

No. 876,129.

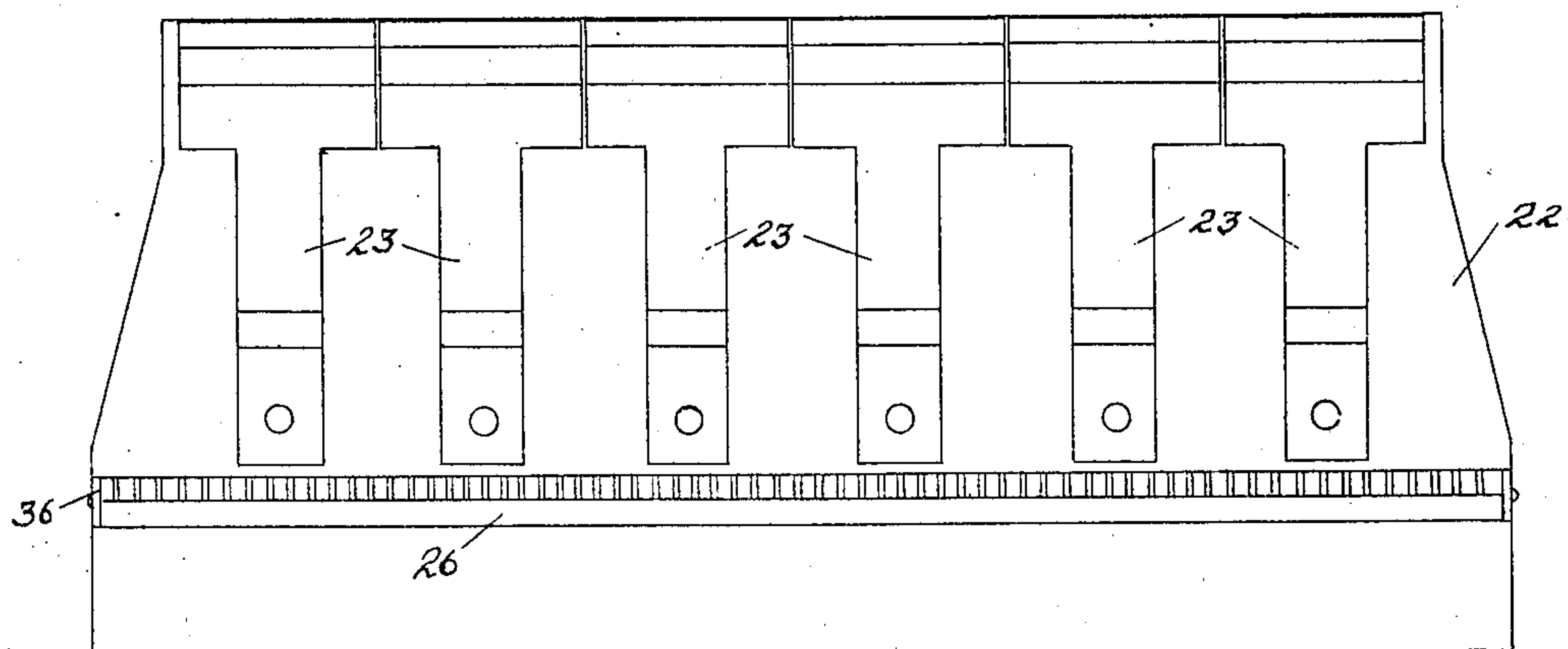
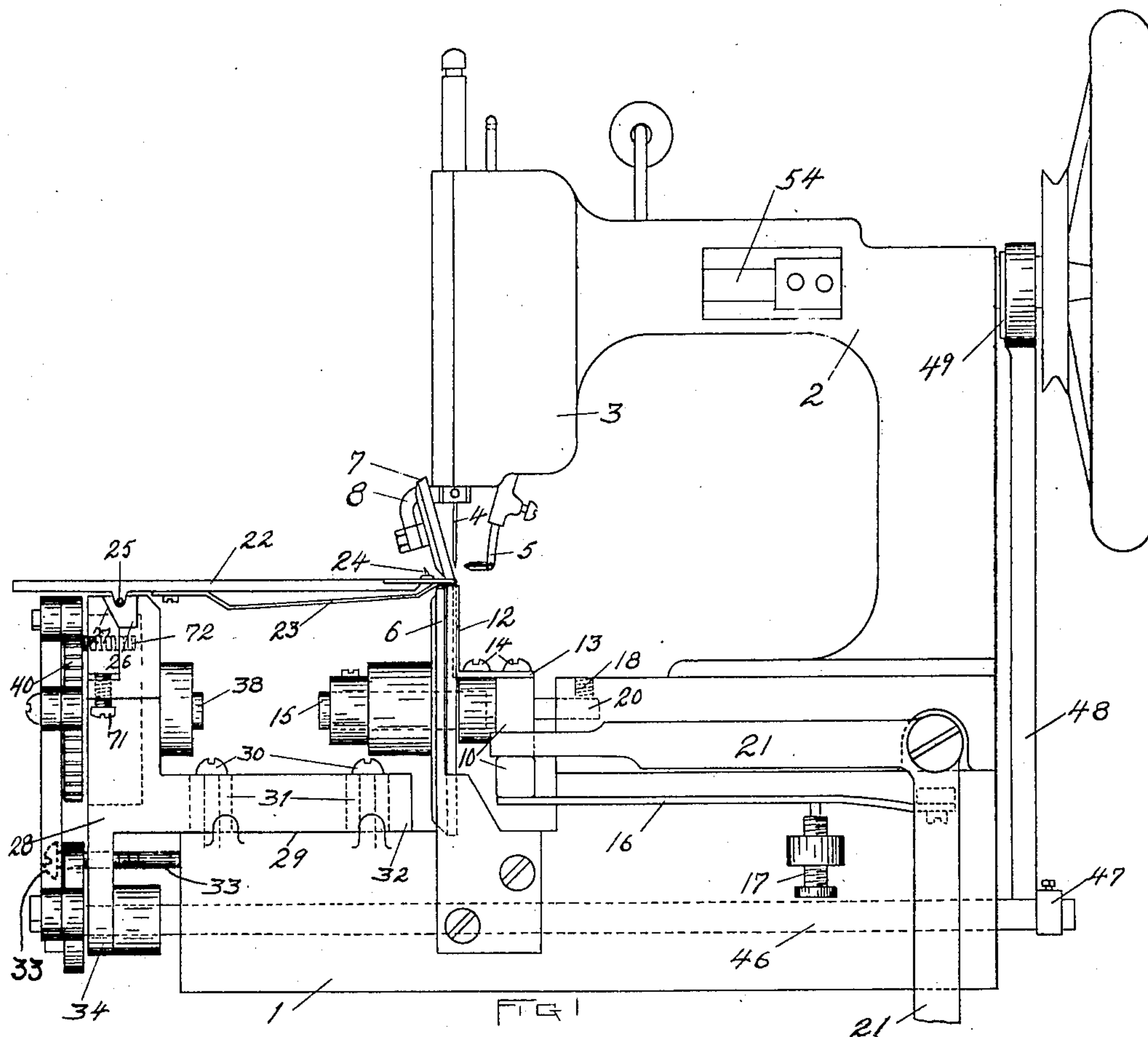
PATENTED JAN. 7, 1908.

