

No. 750,403.

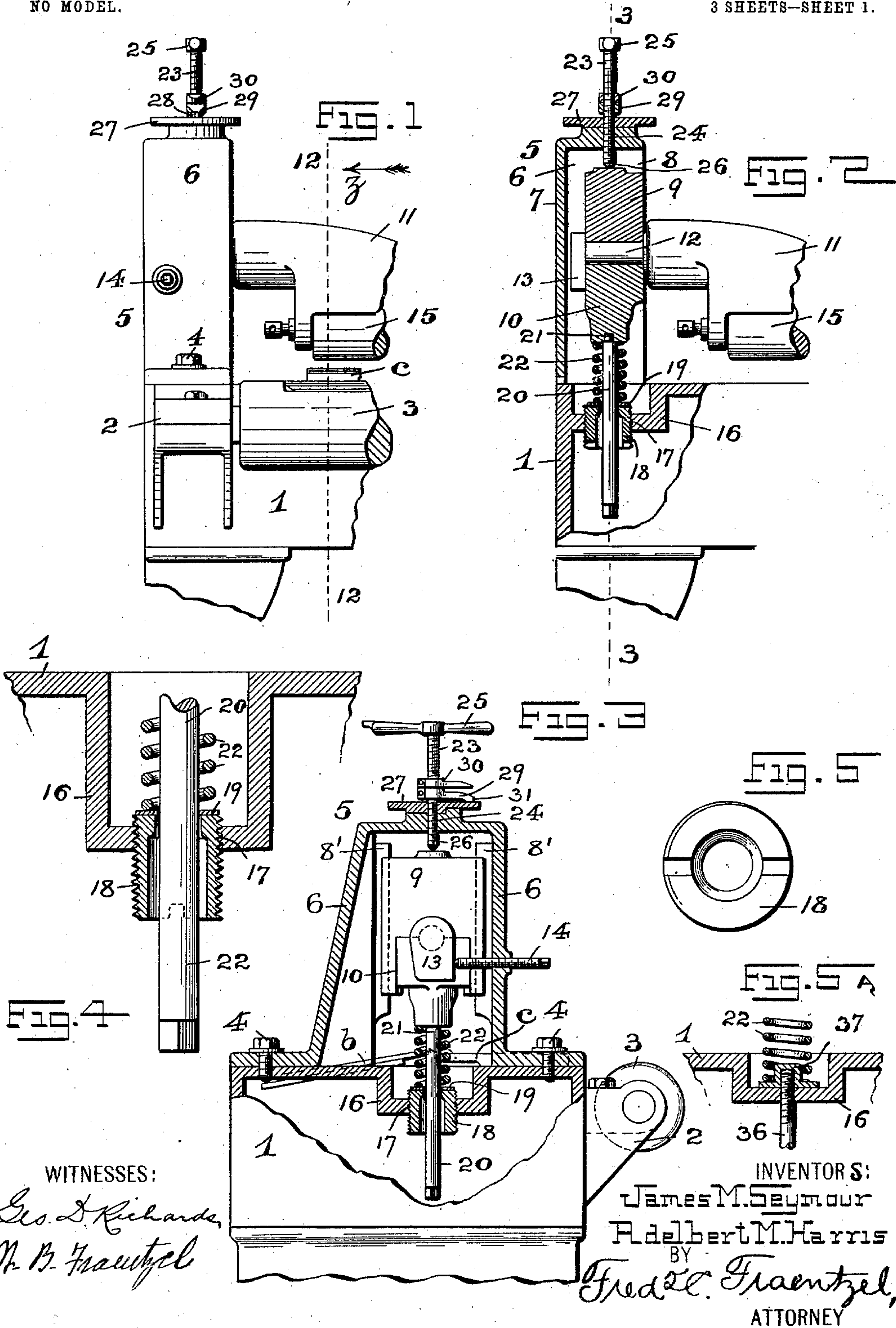
PATENTED JAN. 26, 1904.

J. M. SEYMOUR & A. M. HARRIS.
LEATHER SPLITTING MACHINE.

APPLICATION FILED MAY 3, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:

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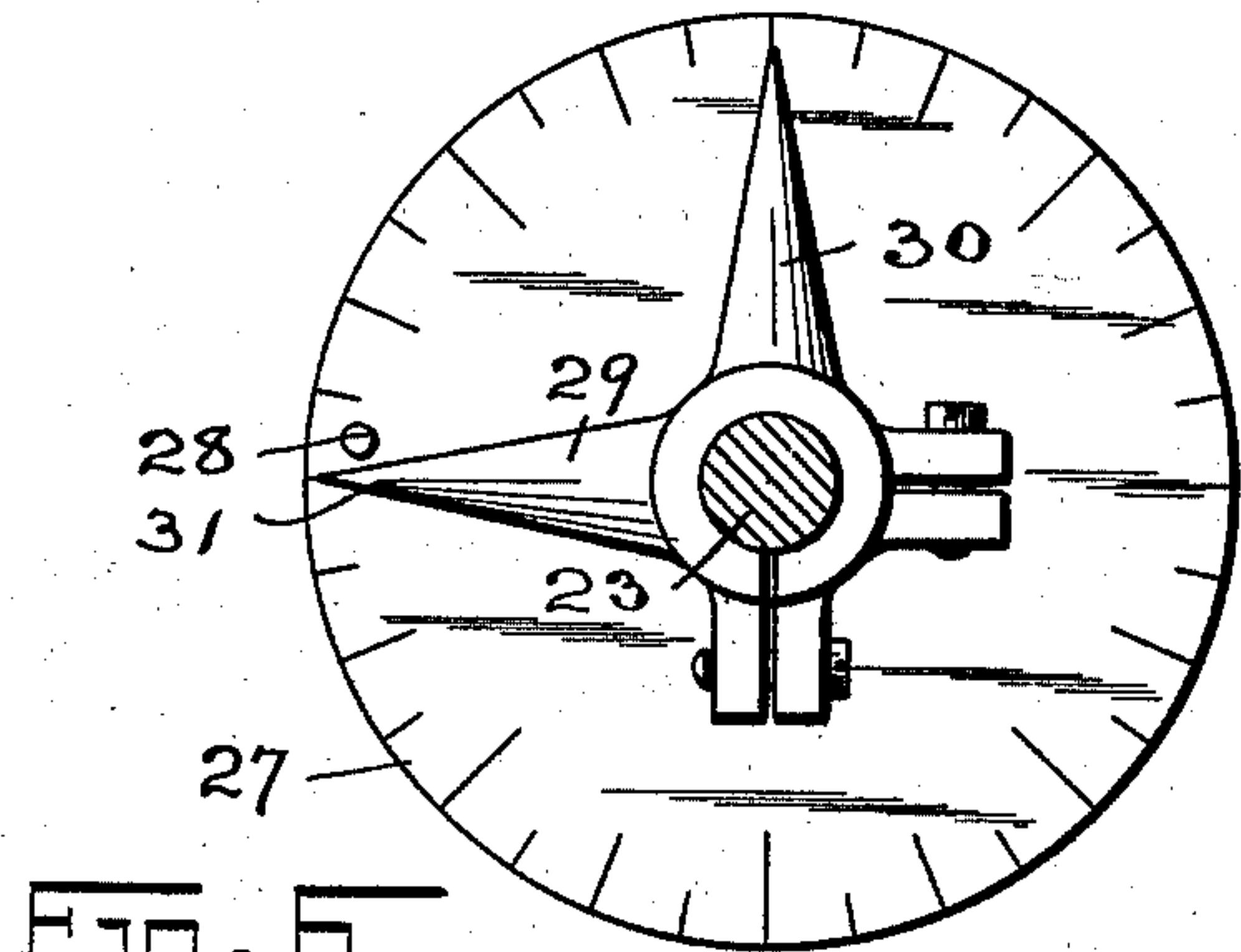


