

May 9, 1933.

A. M. GUILLET

1,907,959

LINING AND LEVELING MEANS FOR MACHINERY

Filed April 7, 1928

3 Sheets-Sheet 1

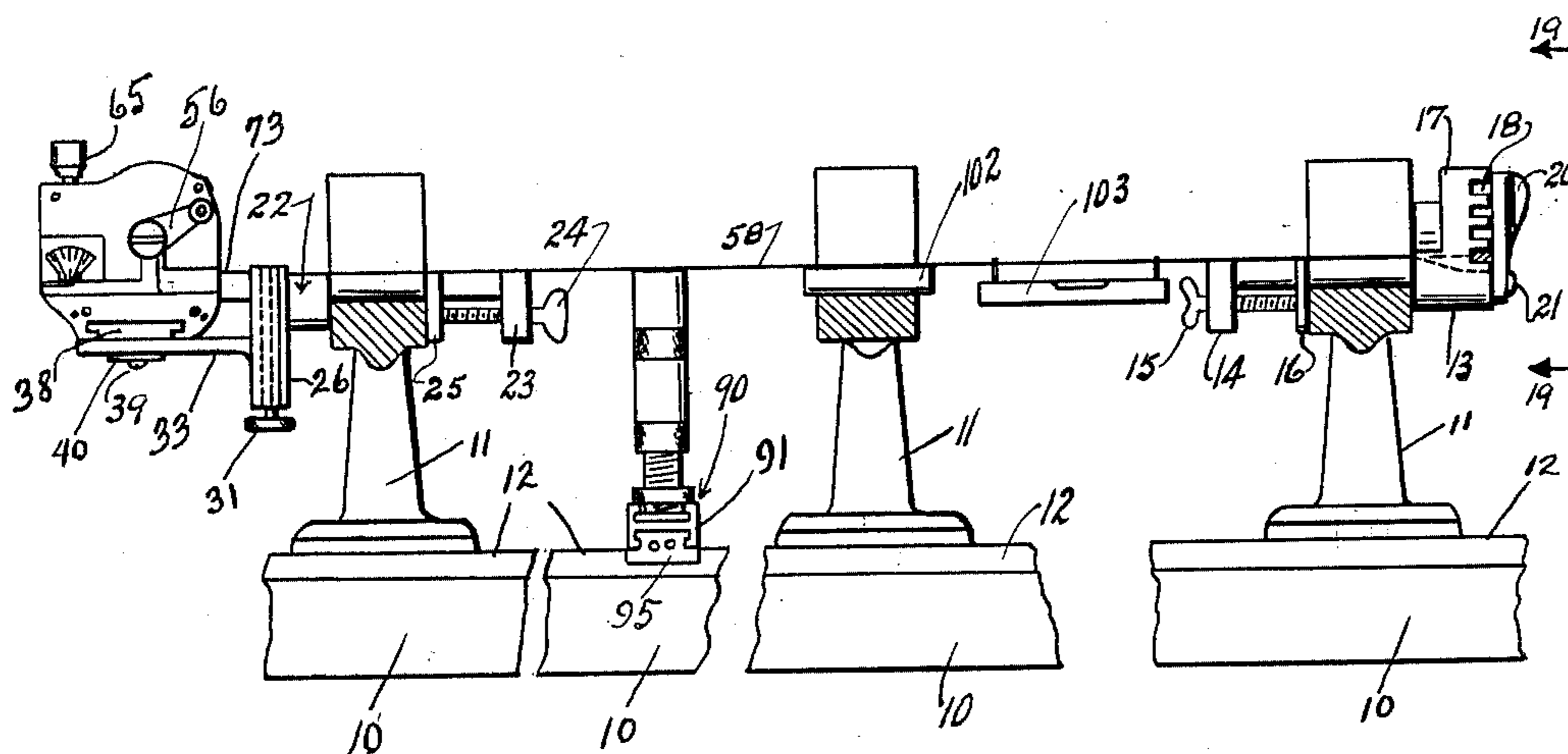


FIG. 1

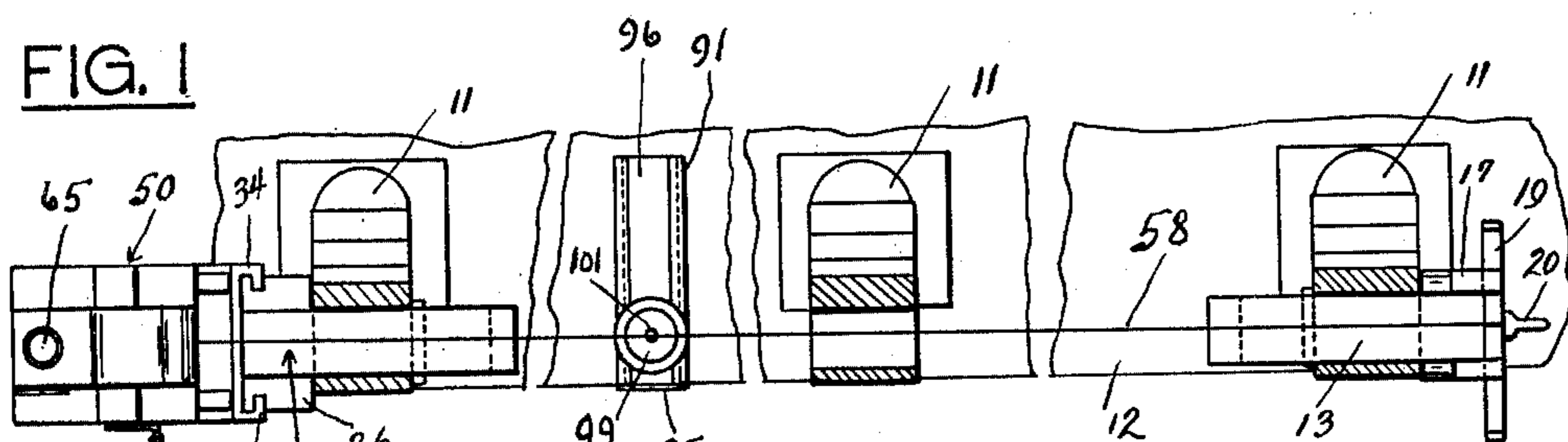
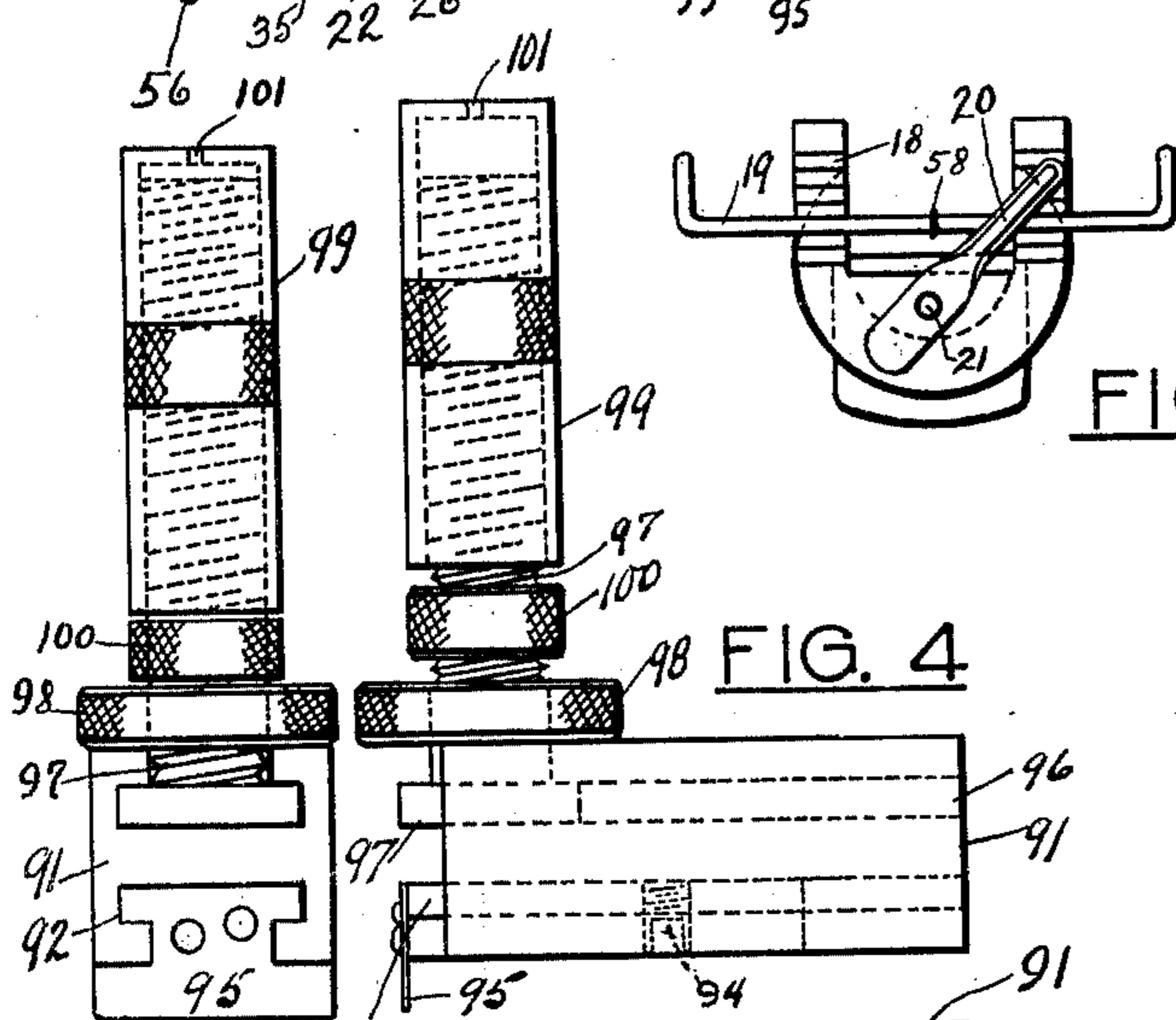