A. M. BANKER & F. CURTIN.

GLOVE TIPPING MACHINE.

APPLICATION FILED MAY 25, 1908.

4 SHEETS—SHEET 1.



WITNESSES

J. L. Fuller.
J. Donsbach.

FIG 2

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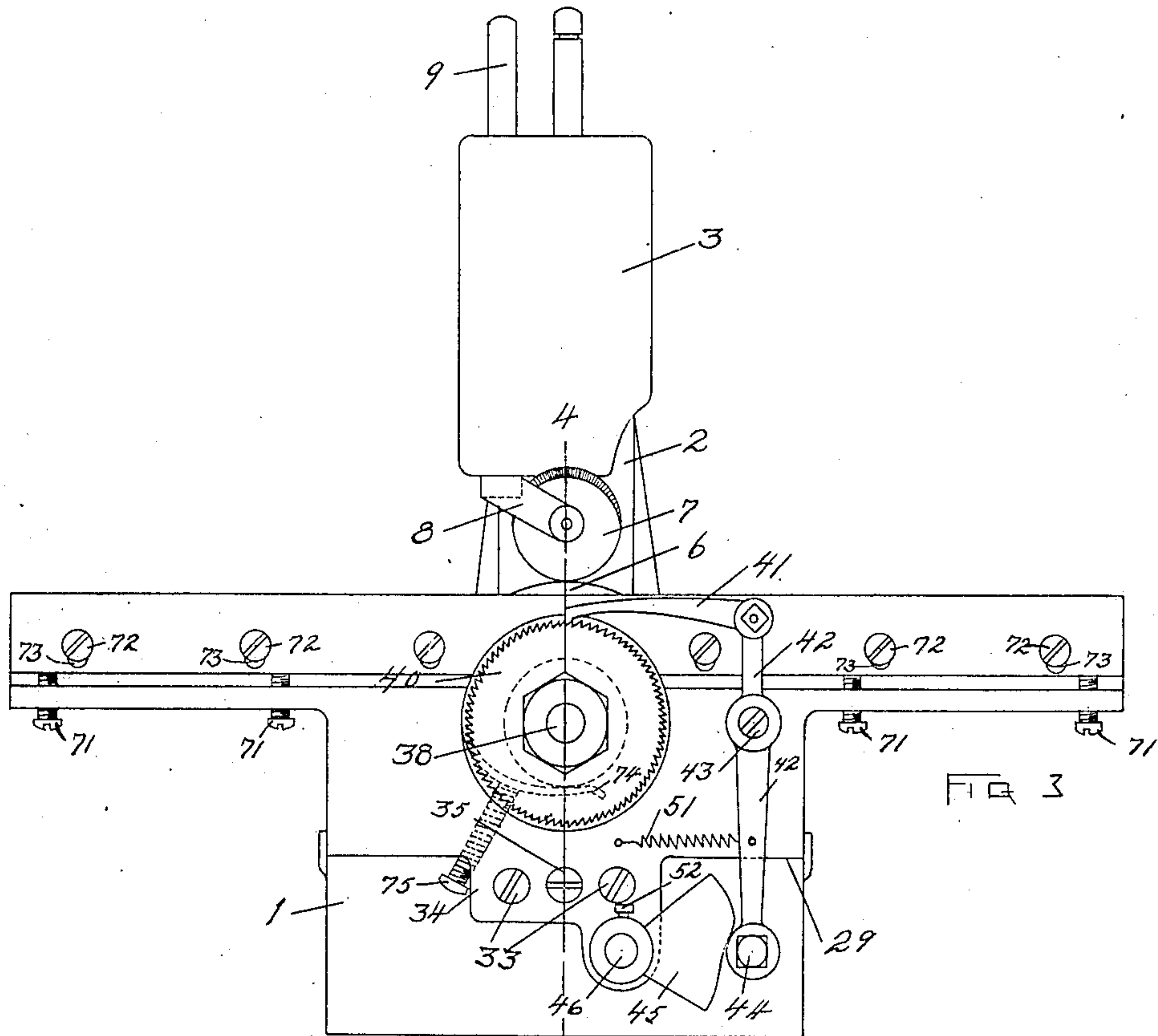