FIG. 6

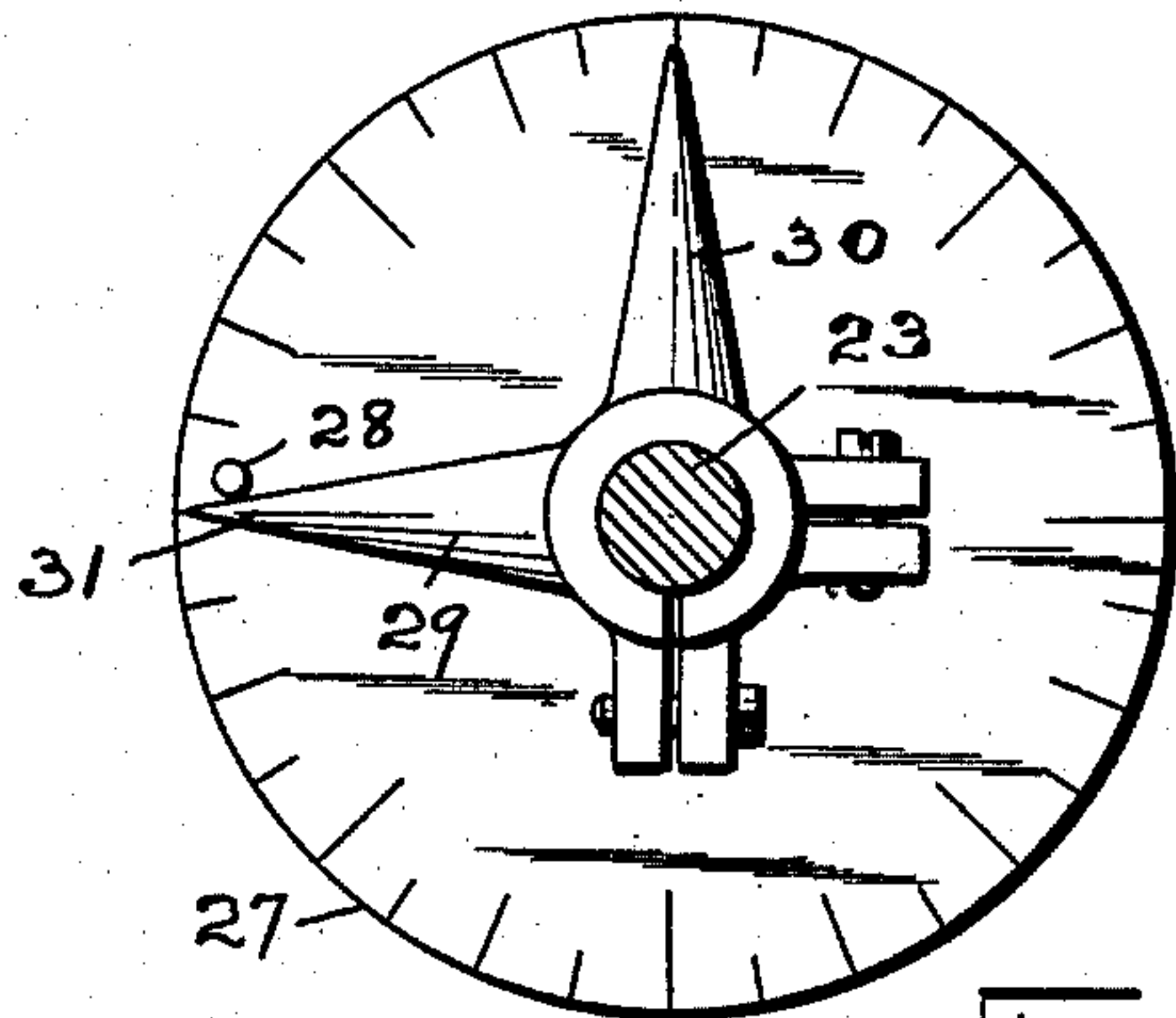


FIG. 7

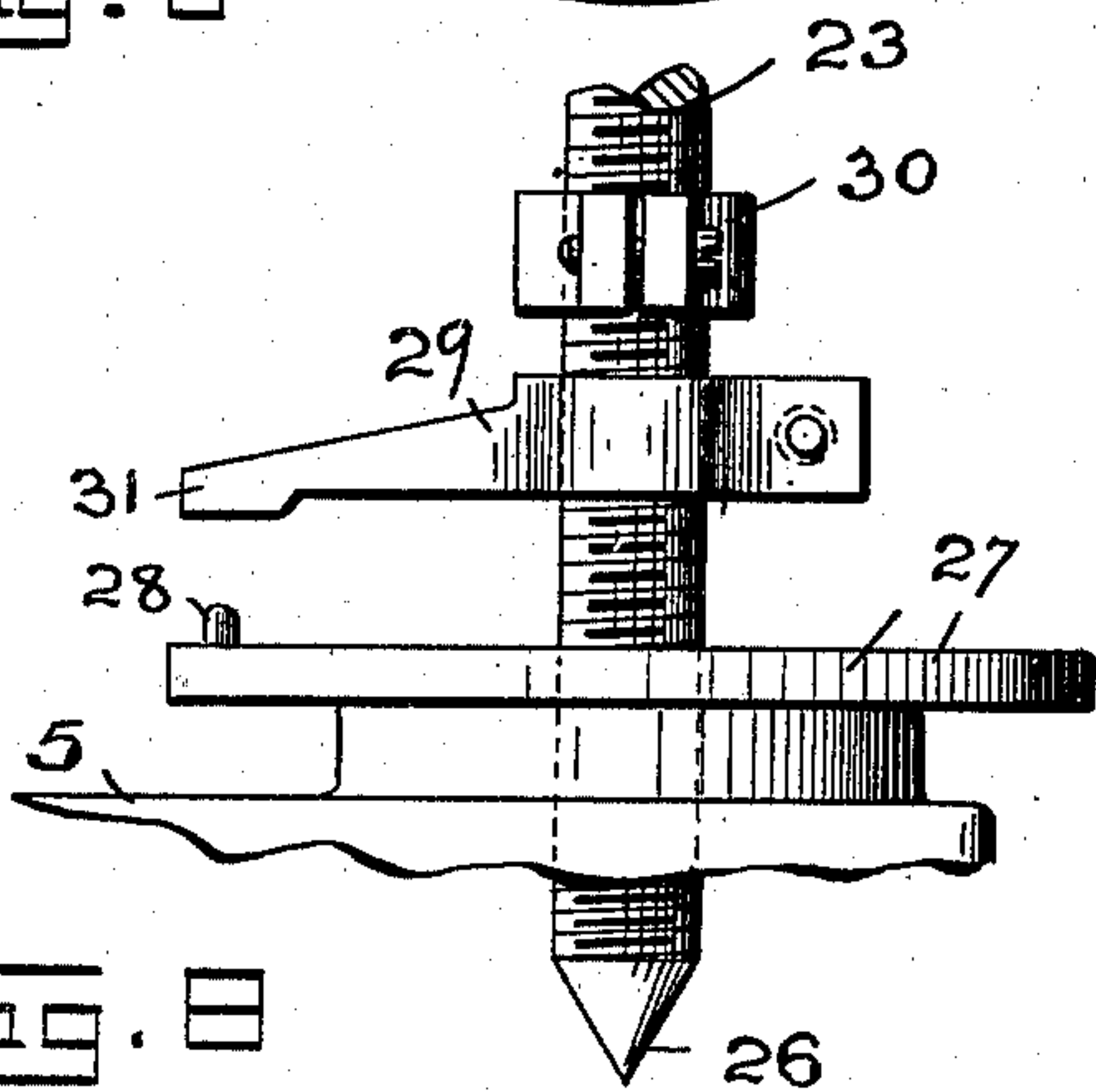


FIG. 8

