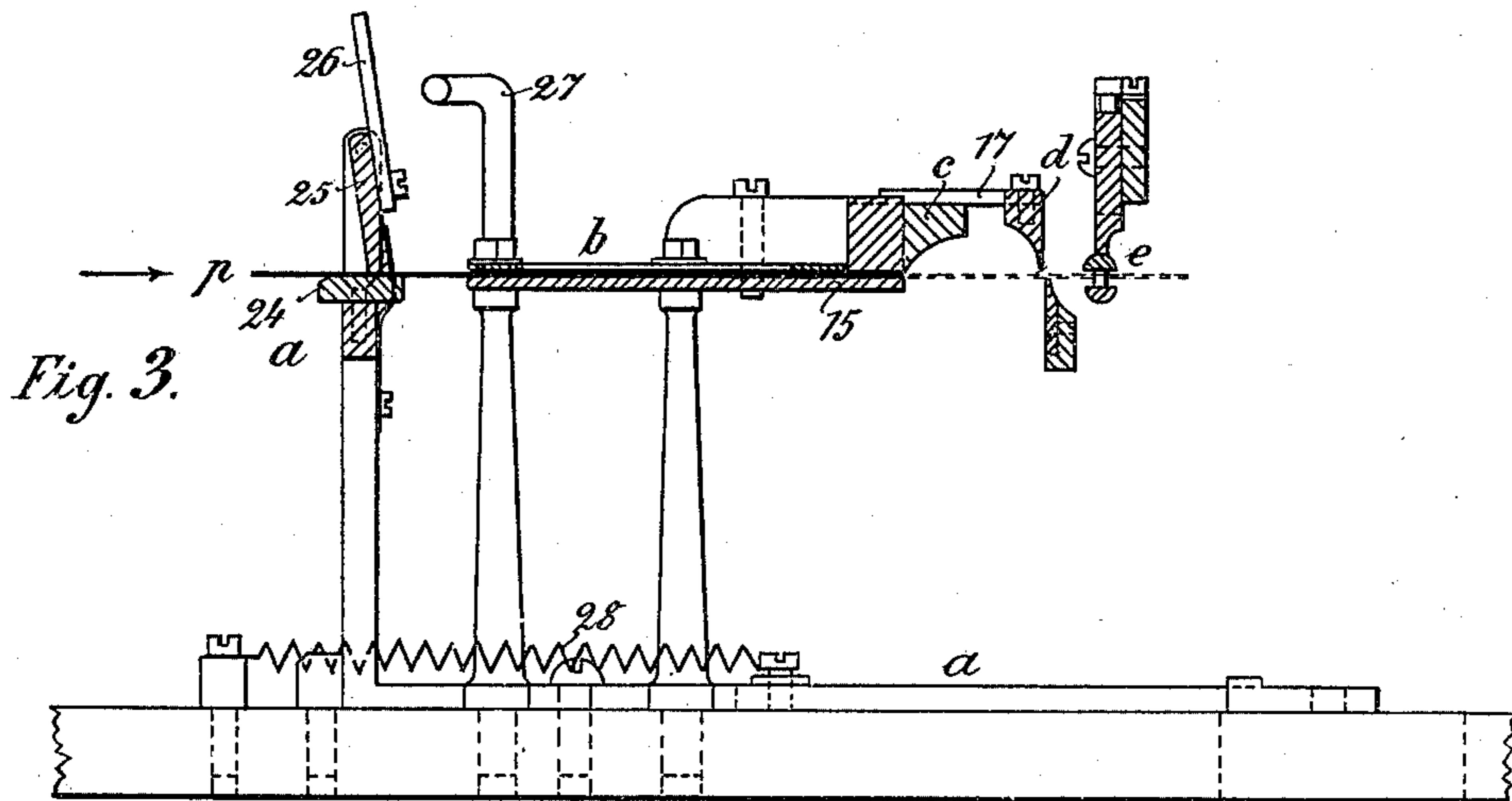
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APPARATUS FOR MAKING AND INSERTING CIGARETTE MOUTHPIECES.