FIG 3

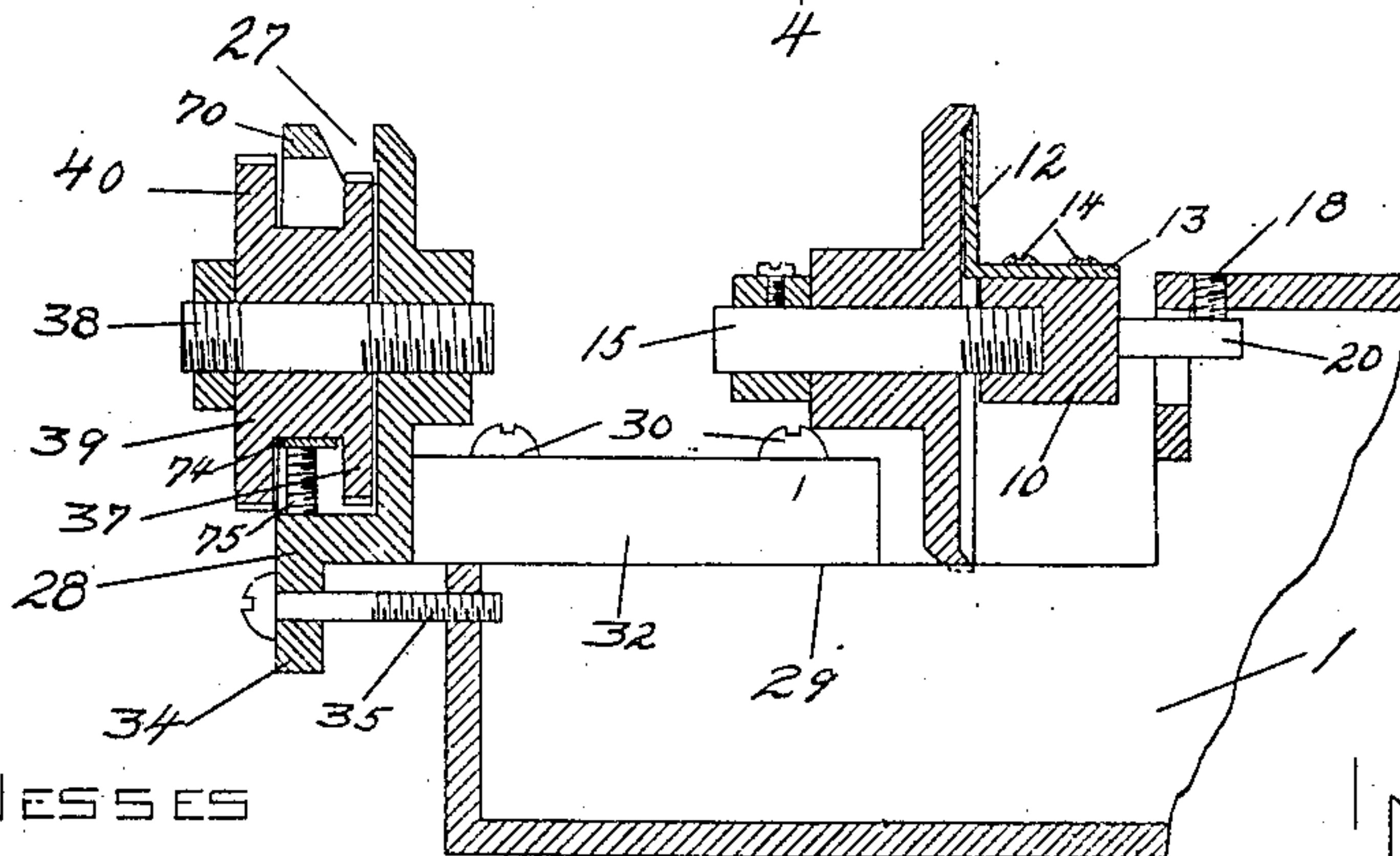


FIG 4

WITNESSES

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4 SHEETS—SHEET 3.