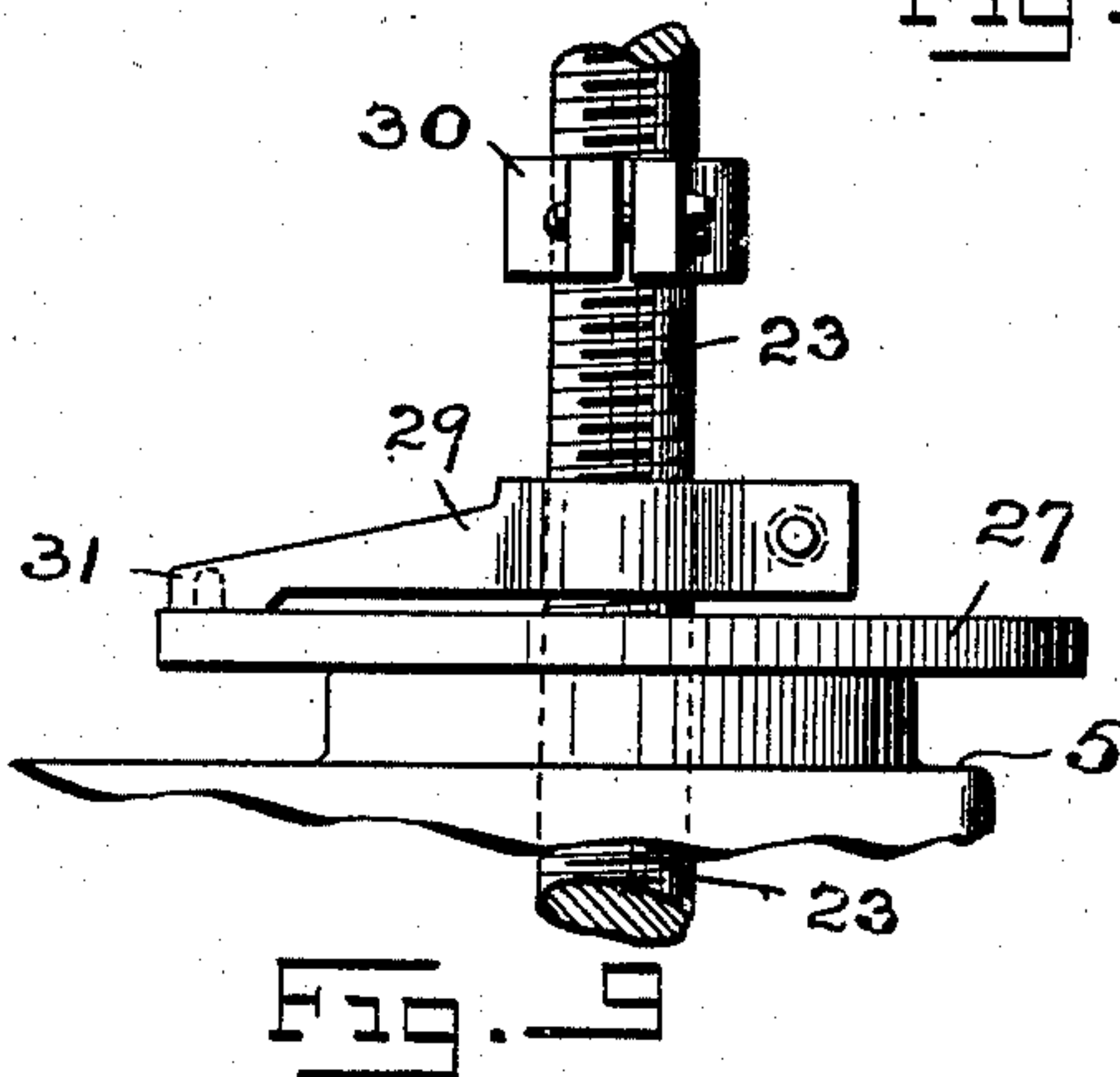


FIG. 9

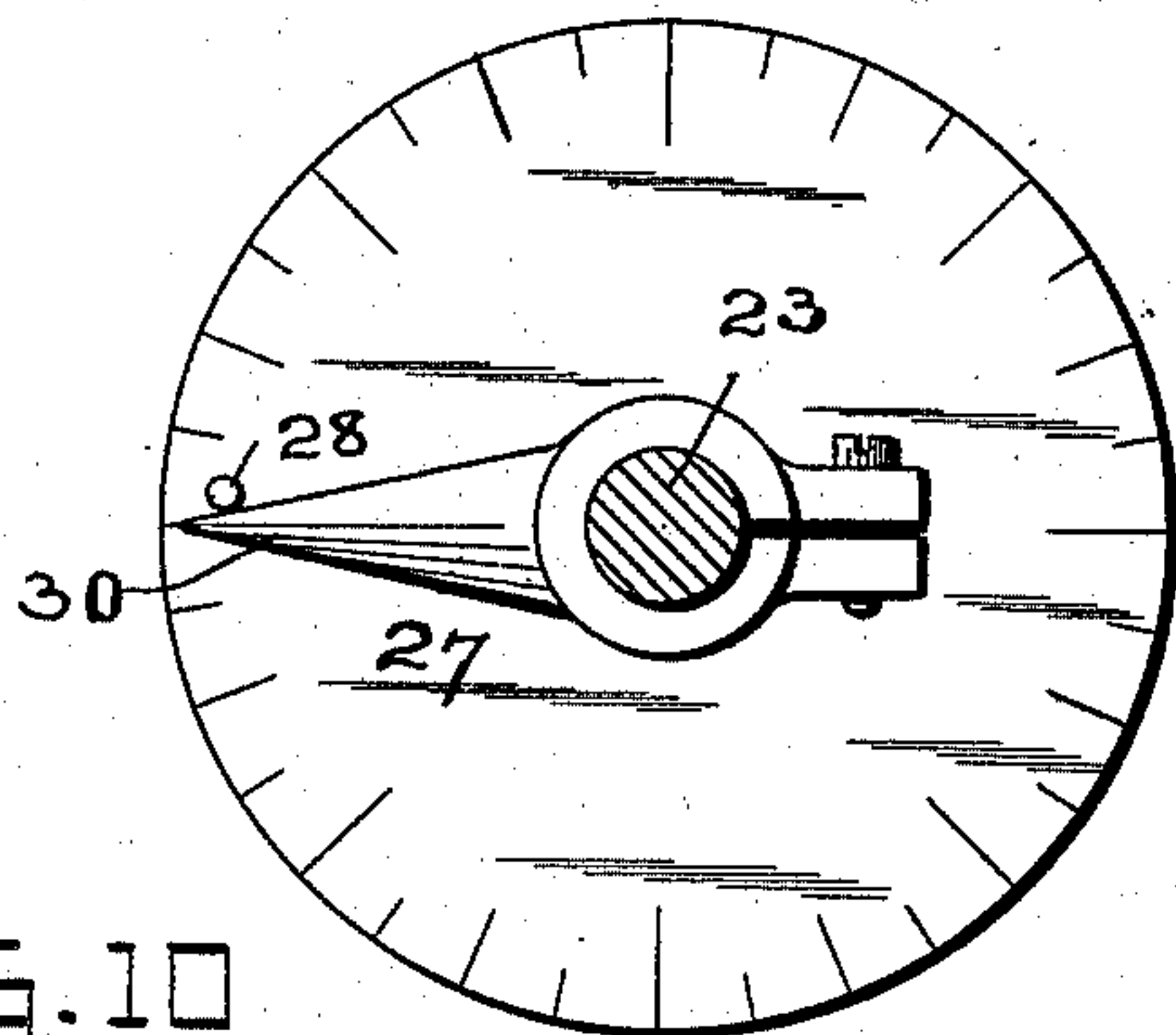


FIG. 10