FIG. 2



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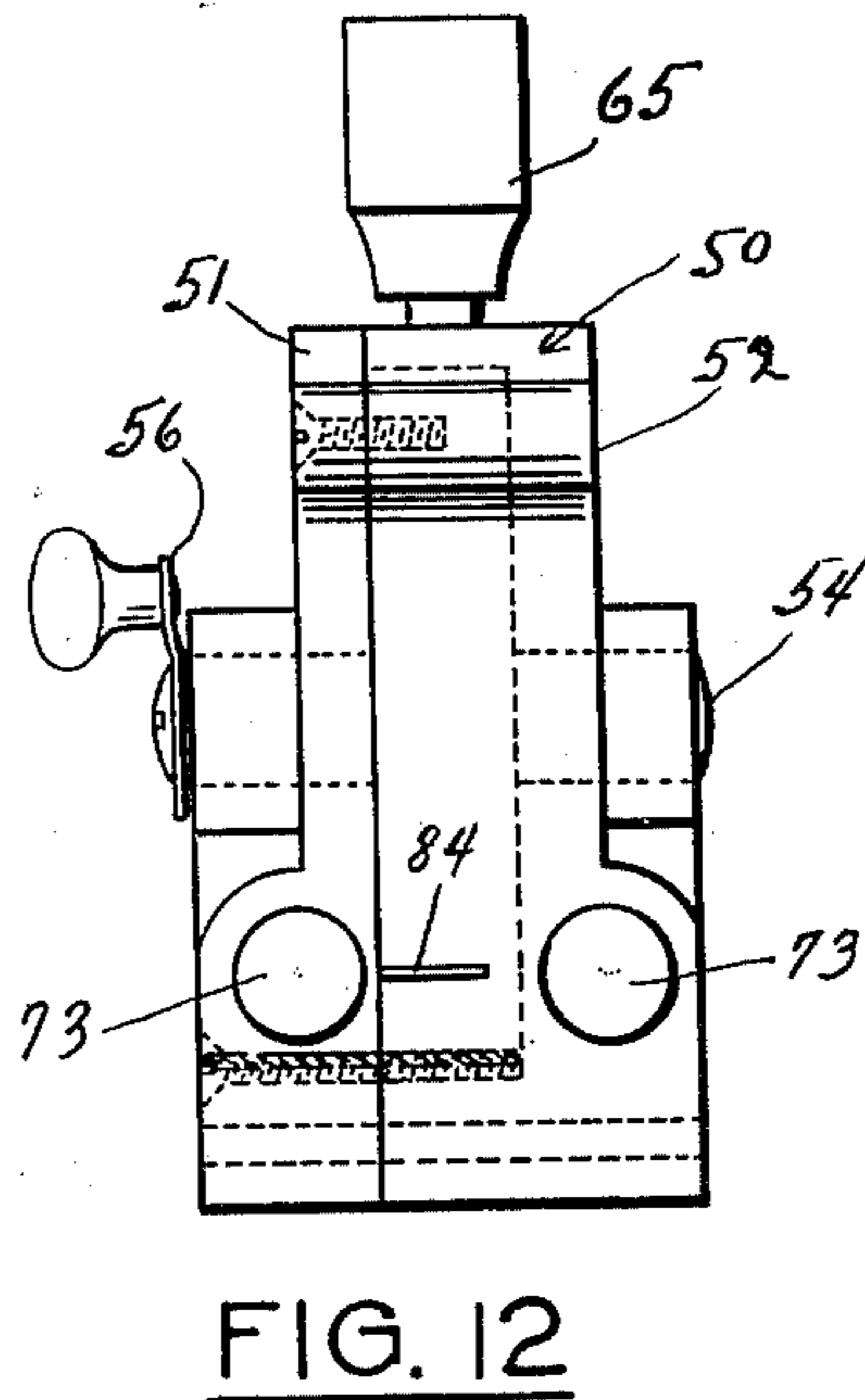
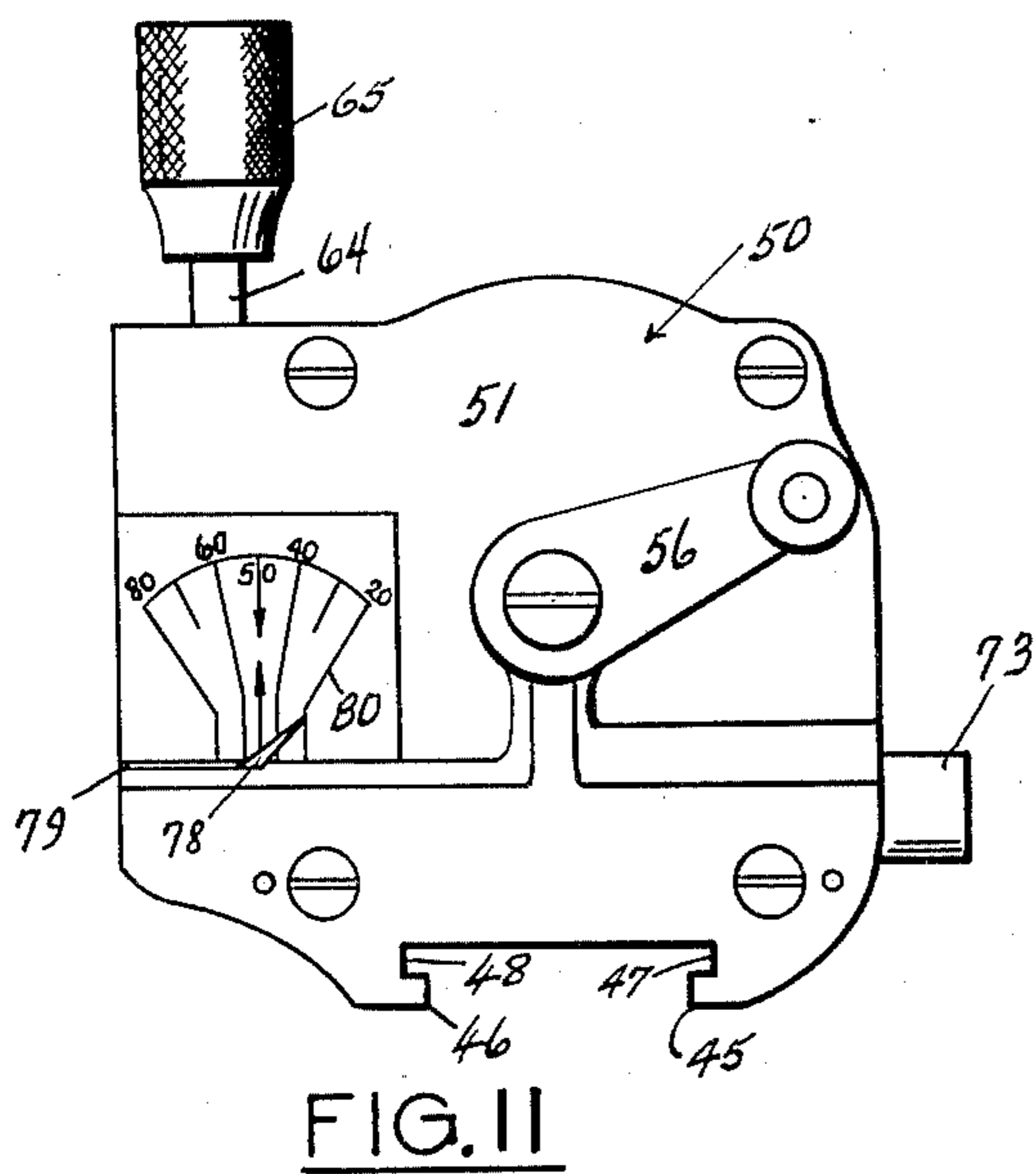