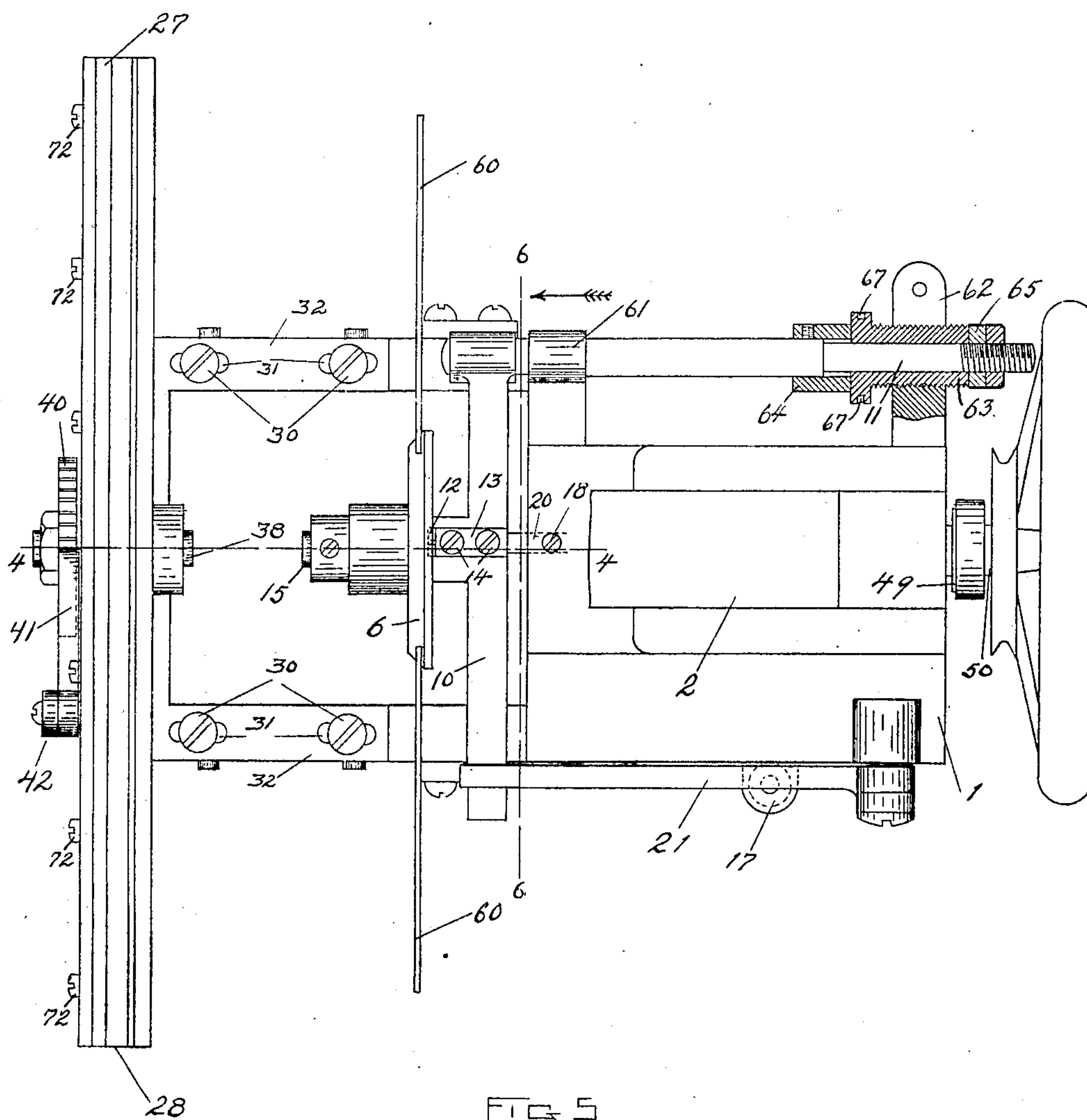


FIG 5

WITNESSES

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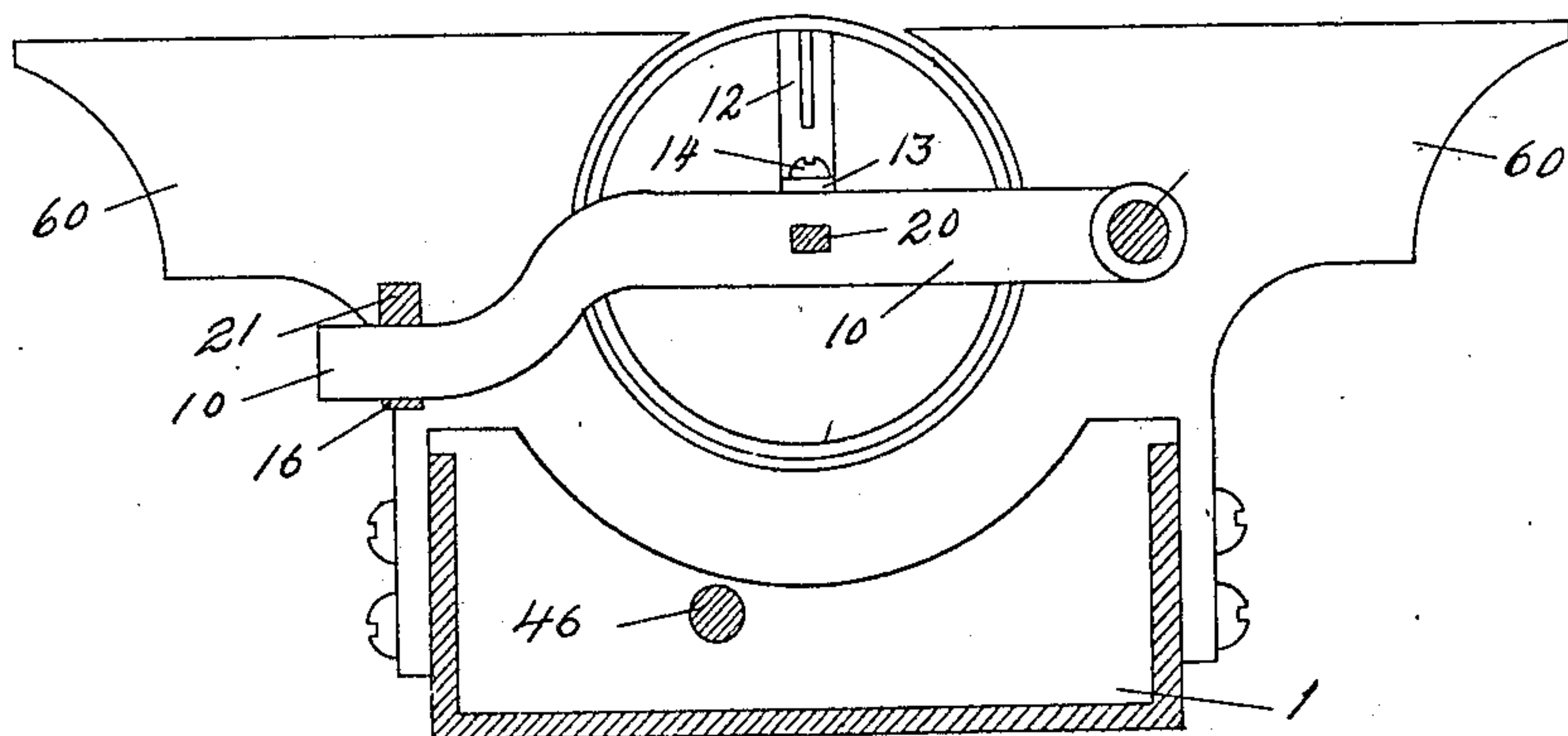
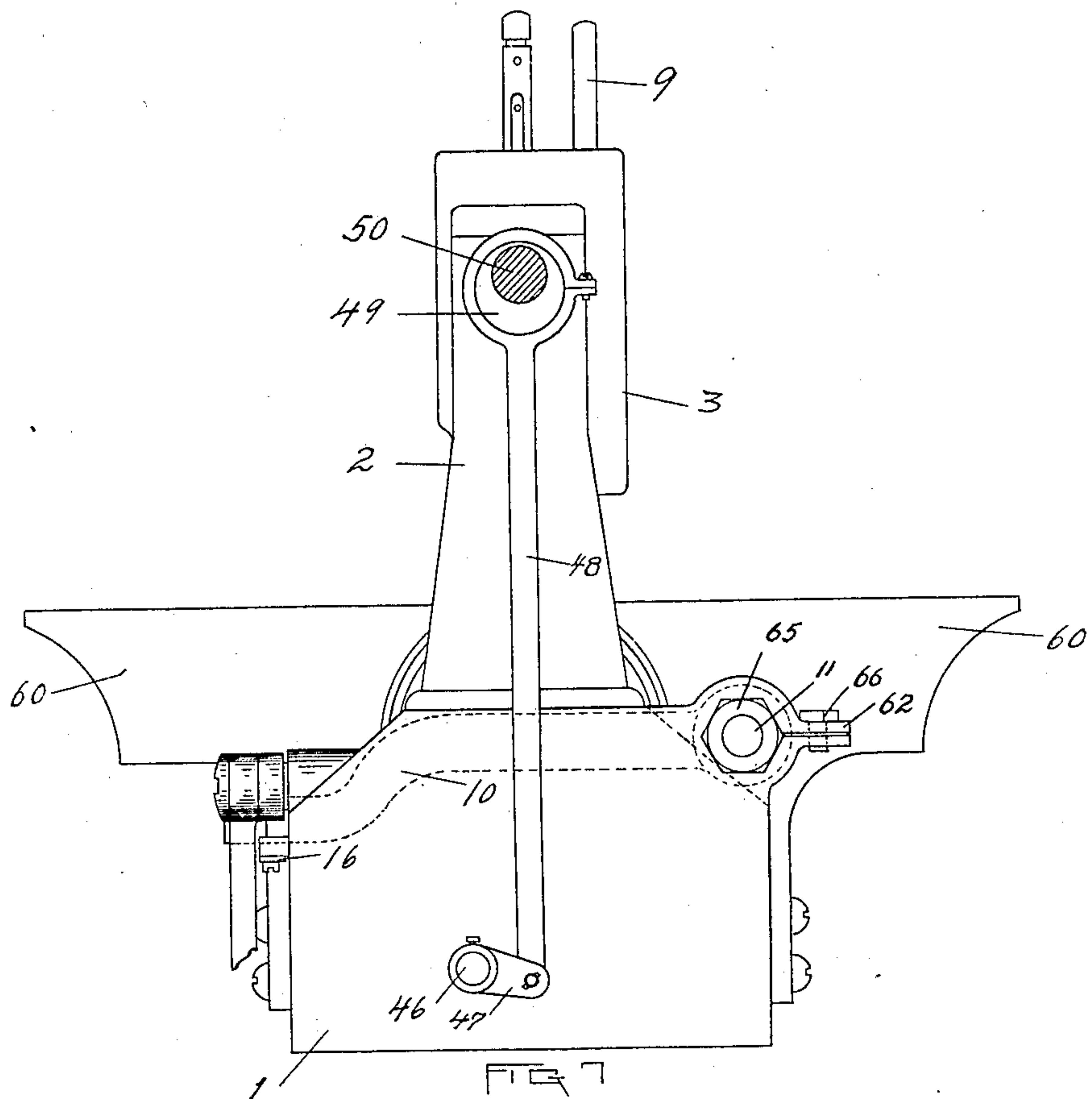
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4 SHEETS—SHEET 4.



WITNESSES
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FIG 8

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UNITED STATES PATENT OFFICE.

ALBERT M. BANKER, OF JOHNSTOWN, AND FRANK CURTIN, OF GLOVERSVILLE,
NEW YORK.

GLOVE-TIPPING MACHINE.

No. 876,129.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed May 25, 1906. Serial No. 318,623.

