

No. 832,369.

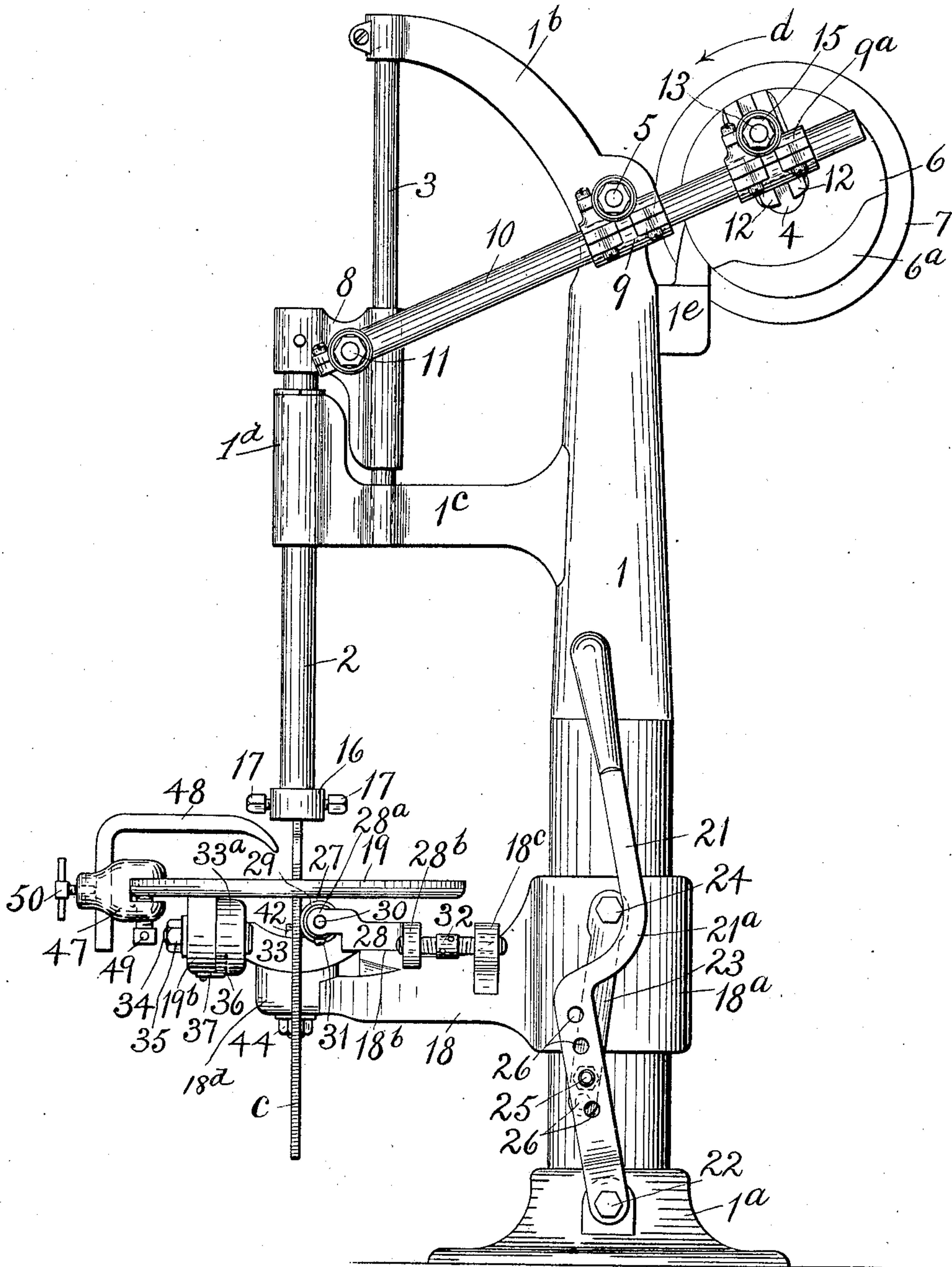
PATENTED OCT. 2, 1906.

C. J. FANCHER.

MACHINE FOR OPERATING ABRADING OR CUTTING TOOLS.

APPLICATION FILED APR. 22, 1904.

3 SHEETS—SHEET 1.



Witnesses

L. Alcutt.
A. L. Stevens.

FIG. 1.

