

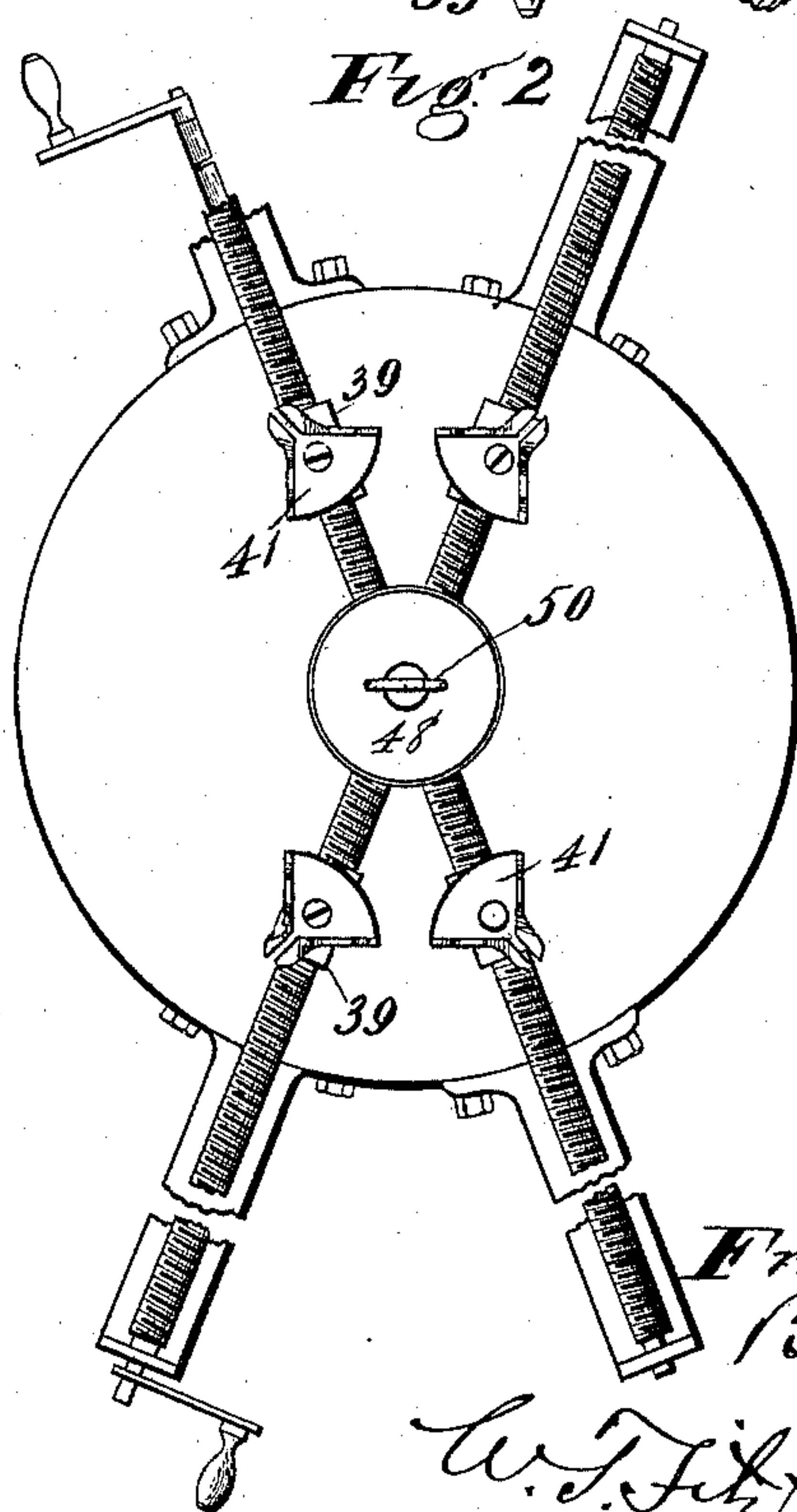