To all whom it may concern:

Be it known that we, ALBERT M. BANKER, residing at Johnstown, and FRANK CURTIN, residing at Gloversville, in the county of Fulton and State of New York, have invented certain new and useful Improvements in Glove-Tipping Machines, of which the following is a specification.

The invention relates to such improvements and consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a view in side elevation of our improved glove-tipping machine. Fig. 2 is a plan view of the under side of the work-plate detached. Fig. 3 is a view in front elevation of the machine, with the work-plate removed. Fig. 4 is a vertical, longitudinal section of the same taken on the broken line 4—4 in Fig. 3. Fig. 5 is a top plan view of the machine with the work-plate removed, and the head broken away, and certain parts shown in horizontal section. Fig. 6 is a vertical cross section of the same taken on the broken line 6—6 in Fig. 5, viewed in the direction of the arrow. Fig. 7 is a view in rear elevation of the machine.

In the manufacture of certain kinds of gloves, particularly ladies silk and cotton gloves, it is customary to reinforce the ends of certain of the fingers where most exposed to wear. This is commonly accomplished by making the finger, at the point where it is desired to reinforce the same, of double thicknesses of fabric by applying and securing to the inner side thereof a reinforce-piece or tip which may be either integral with, or separate from, the finger-strip itself, said tip being stitched to the body of the finger-strip. The operation of thus stitching the reinforce-tips to the bodies of the finger-strips is accomplished while the glove is yet in blank form and as a preliminary operation to the formation of the finger-sheaths. The inner end of the tip which extends transversely of the finger-sheath is preferably secured to the finger-strip by an over-seaming operation termed "blind stitching" whereby the seaming thread is confined wholly to the side of the finger-

strip to which the tip is attached, and does not appear upon the outer side of the strip which is exposed to view when the glove is worn. As a desirable mode of procedure to accomplish the stitching of the reinforce-tips to the finger-bodies in this manner, the finger portions of the glove-blank are folded over the edge of a thin metal plate at about the point where the stitching is to be inserted, with the tips applied to the folded-over portions of the finger-bodies, the inner edge of each tip being exposed adjacent to the fold-line of its finger-strip just beyond the edge of said plate, in which position the parts are held by spring-clamps while the blank thus mounted upon said plate is fed to a sewing machine which performs the stitching operation.

The present invention relates in certain of its features to machines for thus stitching the reinforce-tips to the finger-strips, and in certain other features to the construction of the work-plate for supporting the blanks in proper position for presentation to the stitch-forming mechanism.

Certain objects of the invention are to present the work in a horizontal position to the stitch-forming mechanism the needle of which operates in a vertical plane; to avoid danger of entanglement of the work with the operating mechanism; to secure by suitable adjustment greater accuracy in the insertion of the stitches; and to facilitate the work of the operator.

Other objects of the invention will appear in connection with the following description.

Referring to the drawings wherein the invention is shown in its preferred form, 1, represents the base, 2 the arm, and 3, the head of an ordinary form of sewing machine, employing a needle, 4, operating in a vertical plane, and a looper, 5, all of which may be of the usual form adapted for making an over-edge seam, using a single thread.

The machine is provided with a pair of disks, 6 and 7, between which the work is adapted to pass in a horizontal position to the stitch-forming mechanism. The upper disk, 7, is rotatively mounted upon the offset end of an arm, 8, projecting from the spindle, 9, rotatively mounted in the head of the machine, whereby the disk, 7, is adapted to be swung into and out of position to cooperate with the lower disk 6. The lower disk is rotatively mounted upon a stud, 15, pro-

jecting transversely of the path of the work from the rocker-arm, 10, fixed upon the rock-shaft, 11, supported in bearings at the side of the machine, said rocker-arm extending transversely of the machine, below, and in rear of, the needle, and parallel with the line of movement of the work. The disk, 6, is undercut on its rear side to form a space adapted to receive the throat-plate, 12, which occupies a vertical position, and is provided on its rear side with a vertical groove to receive the needle. The throat-plate is secured in position by means of an L-shaped base, 13, attached by means of screws, 14, to the upper side of the rocker-arm 10. The rocker-arm, 10, is yieldingly forced upwardly by means of a plate-spring, 16, the force of which is regulated by means of a set-screw, 17, the position of the rocker-arm being determined normally by means of a set-screw, 18, inserted downwardly through the bed-plate of the machine in the path of a lug, 20, projecting rearwardly from the rocker-arm. By means of said set-screw, 18, the normal vertical position of the disk, 6, and throat-plate, 12, can be accurately regulated. The disk, 6, and throat-plate can be depressed when desired by means of an angle-lever, 21, which may be operated in any known manner, one arm of said lever overhanging the swinging end of the rocker-arm 10.