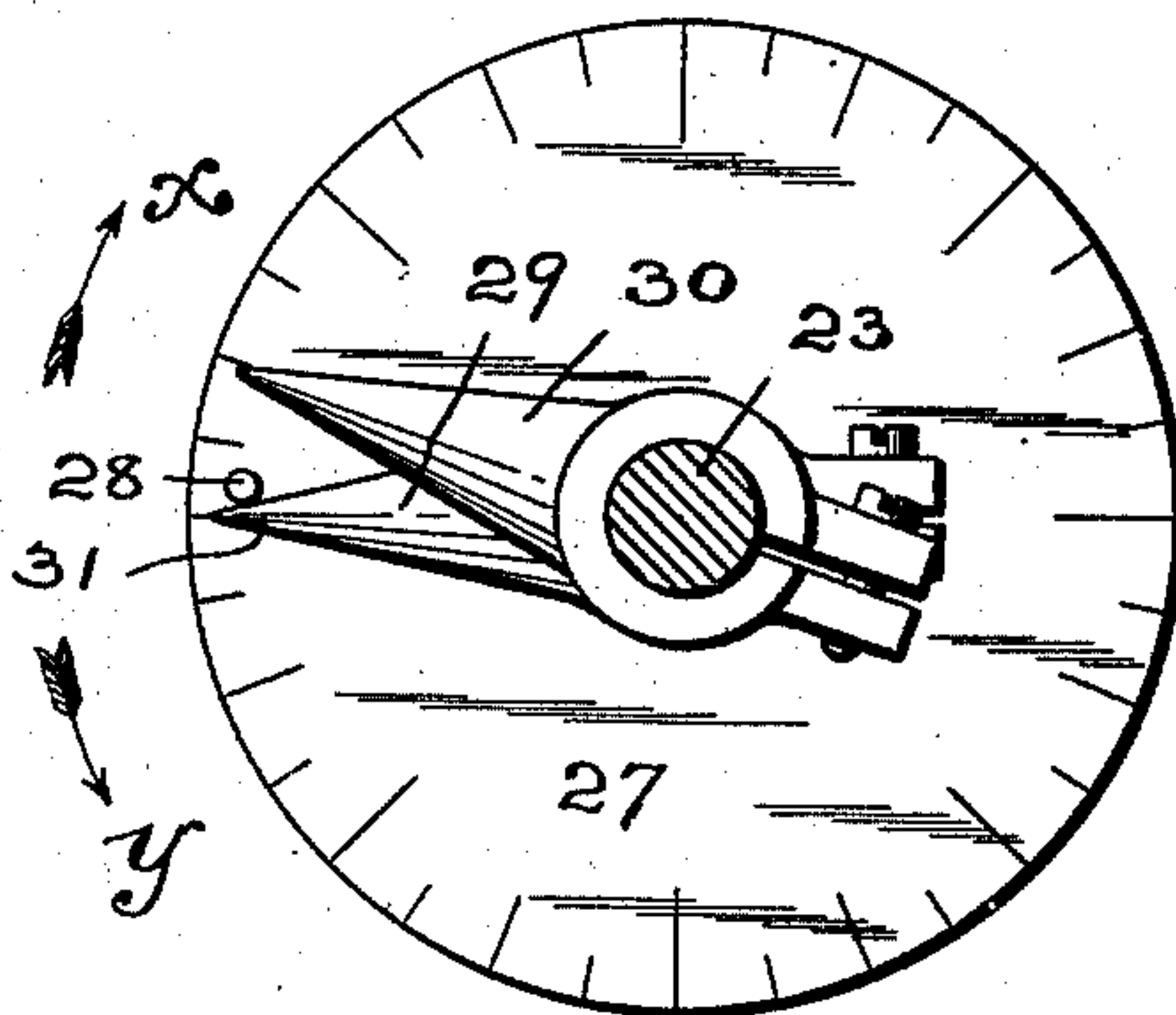


FIG. 11

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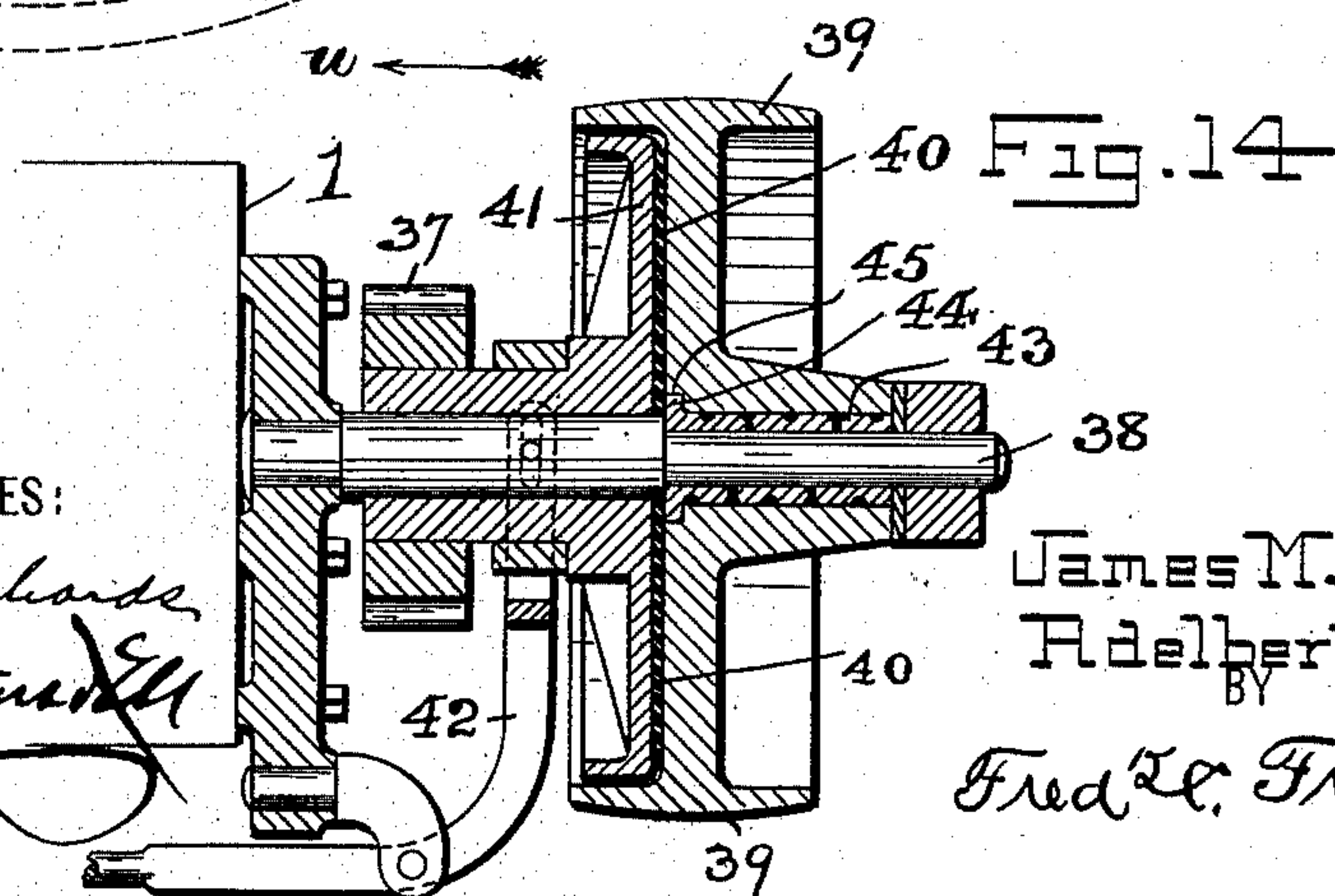