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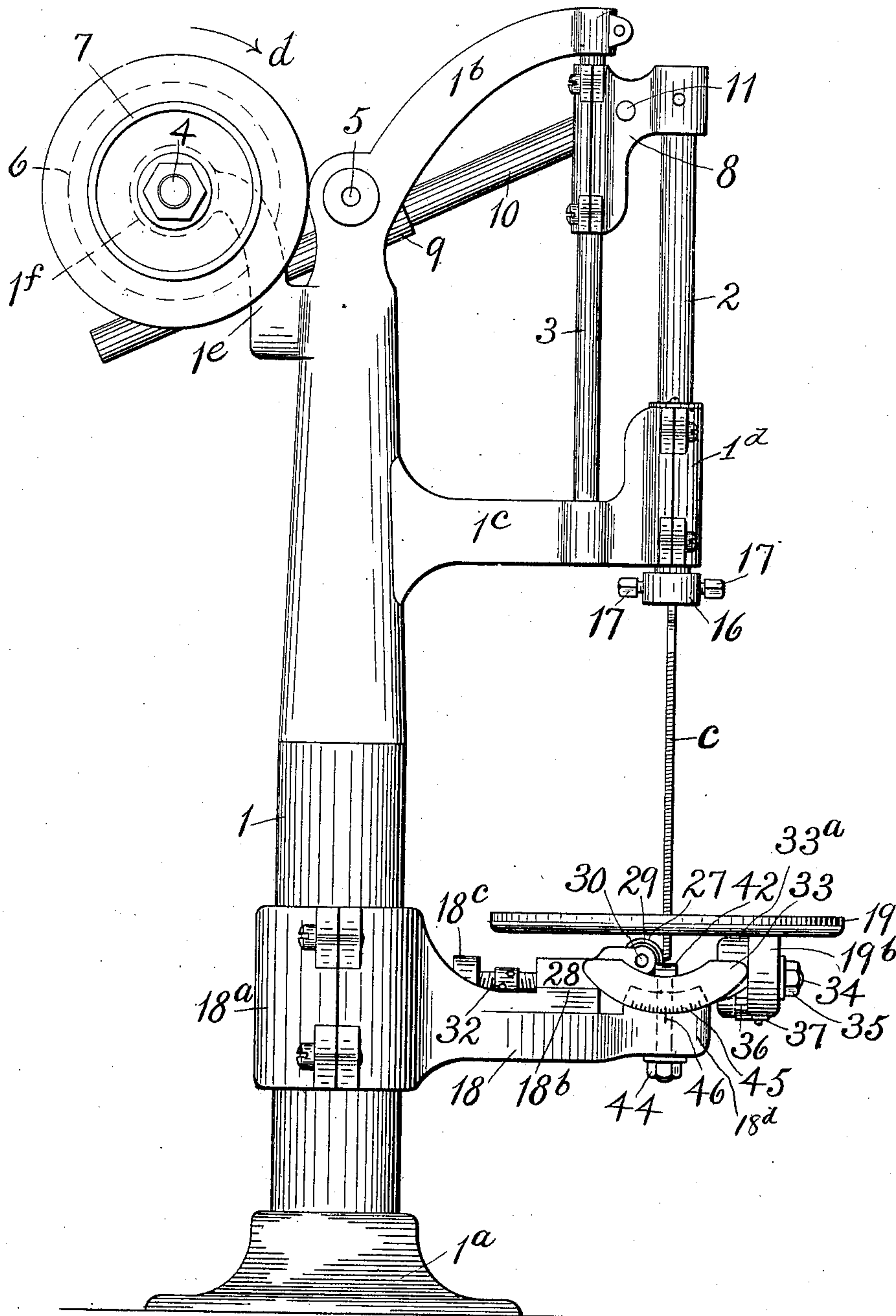


FIG. 2

Witnesses

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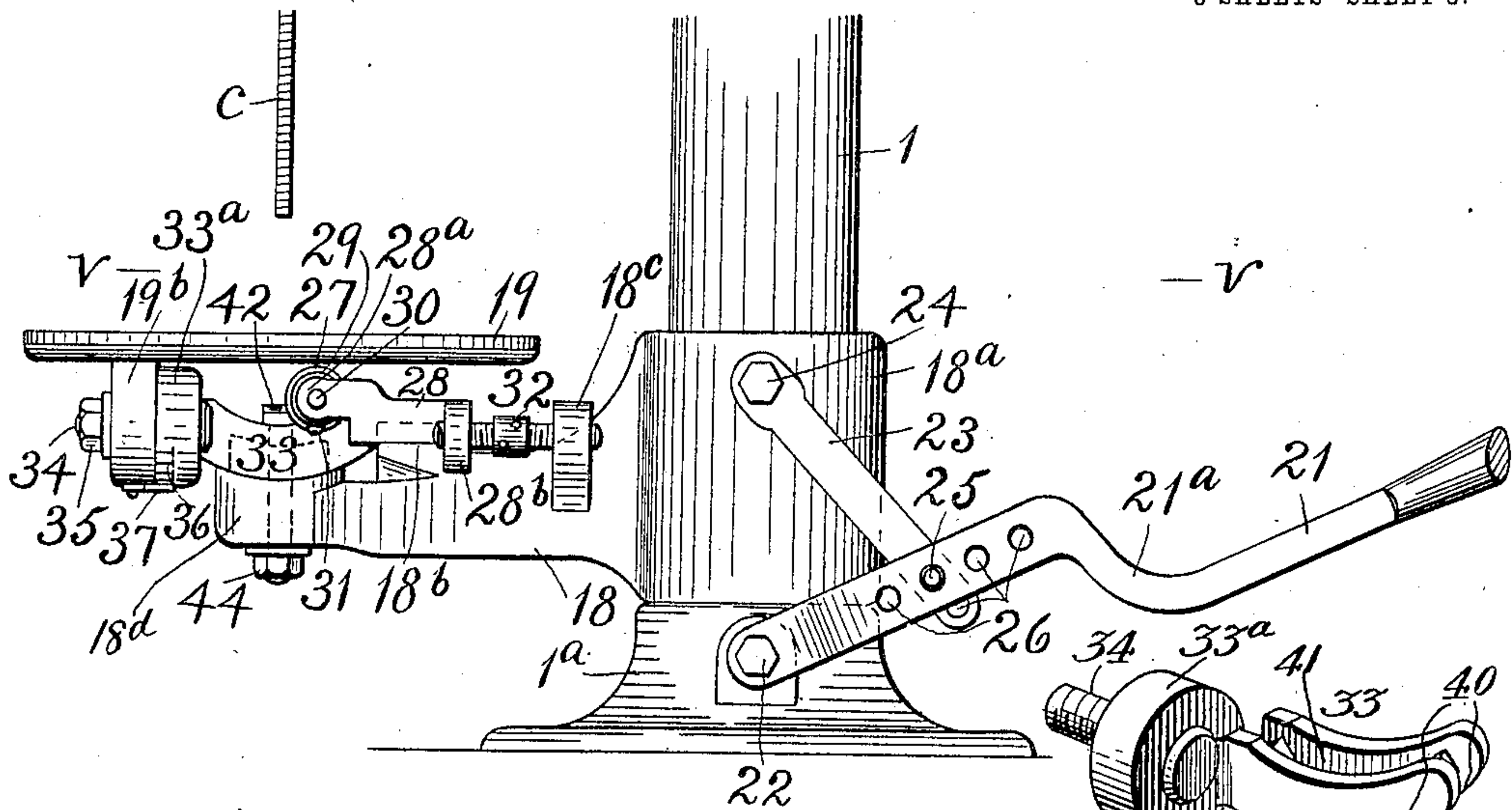