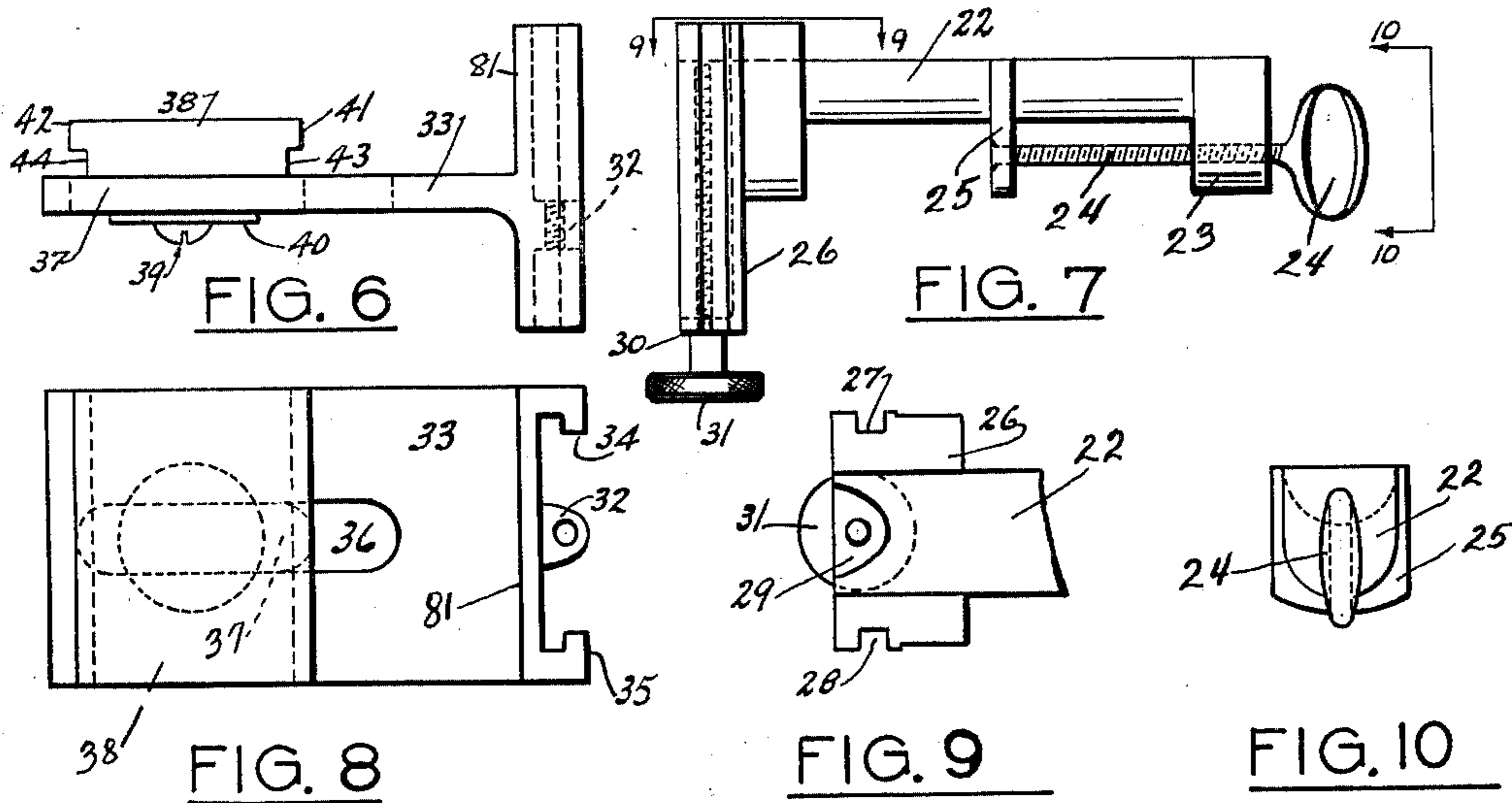
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3 Sheets-Sheet 3