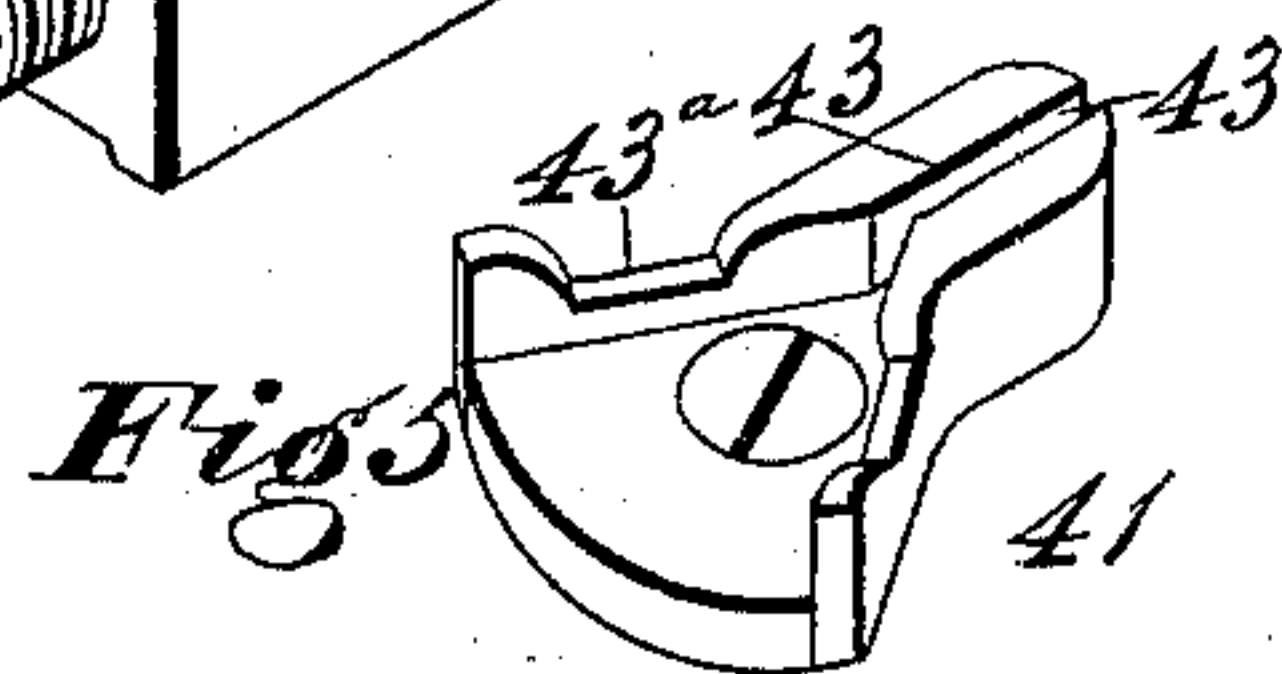
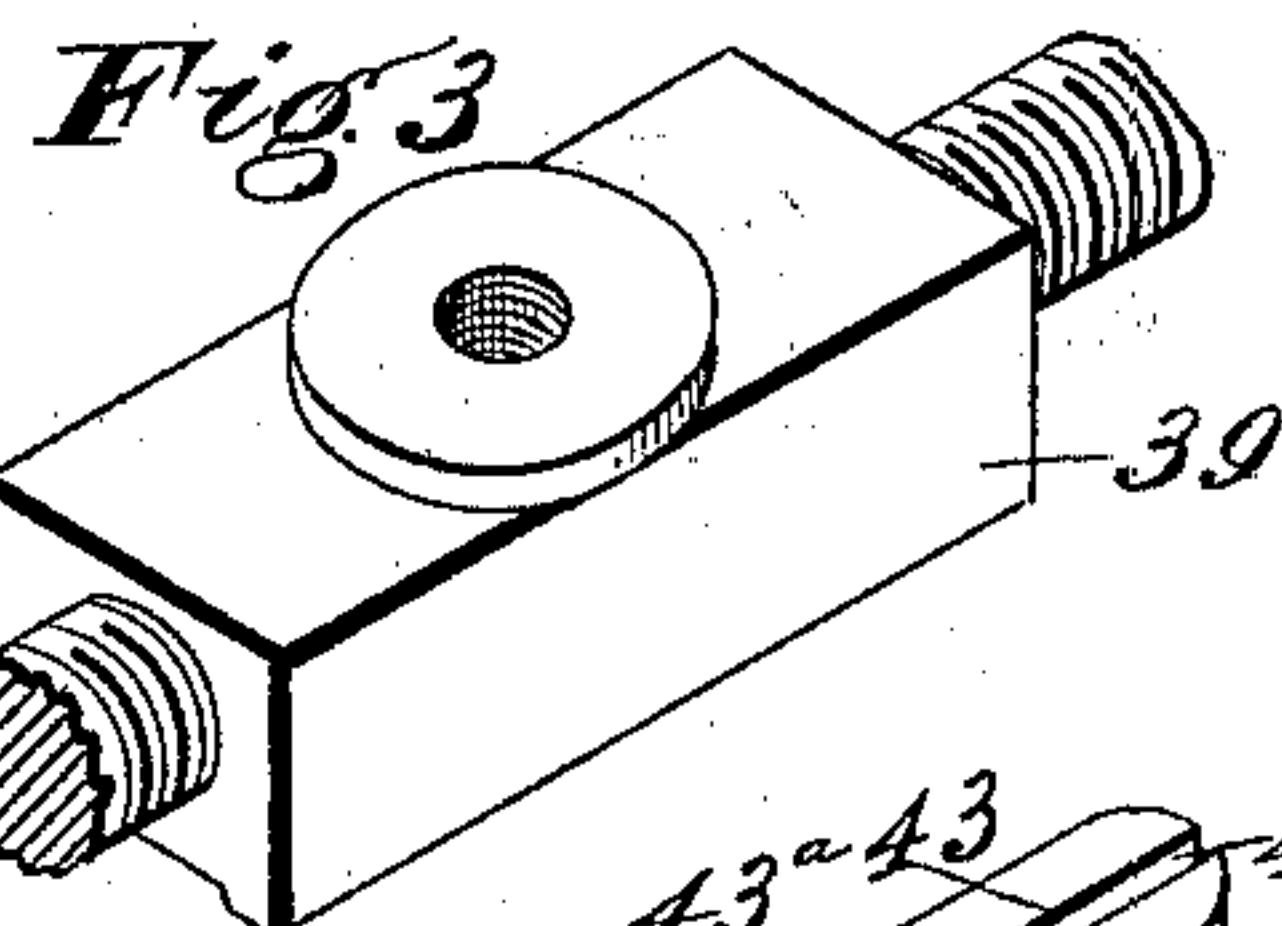