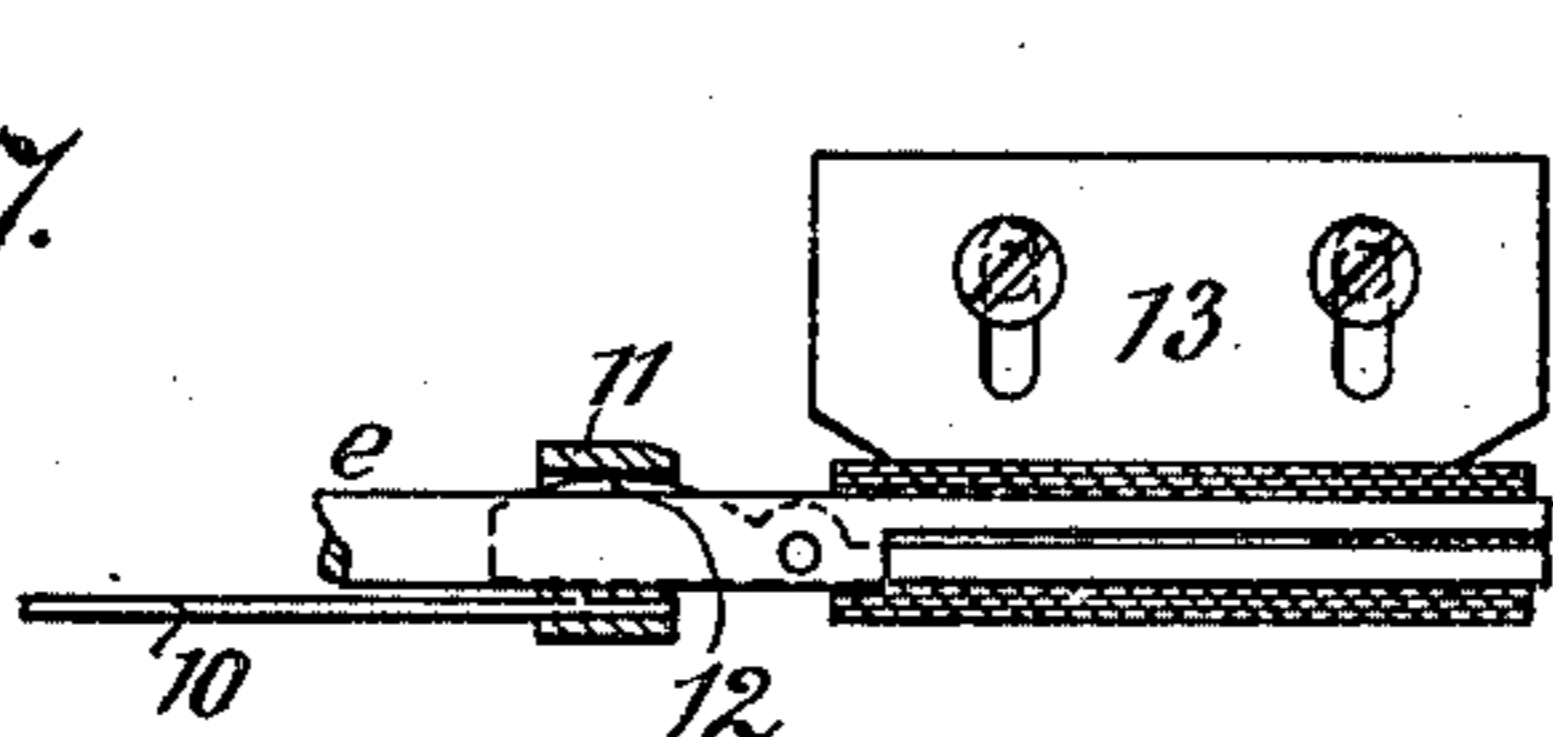
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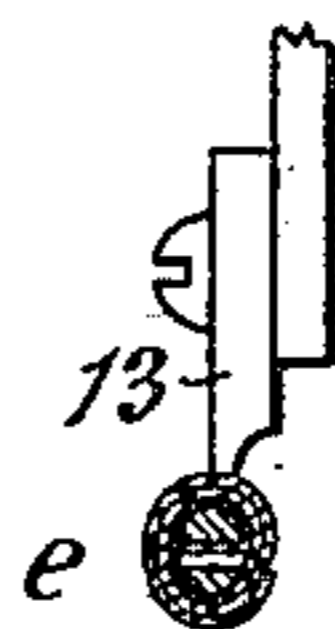
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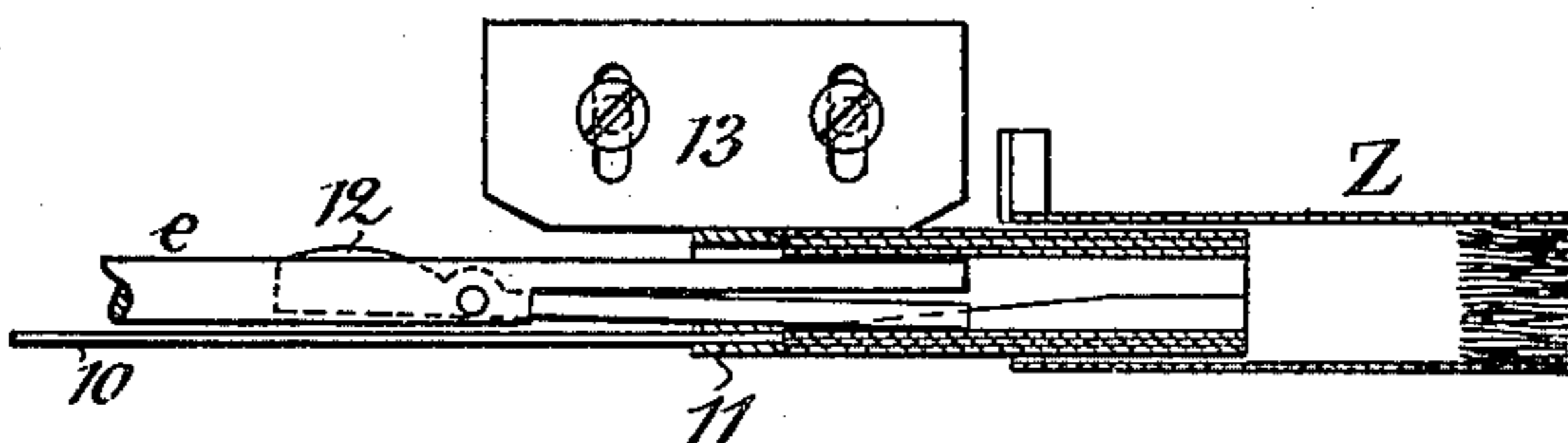
*Fig. 7.*