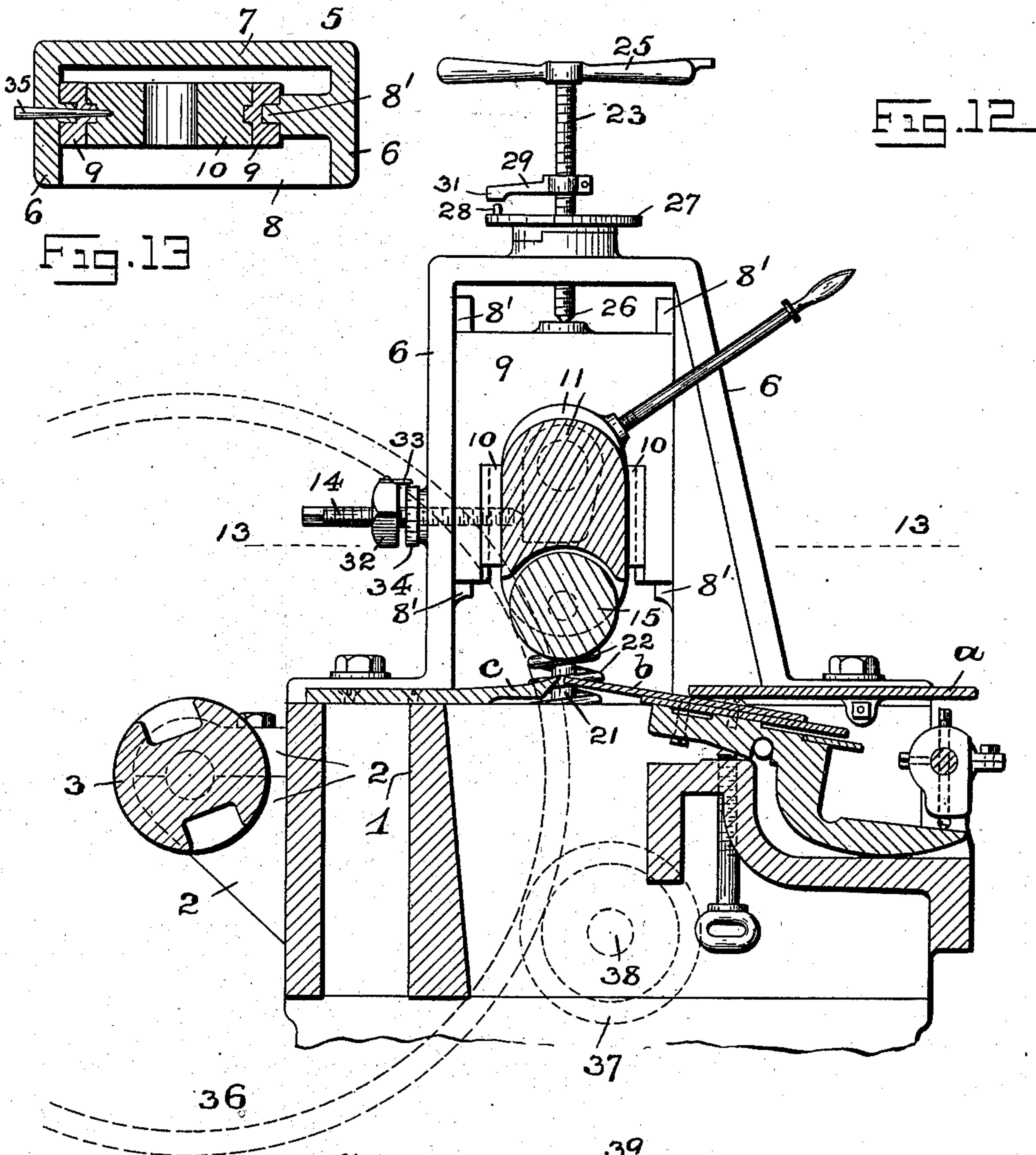
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