FIG. 3.

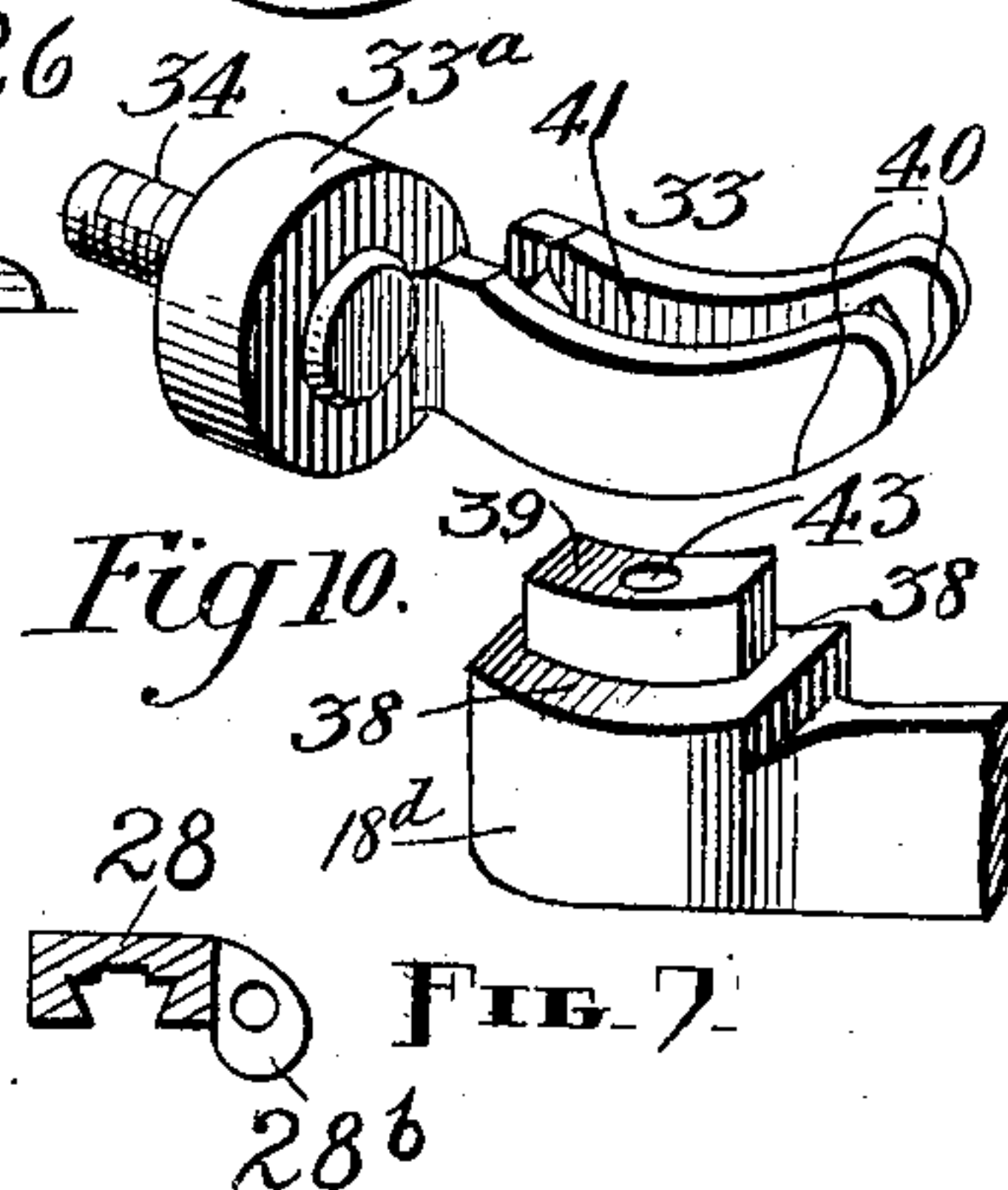


Fig. 10.

