

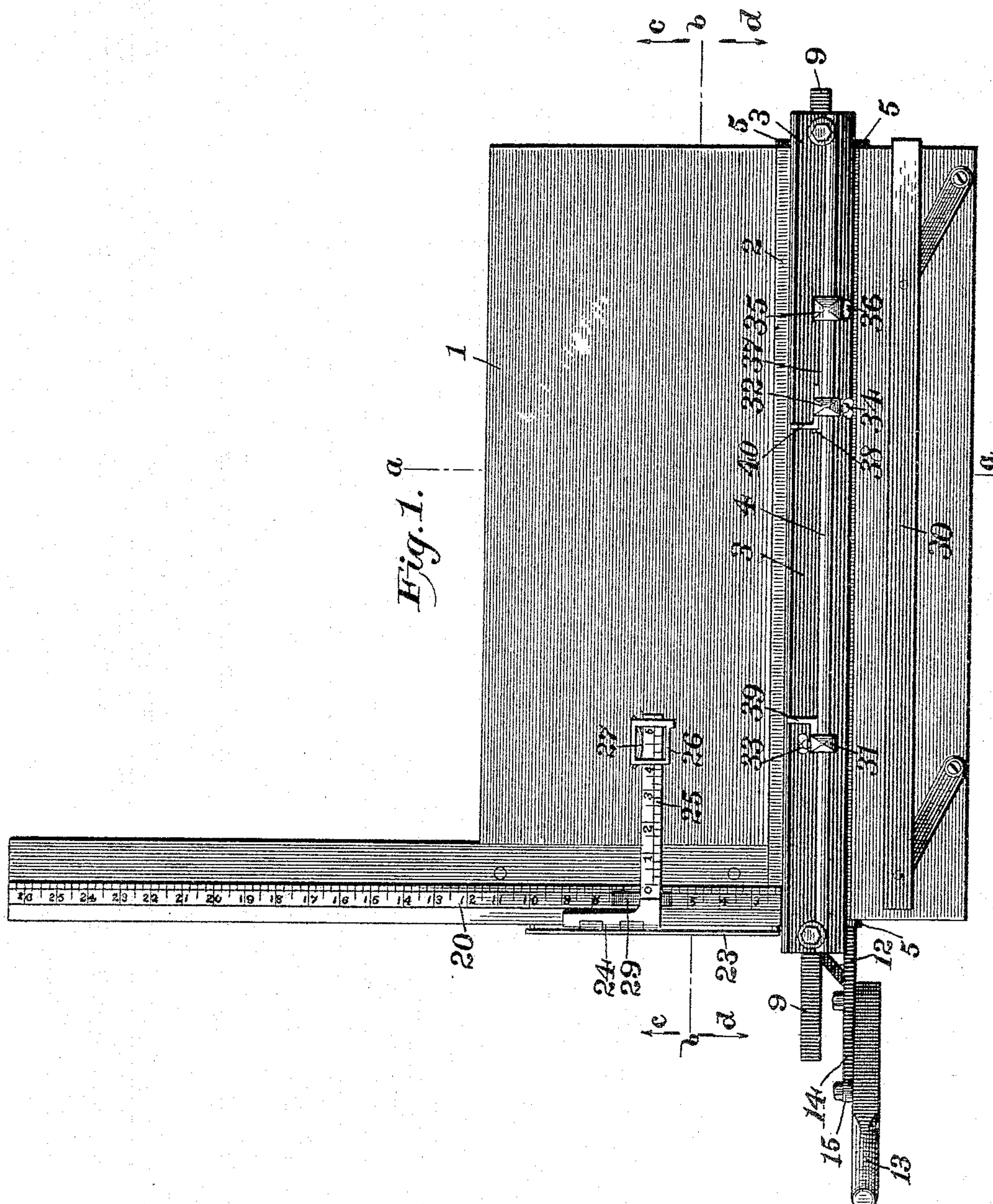
(No Model.)

5 Sheets—Sheet 1.

E. L. GAYLORD.
PICTURE MAT CUTTING DEVICE.

No. 491,307.

Patented Feb. 7, 1893.



WITNESSES:

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 to S. Meloy.