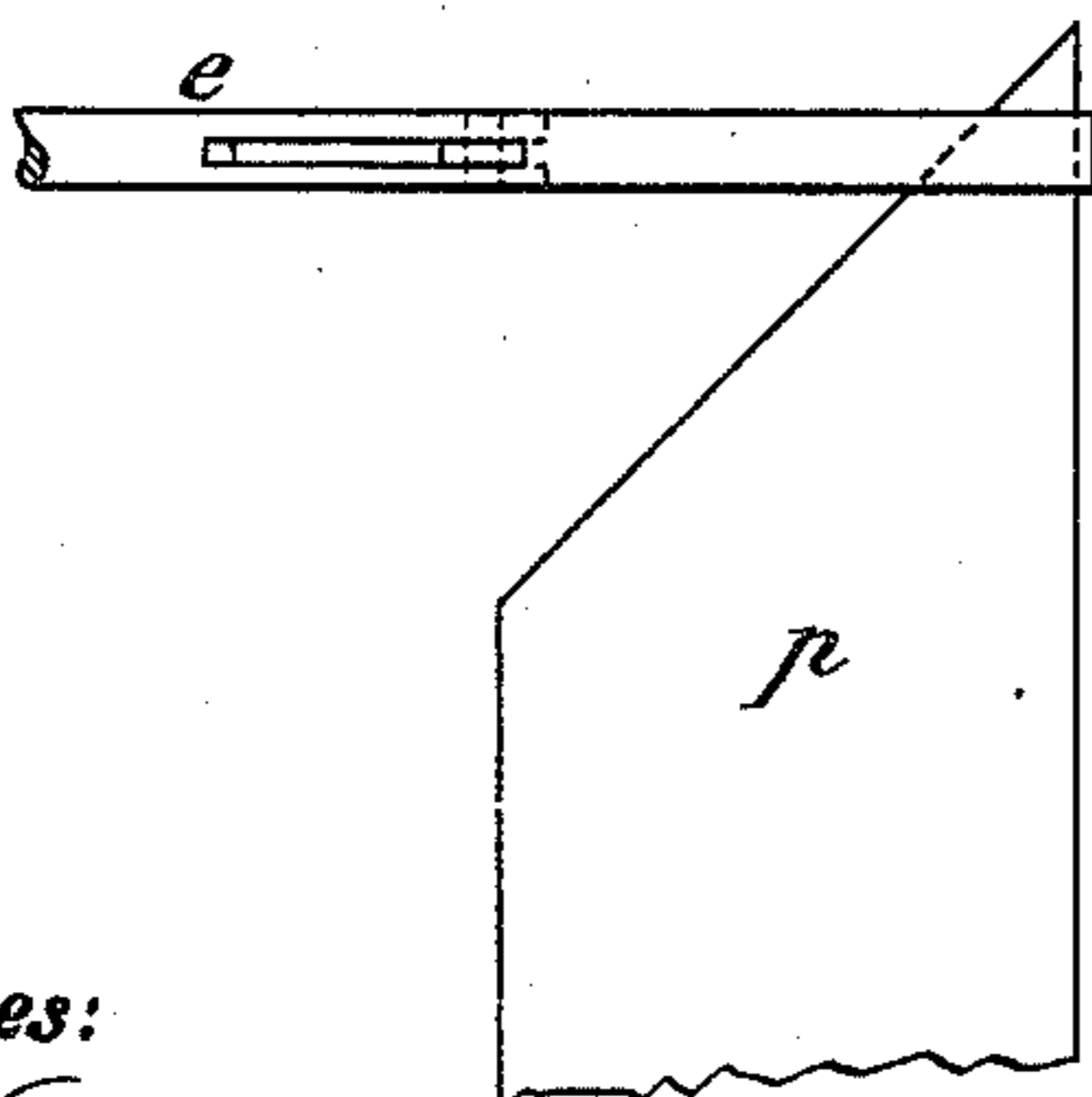
*Fig. 8.*



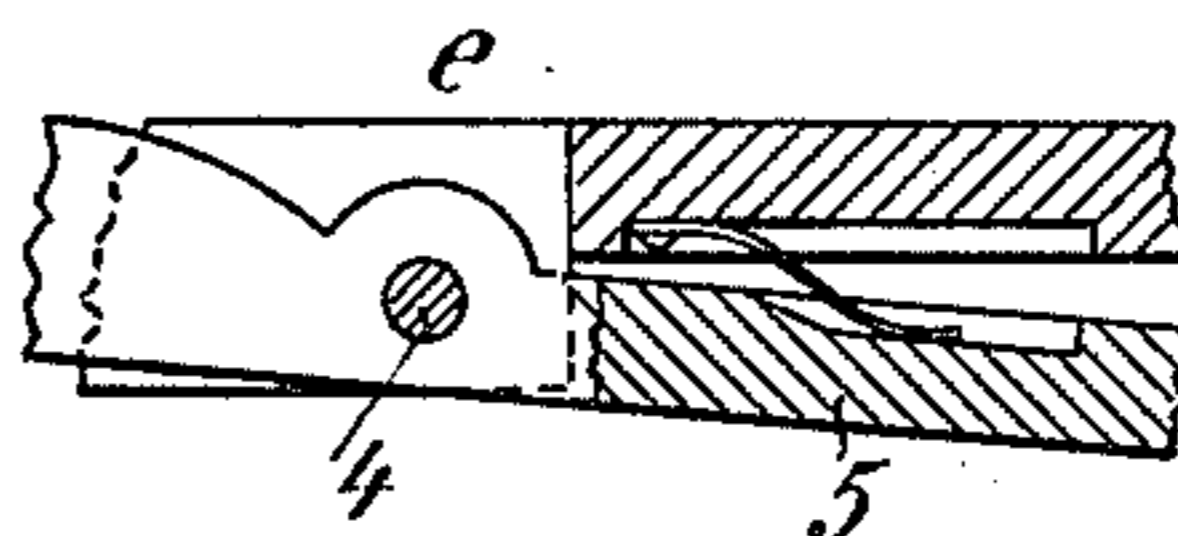
*Fig. 9.*



*Fig. 6.*



*Fig. 5.*



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Inventor:

*Carl R. Martin*  
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4 Sheets—Sheet 4.

Fig. 10.