JAMES M. SEYMOUR AND ADELBERT M. HARRIS, OF NEWARK, NEW JERSEY; SAID HARRIS ASSIGNOR TO SAID SEYMOUR.

LEATHER-SPLITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 750,403, dated January 26, 1904.

Application filed May 3, 1902. Serial No. 105,856. (No model.)

To all whom it may concern:

Be it known that we, JAMES M. SEYMOUR and ADELBERT M. HARRIS, citizens of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Leather-Splitting Machines; and we 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in that class of machines which are employed for the splitting up of leather skins; and the invention has for its principal object to provide various novel and simply-constructed appliances with leather-splitting machines whereby the operator can more perfectly handle the machine and can more rapidly and perfectly split the skins or hides of leather, and, furthermore, to provide in connection with a leather-splitting machine an adjusting device for rapidly setting the splitting or cutter mechanism in its properly-adjusted relation to the other parts to the machinery to cut the leather into "splits" of the requisite thickness and that without any further adjustment of the parts of the machine or particular care or attention on the part of the operator.

Other objects of this invention not at this time more particularly mentioned will be obvious from the following detailed description of the invention.

This invention therefore consists in the various novel arrangements and combinations of devices hereinafter fully set forth, as well as in the details of the construction thereof, all of which will be described in the accompanying specification and then finally embodied in the clauses of the claim, which are appended to and form a part of this specification.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of one of the end frames or housings of a leather-splitting machine with which the invention is employed,

the said view also representing one of the end portions of the splitting-knife, a supporting-roll, and the beam and adjusting-roll connected with the said beam. Fig. 2 is a longitudinal vertical section of the housing and a portion of the bed of the machine, with portions of the tension device and guide or cross-head also represented in vertical section, but the end portions of the beam and adjusting-roll being represented in elevation. Fig. 3 is a vertical cross-section taken on line 3 3 in said Fig. 2, but the said guide or cross-head being represented in end elevation. Fig. 4 is a sectional representation of the tension device and parts of the bed-plates of the machine with which the device is used. Fig. 5^A is a similar view of certain portions of a tension device of a slightly-modified form of construction, and Fig. 5 is a view of the lower end of a tubular nut used with the said tension devices. Figs. 6 and 7 are plan views of one of a pair of index dials or plates provided with a stop and a pair of index-hands, which are employed with the adjusting mechanism in the respective end frames or housings of the machine for the adjustment of the leather-splitting device. Fig. 8 is a side view of the parts in their relative positions indicated in said Fig. 6, and Fig. 9 is a similar view of the same parts when in their relative positions represented in said Fig. 7. Fig. 10 is a plan view of the index-dial and index-hands just prior to final adjustment; and Fig. 11 is a similar view of the same parts, indicating the positions of the two index-hands at the time that the final adjustment is made. Fig. 12 is a vertical section on line 12 12 in Fig. 1 of the drawings looking in the direction of the arrow Z, illustrating the housing and the adjusting and tension mechanism back of the beam and adjusting-roll in elevation, but the various other parts of the machine proper being represented in vertical cross-section. Fig. 13 is a cross-section of the housing and the various parts contained therein, said section being taken on line 13 13 in said Fig. 12; and Fig. 14 is a detail vertical section of a driving mechanism employed with the machine.

Similar characters of reference are employed

in all of the said above-described views to indicate corresponding parts.