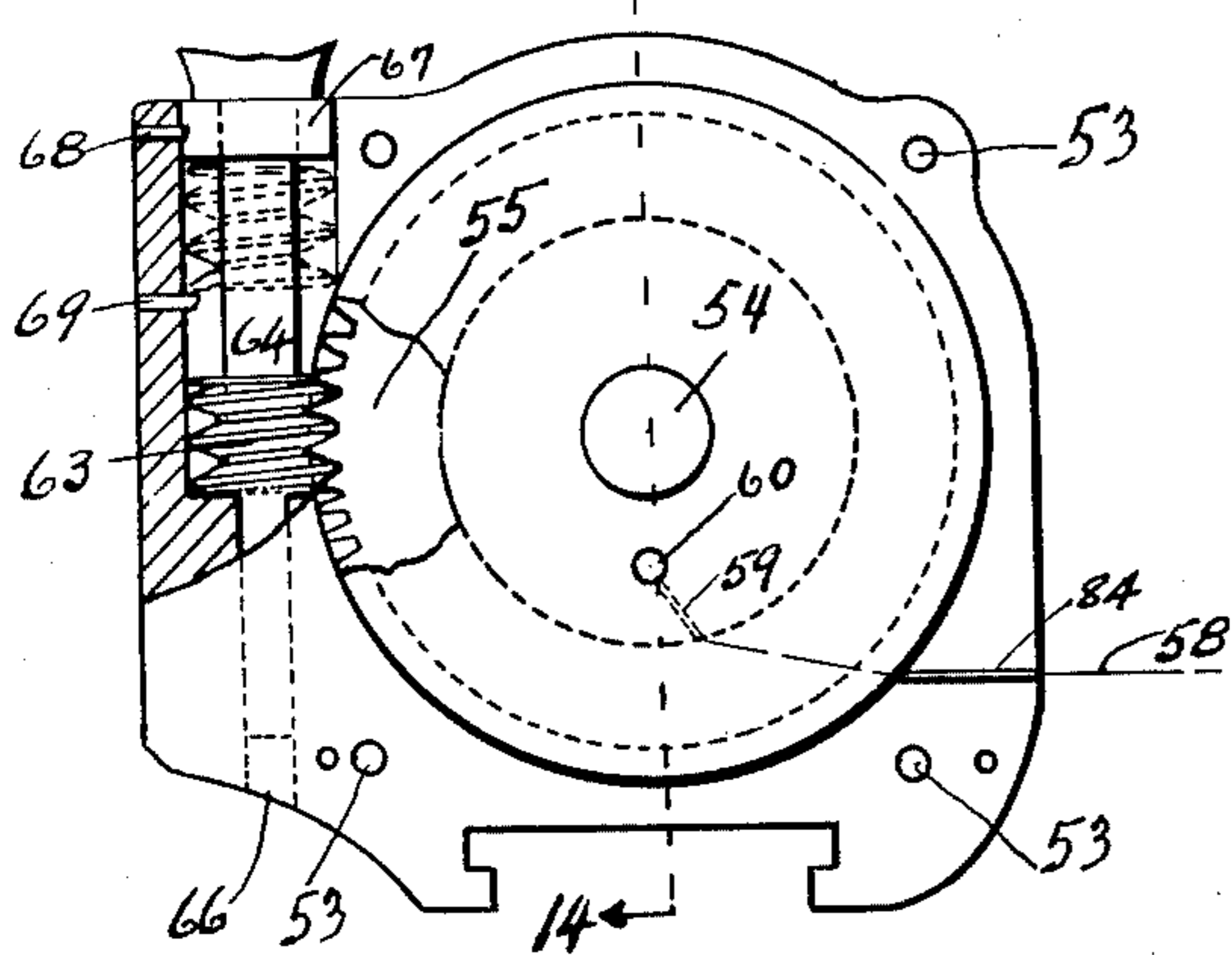


FIG. 13

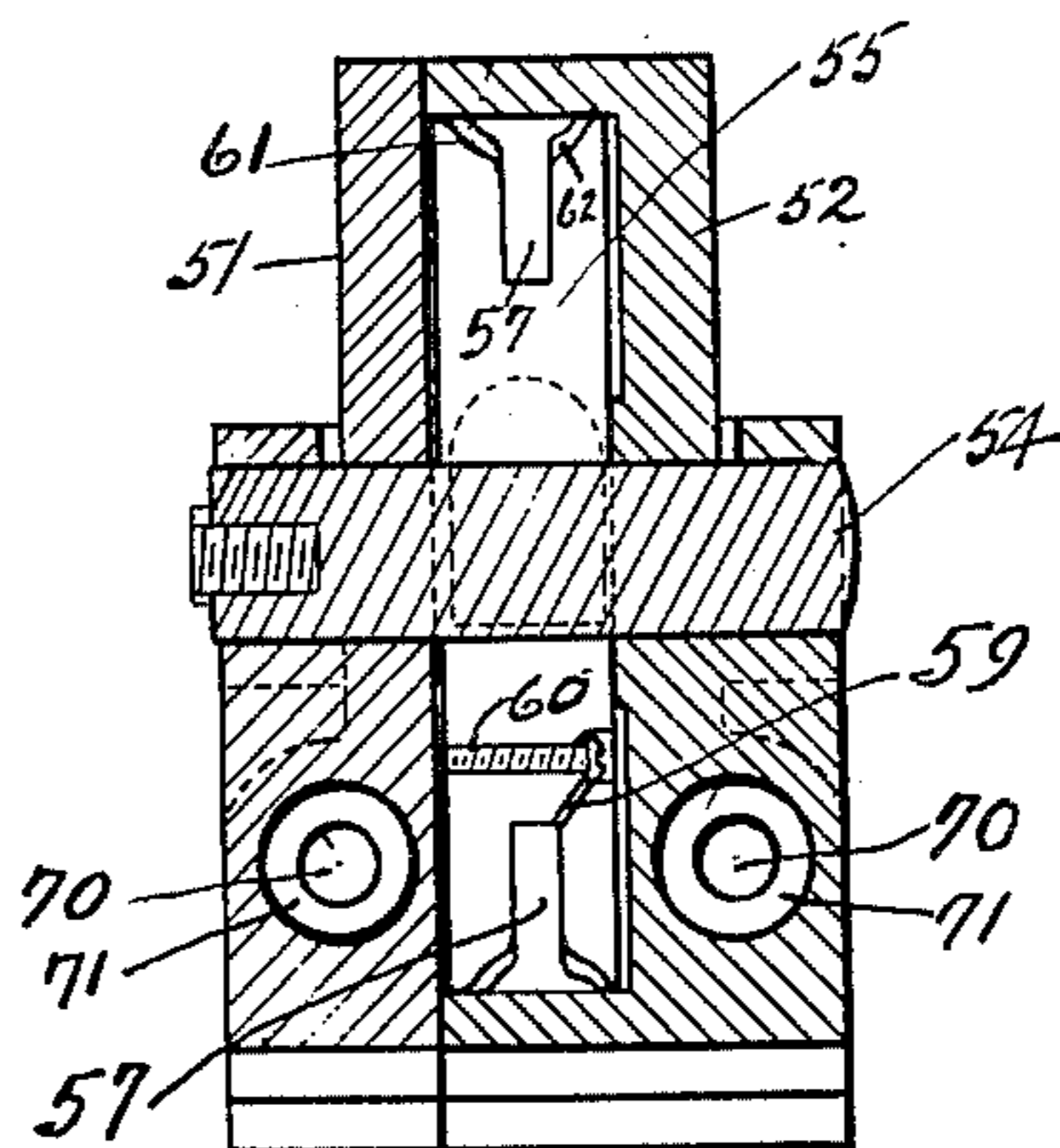


FIG. 14

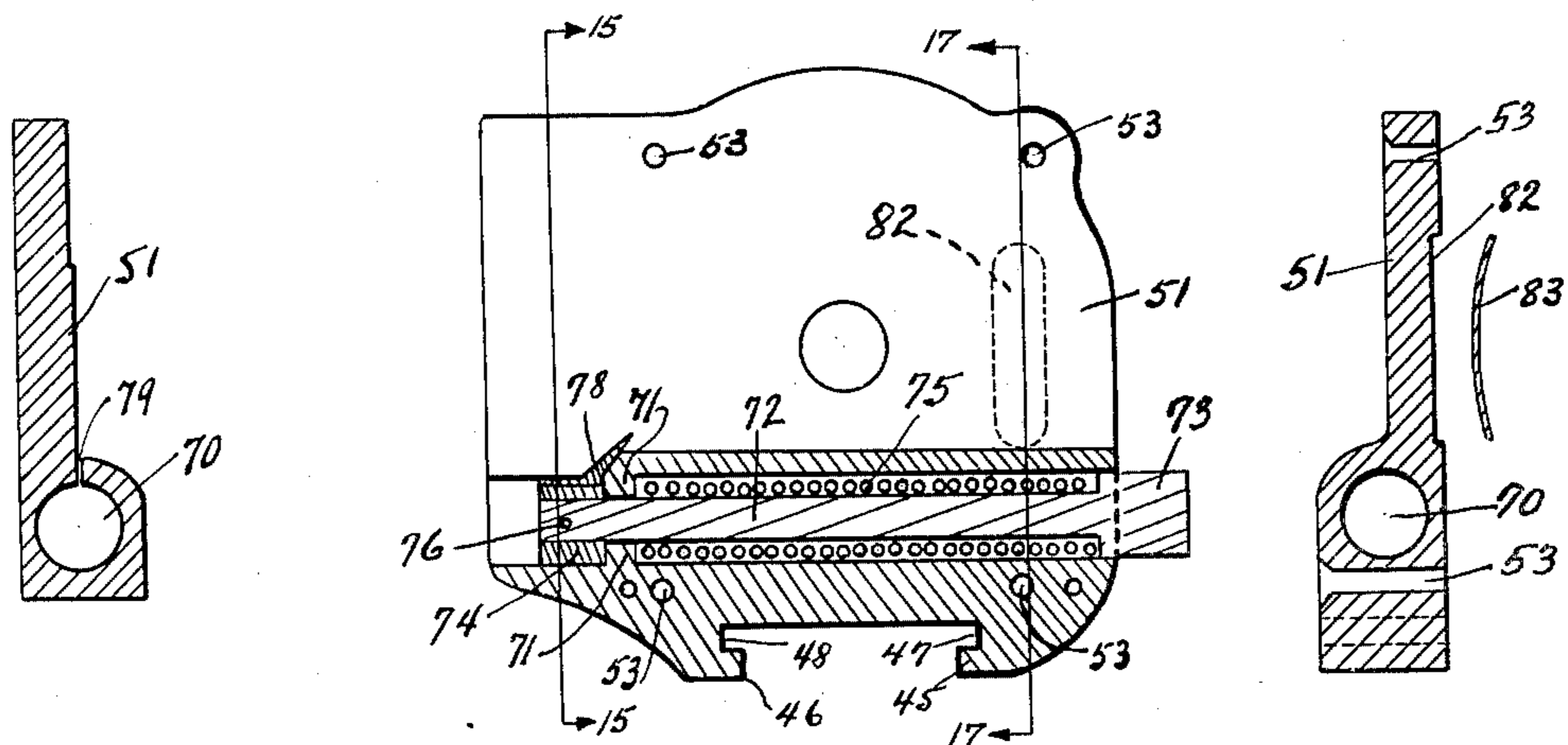


FIG. 15

FIG. 16

FIG. 17

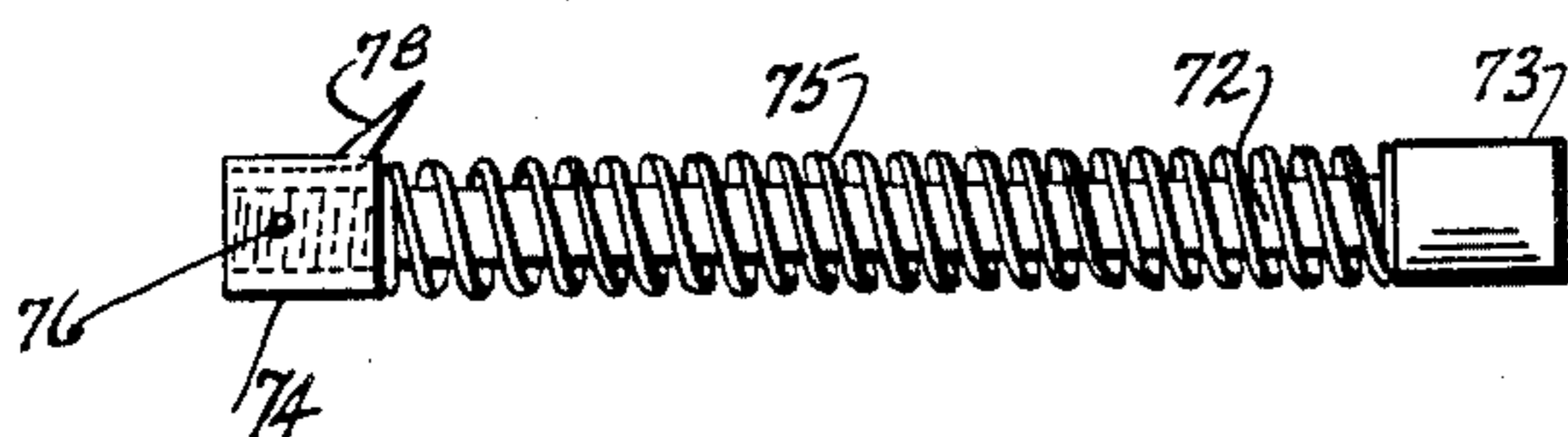


FIG. 18

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UNITED STATES PATENT OFFICE

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LINING AND LEVELING MEANS FOR MACHINERY

Application filed April 7, 1928. Serial No. 268,310.

This invention relates to the art of lining up and leveling of various types of machines, and more especially to lining up and leveling textile spinning and card room machinery, and embodies certain improvements in the structure set forth in my Letters Patent numbered 1,531,652, of March 31, 1925, and Letters Patent granted to me on February 1, 1927, numbered 1,616,084, both embodying structures for the same purpose as in the present invention.

In the first-named patent I disclose a leveling and lining up device including a pair of clamps adapted to be disposed over the roll supporting beam and the thread board of a spinning machine, one of the clamps carrying upon it a roll upon which is wound a wire. The other clamp is provided with means for engaging and anchoring the opposite end of the wire from the reel, the idea being to stretch this wire along the beam from end to end thereof, then turn the reel in the reverse direction until the wire is absolutely taut, and then gauge any depression or undue elevation of any portion of the rail by this wire.

In the last-named patent clamps are shown attached to the ends of a spinning frame, with a reel for stretching a wire between the two clamps in the manner above described, but in the later patent there are means for adjusting a portion of the clamps vertically with relation to the portion of the clamp which is seated in the roll stand of the spinning frame.