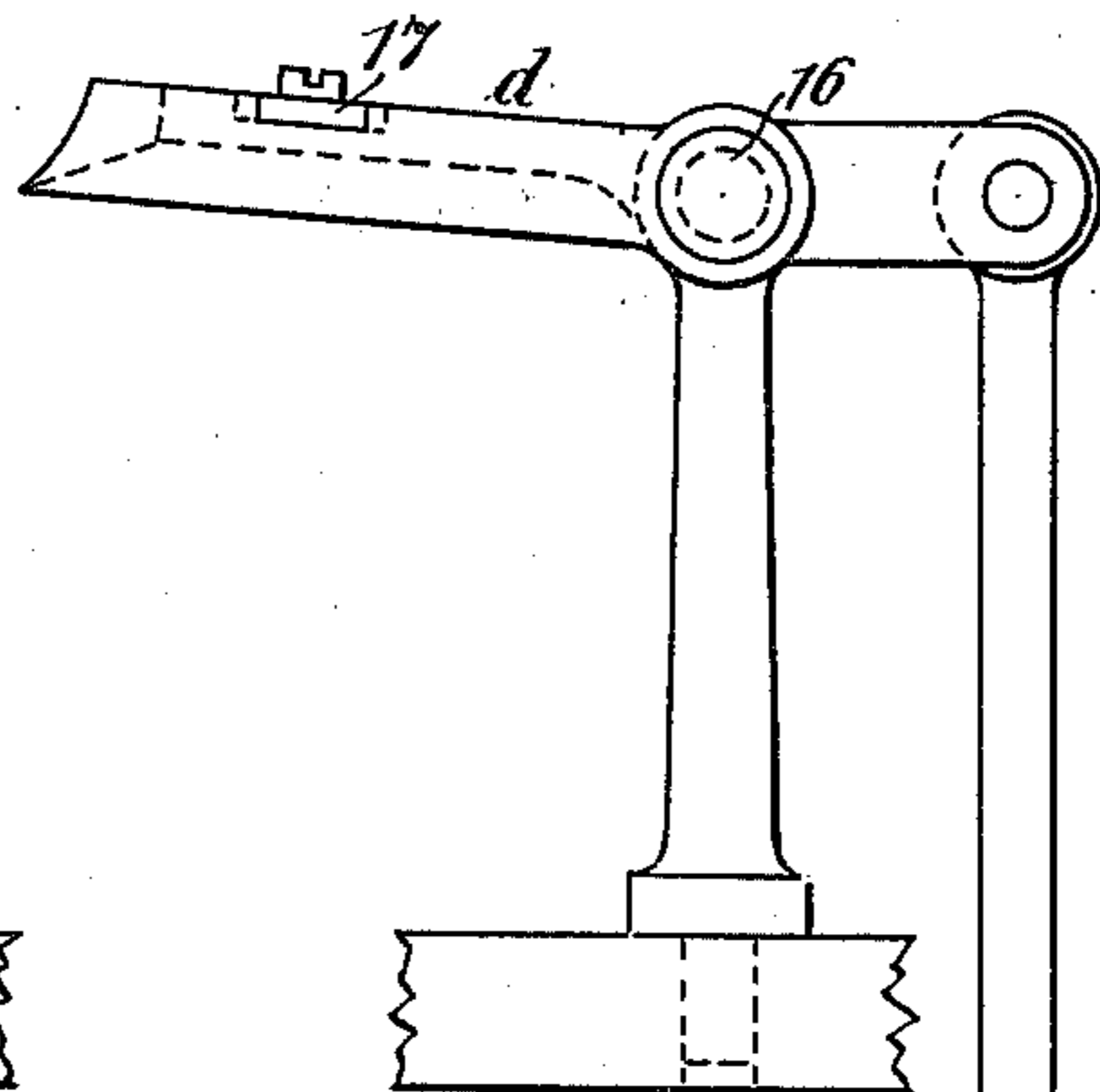
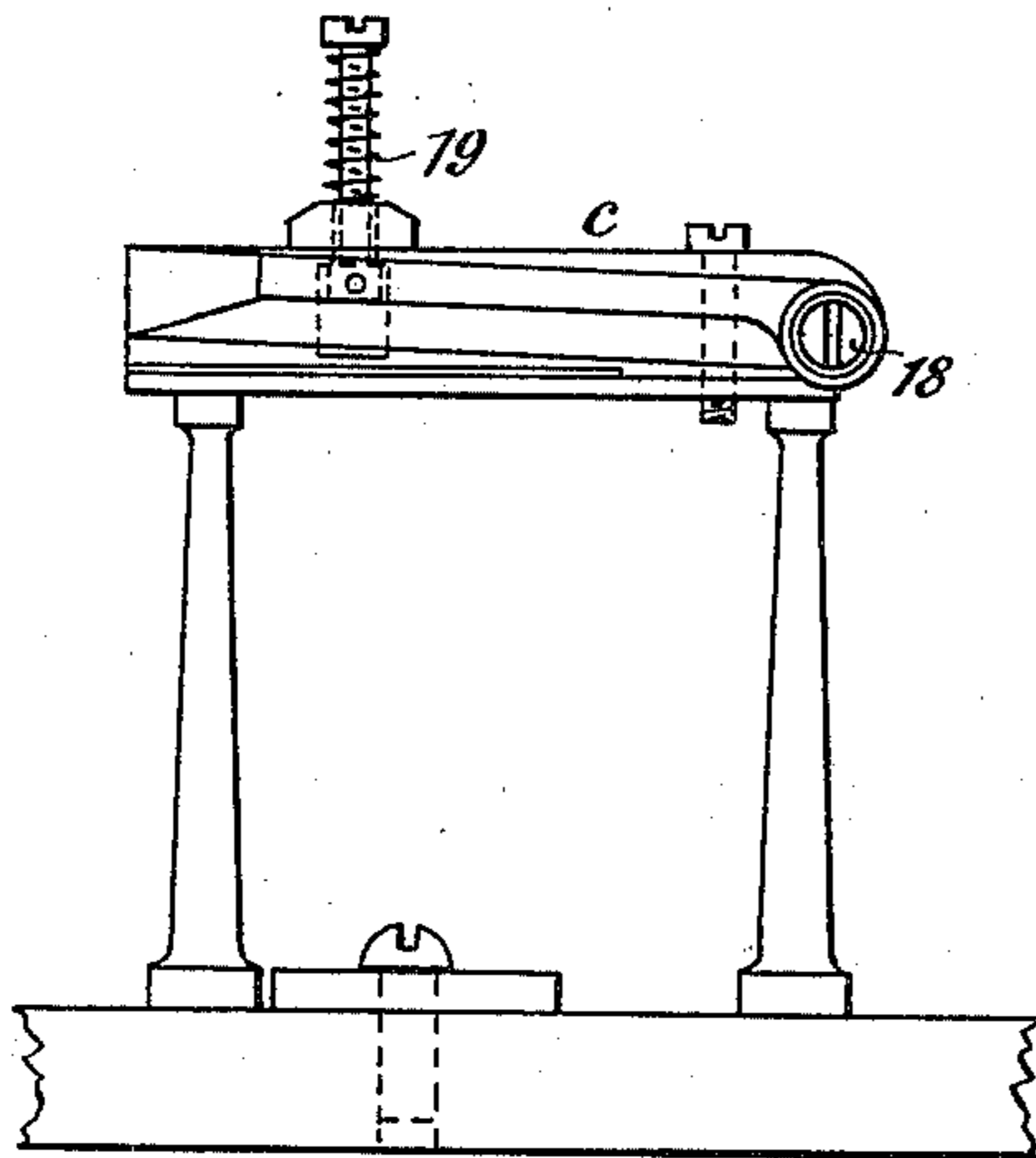