Referring to the several figures of the drawings, the reference character 1 indicates a portion of the one end of the usual construction of machine-frame of a leather-splitting machine which is provided with the side bearings 2 for the support of a supporting-roll 3 of the usual construction. The machine is also provided, as will be seen from an inspection of Fig. 12, with the usual table *a*, upon which the hide or skin to be split is placed, and with the adjustably-arranged top or bed-plate *b* and the splitting knife or cutter *c*, all substantially as illustrated. Suitably secured upon each end of the said machine-frame 1 by means of screws or bolts 4 or in any other manner is a supporting frame or housing 5. These housings are usually made with the closed sides 6 and closed face or end 7 and with the open portion 8. The two oppositely-placed sides 6 are made upon their inner surfaces with guide-ribs 8', upon which is suitably and slidably arranged one of two members or blocks 9 and 10 of a supporting cross-head formed with bearing portions for the support therein of the journals 12 of the beam 11. One or both of the journals 12 are made with a projection 13, which can be brought against the end of a screw 14, which is adjustably arranged in one of the sides 6 of the housings 5 and against which the projection 13 is brought to permit of the proper adjustment of the beam 11 and the adjusting-roll 15 of the beam in alinement with the various parts of the tension and adjusting mechanism in the housing 5 and also in direct alinement with the cutting edge of the knife *c*, as indicated in Fig. 12. To properly bring the central axis of the said adjusting-roll 15 directly above and in vertical alinement with the cutting edge of the knife *c*, the screw 14 may be provided with an adjusting-nut 32, secured in a fixed position upon said screw 14, so as to turn with the latter, and provided with a pointer 33, which can be moved over an index or dial 34 on the side of the housing, so that the screw 14 can be readily adjusted to the necessary graduation and the point or free end of said screw 14 brought in the proper position to act as a stop against which the projection 13 is brought, as hereinafter stated. The members 9 and 10 of each cross-head are adjustably retained between the said guide-ribs 8 in the following manner: The end portion of the frame of the machine is made in a proper position directly beneath the housing 5, with a downwardly-extending and chambered projection 16, having in its lower surface a screw-threaded hole or opening 17, into which is screwed a tubular nut 18. Resting directly upon the upper surface of said nut is a washer 19, and extending through the tubular portion of the nut 18 and the opening in said washer 19 is a guide-rod 20, having its upper end 21 tapped into or otherwise

secured to the lower member 10 of the cross-head, substantially as illustrated, and encircling the upper body portion of the guide-rod 20 and arranged directly between the upper surface of the washer 19 and the lower member 10 of the said cross-head are the coils of a spring 22. This arrangement of the parts is clearly represented in Figs. 2, 3, and 4 of the drawings, and when the said parts have thus been assembled the springs 22 act as supports for the ends of the beam 11 and the adjusting-roll 15, while the rod 20 prevents any distortion of the compressed coils of the spring, and thus maintains the proper alinement of all the parts, irrespective of the weight of the beam 11 and the adjusting-roll 15.

As illustrated more particularly in Fig. 4, the internal diameter of the upper portion of the nut 18 is preferably made a trifle larger than the diameter of the guide-rod 20, whereby the said rod 20 and the supporting-washer 19 will readily find their proper alinement should for some reason the rod 20 or the nut 18 not have been exactly centered during the manufacture of the machine. The said nut 18 can be raised or lowered in its screw-threaded opening 17 in the projection 16 for properly raising or lowering the cross-heads and bringing the beam 11 and adjusting-roll in their approximately adjusted positions above the bed of the machine.

From an inspection of the several figures of the drawings it will be clearly seen that when it is desirable to replace the springs 22 by others all that is necessary is to block up the beam 11 and roll or to support it by means of a block and tackle and then unscrew the nut 18. Instead of blocking the said beam 11 and its roll 15 or in lieu of employing a block and tackle the housing may be provided in its one side with an opening registering with correspondingly-placed openings in the two members or blocks 9 and 10 of the cross-head and into which a pin 35 can be inserted, as indicated in Fig. 13, to retain the said cross-head and its connected parts in their raised positions, as will be clearly understood. Immediately upon the removal of the said nut 18 the spring 22 drops out and can be easily replaced by another spring, which is held in its encircling position on the guide-rod 20 by means of the replaced washer 19 and nut 18. In order that the proper tension may be alike at both ends of the beam 11 and the adjusting-roll 15, the screws 23, which move in the screw-threaded portions 24 of the housings 5, are employed, each screw 23 being provided with a hand-wheel 25 or other means for turning the same and having its lower end 26 in engagement with the upper member 9 of the cross-head, substantially as illustrated. Thus this arrangement of the screws 23 and the counteracting-springs 22 is such that with the proper movement of said screws the beam 11 is lowered or raised and the adjusting-roll 15

brought closer to or farther away from the cutter to produce any suitable degree of thickness of the split taken from the skin.

In place of the nut 18 and the long guide-rod 20 a shorter screw-rod 36 may be screwed directly into a screw-threaded hole in the bottom of the cup-shaped projection 16, as illustrated in Fig. 5^A, in which case the inner free end of the rod 36 is screwed directly into a shouldered supporting-cap 37, upon which the lower end of the spring 22 rests, as shown.

In practice it is usual for the operator to gage the thickness of the split by feeling of the split portion by means of the thumb and forefinger.

In order to adjust the various parts of the splitting-machine to an exact degree after the first approximate thickness of the split has been made and to cause all the splits thereafter made to be of a uniform degree in thickness, the machine is provided with an index dial or dials formed with a stop and with one or two, but preferably with a pair, of separately-working index-hands for adjusting the parts of the splitting-machine to a final degree. These dials and index-hands are used in connection with adjusting-screw 23 and are more particularly illustrated in Figs. 6 to 11, inclusive. Each dial is indicated by the reference character 27 and is secured upon the upper portion of a housing 5 of the machine and encircles the screw 23, said screw passing through a central hole in the dial, but the dial being fixed in immovable position, so that the turning of the screw will not affect the position of the dial. Each dial 27 is provided at its zero division with a short post or stud 28, which serves the purpose of a stop, in the manner to be presently described. Movably arranged independent of each other and in the manner of a pair of nuts upon each screw 23 are two index hands or pointers 29 and 30. When a skin of leather is passed into the machine for producing the split, during the first cut these index-hands 29 and 30 are placed in one of their elevated positions upon the screw 23, as indicated in Figs. 6 and 8, and the beam 11 and adjusting-roll 15 are adjusted, by means of the screws 23, in the manner previously stated, the operator determining the approximate thickness by feeling the split between the thumb and forefinger, as is now customary. If the operator finds that the split should be made thinner one or more degrees, he turns the lower index-hand 29 by hand upon the screw 23 until its end portion 31 is brought against the side of the stop 28, as indicated in Figs. 7 and 9. The operator next turns the upper index hand or pointer 30 upon the screw 23 until said hand 30 is brought directly above the hand 29, as illustrated in Fig. 10. It will be understood that these independent movements 29 and 30 have been made with turning or changing the previously-adjusted positions of the screws 23. Now suppose the operator de-