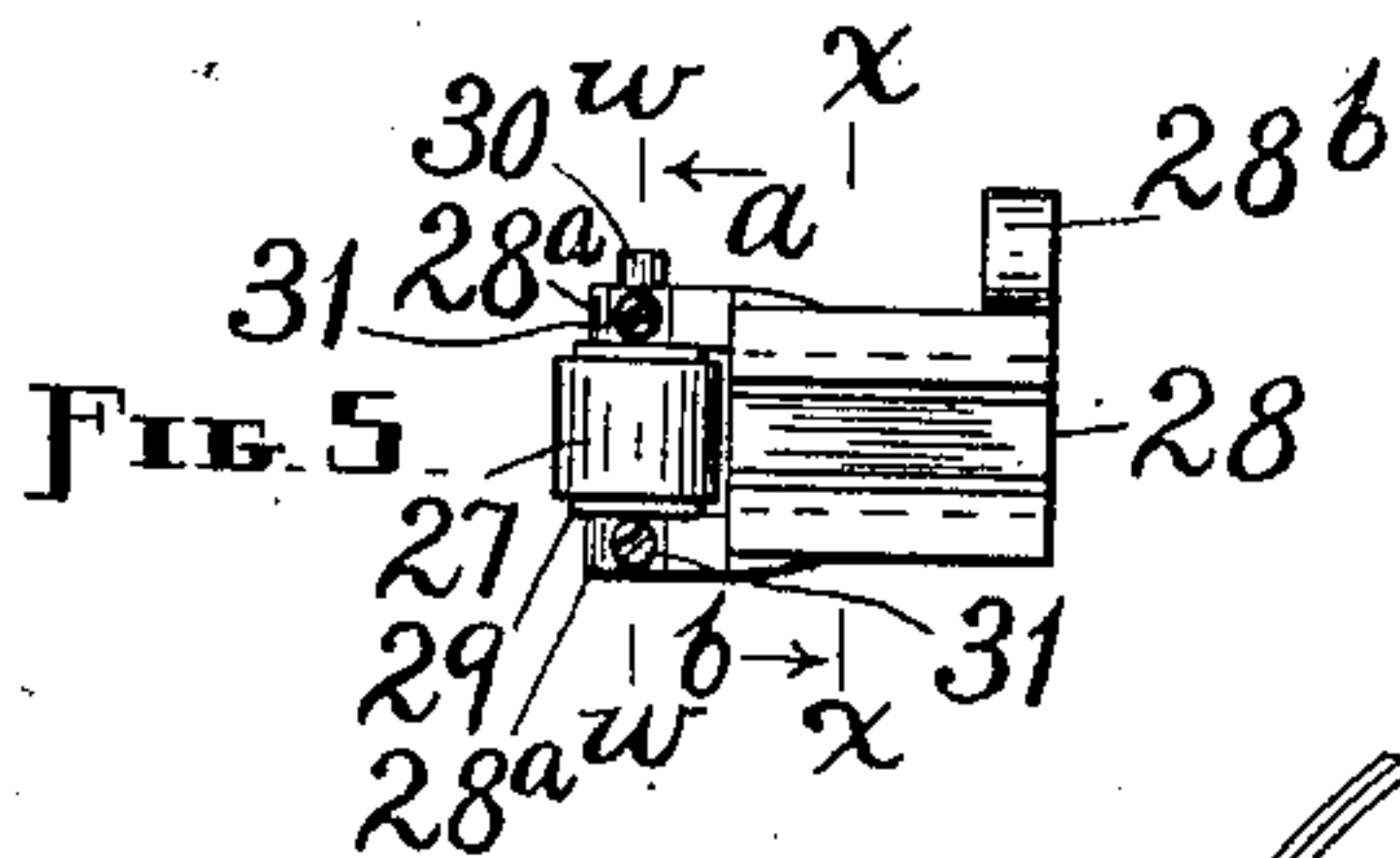


FIG. 5.