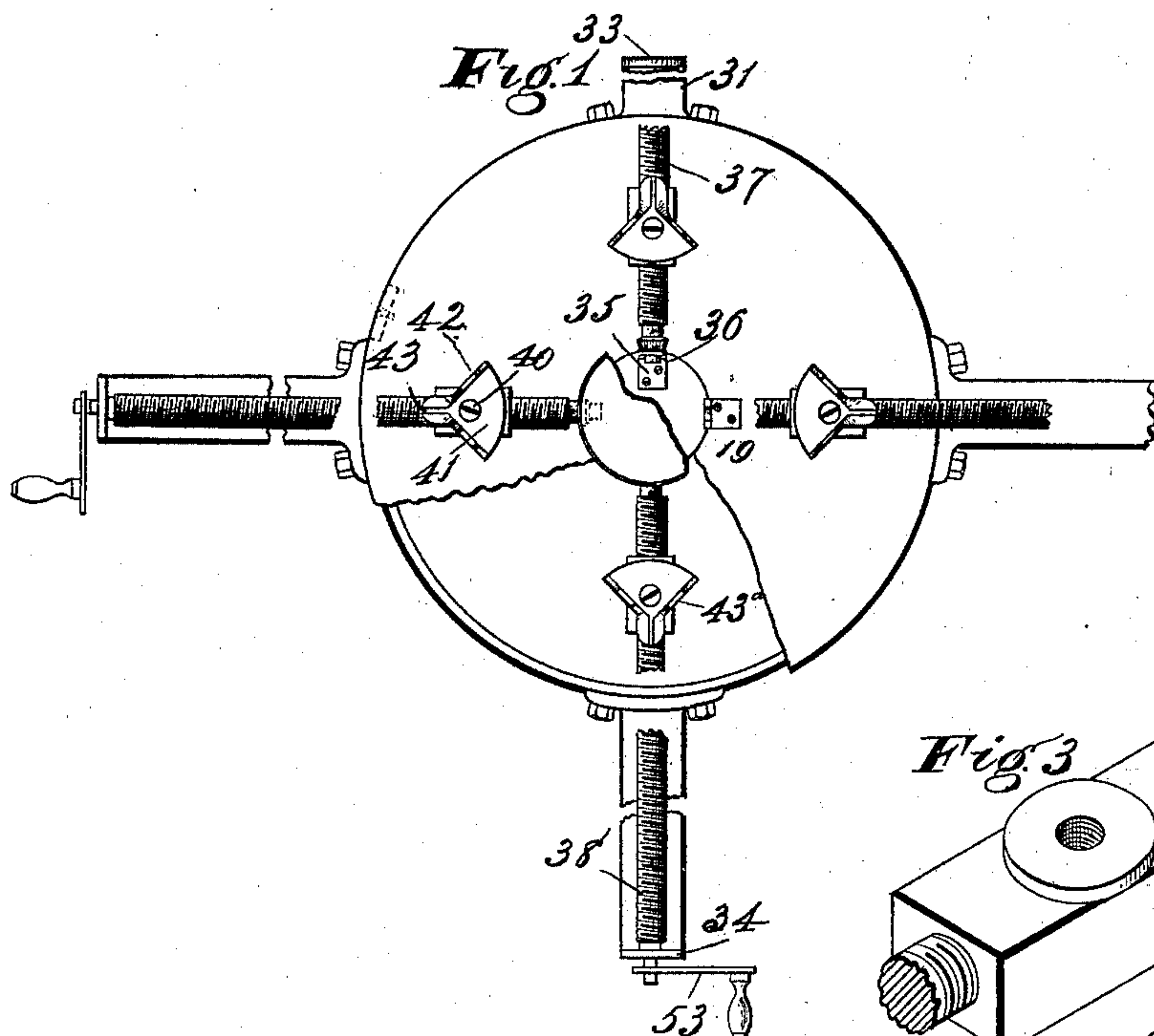
(No Model.)