In the present invention I provide clamps adapted to be fitted into the end roll stands in spinning and fly frames with additional means for gauging the tautness of the wire stretched therebetween.

It is an object of my invention to provide leveling and lining means for spinning frames, fly frames, and the like in which a plurality of leveling and lining operations may be carried out at one time and in which the leveling and lining means can be quickly adjusted with great ease to more effectively carry out the leveling and lining operation.

It is another object of my invention to provide leveling and lining means for spinning

frames, fly frames, and other pieces of machinery in which a clamp member can be secured at one end of the piece of machinery, with adjustable means thereon for holding an end of a wire, with a second clamp member secured to the other end of the piece of machinery to which the other end of the wire is attached, which clamp can be adjusted so as to permit a portion thereof to be adjusted vertically, laterally and longitudinally of the piece of machinery, with means associated with the clamp member for imparting the desired amount of tautness to the wire, and tension means for causing the tautness to begin with a predetermined amount of pounds pull.

Another object of my invention is to provide lining and leveling means for spinning frames, fly frames, and other textile machinery in which a music wire of great strength is used which is unaffected by atmospheric conditions, which is reeled but once to each beam, like a fiddle string, with no slack as compared with the use of a line or string stretched by hand six times, with the usual guess work of slack allowance, in order to line up both beams, spindle rails, and roll stands.

Having thus stated some of the objects of my invention, a brief description of the various figures in the drawings follows:

Figure 1 is a front elevation of the roll rail of a spinning machine and the roll stands thereon, showing my leveling and alining device attached thereto;

Figure 2 is a top plan view of the structure set forth in Figure 1;

Figure 3 is a front elevation of my gauge, as shown in Figure 1;

Figure 4 is a side elevation of the gauge;

Figure 5 is a bottom plan view of my gauge;

Figure 6 is a side elevation of a portion of my reel support;

Figure 7 is a side elevation of the clamping means for the reel support;

Figure 8 is a plan view of Figure 6;

Figure 9 is a plan view taken along the line 9—9 in Figure 7;

Figure 10 is an end view taken along the line 10—10 in Figure 7.

Figure 11 is a side elevation of my reel for imparting a tautness to the wire;

Figure 12 is an end view of Figure 11, looking at the right hand end thereof;

5 Figure 13 is a side elevation of my reel with the front cover removed and with parts broken away for better illustration;

Figure 14 is a cross sectional view taken along the line 14—14 in Figure 13;

10 Figure 15 is a cross sectional view taken along the line 15—15 in Figure 16;

Figure 16 is a side elevation of the front cover for the reel with parts thereof shown in cross section;

15 Figure 17 is a cross sectional view taken along the line 17—17 in Figure 16;

Figure 18 is a side elevation of the tension means embodied in the reel;

20 Figure 19 is an end view taken along the line 19—19 in Figure 1.

Referring more particularly to the drawings, it will be seen that I have shown my device as attached for the leveling and lining up of roll stands of a spinning frame, but I desire it to be understood that my device may be attached to any type of machinery or to any object capable of having my device attached thereto for the purpose of leveling and lining the same, such as fly frames and a large variety of various types of machinery.