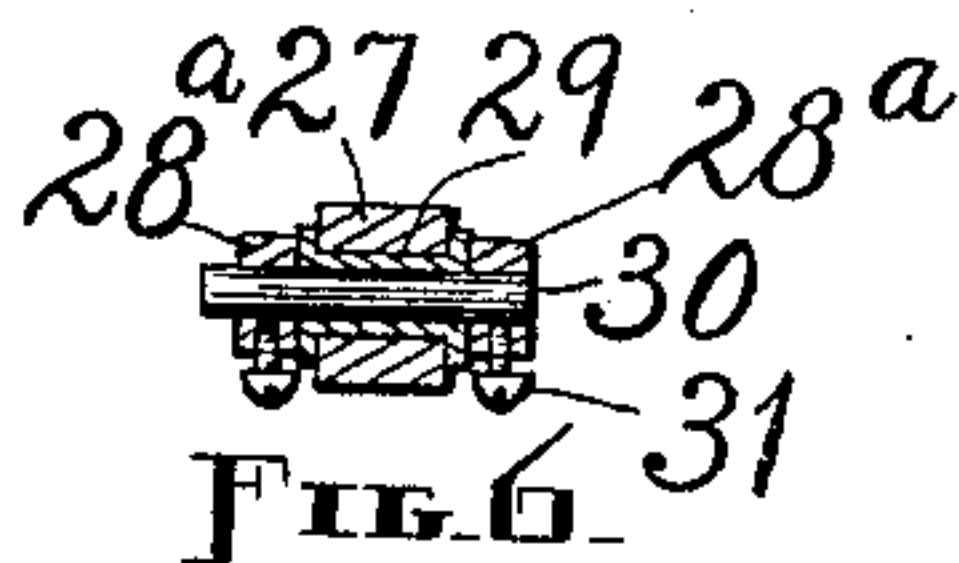


FIG. 6.

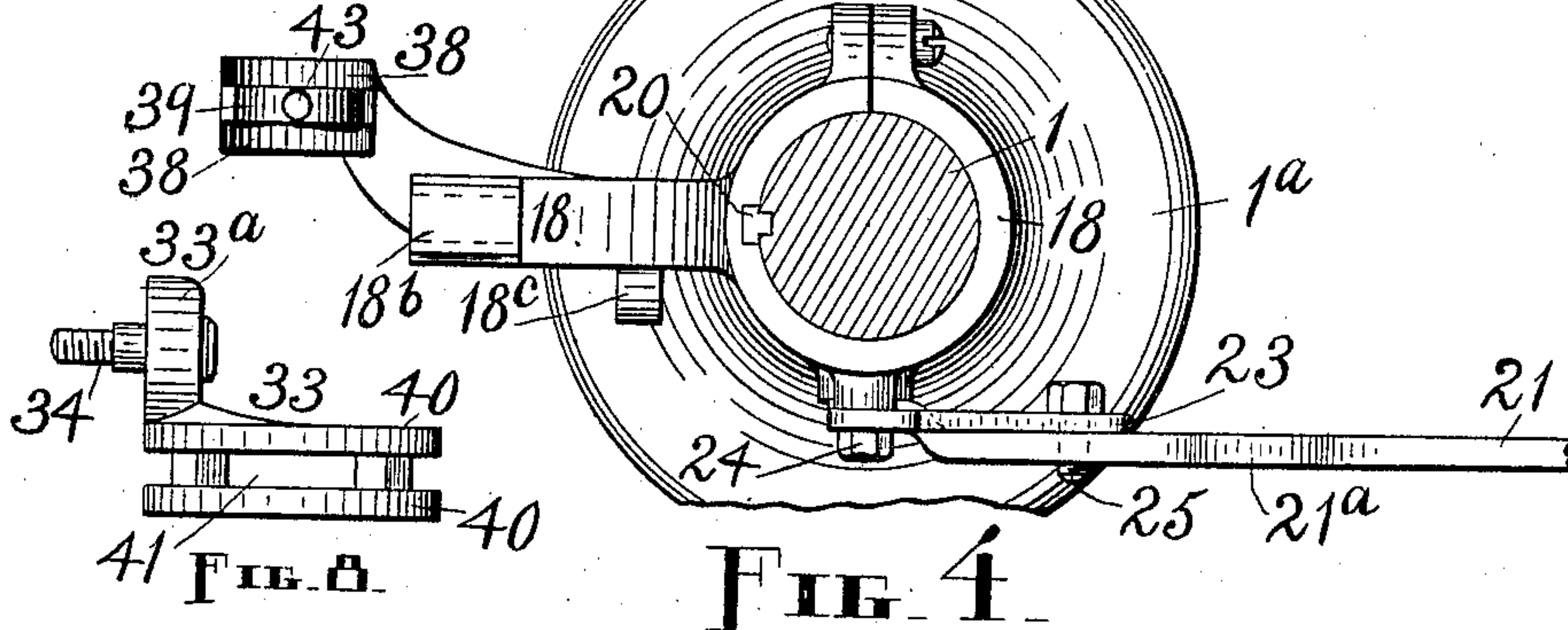


FIG. 4.