cides to produce a split, which is, say, just one degree or division of the scale thinner than the approximate cut previously found by touch, then all he does is to turn the screw 23 by means of its hand-wheel in the direction of the arrow X in Fig. 11 until the upper hand 30 is placed directly over the proper graduation, as shown in said Fig. 11, which will clearly indicate that the parts of the splitting mechanism have been properly adjusted to produce splits all of the required and uniform thickness. While the upper hand 30 has moved with the screw 23, the lower hand 29 has been prevented from turning by its contact with the side of the stop 28, as will be understood. The screw 23 can now be turned in the opposite direction of the arrow Y in Fig. 11 to raise the beam 11 and adjusting-roll 15 for insertion of the skin or hide and the screws again turned in the direction of arrow X until the lower hand 29 engages with the stop 28, which indicates to the operator that the parts have been properly set to produce splits which are all of the same thickness. When but one index-hand 29 is used, as indicated in Fig. 12 of the drawings, then this hand is used simply as a guide when brought against the stop 28 to indicate to the operator that the parts of the mechanism have been properly adjusted.

The usual means for driving the supporting-roll 3 is by means of a gear-wheel 36 and pinion 37 on a pinion-shaft 38. (Indicated in dotted outline in said Fig. 12.) Upon said shaft 38 is a loose pulley 39, which is driven from an outside source of power, and with the web portion of which and a leather or other flexible disk 40 can be brought in operative engagement a friction-disk 41, operated by means of a suitable lever or arm 42, which is under the control of the operator. It has been found in practice when the disk 41 is moved away from the leather disk 40 that the suction between the parts would tend to pull the pulley 39 with it, and thus would not suddenly and positively disengage the parts to the detriment of the leather while splitting. To overcome this objectionable feature, the hub of the pulley 39 is rotatively arranged upon a bushing 43, which is fixed upon the shaft 38, said bushing being provided with a shoulder 44, which is fitted into a corresponding depression or recess 45 in the hub of the pulley 39, and thus prevents any lateral sliding movement of said pulley 39 on the axle 38 due to suction when the disks 41 and 40 are moved in the direction of the arrow U. (Indicated in Fig. 14.)

From the above description of our invention it will be clearly understood that we have devised a simple and efficient arrangement of devices and of their parts, all of which are very useful in leather-splitting machines.

We are aware that some changes may be made in the various arrangements and combi-

nations of the devices and their parts without departing from the scope of the present invention. Hence we do not limit our invention to the exact arrangements and combinations of the devices and their parts as described in the specification and as clearly illustrated in the drawings, nor do we confine ourselves to the exact details of the construction of the same.

10 Having thus described our invention, what we claim is—

1. In a leather-splitting machine, the combination, with the bed and a housing, of a cross-head in said housing for supporting the end of the beam and adjusting-roll of the machine, a tubular and screw-threaded nut removably arranged in a screw-threaded opening in said bed, a guide-rod extending through the tubular portion of said nut and having its upper end connected with said cross-head, and a spring arranged between the said nut and cross-head, said spring encircling the said guide-rod, and being removable from said rod and the housing when said nut is unscrewed, substantially as and for the purpose set forth.

2. In a leather-splitting machine, the combination, with the bed and a housing, of a pocket-shaped enlargement on said bed provided with a screw-threaded hole, a cross-head in said housing for supporting the end of the beam and adjusting-roll of the machine, a tubular and screw-threaded nut removably arranged in the screw-threaded hole of said pocket-shaped enlargement, a guide-rod extending through the tubular portion of said nut and having its upper end connected with said cross-head, and a spring arranged between the said nut and cross-head, said spring encircling the said guide-rod, and being removable from said rod and the housing when the said nut is unscrewed, substantially as and for the purpose set forth.

3. In a leather-splitting machine, the combination, with the bed and a housing, of a cross-head in said housing for supporting the end of the beam and adjusting-roll, an adjusting-screw movably arranged in a portion of said housing and having a portion in engagement with said cross-head, an index-dial on said housing, a stop on said dial, and a pair of index-hands on said screw, said hands being capable of independent movement on said screw, and independent of each other, and capable of moving with said screw, and one

of said index-hands being adapted of being brought in engagement with said stop on the dial, substantially as and for the purpose set forth.

4. In a leather-splitting machine, the combination, with a movable cross-head, of an adjusting-screw having a portion in engagement with said cross-head, an index-dial on said housing, and a pair of index-hands on said screw, said hands being capable of independent movement on said screw, and independent of each other, and capable of moving with said screw, substantially as and for the purpose set forth.

5. In a leather-splitting machine, the combination, with frame and housings of the machine, of a beam and its adjusting-roll, means for adjustably supporting the ends of said beam in said housings, an adjusting-screw in each housing, an index-dial through which each screw projects, a stop on each dial, and an index-hand on each screw adapted to be brought in engagement with such stop, substantially as and for the purpose set forth.

6. In a leather-splitting machine, the combination, with the frame and housings of the machine, of a beam and its adjusting-roll, means for adjustably supporting the ends of said beam in said housings, comprising, a cross-head in each housing, a tubular and screw-threaded nut arranged in openings in each frame, a guide-rod extending through the tubular portion of each nut and having its upper end connected with said cross-head, and a spring encircling each guide-rod, said spring being removable from the rod and housing when the nut is unscrewed, a cutter or splitting-knife, and means for bringing the central vertical axis of said roll in direct vertical alinement with the cutting edge of said cutter or knife, consisting, of a projection on said beam, and a screw arranged in the said housing, said screw having its end in movable engagement with said projection, substantially as and for the purpose set forth.

In testimony that we claim the invention set forth above we have hereunto set our hands this 25th day of April, 1902.

JAMES M. SEYMOUR.
ADELBERT M. HARRIS.

Witnesses:

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