Fig. 13.

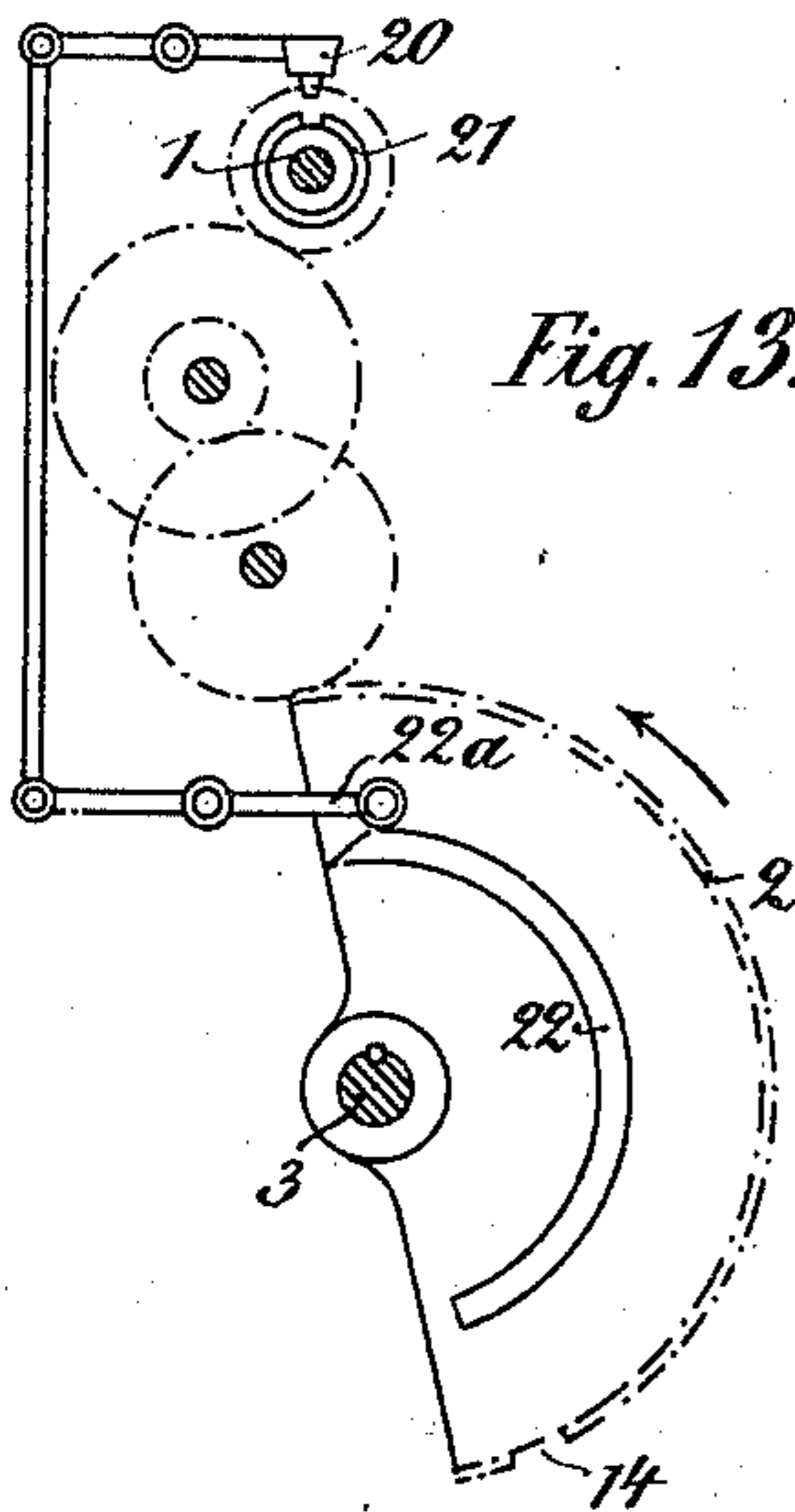
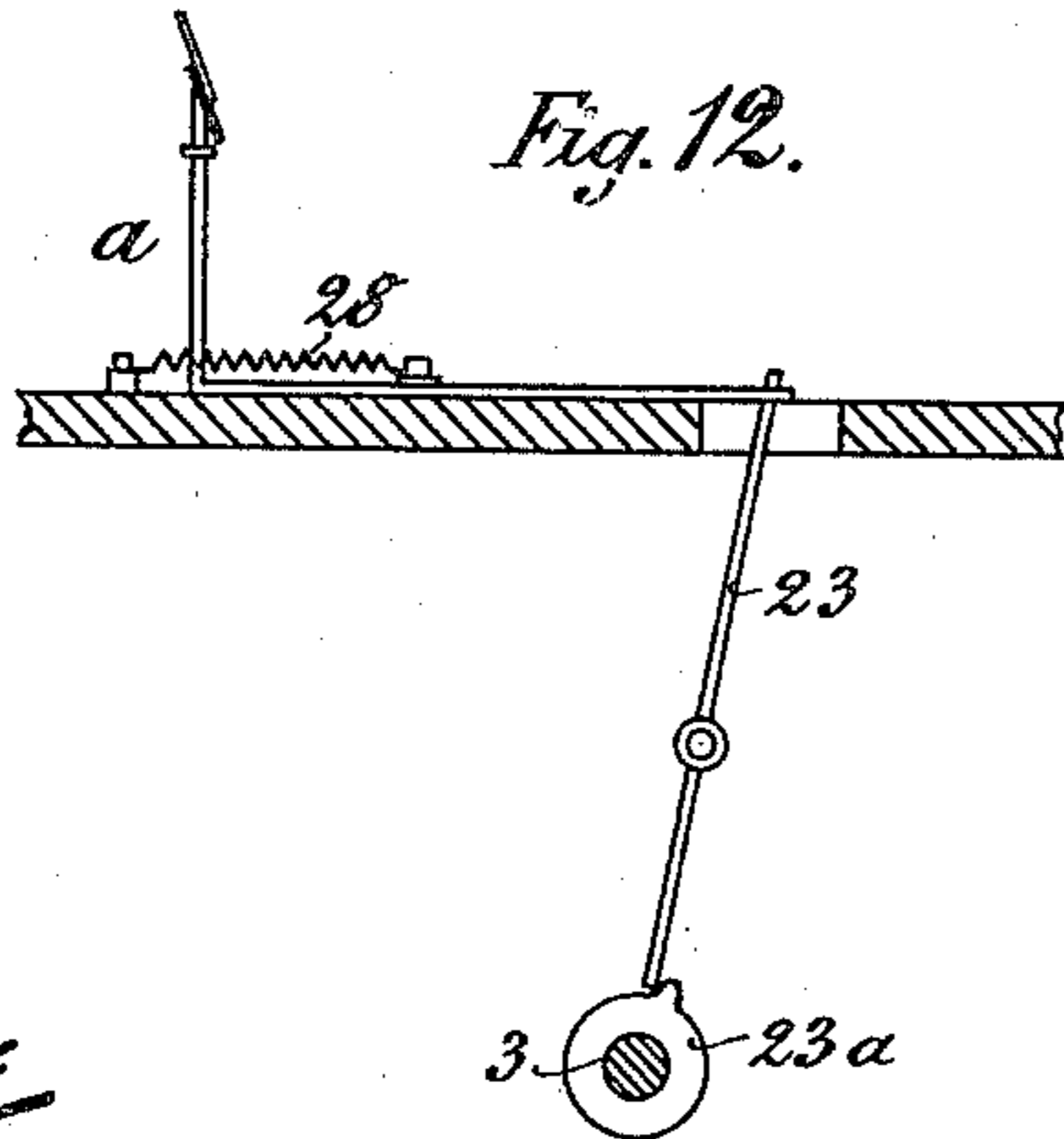


Fig. 12.



Witnesses:

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Inventor:  
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by *Charles H. Wood*  
his atty.

# UNITED STATES PATENT OFFICE.

CARL RICHARD MARTIN, OF DRESDEN, GERMANY, ASSIGNOR TO GEORG MORITZ CALBERLA, OF SAME PLACE.

APPARATUS FOR MAKING AND INSERTING CIGARETTE-MOUTHPIECES.

SPECIFICATION forming part of Letters Patent No. 652,623, dated June 26, 1900.

Application filed March 20, 1899. Serial No. 709,785. (No model.)

*To all whom it may concern:*

Be it known that I, CARL RICHARD MARTIN, a subject of the King of Saxony, residing at Dresden-Pieschen, Germany, have invented certain new and useful Improvements in or Relating to Apparatus for Making and Inserting Cigarette-Mouthpieces, (for which I have made application for Letters Patent in Great Britain under No. 2,953, dated February 9, 1899, and in the German Empire, Serial No. C7, 943 III/79, dated December 9, 1898,) of which the following is a specification.