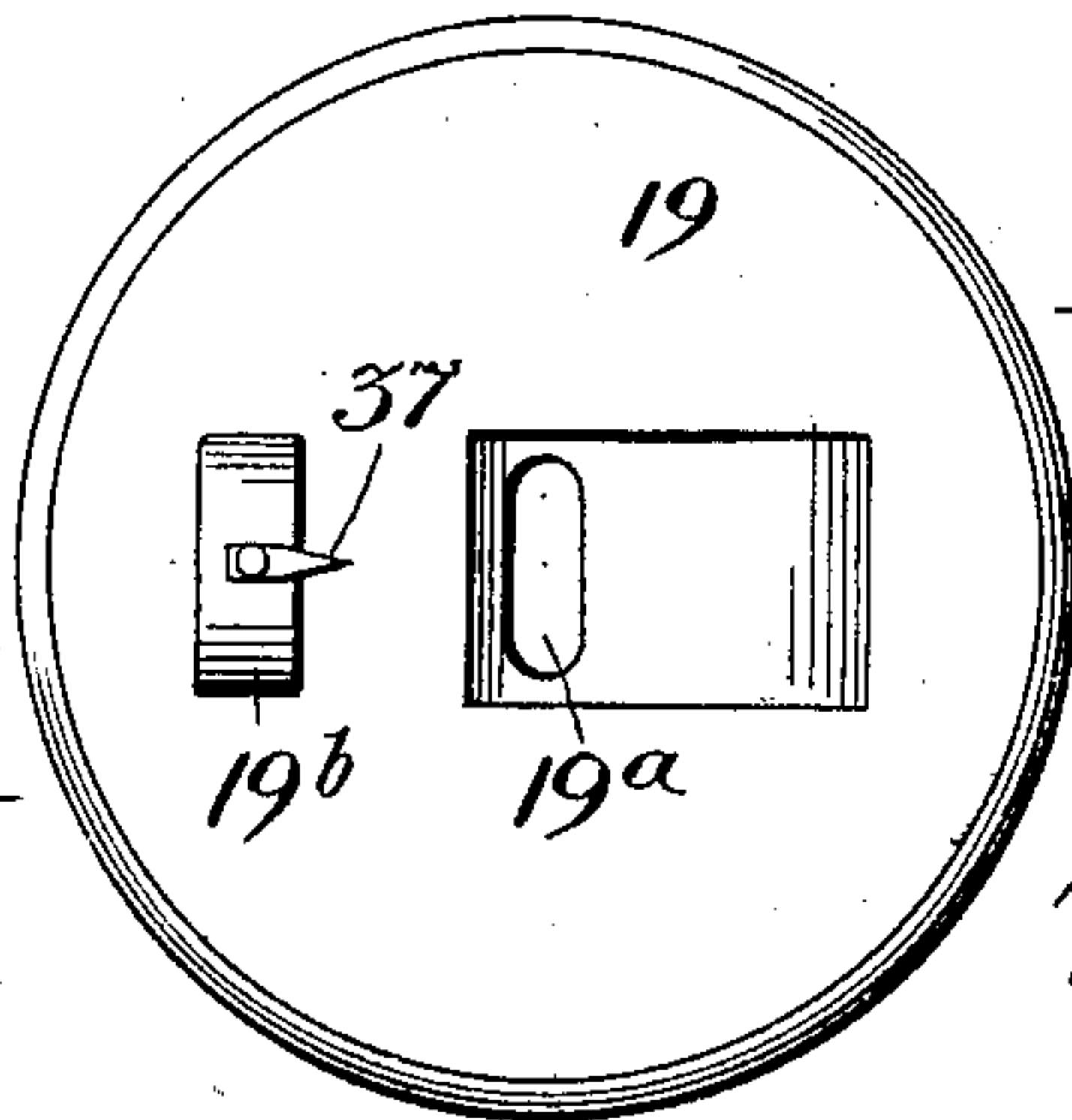


Fig. 9.

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UNITED STATES PATENT OFFICE.

CHARLES J. FANCHER, OF WEST GRANBY, CONNECTICUT, ASSIGNOR TO THE
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MACHINE FOR OPERATING ABRADING OR CUTTING TOOLS.

No. 832,369.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed April 22, 1904. Serial No. 204,306.

To all whom it may concern:

Be it known that I, CHARLES J. FANCHER, a citizen of the United States of America, residing at West Granby, in the county of Hartford and State of Connecticut, have invented a new and useful Machine for Operating Abrading or Cutting Tools, of which the following is a specification.

My invention relates to improvements in machines especially adapted for operating files and other tools of the same general character, and more particularly to the worktable and associated mechanism whereby the same may be readily and conveniently adjusted and held in position.

The objects of my invention are to provide an efficient mechanism by which the several parts may be moved and adjusted and to provide a simple and efficient worktable and to provide a mechanism embodying the advantages herein set out.

I accomplish the objects of my invention by the construction shown in the accompanying drawings, in which like letters of reference indicate like parts.

Figure 1 is a side elevation of a complete machine. Fig. 2 is a view as seen from the rear of Fig. 1, the relative location of the driving mechanism being, however, different. Fig. 3 is a side view of the lower portion of the machine, showing the table supported in its lowered position. Fig. 4 is a plan view of the lower portion of the machine with the standard in section, taken on lines *vv*, Fig. 3, showing the table-support and its projecting arm, also the lever for elevating and lowering the table-support. Fig. 5 is a bottom view of the tool-guide. Fig. 6 is a transverse sectional view taken on lines *ww* of Fig. 5 looking in the direction indicated by the arrow *a*. Fig. 7 is a transverse section taken on lines *xx* of Fig. 5 as seen looking in the direction of the arrow *b*. Fig. 8 is a bottom view of the table-carrier. Fig. 9 is a bottom view of the table; and Fig. 10 is a perspective view of the table-carrier member and the member by which said table-carrier is supported, said two parts being separated to more clearly show their relation.