30 The numeral 10 designates the roll stand supporting beam of a spinning frame, 11 the roll stands themselves and 12 designates the thread board of the spinning frame. My device comprises a clamp member 13, having the downwardly projecting portion 14 with the screw member 15 threadably secured thereon, the end of the screw member fitting against the plate 16 so that when the screw member is driven home the plate 16 will secure the clamp member 13 rigidly in the end roll stand of a spinning frame. This clamp member is flat on its upper surface and 45 its lower surface is circular to conform to the bearing in the roll stand and the clamp member 13 has the upwardly projecting anchor portion 17 with notches 18 in its outer surface, in which the bar 19 is adapted to be fitted with the button member 20 pivoted as at 21 for holding the bar 19 in any one of the notches 18.

50 To the other end of the spinning frame and in the end roll stand I provide a similar clamp member 22 which has the downwardly projecting portion 23 with the screw 24 and the plate 25 for securing this clamp member 22 in the roll stand in the same manner as previously described for the other clamp member. This clamp member has the downwardly projecting portion 26 which has vertically disposed grooves 27 and 28 on either side thereof, with the cut away portion 29 60 thereof and in this projection 30 is loosely

secured the screw member 31, which projects upwardly in the cavity 29 and threadably fits into the projection 32 on the reel support 33. This reel support has the inwardly projecting portions 34 and 35, which 70 fit into the vertically disposed grooves 27 and 28, so that it is readily apparent that by turning the screw 31 the reel support 33 may be raised or lowered with respect to the clamp member 22. This reel support has the longitudinally disposed groove 36 in which a projection 37 on the member 38 is adapted to fit and to threadably receive the screw 39, and a washer 40 fits over the bottom of the member 33 so as to slidably secure the 80 member 38 to the member 33. This member 38 has the projections 41 and 42 thereon, forming with member 33 the grooves 43 and 44 thereunder and fitting into the groove 43 and 44 are the projections 45 and 46 on the 85 reel casing, said reel casing having the transversely disposed grooves 47 and 48 in which the projections 41 and 42 fit, and by this arrangement the reel casing can be adjusted laterally with relation to the clamp member 90 22 and independently of the members 26 and 33.

The reel casing 50 is composed of the shells 51 and 52 and are secured to each other by suitable screws piercing the holes 53 and centrally located in the reel casing is the shaft 54 on which the gear wheel and reel 55 is 95 fixedly secured and a crank 56 is adapted to be secured to one end thereof.

This gear wheel and reel 55 has the peripheral groove 57 in which the wire 58 is adapted to be wound and the end of the wire is passed through the hole 59 and secured in the wheel 55 by means of the screw 60. The inner edges of the groove 57 have the gears 100 61 and 62 cut therein around their entire periphery and mounted in vertical position in the back portion of the casing member 52 is the vertically disposed worm 63 which is secured on the pin 64, having the knob 65 on 110 the upper end thereof and the lower end fits into the vertically disposed hole 66 and a collar 67 fits around the top portion of the pin 64 and is secured in the casing by means of the set screw 68, and another set screw 69 115 pierces the shell of the casing and projects into the path of the worm gear so as to hold the same in raised position out of contact with the gears on the wheel 55 when desired.

In the lower portion of each of the members 51 and 52 there are the longitudinally disposed holes 70, which holes have the restricted portions formed by the projections 71 and in these holes 70 the members 72 are adapted to be fitted, said members having 120 the enlarged portions 73 on one thereof and the nuts 74 are adapted to be secured on the other end thereof with the coiled spring 75 fitting around the member 72 between the projections 71 in the casing and the enlarged 130

portions 73. These members 72 are placed in the holes 70 with the coiled compression spring 75 fitting against the projection 71 and the nut 74 is driven home until the coiled spring is under the compression of twenty pounds pull, at which time a pin 76 is placed therethru to fixedly secure the nut in position. One of the nuts has a groove cut longitudinally thereof in which an indicator member 78 is secured which projects upwardly through the slot 79 and registers with the gauge marks 80 on the side of the member 51. These enlarged portions 73 bear against the face portion 81 of the member 33.

The member 51 has the cut away portion 82 on the inner surface thereof in which the leaf spring 83 is adapted to be fitted so that in assembled position the leaf spring will bear against the side of the gear wheel and reel 55 to provide a braking effect on the wheel as the same is being unwound. The member 52 has the slot 84 through which the wire 58 is lead to engage the gear wheel and reel 55.

In connection with the above described mechanism, I use the gauge 90 which comprises the base member 91 having the T-shaped groove 92 in its lower surface, in which the member 93 is adapted to be slidably mounted and to be adjusted in position with the set screw 94, said member having the blade 95 secured to the forward end thereof to project downwardly over the member 12. The upper surface of the member 91 has a similar T-shaped groove 96, in which the member 97 is adapted to be slidably mounted, said member 97 projecting upwardly and being threaded its entire length with the lock nut 98 secured thereon to lock the member 97 in position and the gauge member 99 is secured on the upper end of the member 97 with the lock nut 100 to secure the member 99 in adjusted position. This member 99 has the hole 101 in the upper end thereof and at the center thereof which serves as a gauge point for the wire 58. It is seen that when the member 91 is placed on the member 12 that by loosening the screw 94 the blade member 95 may be adjusted and by loosening the lock nut the member 97 may be adjusted to alinement immediately beneath the wire 58 and the member 99 may be adjusted to fit lightly against the wire 58 and locked in position by means of the lock nut 100 and that this adjusted gauge can be placed at various positions along the member 12 and both vertical and lateral alinement of the roll stands can be effected at one operation.

I provide a gauge piece 102 for use in the intermediate roll stands, which is the same thickness and of the same contour as the portions of the clamp members which fit in the end roll stands. I also provide the level 103

which can be hooked on the wire to indicate whether or not the machine is level, and for use while the leveling operation is being carried out.

The method of operation of my device when assembled as shown in Figure 1 is as follows:

The crank 56 is turned and this winds the wire 58 onto the wheel 55 and the wire is wound in the groove 57 and this has a tendency to pull the entire casing or the wheel 55 toward the roll stand 11. The rods or pins 73 are pressing against the portion 81 (see Figure 8) and the compression spring 75 tends to prevent the wire 58 from pulling the reel casing toward the portion 81 but as the crank 56 is turned further the entire reel casing is pulled against compression springs 75 toward the portion 81 and the member 38 and the screw 39 and washer 40 are likewise moved toward the portion 81, as the member 38 and screw 39 are slidably mounted in the slot 36 in member 33. It is thus seen that the indicator 78 indicates the tension under which the wire is placed.

In the drawings and specification, I have set forth a preferred embodiment of my invention, and although specific terms are employed, they are used in a generic and descriptive sense only, and not for purposes of limitation, the scope of the invention being set forth in the appended claims.