The present invention relates to the production of cigarette-mouthpieces and their insertion into the corresponding cigarette tubes or shells, and is intended to solve the difficulty of producing these mouthpieces from one endless paper band. Apart from the fact that the ready-rolled mouthpiece is severed from the band while the next one is cut with an oblique end the task requires an essentially different treatment of the paper when being rolled to form the mouthpiece as compared with the method of producing cigarette-mouthpieces in which a series of pieces of paper to be rolled into mouthpieces are introduced ready cut and separately. It will therefore be seen that essential differences arise between the present invention and that described in German patent to Harnisch, No. 88,113, November 24, 1895. Whereas in the latter apparatus the point of the paper strip is held loosely by friction in the slit of the winding-spindle 3 and is loosely rolled within the larger tube 5, according to the present invention, while the strip still forming part of the supply-band is firmly taken hold of by a rolling-up device, acting like curling-tongs, and rolled, the inertia of the supply-roll of paper, aided or regulated by a brake device, assisting in causing the paper to be rolled up firmly. By this means not only is it made possible to employ a continuous-supply band of paper, but the natural stiffness of the paper is thereby broken or reduced, although not to such an extent as to deprive it of all elasticity, it being still able to unroll to a slight extent when left free inside the cigarette-shell, though not so decidedly as is the case with mouthpieces

produced in the manner described in said patent. Such decided unrolling within the shell has the effect of pressing the windings close to the shell, leaving a comparatively large central space occupied only by the small S-shaped end of the paper, which will imperfectly retain short or small tobacco within the cigarette, whereas the elasticity of the spiral formed according to this invention is sufficiently reduced to cause the spiral to loosely but effectively fill the end of the tube or shell which it is destined to occupy. The firm rolling up of the paper is, moreover, increased by the arrangement of a presser acting radially on the rolling-up device and the paper spiral forming upon it.

The additional advantage arising from the avoidance of the difficulty of having to feed regularly and singly thin sheets of paper from the supply-stacks needs no further comment.

It is only necessary to mention, as an example, the automatic post or business card machines, which all suffer from the drawback referred to, which has not been remedied in spite of repeated efforts, and compared with post or business cards the handling of these thin papers is very much more difficult.

In the accompanying drawings, Figure 1 is an elevation of the apparatus, partly in longitudinal section, on the line I I of Fig. 2, the paper feeding and cutting devices opposite the rolling-up device being, however, omitted. Fig. 2 is a plan view showing also the feeding and cutting devices. Fig. 3 is a vertical section through the feeding, cutting, and rolling-up devices on the line III III, Fig. 2. Fig. 4 is a transverse section on the line IV IV, Fig. 1, Figs. 5, 6, 7, 8, 9, 10, 11, 12, and 13 being detail views, hereinafter referred to.

The paper band *p*, Fig. 3, the breadth of which is equal to the length of the mouthpieces to be formed, passes from a bobbin or holder over the feeding device *a*, guide-plate *b*, under the knives *c* and *d*, and enters with its point (see Fig. 6) between the open jaws of the rolling-up device *e*, which is at that time in the position as shown in Fig. 1.

The rolling-up tongs are fixed with their shank in a tube 1, which is revoluble in the bearings, but cannot be longitudinally dis-

placed, said tube being rotated by means of wheel-gearing, Figs. 1 and 13, as long as the semicircular or segmental toothed wheel 2, fixed on and driven by the shaft 3, is in gear with its corresponding transmitting-wheel. When the tube is at rest, the jaws of the rolling-up tongs are open, the jaw 5, pivoted at 4, Figs. 1 and 5, being pressed down by a spring. As soon as the pointed edge of the paper comes into position between the jaws of the rolling-up tongs the cam-disk 6, by means of the lever 7 and ball-joint connection 8, presses forward the plunger-shaft 9, which is revoluble with the hollow spindle 1, and thereby moves forward the thin rod 10 and its end ring 11, in doing which the lever 7 passes from position I into the position II, Fig. 1. In consequence of this change of position the ring 11 is pushed over the shoulder 12 of the jaw 5, thereby closing the jaws over the paper strip *p* and firmly holding it. At the same time the rolling-up tongs are set rotating, thus winding around them firmly and tightly a certain length of the paper strip, a presser 13, Figs. 7 and 8, actuated by a spring, Fig. 1, also contributing to cause the paper convolute to be wound up tightly. This part of the operation being finished, the break in the series of teeth 14, Fig. 13, allows the rolling-up tongs to rest for a short time. During this time the already partly-formed convolute is cut off from the paper band, the new end of which is cut off obliquely at the same time. The first operation is effected by the knife *d*, Figs. 2, 3, and 11, coöperating with an under knife, Fig. 3, and the second by a knife *c*, the edge of the plate 15 serving as the under knife. The knife *d* is attached as a lever-arm to a shaft 16, Figs. 2 and 11, which is intermittently operated by means of connecting-rods and a cam-disk, as represented in Fig. 11. A plate 17, Figs. 2 and 3, is fixed to the top of the knife *d* and extends over and rests upon the top of the knife *c*, so that the downward movement of the knife *d* will be communicated to the knife *c*, which is pivoted upon a fixed point 18, Fig. 10. A spring 19, attached to the knife *c*, (see Fig. 10,) tends to return the knife *c* to normal elevated position, and in its upward movement will elevate the knife *d* by coming in contact with plate 17, as will be readily understood. After the paper convolute has been cut off it is given a few more turns by the renewed engagement of the toothed gearing following the recess in the cog-wheel 2, Fig. 13, in order to wind up the rest of the strip forming the mouthpiece. At this moment a bolt or pawl 20, Figs. 2 and 13, falls into a recess in a disk 21 of the hollow spindle 1 owing to the raised edge or cam-surface 22 on the wheel 2 releasing a lever 22<sup>a</sup>, operating the pawl. The rolling-up device at this position of the pawl, Fig. 1, remains at rest until the new end of the paper band is introduced. During this period of rest the jaws are first eased to allow the mouthpiece to be pushed off into the cig-