2 Sheets—Sheet 1.

F. REISSMANN.
FRAME CLAMP AND SUPPORT.

No. 604,160.

Patented May 17, 1898.



Witnesses

E. E. Overholt
A. H. Miller

Inventor

Frederick Reissmann,

By

W. T. Fitzgerald & Co.,
Attorneys.

(No Model.)

2 Sheets—Sheet 2.

F. REISSMANN.
FRAME CLAMP AND SUPPORT.

No. 604,160.

Patented May 17, 1898.

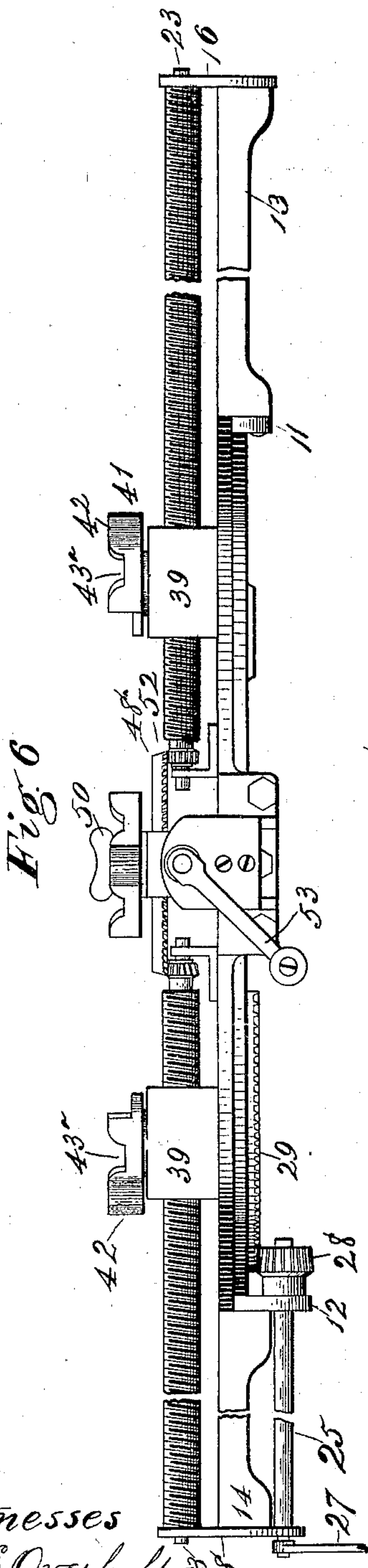


Fig. 6

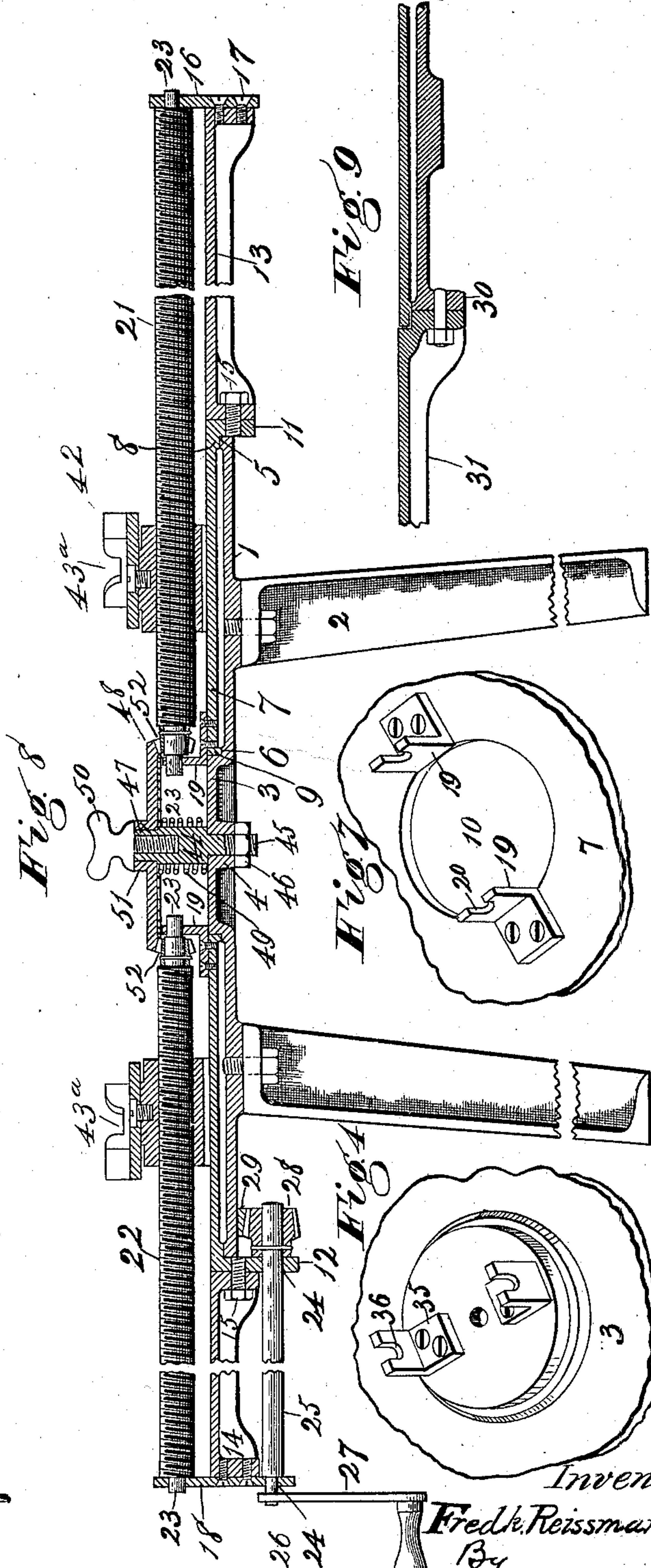


Fig. 8

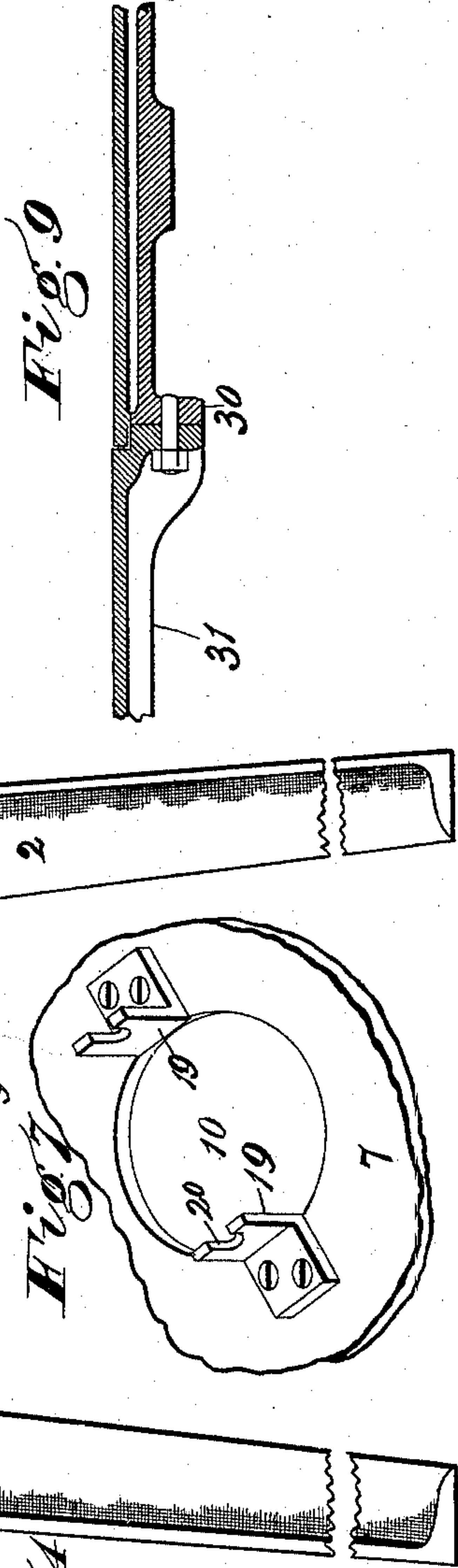


Fig. 9

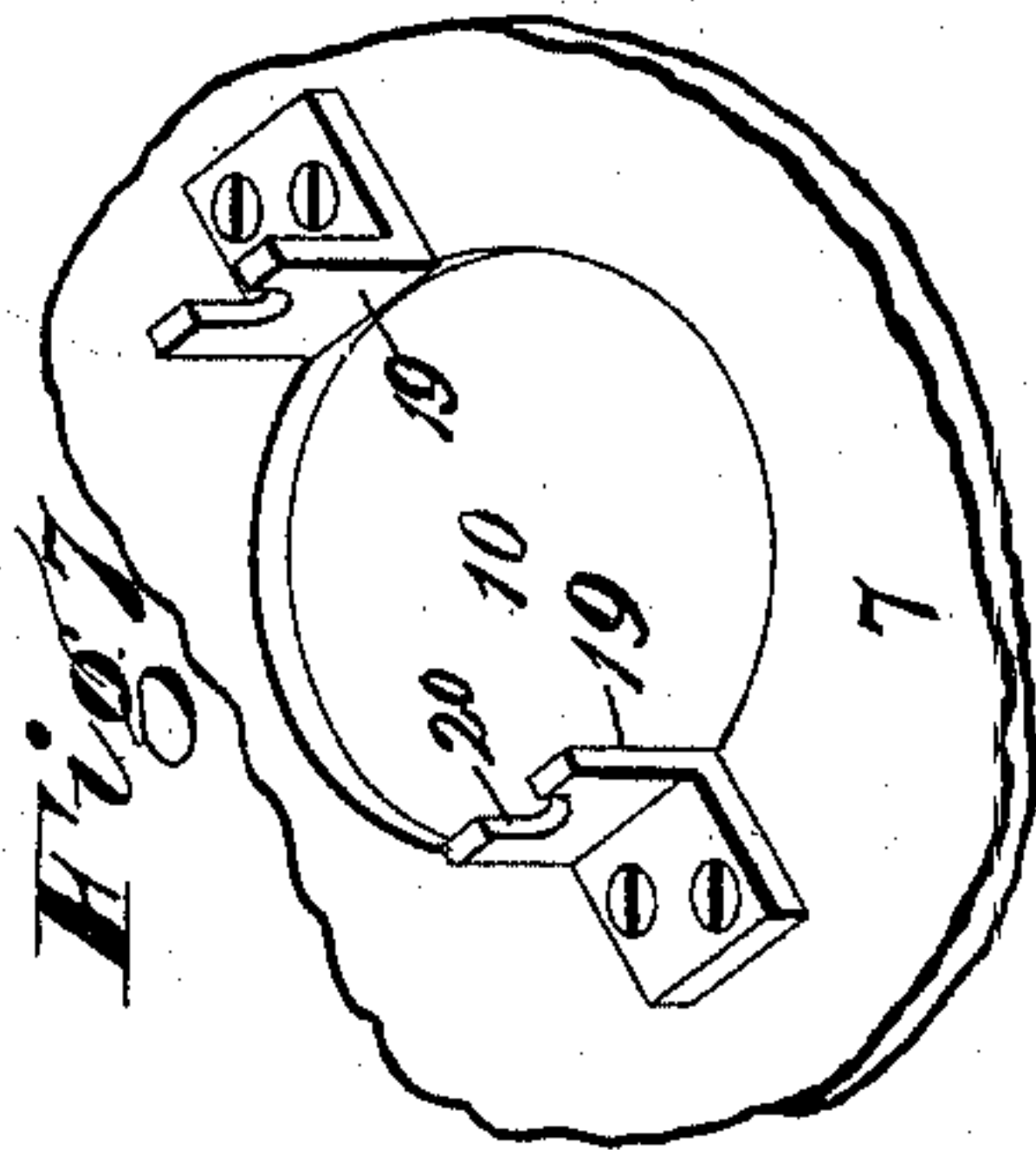


Fig. 7

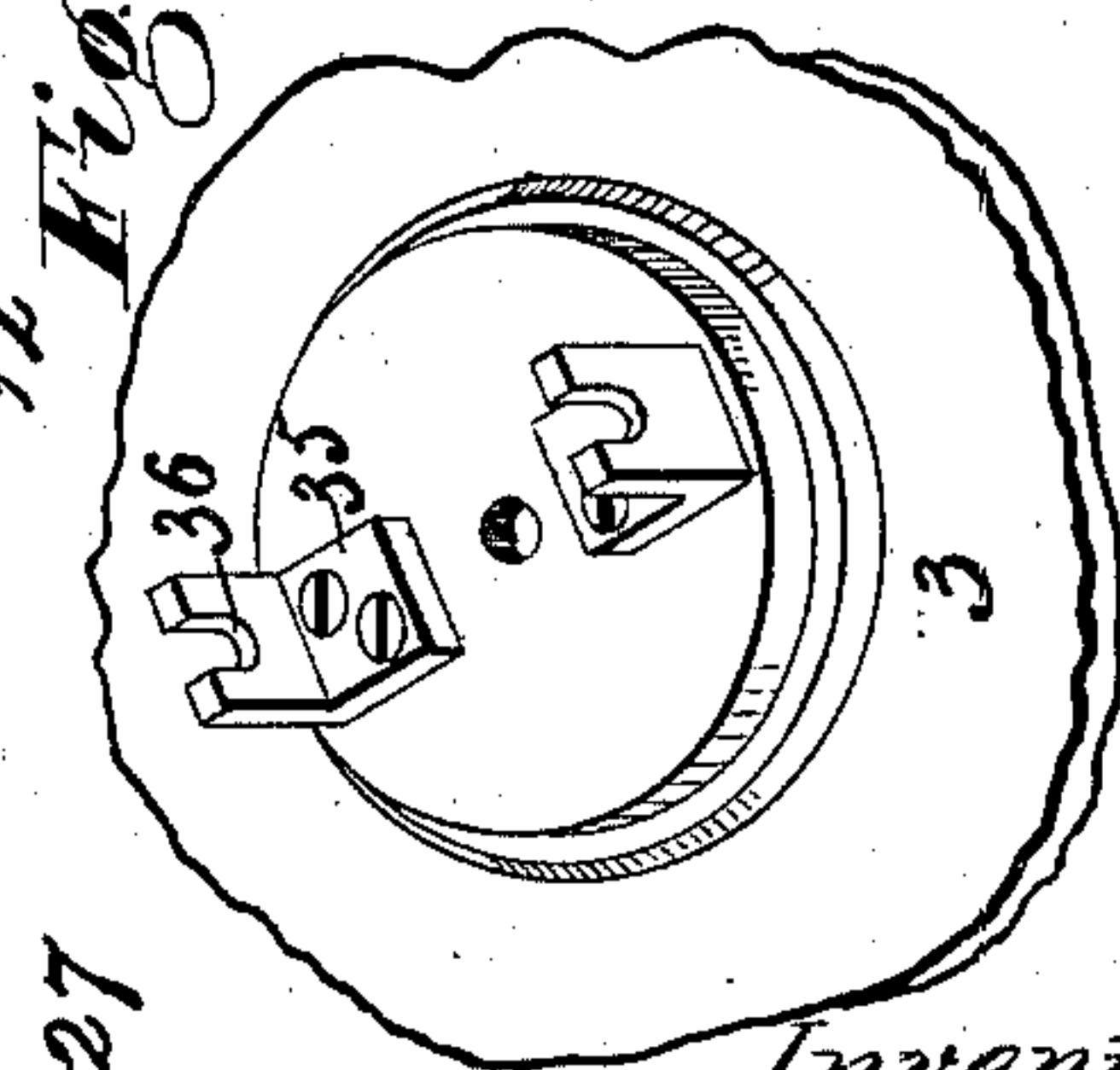


Fig. 4

Witnesses

E. C. Overholt.

A. H. Miller.

Inventor

Fredk. Reissmann

By

W. J. Fitzgerald & Co.

Attorneys.

UNITED STATES PATENT OFFICE.

FREDERICK REISSMANN, OF WEST POINT, NEW YORK.

FRAME CLAMP AND SUPPORT.

SPECIFICATION forming part of Letters Patent No. 604,160, dated May 17, 1898.

Application filed March 5, 1897. Serial No. 626,157. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK REISSMANN, a citizen of the United States, residing at West Point, in the county of Orange and State of New York, have invented certain new and useful Improvements in Frame Clamps and Supports; 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, as will be hereinafter fully described and claimed, relates to a holding device or clamp, and more particularly to an adjustable combination of miter-boxes designed to receive the corners of a frame, and while my invention is especially desirable and efficient for use in holding the parts of molding forming a picture-frame during the process of fitting and nailing or otherwise securing the same it will also be found a valuable addition to a shop or factory where frames of any character are produced.

The prime object of my invention is to provide a clamp of the character specified which may be easily and quickly adjusted to accommodate and reliably hold any size of frame, whether square or oblong in form.

A further object is to enable the operator to bring the requisite pressure to bear upon each corner of the frame, thus insuring a perfect angle for each corner.