INVENTOR

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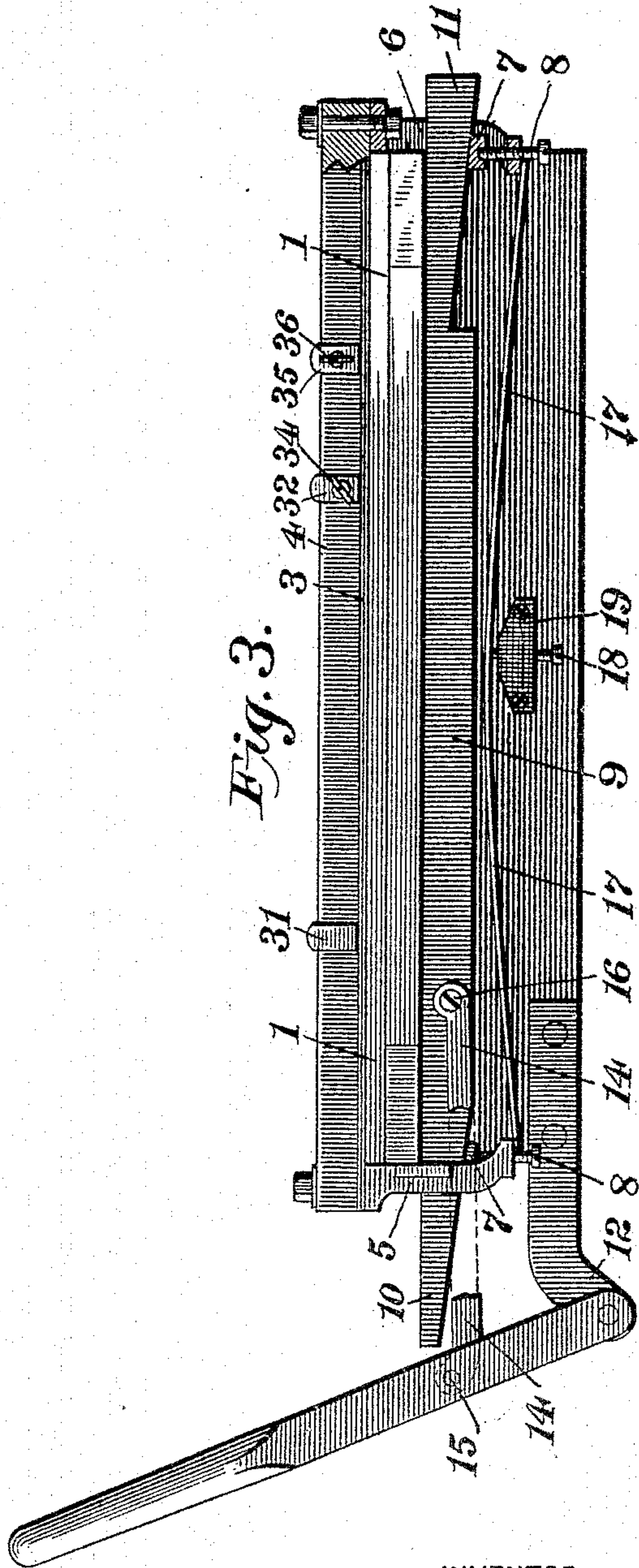
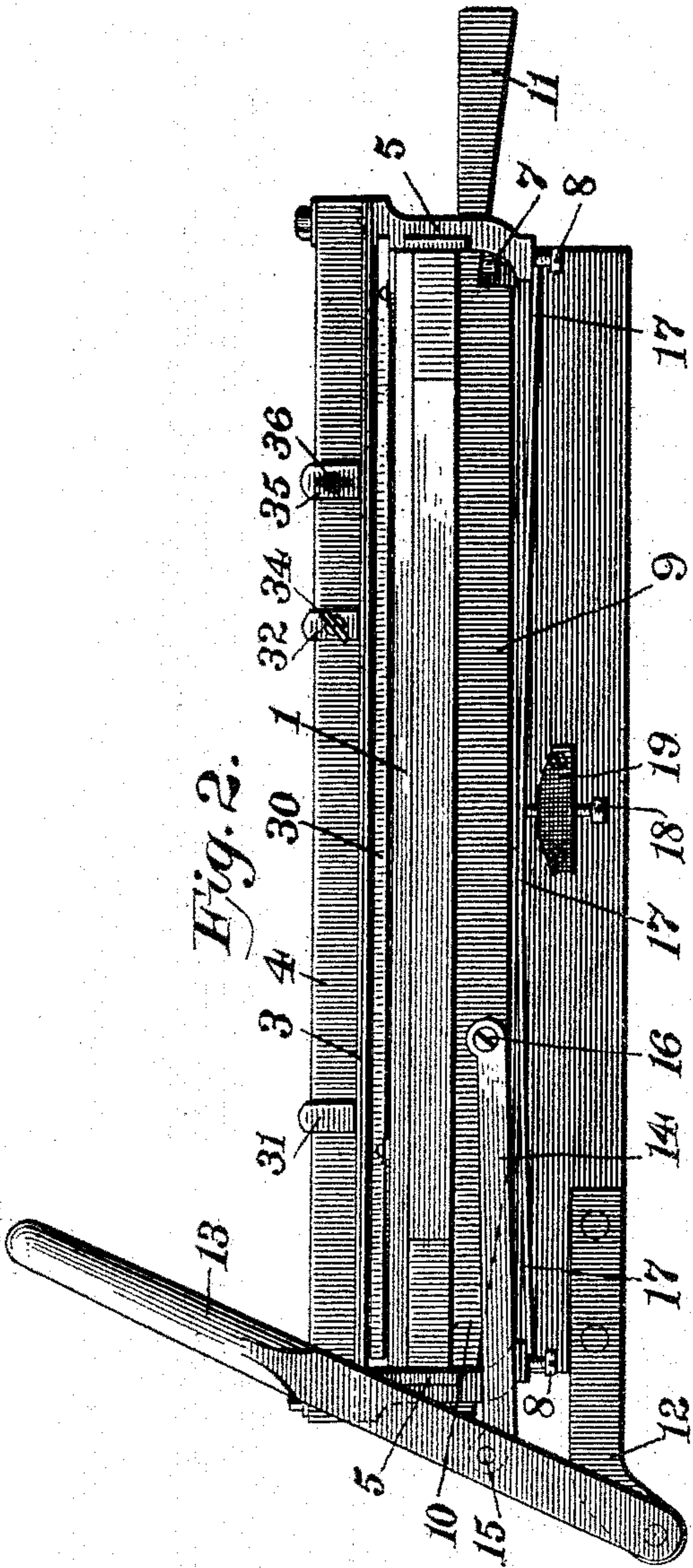
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5 Sheets—Sheet 2.