arette-shell. For this purpose the cam-disk 6 moves the lever 7 into the position III, Fig. 1, which causes the ring 11 to be pushed beyond the shoulder 12. The rolling-up tongs are thereby eased or partly opened, the ring being somewhat wider than the closed tongs. The jaw 5 is eased a little, Fig. 9, the presser 13, which otherwise would prevent the easing of the convolute, being lifted by the edge of the forwardly-moving ring 11 and kept in that position until the mouthpiece has been shifted from the rolling-up tongs into the cigarette shell or tube. Before the mouthpiece has completely entered the cigarette-shell it will have passed out of reach of the presser and may therefore expand inside the shell, so as to become securely held therein. The apparatus represented in Figs. 1, 2, and 9, serving to hold the cigarette tubes or shells filled with tobacco up to the space reserved for the mouthpiece, form no part of this invention, and therefore require no description, any convenient form of holder being applicable. The shell being now removed, the lever 7 returns to its initial position I, the ring 11 passes back over the shoulder 12, and the jaws of the rolling-up device are again open to receive the next strip of paper to be rolled up. The point of the strip, which after cutting off the mouthpiece only reaches to the knife, is made to move a little forward to bring the point within reach of the jaws of the rolling-up tongs, as seen in Fig. 6. This is done by the forked lever 23 and spur-wheel 23<sup>a</sup>, Fig. 12, acting on the carrier *a* to move the strip *p* forward to the required extent. During the forward movement of the carrier *a* the strip is held fast on the little ledge 24 by the clamp 25, actuated by a spring, Fig. 3. On reaching the limit of the forward movement the clamp 25 is released by its projection 26 striking against a fixed projection 27 to prevent it from being wedged during the first movement. The carrier being drawn back after its forward movement by the spring 28, the clamp will act as a brake when the end of the paper band is being rolled up to form the mouthpiece. The triangular piece of paper remaining after the mouthpiece is cut off is waste paper.

The above-described apparatus may be used either independently by itself or conjointly as part of a machine for producing cigarettes provided with mouthpieces.

I claim—

1. Apparatus for making from an endless paper band and applying cigarette-mouthpieces comprising a carrier for intermittently feeding forward a paper band having an obliquely-cut end said carrier being provided with a clamp, tongs for seizing and rolling up the forward end of the paper strip, a ring or device for closing the tongs on the end of the paper strip and means for moving said device forward for such purpose over a shoulder of the movable jaw of the tongs, means for rotating the rolling-up device, a presser acting upon said strip as it is being rolled up,

cutters for separating a section from the endless band the end of which is simultaneously cut obliquely by another cutter, means for slightly opening the jaws of the rolling-up device by moving the jaw-actuating device slightly forward and raising its movable jaw in order that the mouthpiece may be easily transferred from the rolling-up device and inserted into the shell or tube of the cigarette substantially as described.

2. In an apparatus for making cigarette-mouthpieces, the combination with the main shaft, the hollow winding-spindle, gearing interposed between said winding-spindle and shaft, the gripping-jaws carried by the spindle, the plunger-shaft revoluble with the spindle and capable of a longitudinal movement independent thereof, the rod connected to the plunger-shaft and carrying the ring at its outer end, adapted to encircle the gripping-jaws to close them when the plunger-rod is moved forward a certain distance and to permit them to open slightly when the plunger is moved a farther distance, and means for imparting these movements to the plunger; substantially as described.

3. In an apparatus for making cigarette-mouthpieces, the combination with the main shaft, the hollow spindle, connections between the spindle and shaft for intermittently rotating the spindle, the gripping-jaws carried by the spindle, the plunger-shaft revoluble with, but movable longitudinally independently of the spindle, the rod carrying the ring at the other end, connected to the plunger, the cam mounted on the main shaft having the cam-groove therein, the pivoted lever, one end of which travels in said groove and connected at its opposite end by universal connections to the end of the plunger-shaft, whereby said shaft will be given a forward movement to close the gripping-jaws and a further forward movement to slightly release them, and then retracted; substantially as and for the purpose set forth.

4. In an apparatus for making cigarette-mouthpieces, the combination with the winding-spindle, the main drive-shaft, the segmental gear carried by the shaft having the cam, gearing connecting the spindle and segmental gear, the disk carried by the spindle having the recess in its periphery, the pawl for engaging the recess to lock the spindle from

rotation, the lever resting with one end on the cam on the segmental gear and connected at the other end by an arm to the end of the locking-pawl; substantially as described.

5. In an apparatus for making cigarette-mouthpieces, the combination with the sliding paper-carrier, the pivoted clamp for holding the strip carried thereby, mechanism for sliding the carrier forward, means for releasing the clamp, when the carrier is slid forward a certain distance, and the spring for returning the carrier to first position; substantially as described.

6. In an apparatus for making cigarette-mouthpieces, the combination with the movable paper-carrier, the pivoted clamp carried thereby, the arm carried by the clamp, mechanism for moving the carrier forward, the projection against which the arm on the clamp strikes to release the clamp at the limit of its forward movement, and the spring for returning the carrier to first position; substantially as described.

7. In an apparatus for making cigarette-mouthpieces, the combination with the knife for severing the convolute from the strip, a second knife for obliquely cutting the new end, a plate carried by the first knife extending over and resting upon the second, a spring for lifting the second knife whereby the downward movement of the first knife is communicated to the second and the upward movement of the second is communicated to the first knife; substantially as described.

8. In a machine for making cigarette-mouthpieces, the combination with the pivoted lever carrying the knife for severing the convolute from the strip, a second pivoted lever carrying a knife for obliquely cutting the new end, mechanism for moving the first lever downward, a spring for lifting the second lever, and means for communicating the downward movement of the first lever to the second, and the upward movement of the second lever to the first.

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

CARL RICHARD MARTIN.

Witnesses:

G. A. ALWIN ARLDT,  
HUGO DUMMER.