Other advantages arising from the use of my invention will be apparent from the following specification, considered in connection with the accompanying drawings, in which—

Figure 1 is a top plan view of my invention, showing the adjusting-shafts at right angles to each other. Fig. 2 is a similar view showing said shafts in another position. Fig. 3 is a detail view of supporting-base for the miter-box. Fig. 4 is a detail view of part of the base-plate. Fig. 5 is a detail view of the miter-box. Fig. 6 is an edge of Fig. 1 on a slightly-enlarged scale. Fig. 7 is a detail view of part of the upper plate. Fig. 8 is a central section of Fig. 6, while Fig. 9 is a detail in section of an arm of the base-plate.

For convenience of reference the various details of my invention will be designated by figures, the same figure referring to a like part throughout the views.

Briefly stated, my invention consists in providing a base-plate or support and a movable plate mounted thereon, miter-boxes located upon the movable plate, and certain accessories for adjustably holding said boxes and bringing them to bear upon the corners of the frame to be secured.

In developing my adjustable clamp I provide the base-plate 1, which is circular in outline and is held in position, preferably, by suitable legs 2, though a single standard or base may be employed in lieu of the legs.

Centrally disposed in the base-plate 1 is the circular hub 3, while in the center of said hub is formed the downwardly-projecting collar 4, the office of which will be hereinafter set forth. Upon the upper side and on the outer rim of the base-plate is formed the annular track 5, while a similar track 6 is formed around the hub 3, both of said tracks being of same height. Upon the base 1 thus provided I mount the revoluble table 7, which is also circular, though of a slightly-greater diameter than the base, and is provided upon its lower side with the annular shoes 8 and 9, designed, respectively, to bear upon the tracks 5 and 6. A central aperture 10 is provided in the table of sufficient diameter to snugly receive the hub 3, thus providing that the upper surface of said hub and the upper surface of the table will be flush or on a line with each other. It will be observed that by thus providing the tracks 5 and 6 a minimum frictional contact will result, thus making it possible to easily rotate the table.

At diametrically opposite points upon the table I form the downwardly-inclined brackets 11 and 12, the outer surfaces of which are on a line with the peripheral face of the table. Arms 13 and 14 are attached, respectively, to the brackets 11 and 12 by suitable bolts 15 or otherwise. To the outer end of the arm 13 I secure the standards 16 by screws or bolts 17, while in like manner I attach to the arm 14 the standard 18. On a median line with said standards and diametrically opposite each other I secure to the edges of the opening 10 the bearing-seats 19, designed to receive in suitable recesses 20 the inner ends of the threaded shafts 21 and 22, the outer ends of which are supported in suitable bearings by the standards 16 and 18, each of

said shafts being provided at each end with journals 23.

It will be observed that the bearing-seats 19 consist of a plate of suitable metal bent to form a right angle, and it is so adjusted that the vertical member thereof will rest upon the edge of the hub. The lower end of the bracket 12 and the standard 18 extend downward sufficiently to provide bearing-seats 24 for the shaft 25. The outer end of said shaft is provided with the journal 26 and the operating-handle 27, while the inner end thereof passes through the bracket 12 and has keyed thereto the bevel-gear 28, designed to engage with the rack-bar 29, integrally formed with or otherwise attached to the under side of the edge of the base-plate 1, and by means of said rack-bar and gear the table may be rotated proportionably with the length of said bar.

Extending downward from opposite points upon the stationary base-plate 1 I form the ears 30, to which I bolt or otherwise secure the fixed arms 31 and 32, the outer ends of both being provided, respectively, with standards 33 and 34, while at points upon a central line with said standards I attach to the upper surface of the hub 3 by any suitable means the bearing-plates 35, which are provided with an open bearing-seat 36.

Mounted in suitable bearings in the standard 33 is the outer end of the threaded shaft 37, while the inner end thereof rests in the seat 36, provided in the bearing-plate 35, while in like manner the outer end of the shaft 38 is mounted in the standard 34, while the inner end of said shaft rests in a suitable seat provided in the contiguous bearing-plate 35.

By thus mounting the shafts 21, 22, 37, and 38 it will be observed that the two former are designed to move with the upper plate or table, while the other two remain stationary with the base-plate, enabling the former shafts to be moved independently of the others, the purpose of which will be made plain.

Upon each of the threaded shafts just referred to are operatively mounted, by means of a suitably-threaded aperture, the guide-blocks 39, four in number, one for each shaft, the same being substantially a rectangular oblong, the lower face of which is designed to reach downward into loose contact with the upper surface of the table, though having a capacity to move longitudinally and freely upon the shafts as they are rotated in either direction. Upon the guide-blocks thus provided I pivotally mount, by means of the bolt 40, the miter-boxes 41, which are perfectly trued to form a right angle or perfect corner. Said boxes are provided with the rim or flanges 42, which are integrally formed with the bottom, though they may be attached by suitable screws if deemed a cheaper construction. The meeting angle of the flanges 42 is left open, as indicated at 43, to permit a saw to be operated between the meeting ends of the molding forming the frame when

it is found necessary to more perfectly unite them.

Within the collar 4, formed in the hub 3, I secure in a fixed position the axle 44 by means of the threaded end thereof 45 and the locking-nut 46. The upper end of the axle 44 is provided with the journal 47, and upon said journal I rotatably mount the beveled gear 48.

Intermediate the upper surface of the hub 3 and the lower face of the gear 48 I dispose around the axle the spring 49, the tension of which is disposed upward against said gear. Seated in a threaded socket provided in the upper end of the journal 47 is the thumb-screw 50, designed to cover the upper edge of the hub 51, formed upon the gear 48, and when turned home in its socket is designed to hold said gear downward into engagement with all of the gears 52, keyed upon the inner ends of all the shafts.