I claim:

1. Means for leveling and lining machinery comprising a pair of clamps, a wire co-acting therewith, means vertically and laterally adjustable with relation to the machine on one clamp for engaging and tensioning the wire, means vertically and laterally adjustable with relation to the machine on the other clamp for engaging the other end of the wire, means on one clamp for imparting initial tension to the wire, and gauge means associated with the means for determining the initial tension and adapted to indicate the increase of the tension of the wire.

2. Means for lining and leveling machinery comprising a pair of clamps, a reel associated with one of the clamps, a wire adapted to be wound on said reel, an anchor portion on the other clamp and having a plurality of notches therein, a bar member adapted to be adjustably mounted in said anchor portion and to have the other end of the wire secured thereto.

3. Means for lining and leveling machinery comprising a pair of clamps, a wire, fastening means on one end of the wire, a reel casing, a reel in said casing with which the other end of the wire is connected, the reel casing being detachably connected to the clamp, a worm gear on the periphery of said reel, the reel casing also being slidably mounted for both lateral and longitudinal movement along the clamp with relation to

the machine, a worm adapted to be optionally engaged with said worm wear, tension means for controlling the longitudinal movement of the reel casing, the other clamp having a plurality of notches disposed one above the other and adapted to receive and hold the fastening means on one end of the wire while permitting the wire to be adjusted laterally.

4. Means for lining and leveling spinning frames, comprising a clamp member adapted to be secured in one end roll stand of a spinning frame, an upwardly projecting U-shaped portion on said clamp, each of the legs of the U-shaped portion having notches therein registering with the notches in the other leg, a bar adapted to be adjustably mounted in said notches, a wire secured to the bar, a second clamp adapted to be secured in the other end roll stand, a reel member with a reel casing therefor adjustably secured on said second clamp, the wire being secured to and adapted to be wound on said reel, means for rotating said reel, means adapted to be optionally engaged with said reel to hold the same in a selected position, said reel and reel casing being capable of movement both laterally and vertically with relation to the machine, and resilient means for controlling the said longitudinal movement.

5. In a device for leveling and lining machinery, a wire, a clamp member adapted to be secured to one end of the machinery, means on said clamp member for holding in adjusted position one end of the wire, a second clamp member adapted to be secured to the other end of the machinery, a reel on said second clamp member, means on said reel for securing the other end of the wire thereto, means for turning said reel to impart tautness to said wire, a worm gear on the periphery of said reel, a worm adapted to be optionally engaged with said worm gear on said reel to turn said reel and impart tautness to the wire, and also being adapted to be optionally engaged with said worm gear for holding the same in adjusted position.

6. Means for leveling and lining machinery comprising a clamp member adapted to be secured at one end of the piece of machinery, a second clamp member adapted to be secured to the other end of the piece of machinery, a wire, means for securing the wire to the first clamp member, a reel and reel casing on the other clamp member, said reel being adapted to have wound thereon the wire to impart tautness to the wire, said reel having therein a peripheral groove for receiving the wire, gear teeth in the periphery of the reel, a crank arm secured to the reel to turn the same and impart tautness to the wire, a worm adapted to be optionally engaged in the peripheral teeth and when so engaged to serve as additional means for tautening the wire, and to lock the wheel in adjusted position.

7. Means for leveling and lining machinery comprising a clamp member adapted to be secured to one portion of the piece of machinery, a second clamp member adapted to be secured to another portion of the piece of machinery, a vertically adjustable member slidably secured on the second clamp member, a longitudinally slidable member secured to the vertically adjustable member, a laterally slidable member secured to the longitudinally slidable member, said laterally slidable member having pins slidably mounted therein adapted to press against the vertically adjustable member, resilient means for holding the pins against the vertically adjustable member, a reel in the laterally slidable member, a wire secured to the said reel and having its free end secured to the first named clamp member, means optionally operable one at a time, for turning the reel to impart tautness to the wire, all of said movement and adjustment being with relation to the machine.

8. Means for leveling and lining machinery comprising a pair of members adapted to be secured to two points on a machine, a wire adapted to be held by the two members, means on one of the members for holding a wire and permitting adjustment of said end of the wire laterally and vertically with relation to the machine, means on the other member for holding the other end of the wire, said last named means being vertically, laterally and longitudinally adjustable with relation to the machine, means on said second member for imparting tension to the wire, additional means on said second member adapted to be optionally operated for imparting tension to the wire and holding the tensioning imparting means in adjusted position.

9. Means for lining and leveling machinery comprising a member adapted to be secured to one portion of the machine, a wire, means for securing one end of the wire to said member, a second member mounted on another portion of the machine, a reel and reel casing mounted on said second member, means on said reel for securing the other end of the said wire thereto, means for adjusting said reel vertically and laterally with relation to the said machine, means for imparting tension to said wire through said reel, other means adapted to be optionally engaged with said reel to impart tension to the wire and to lock the reel against turning movement under tension of the wire, said reel being slidable longitudinally of the machine, resilient means adapted to retard said sliding movement of said reel in one direction, and means for indicating the tension under which the wire is placed at all times.

10. Means for lining and leveling machinery comprising a reel, a casing for said reel, a support for said casing, means for slid-

ably mounting said support on a portion of said machinery, screw means for adjusting said support vertically with relation to the machine, means for securing a wire on said
5 reel, means located at another point on the machine for securing the other end of the wire thereto, and means in the reel casing for indicating the tension under which the wire is placed.

10 11. Means for lining and leveling textile machines having a pair of roll stands, comprising a bracket adapted to be mounted on one of the stands, a horizontally disposed rest mounted for vertical sliding movement
15 on the bracket, a base block slidably mounted on the rest for movement toward and from the stand, reeling means mounted on the base block, a wire windable on the reeling means, means for anchoring one end
20 of the wire to the other roll stand and yieldable means for urging the base in a direction to maintain the wire taut.

12. Means for lining and leveling textile machines having a pair of roll stands, comprising a bracket adapted to be rigidly and detachably mounted on one of the stands, a horizontally disposed rest mounted for vertical sliding movement on the bracket, an adjusting screw mounted on the bracket and
30 engaged with the rest in a manner to shift the same vertically and maintain the same in vertically adjusted position, a base block slidably mounted on the rest for movement toward and away from the stand, reeling
35 means mounted on the base block, a wire windable on the reeling means, means for anchoring one end of the wire to the other roll stand, and spring controlled plungers slidably mounted on the base block for engagement
40 with the bracket in a manner to yieldingly urge said base block away from said bracket in a direction to maintain the wire taut.

In testimony whereof I affix my signature.
45 ALBERT M. GUILLET.

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