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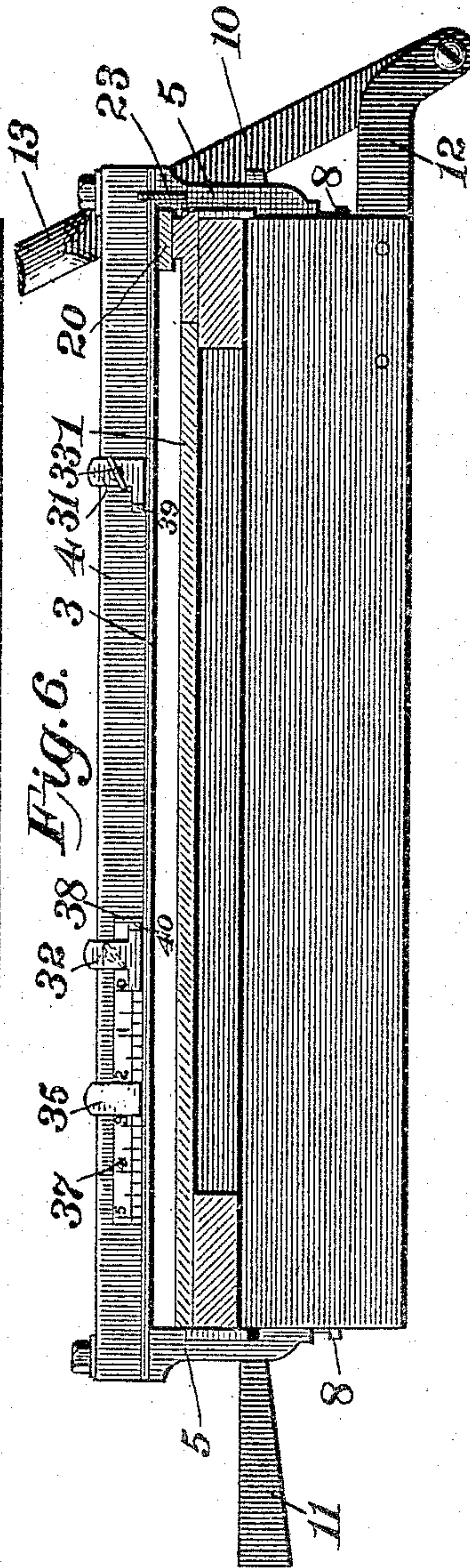
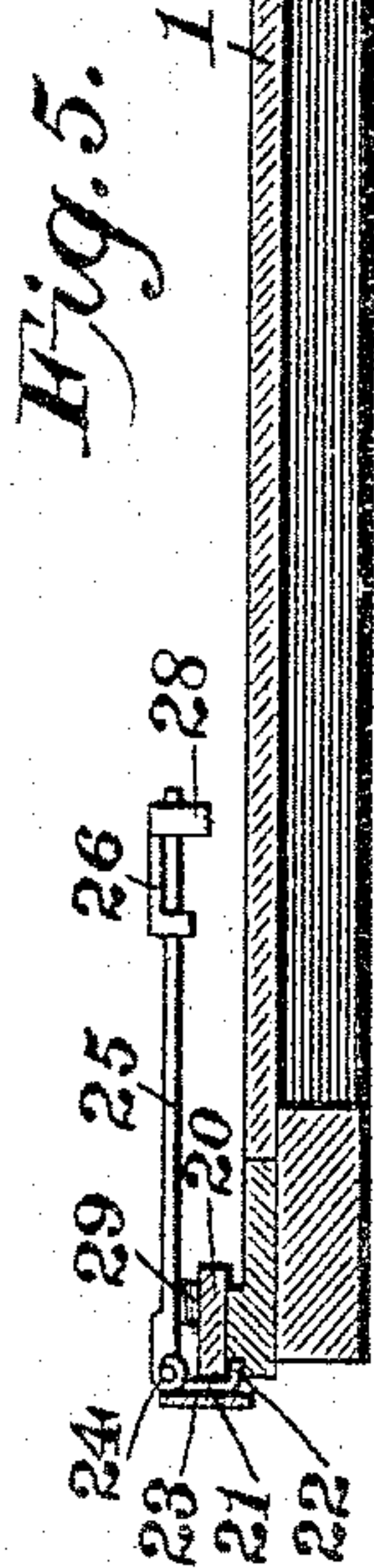
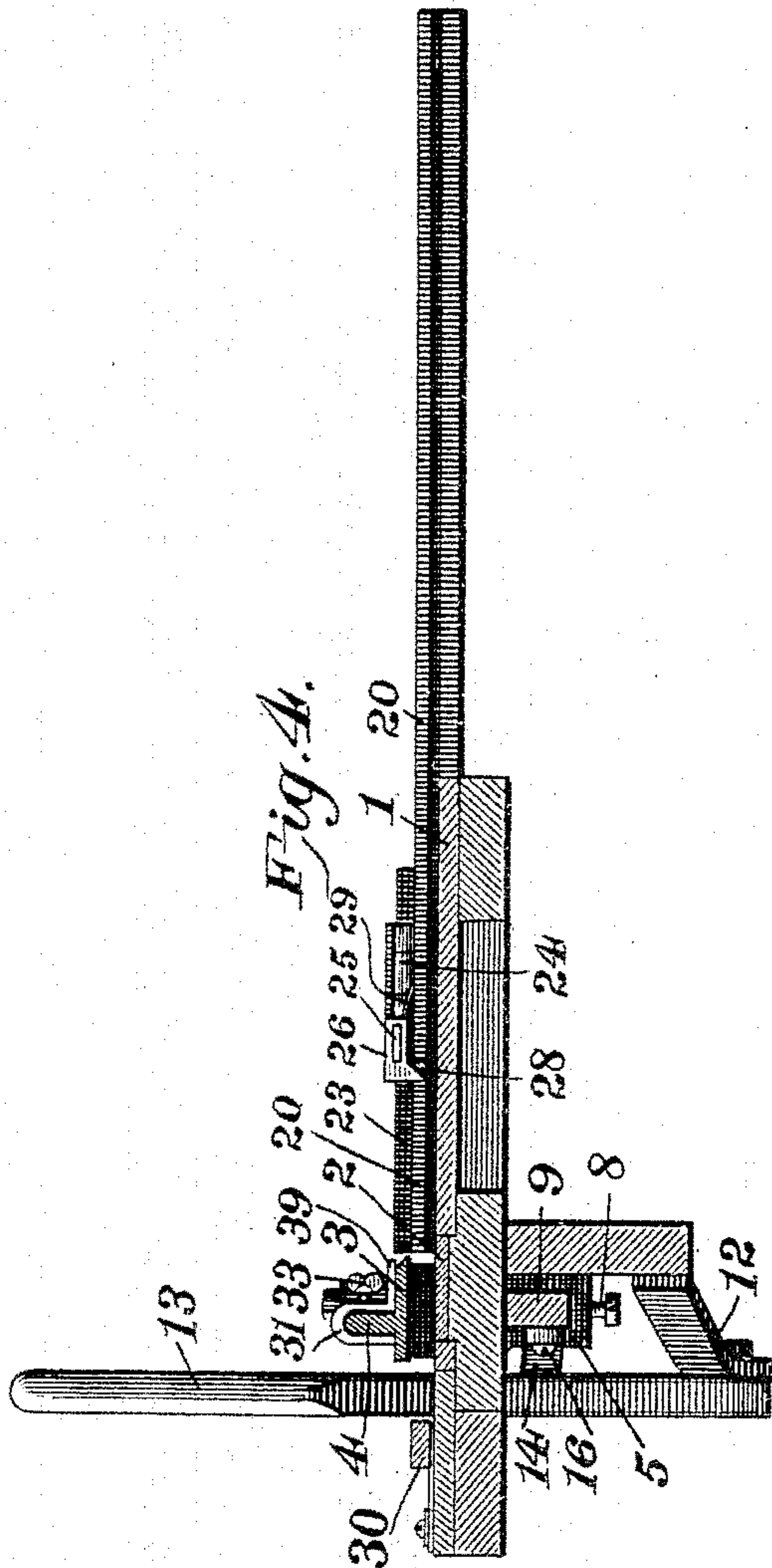