To the outer end of the shaft 38 (though shaft 37 may be used, if preferred) I attach the operating crank or handle 53, by means of which not only the shaft to which it is attached may be rotated in either direction, but a like movement may be imparted to all of the other shafts through the mediation of the gears 48 and 52.

After thus constructing and assembling all of the several parts in their respective operative positions the operation of the complete machine may be stated to be as follows: When it is desired to hold a square frame, the several shafts are brought at right angles to each other by properly operating the crank or handle 27, which will cause the rotation of the gear 28, acting upon the rack-bar 29, thus bringing the shafts, through the rotation of the table, in the desired position. Before this operation, however, it will be understood that the thumb-screw 50 is to be released, which will, through the action of the spring 49, permit the gear 48 to rise upward out of engagement with all of the gears 52. After the shafts have been brought into the desired position the set-screw 50 is turned home in its seat, thus forcing the gear 48 into engagement with the gears 52, when the crank or handle 53 may be operated to turn the shaft 38 in either direction, according to what position may be desired for the miter-boxes, as said boxes may be simultaneously drawn outward or forced inward to the desired point. After the miter-boxes have thus been adjusted the pieces of molding forming the frame are assembled in such a manner that the ends thereof will rest in said boxes, when by a further rotation of the shaft 38, which, it will be understood, imparts a similar movement to the other shafts, each of the boxes are drawn inward, thus bringing a uniform pressure to bear upon the ends of the pieces forming the frame, when said ends may be further adjusted, if found necessary, by entering a saw between them and between the open corner 43 of the miter-boxes, when the

ends may be nailed by means of the recesses 43^a. By a proper manipulation of the handle 53 the miter-boxes are simultaneously withdrawn, permitting the frame to be re-
5 moved in a finished condition.

It will be readily apparent that when it is desired to operate upon an oblong frame the crank or handle 27 is operated, which will cause the shafts to form any preferred angle
10 found practicable for the purpose. By thus changing the location of the several shafts with respect to each other the capacity of my improved clamp is not in the slightest degree effected, as the adjustment of the miter-boxes
15 may be perfectly controlled in the manner above set forth.

It will be understood that the principal object in so forming the upper surface of the hub that it will be flush with the surface of
20 the table is to permit the several threaded shafts to be located and held in the same plane.

By providing the recesses or open bearing-seats 20 and 36 in the bearing-plates 19 and
25 35 the inner ends of the shafts may be freely lifted when it is desired to remove the several parts and place them in condition for shipment.

It will be seen from the foregoing specification that I have produced a holding or clamping device of a reliably efficient character which may be cheaply manufactured and assembled.

While I have described the preferred accessories to be employed in materializing my invention, it will be understood that the equivalents thereof are comprehended, and I do not therefore wish to be held strictly to the exact construction set forth.

40 Suitable apertures, it will be understood, may be provided to convey oil to the tracks 5 and 6 and to the other bearing-surfaces.

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

1. In a locking frame-clamp, a fixed supporting-plate, a revoluble plate mounted thereon, each of said plates having journal-bearings, threaded shafts having gears on
50 their inner ends journaled in said bearings, a central adjustable gear and means to throw it in and out of operative connection with the gears on the shafts, all combined as set forth.

2. As an improvement in locking frame-clamps, the combination of a vertical fixed
55 plate having a central hub and a circular

rack, a revoluble plate mounted thereon, threaded shafts journaled in said plate carrying miter-boxes, and operative means connected with the rack for revolving the revoluble table, all arranged as set forth. 60

3. As an improvement in locking-clamps for frames, the combination of a fixed support having suitable legs and a central upwardly-disposed hub, of a revoluble plate, 65 operatively mounted on said hub; threaded shafts secured to said support and movable plate in the manner specified and having upon their inner ends a beveled gear designed to mesh with a central gear, which latter communicates movement from one shaft to another, and means for automatically raising the central gear when the thumb-screw secured thereto is raised, substantially as specified and for the purpose set forth. 75

4. As an improvement in frame-holding clamps, the combination of a fixed plate, a movable plate mounted thereon, each plate being provided with a pair of suitably-mounted threaded shafts, miter-boxes operatively connected with said shafts and adjustable thereon, gears secured to the inner ends of said shafts, a vertically-adjustable central gear meshing with each shaft-gear and means for operating one of said threaded shafts, all arranged as set forth. 85

5. In a locking frame-clamp, a fixed supporting-plate having a vertical central hub provided with a downwardly-extending collar, a revoluble plate having a central aperture fitting over said hub, an axle extending through said collar and having an adjustable gear on its upper part and a spiral spring around its central portion and a thumb-screw whereby the gear may be thrown into and out of operative condition and means to operate said gear and screw-shafts with miter-boxes and gears cooperating with said gear all combined as set forth. 95

6. In a locking-frame, a fixed supporting-plate, a revoluble plate mounted thereon, shafts carrying miter-boxes and having gears on their inner ends, a central adjustable gear and devices whereby it is thrown into and out of operative connection with the inner end gears, all combined as set forth. 105

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

FREDERICK REISSMANN.

Witnesses:

WILLIAM C. WOODS,
CHARLES SEHRÖGLER.