The construction and operation of the machine will be readily understood on reference to the drawings, in connection with the explanation contained herein.

In the construction of the machine as shown I provide a substantial standard 1, having a base 1^a, adapted to be fastened to a bench or other suitable support, and these carry all of the other members of the machine. Springing from the head of the standard 1 is an upwardly and forwardly extending curved arm 1^b and below this a forwardly-extending arm 1^c, terminating in a sleeve or bearing 1^d for the ram 2. A guide-rod 3 is mounted between the aforesaid arms. The standard is further provided with a bracket 1^e, which forms a bearing 1^f for the shaft 4, and with a stud 5. The shaft 4 carries a driving-disk 6 and a pulley 7. Connected with the ram 2 is a slide 8, mounted to move on the rod 3. A fulcrum-bearing 9 for the driving-rod 10 is mounted on the stud 5. The head of the rod 10 is pivoted at 11 to the slide 8, and the tail of said rod is operatively connected with the disk 6 by means of a bearing 9^a, adjustably held to said disk by means of the flanges 12, bolt 13, and nut 15. 6^a is a counterweighted part of the disk 6. The arrow *d* indicates the direction of rotation of the disk 6.

As the driving mechanism forms the subject-matter of a divisional application filed April 10, 1905, and is not claimed herein, it is not deemed necessary to herein further describe this portion of the machine.

A movable sleeve 18^a is mounted on the standard and keyed thereto at 20, and an arm or support 18 projects therefrom, upon which arm the table supporting and adjusting mechanism is mounted.

The mechanism for raising and lowering the table-support comprises a bent lever 21, pivoted at 22 to the base 1^a, and a link 23, pivoted at one end upon the bent lever at a point 25 below the bend and at its opposite end pivoted on the sleeve 18^a at 24. The bent portion of the lever forms an offset 21^a, and when the lever is turned to a position to carry the table-support upwardly the lever is moved to a position where it is in contact with a stop, comprising in this instance the head of the pivot 24, thus carrying the pivotal point 25 beyond the center of gravity and firmly locking the mechanism in place, as shown in Fig. 1.

For the purposes of adjustment the lever is provided with a series of openings 26, so that

the pivotal point of connection between the lever and link may be changed, and thus while at all times the table-support may be moved downwardly to the extreme limit its point of permanent elevation may be varied
5 by changing the pivotal point of connection between the link and the lever.

The machine is shown as provided with a file *c* in the tool-holding member 2. I also
10 show a roller 27, journaled beneath the work-table 19 in a carriage 28. This serves as a guide and abutment for the file. The roller 27 is preferably made of rawhide and mounted on a spool 29, loose on a spindle 30, the
15 ends of which latter are received in openings in arms 28^a, projecting from the front of the carriage 28. Set-screws 31, engaging the sides of threaded openings in the bottoms of the arms 28^a, are adapted to engage and hold
20 in place the spindle 30. When the roller 27 becomes worn, it may be removed by loosening the set-screws 31 and withdrawing the spindle, a new roller being inserted in place of the old.

The carriage 28 is slidingly mounted on a horizontal platform 18^b, formed on the support 18, to receive said carriage. A right and left hand screw 32, having its terminals in threaded engagement with lugs 28^b and
30 18^c on the carriage 28 and support 18, respectively, is the medium by which the carriage is moved on the platform 18^b for the purpose of properly positioning the roller 27 relative to the tool *c*, a change in position of said
35 roller being required to accommodate a file of greater or less thickness.

The table 19 has, besides the opening 19^a for the passage of a tool, a perforated lug 19^b, by means of which said table is mounted and
40 secured to a similar lug 33^a, the latter being mounted upon a member 33. The two lugs referred to are secured together by a centrally-arranged bolt 34, which bolt serves as a pivot upon which the table is tilted later-
45 ally to the desired angle, the same being held in fixed position by tightening the nut 35 upon the bolt-forming pivot. In some instances it is desirable that these lugs be of the same circumferential dimensions and that
50 indicating means be provided upon the adjacent peripheries, so that the degree or angle to which the table is tilted may be determined. Such means consists in this case of a scale 36 and pointer 37. The arm or support
55 18 is inclined downwardly at its front portion and is provided at this terminal 18^d with curved or segmental seats 38 and a centrally-arranged and upwardly-projecting segmental rib 39. The member 33 is slotted at 41 be-
60 tween its ends, the opening being adapted to receive and fit with a sliding fit the upwardly-projecting segmental rib 39, while flanges 40 on the bottom of said member bear on the seats 38. The shapes of the member 33 and
65 the member upon which it rests are shown

more clearly in Fig. 10, in which in perspective I show the two parts separated. A bolt 42 passes through a vertically-arranged opening 43 in the part 18^d, which opening terminates at the top through the center of the rib 39, and a nut 44, having threaded connection with the bolt below said support, serves to rigidly lock the members 18^d and 33 together. It will readily be seen that by loosening the nut the carrier or member 33 may be moved
75 upon its seats so as to tilt the table forward or backward to such extent as may be necessary, and when the table has been thus tilted the nut is tightened and the table thus locked in position. One face of the member 33 and
80 the adjacent face of the member 18^d are made flush, and a scale 45 may be marked on one of said faces and a pointer 46 provided on the other, so that the angle of inclination of the table may be readily read.
85