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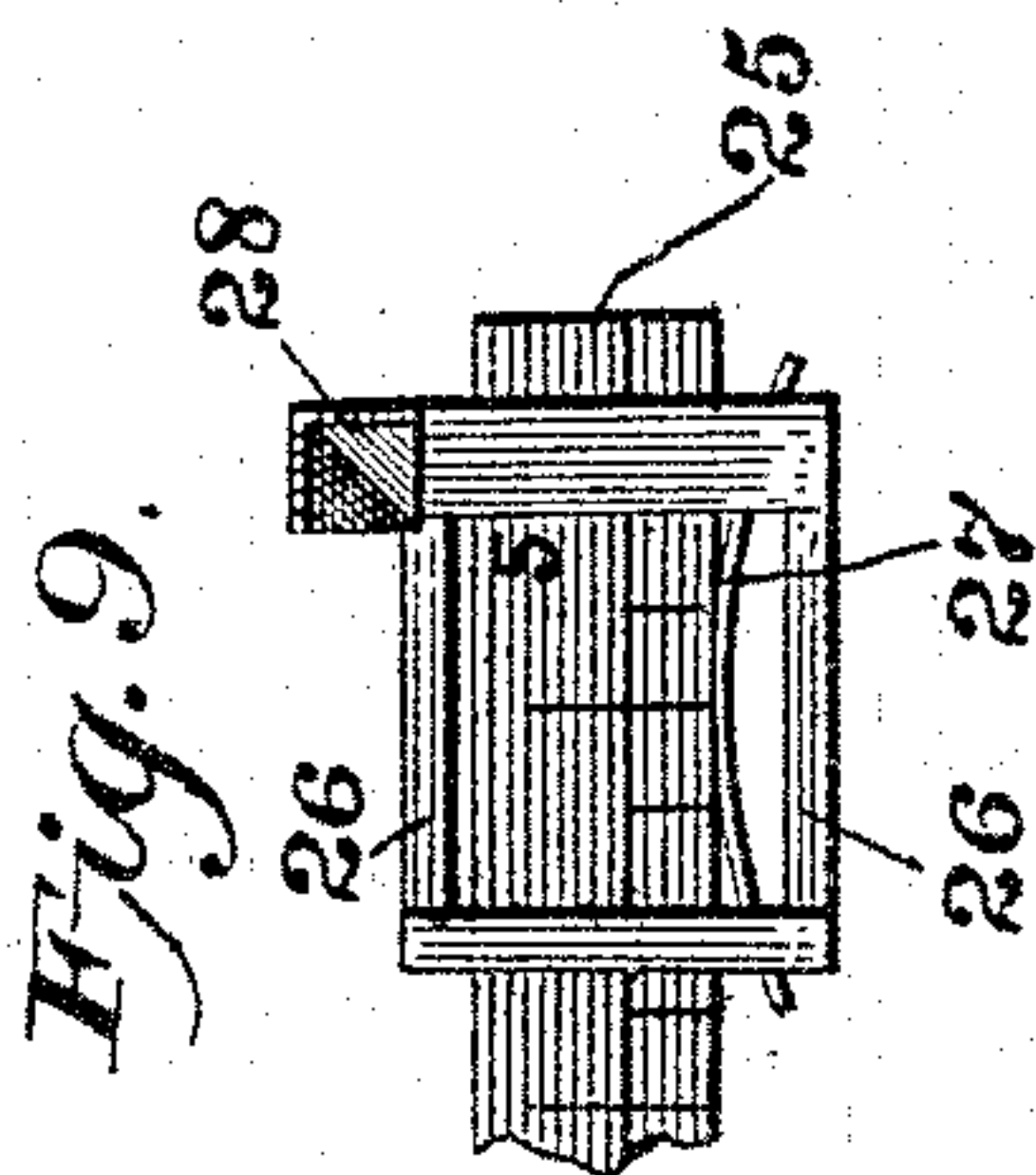
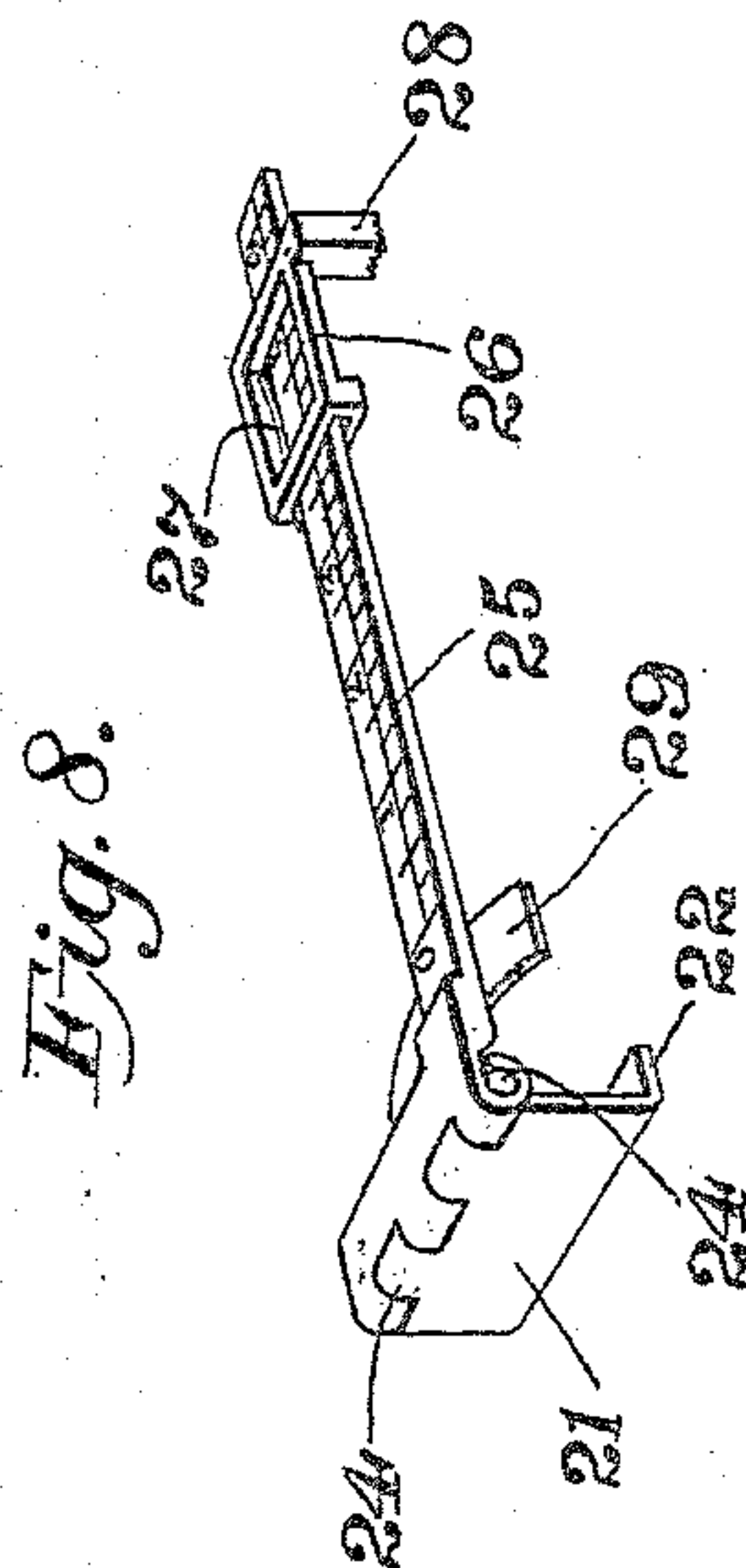