In cases where a work-holder is needed I provide a bifurcated clamp 47 and an angular rod 48. The lips of the clamp 47 are arranged to receive any portion of the edge of the table 19, to which said clamp can be easily
90 attached by means of a set-screw 49. The vertical portion of the rod 48 passes through an opening in the tail of the clamp 47 and is held in position by a set-screw 50, entering said tail from the front. The free end of the
95 horizontal portion of the rod 48 is preferably bent or curved downward, the end portion being arranged to bear against the material on the table. The work-holder may be adjusted to bear upon any piece of material,
100 and the principal office of the holder is to prevent the material from being lifted from the table by the upward motion of the file.

Having therefore described my invention, what I claim, and desire to secure by Letters
105 Patent, is—

1. The combination, in mechanism of the class specified, of a standard, a table-support mounted thereon, said support being capable of adjustment, means to depress and elevate
110 said support and to positively limit its upward motion, such means comprising a lever pivotally mounted adjacent to the base of the standard, a link pivoted at one end to the support and at the other end to the le-
115 ver above its pivotal point, and a stop to limit further motion of the pivotal point between the lever and link when the link has passed the center of gravity.

2. The combination, in mechanism of the
120 class specified, with a standard and a table-support adapted to slide on the standard, a lever pivotally mounted at a point below the table-support, a link in pivotal engagement with the lever and in pivotal engagement
125 with the table-support, and a stop to limit the movement of the members, said lever being provided with an offset above the pivotal point of engagement with the link, which lever engages the stop at a point above the off-
130

set when the pivotal point of connection between the link and lever has passed the center of gravity.

3. The combination, in mechanism of the class specified, of a standard, a table-support slidably mounted on the standard, a lever having one end pivotally mounted on the standard and provided with a plurality of openings, a link having one end pivotally connected with said lever at one of said openings and having its opposite end pivotally connected with the table-support, the pivotal point of connection of the link with the table-support and the pivotal point of connection of the lever with the standard being in substantially vertical alinement, and a stop to limit the movement of the members after the pivotal point between the lever and link is past the vertical line.

4. The combination, in mechanism of the class specified, with a table and a support therefore provided with a platform, of a tool-guide comprising a carriage mounted on said platform and having arms, a roller mounted between said arms, said carriage and roller being located below said table, and means to reciprocate the carriage.

5. The combination, in mechanism of the class specified, with a table-support provided with a platform, of a tool-guide comprising a carriage mounted on said platform, and a right and left hand screw in engagement at one terminal with said support and at the other terminal with said carriage, for reciprocating the latter on the platform.

6. The combination, in mechanism of the class specified, of a standard, an adjustable table-support comprising an adjustable sleeve mounted on said standard and having an arm projecting therefrom and having its upper face at its end portion 18^d provided with two concave arcuate seats and an upwardly-projecting rib therebetween, with a bolt-receiving opening passing vertically through the body of said member 18^d and through the rib, a member 33 slotted between its ends and shaped with its lower faces to rest upon the upper faces of the rib-provided member, means to connect the table with the member 33, and a bolt to lock the members 33 and 18^d together.

7. The combination, in a filing-machine of the class specified, of a suitable supporting-frame, a member 18 on said frame, said member being provided at one terminal 18^d, with concave arcuate upper faces and an upwardly-projecting rib therebetween, a bolt-receiving opening passing through said terminal and through said rib, a member 33 having its central portion slotted for the reception of said rib with its lower faces adapted to rest within the concave upper faces of the part 18^d, a member 33^a mounted on said member 33, a table provided with a member 19^b, the latter being secured to the member 33^a, the members 33 and 18^d having one of their faces flush each with the other, and indicating means on said flush-faces whereby the degree of adjustment from a vertical line may be measured and read.

8. The combination, in a filing-machine of the class specified, comprising a suitable frame, a table-support adjustably mounted on the standard of said frame, an arm projecting from said table-support provided at its end portion with a member 18^d, the upper faces of the member 18^d being concave, a member 33 mounted on said member 18^d in adjustable relation thereto, a member 33^a mounted on one end portion of the member 33, a table provided with a lug 19^b projecting from its lower face, and locking means between the member 33^a and the lug on the lower face of the table, whereby said table may be tilted in any direction.

9. The combination, in a machine of the class specified, with a work-table, of a work-holder comprising a bifurcated clamp adapted to be attached to said table at any point on its periphery, means for such attachment, an angular rod capable of vertical and rotary adjustment fitted in said clamp and adapted to extend over the work, and means to hold said rod after adjustment.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES J. FANCHER.

Witnesses:

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