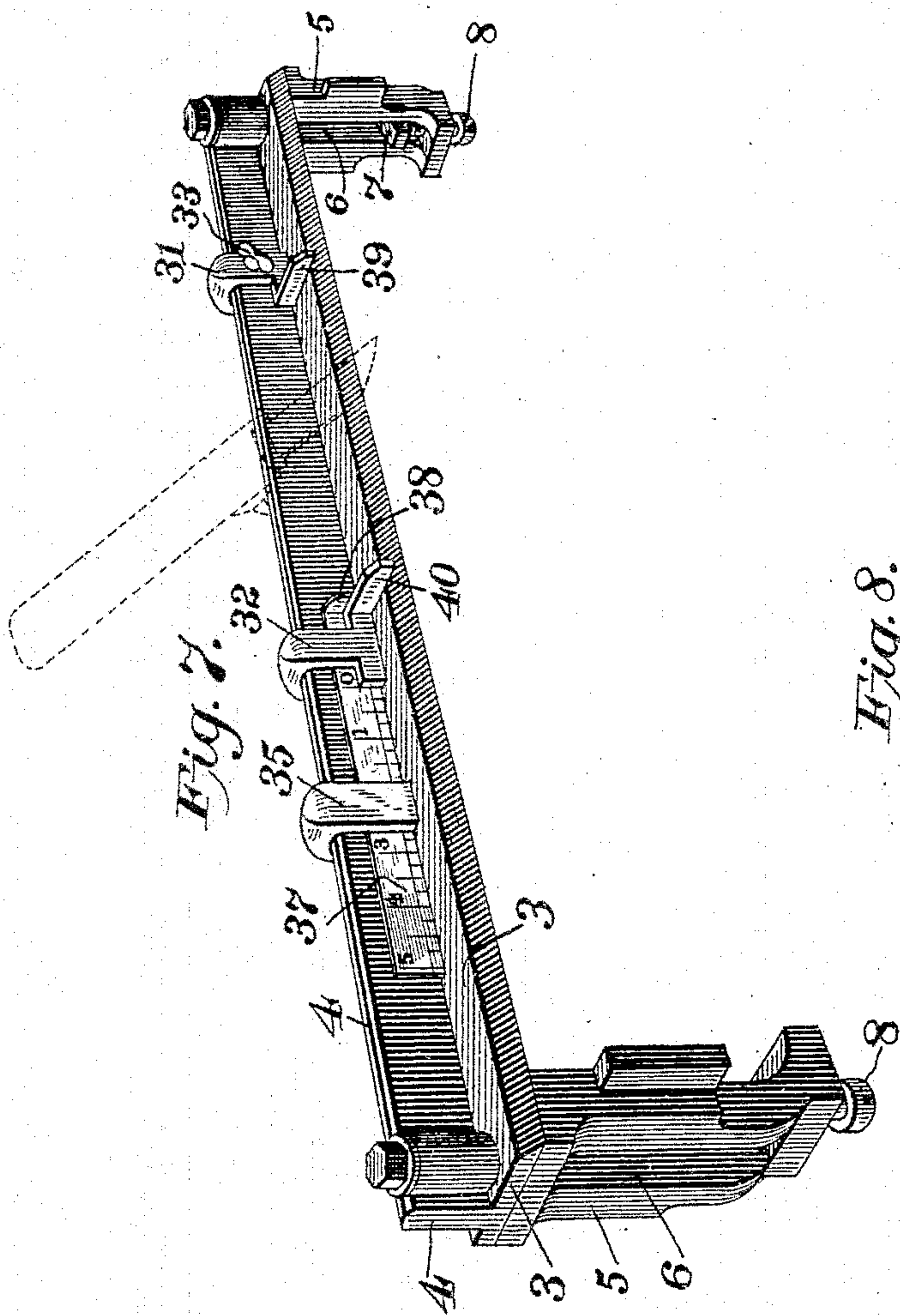
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E. L. GAYLORD.
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Fig. 10.

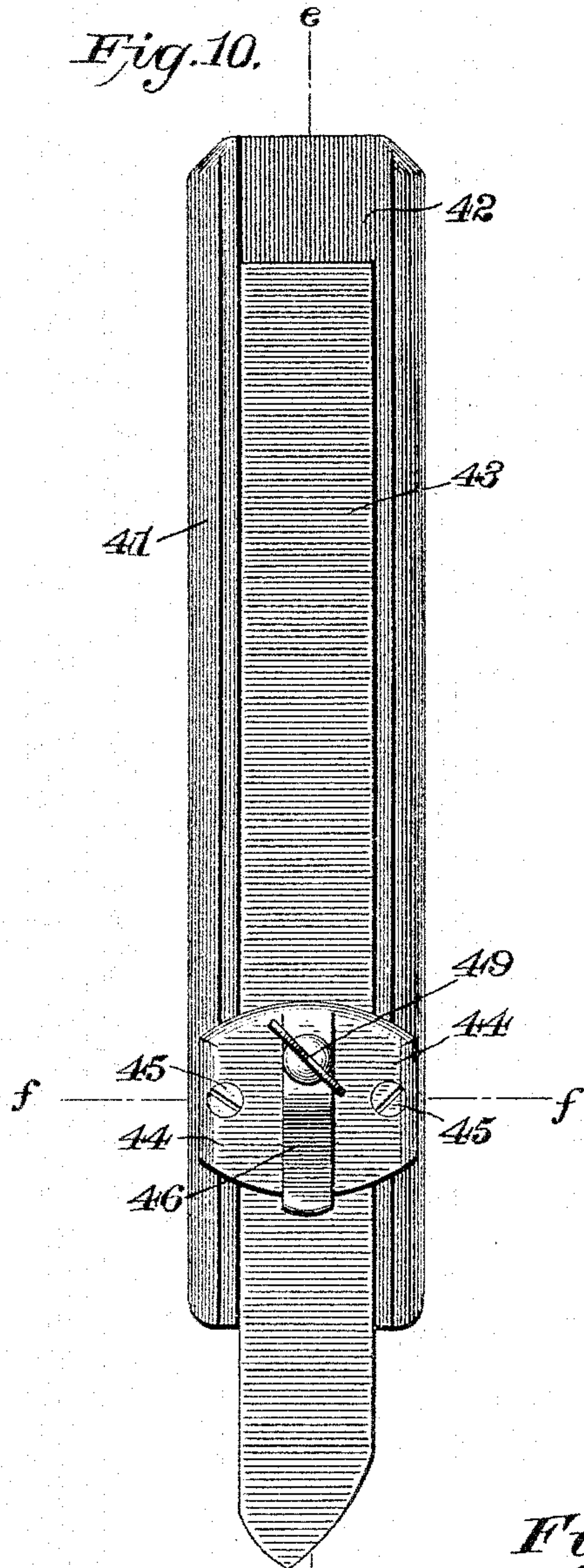


Fig. 11.

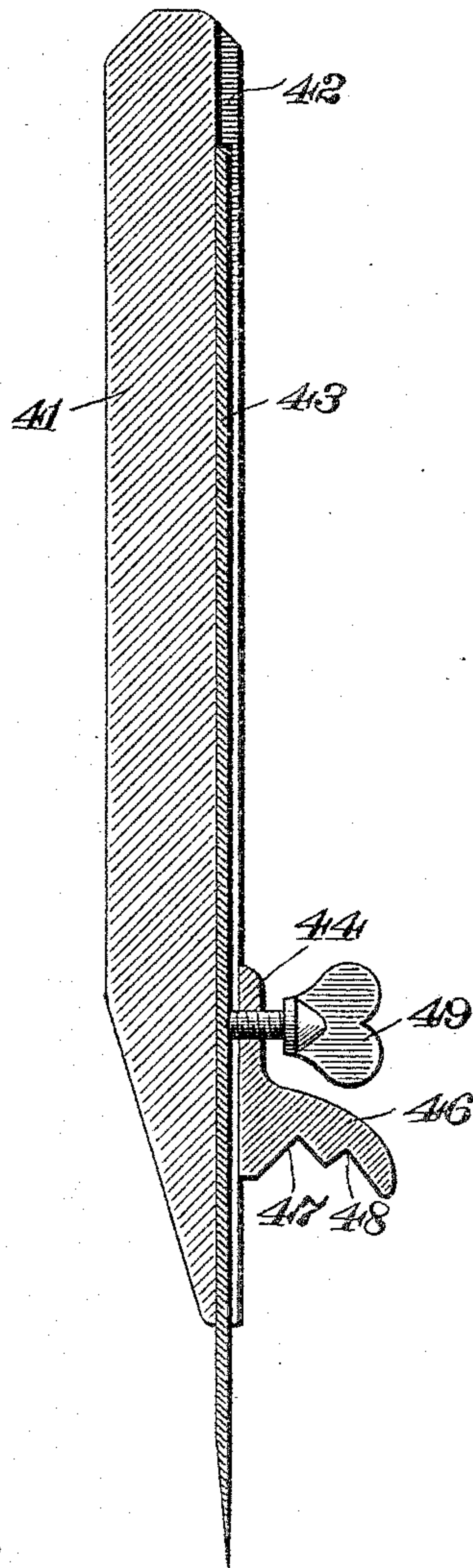
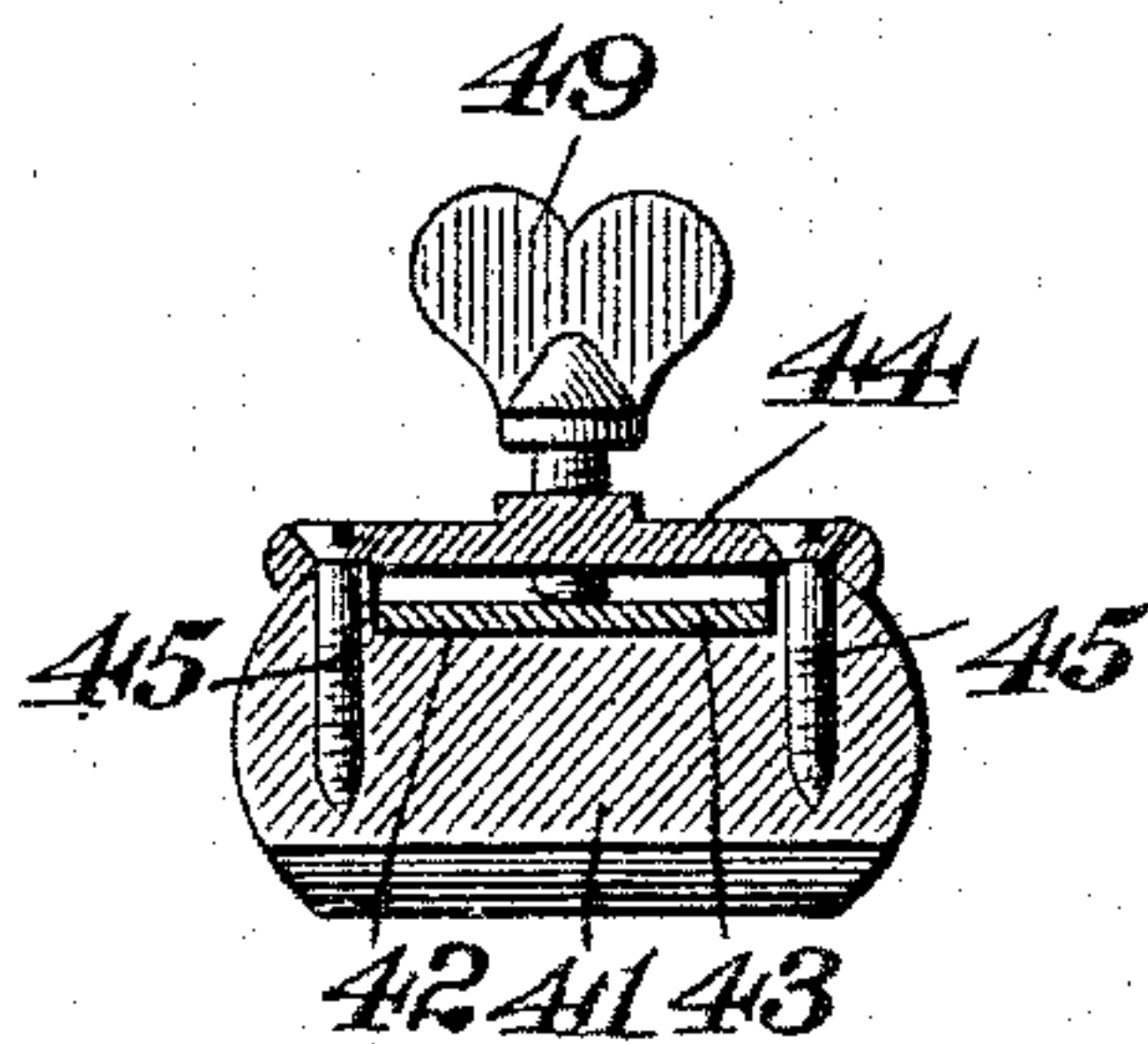


Fig 12



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UNITED STATES PATENT OFFICE.

EDWARD L. GAYLORD, OF BRIDGEPORT, CONNECTICUT.

PICTURE-MAT-CUTTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 491,307, dated February 7, 1893.

Application filed September 8, 1892. Serial No. 445,356. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. GAYLORD, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Picture-Mat-Cutting Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in machines for cutting picture mats and the like, and has for its objects to facilitate the "laying out" of the mat and to afford means for cutting the latter with great dispatch.

In the accompanying drawings,—Figure 1 is a plan of my machine. Fig. 2, a rear elevation, the clamp bar being in elevated position. Fig. 3, a view similar to Fig. 2, but with the parallel rule removed and the clamp-bar depressed. Fig. 4, a section at the line *a, a*, of Fig. 1. Fig. 5, a section at the line *b, b*, of Fig. 1, looking in the direction of the arrows *c*. Fig. 6, a section also at the line *b, b*, of Fig. 1, but looking in the direction of the arrows *d* and showing the clamp-bar raised. Fig. 7, a detail perspective of the clamp-bar. Fig. 8, a detail perspective of the mat "marker" device. Fig. 9, a detail broken bottom view of said device showing the "marker" proper. Fig. 10, a front elevation of my improved knife, and Figs. 11 and 12, sections at the lines *e* and *f*, respectively, on Fig. 10.

Similar numbers of reference denote like parts in the several figures of the drawings.

1 is the table or bed of my improvement adapted to be secured on a work bench or the like in any ordinary manner.

2 is a cutting surface preferably of glass which is secured in the bed flush with the top thereof, as shown particularly at Fig. 4.

3 is the clamp bar made of metal—preferably steel—and having rising therefrom and extending longitudinally thereof a rib 4 which serves as a guide rest for the cutting knife. This rib 4 is chamfered along its upper edges in order to give it a nice finish. Secured at the ends of the bar 3 are hangers 5 having therein vertical gates 6. At the lower ends of these gates are shoes 7 which are swiveled to

screws 8 which latter are passed through the bottoms of the hangers, and by the manipulation of these screws the shoes are elevated or lowered for the purpose presently explained. The clamp-bar rests upon the bed with the hangers embracing opposite sides of said bed in such manner that said hangers may be elevated or lowered to raise or depress the bar. 9 is a slide-bar beneath the bed and having its ends formed with wedges 10, 11, which extend through the gates 6 in the hangers.

12 is a bracket extended from the bed, and 13 is a lever pivoted to said bracket.

14 is a link whose ends are pivoted at 15, 16, respectively, to said lever and the bar 9.

17 is a flat spring whose ends are capable of being depressed by the hangers when the latter are lowered, and 18 is a screw which is passed through a nut 19 secured to the bed and bears against the bottom of the spring midway of its length by means of which screw the spring may be properly set up.

From the foregoing it will be seen that when the lever 13 is thrown in the two positions shown at Figs. 2 and 3 the clamp bar will be respectively raised and lowered, the lowering being effected by the positive action of the wedges against the resiliency of the spring while the raising is accomplished by the action of the spring on the withdrawal of the wedges. To compensate for wear on the wedges, or to properly adjust the vertical movement of the clamp-bar, the shoes 7 are raised or lowered as occasion may demand.

At the left of the machine and extending in a direction at right angles to the clamp-bar is a raised strip 20 which is scaled into inches and fractions of an inch.

21 is a plate which has a lip 22 depending beneath the rear edge of the strip 20, said plate adapted to slide freely lengthwise of said strip.

23 is a keeper which is secured to the rear of said strip in order to secure the plate as against displacement.

Hinged at 24 to the plate 21 is a gage bar 25 marked off as in the instance of the strip 20 and 26 is a frame arranged to slide on said bar.

27 is a friction spring which bears against the bar and frame to prevent accidental slipping of the latter. Depending from the bot-

tom of the frame is the marker 28 which consists of a rectangular serrated foot shown particularly at Fig. 9.

29 is a flat spring secured to the bottom of the bar 25 and bearing against the strip 20, whereby said bar is normally elevated to keep the marker from dragging on the mat to be cut. The keeper 23 may of course extend throughout the length of the strip 20 if desired.

30 is an ordinary parallel rule or adjustable straight edge secured to the top of the bed in the immediate rear of the clamp bar.

The manner of "laying off" the mat by the use of my instrument is as follows. The mat is first trimmed to the desired size by placing it on the bed with one edge against the strip 20 while the rear edge extends beneath the clamp-bar. The edges are successively trimmed by cutting them along the rear of the clamp-bar. The margin of the mat around the opening to be cut is determined, and it is the office of my machine to accurately lay off this margin. The mat is squared along the strip 20 and the rear edge of the clamp bar, and the lever 13 is operated to depress said bar firmly against the mat. The gage-bar 25 is now pushed along the strip until the rear edge of said bar reaches the proper distance as denoted by the scale on said strip, which distance is the width of the margin desired between the opening to be cut and the edge of the mat which is flush with the rear edge of the clamp-bar. The frame 26 is now pushed along the gage bar until the proper marginal distance is registered with respect to the edge of the mat which extends along the side of the strip 20. The end of the gage bar is now depressed thereby causing the serrated marker to make a rectangular indentation upon the mat, whereby one corner of the desired opening is found, and the remaining corners are marked in like manner. The mat is next adjusted and clamped beneath the bar 3, the indented corners being properly registered at the front edge of said bar, and the mat is cut in the usual manner to provide the desired opening. In cutting similar openings in two or more mats of the same size, I adjust the straight edge 30 to such a position that when the rear edge of the mat is in abutment therewith, the indented corners will be in proper position with respect to the front edge of the clamp-bar, and I am thereby enabled to cut opposite sides of similar mats with great rapidity. But, in cutting large numbers of similar mats, much time is consumed in the marking of corners, notwithstanding the fact that they do not have to be "found" except in the instance of the first mat. I have therefore provided an attachment, which, while it is unnecessary in the cutting of single mats, is of great value in the cutting of considerable numbers of similar mats, and this attachment I will now describe.

31 and 32 are clips adapted to slide freely on the rib 4 of the clamp-bar, each clip hav-

ing set screws 33, 34, respectively, whereby such clips may be secured at any desired points along said rib.

35 is an adjustable stop capable of sliding along said rib and provided with a set screw 36 for fixing said stop in any desired adjustment.

37 is a gage-plate confined against the front vertical wall of the rib by the clip 32 and stop 35 and having at its inner end a lip 38 which acts as a stop to the clip 32.

39 and 40 are fingers which project forward from the clips 31 and 32 and overhang the front edge of the clamp bar.

The corners of a mat opening having been indented as before set forth, the clips 31 32 are moved so that their fingers 39, 40, register with such corners at the edge of the clamp bar. The plate 37 is then thrown back until its lip 38 abuts against the clip 32. The stop 35 is moved along the rib to a predetermined distance from the clip 32, and said stop and both clips are secured in their adjustments by their respective set screws.

The mat opening is generally longer one way than the other, and in cutting the long side the screw 34 is loosened and the clip 32 pushed back against the stop 35, the distance between the stop and the clip 32 (see Fig. 7) being predetermined by the difference between the two lengths of the mat opening. Therefore, after the clips and the stop 35 have once been located with respect to the indented corners of the short and long sides of the mat opening, similar mats may be successively cut without the use of the marker for the corners since the fingers 39, 40 arrest the cutting knife within the limits prescribed by the dimensions of the opening.

In connection with my improvements hereinbefore set forth I provide an exceedingly novel and useful cutting knife which I will now describe.

41 is a handle preferably of wood and having a way 42 within which the knife 43 is placed.

44 is a cover plate secured by screws 45 to the handle at the lower part thereof and immediately over the way 42. Depending from the plate 44 is a stop guide 46 which has two notches 47, 48, which are in different vertical planes.

49 is a set screw by means of which the knife is secured within the way 42.

My improved knife is used in the following manner. The stop 46 is rested at one of its notches on the rib 4, whereby the cutting edge of the knife is positively raised so that it will penetrate through the mat and no farther, the knife having been previously adjusted. The point of the knife is forced into the mat at one of the indented corners, and the knife is then drawn along the clamp-bar until the other corner is reached, when the handle is swung backward until the edge of the knife has cut up to the line which bisects the angle of junction of the sides of the mat

opening. When used in connection with the clips and stops hereinbefore described, this knife overcomes a great defect hitherto experienced in mat cutting, namely, the imperfection of the corners of the mat opening and an inexperienced person can with my knife and machine cut perfect mat openings. In cutting mats, the bevel of whose opening is at a steep angle, the lower notch 48 is placed against the rib 4, the knife being thereby brought into a position nearer a perpendicular than in the instance of the upper notch 47.

I claim,—

1. The combination of the graduated strip 20, the plate 21 capable of sliding along said strip, means for holding said plate in position the gage-bar 25 hinged to said plate and carrying the adjustable marker, and the spring 29 whereby said bar is normally elevated, substantially as set forth.

2. In a mat-cutting machine, the combination of the bed, the clamp-bar supported on said bed and capable of being elevated and lowered, the hangers depending from said bar and provided with vertical gates, the slide bar abutted against the bottom of the bed and having inclines on the underside at its ends, which latter extend within said gates, the vertically adjustable shoes in the bottoms of said hangers and affording supports for said inclines, the spring which keeps the clamp-bar normally raised, and means for moving the slide-bar to and fro, substantially as shown and set forth.

3. The hereindescribed device for positively

limiting the action of the cutting knife to a predetermined distance, the same comprising the clamp-bar having a raised rib, the clips 31, 32, adapted to slide on said rib and provided with projecting fingers 39, 40, the stop 35 also adapted to slide on said rib, the gage-plate 37 confined against said rib by the clip 32 and stop 35 and having at its inner end a lip 38, and means—as set screws—for securing said stop and clip in their adjustments, substantially as set forth.

4. The hereindescribed knife for cutting mats, the same comprising a handle, a blade adjustable therein, and a stop-guide depending from said handle and provided with notches which are in different vertical planes, in combination with the guide-rib of the clamping-bar, substantially as set forth.

5. The combination of the handle 41, the knife adjustable within said handle, the plate secured to the handle over said knife, the stop guide depending from said plate and having notches as described, the set screw whereby said knife is secured in any desired adjustment, and the guide rib against which said stop guide bears when the knife is in operation, substantially as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD L. GAYLORD.

Witnesses:

F. W. SMITH, Jr.

J. S. FINCH.