The work to be fed to the machine is mounted upon a work-plate, 22, which is supported in a horizontal position with its inner edge interposed between the disks, 6 and 7, resting upon the former. The work-plate, 22, is provided on its underside with a series of spring clamps, 23, operating in the usual manner to clamp against the underside of the plate the folded-over end-portions of the finger-strips, with the reinforce-tips applied in proper position thereto, while the body of the finger-strips and hand-portion of the glove are drawn over upon the upper surface of the work-plate into engagement with the retaining pins, 24, which serve to hold the finger-strips stretched over the edge of the plate in position to receive the over-seam stitches inserted by the stitch-forming mechanism. The work-plate, except for the pins, 24, presents a smooth, flat, upper surface upon which the work can rest free from danger of entanglement with the operating mechanisms. At or near its outer end, the work-plate, 22, is pivotally mounted at, 25, upon a slide, 26, the axis of the pivotal connection extending in a horizontal line parallel with the line of movement of the work. The slide, 26, is located beneath the work-plate and is adapted to fit and slide longitudinally along a slideway, 27, formed in an adjustable bed, 28, on the front end of the machine. The outer wall of the slideway is formed by a separate plate, 70, beveled or

chamfered on its inner side to form an upwardly flaring slideway, which plate rests upon supporting screws, 71, by adjustment of which it can be lowered and raised to take up any lost motion due to wear, said plate being locked in adjusted position by means of the screws, 72, which pass through the respective slotted apertures, 73, in said plate. The adjustable bed, 28, is moved along slideways, 29, on the main frame of the machine toward and from the vertical line of the needle, being secured to said main frame by means of screws, 30, inserted through slots, 31, in the inwardly projecting legs, 32, which form a part of said adjustable bed. The location of the adjustable bed can be accurately determined by means of three adjusting screws, one of which 35, passes loosely through an aperture in a flange, 34, depending from said adjustable bed and into a screw-threaded aperture in the main frame of the machine whereby it is adapted when screwed inwardly to force the adjustable bed inwardly along its slideways, 29, the other adjusting screws, 33, 33, passing through screw-threaded apertures in said depending flange, 34, into engagement with the main frame of the machine and being adapted when screwed inwardly to force the adjustable bed outwardly. By this means the bed can be accurately adjusted and maintained in adjusted position, being further secured, when adjusted, by tightening the screws 30. It is thus possible to secure an extremely accurate adjustment of the work-plate to cause the inner end of the same to properly cooperate with the stitch-forming mechanism, which is very desirable as the formation of blind stitches by means of a sewing machine requires that the position of the work should be adjusted to the position of the needle within the dimension of a thickness of the fabric in order that the stitch may neither show through the fabric nor entirely skip the fabric of the finger-strip.

Slide movements may be imparted to the slide, 26, and work-plate in any known manner. As a preferred means for imparting to the work-plate a step-by-step movement I have shown the work-plate-slide provided on its under side with gear-teeth, 36, forming a gear-rack adapted to be engaged by a gear-wheel, 37, rotatively mounted upon a stud, 38, fixed upon the adjustable bed, 28, the engagement of said gear with said gear-rack being permitted by means of an opening in the bottom of the slideway 27. The gear 37, is fixed upon a sleeve, 39, upon which is also fixed a ratchet, 40, adapted to be engaged by a pawl, 41, on the upper end of a lever, 42, fulcrumed at, 43, upon the adjustable bed, 28, and having its lower end provided with a follower, 44, adapted to be engaged by a cam-segment, 45, fixed upon a rock-shaft, 46, extending longitudinally of the machine from

the front end of the machine to the rear end thereof whereat it has fixed thereon a rocker-arm, 47, connected by pitman, 48, with an eccentric, 49, on the main shaft, 50, of the machine. The follower, 44, is held against the cam, 45, by means of a coil-spring, 51, connecting the lower arm of the lever, 42, with a fixed support on the adjustable bed 28. As the machine operates, a rocking movement is imparted to the rock-shaft, 46, through the eccentric, 49, and pitman, 48, which rocking movement is imparted through the cam, 45, and follower, 44, to the lever, 42, causing in connection with the spring, 51, a reciprocating movement of said lever and pawl, 41, and a step-by-step movement of ratchet, 40, connected gear-wheel, 37, and work-plate 22. Accidental movement of the ratchet, 40, and gear, 37, is prevented by engagement with the sleeve or hub upon which they are mounted of a friction-plate, 74, adapted to be forced against said hub or sleeve with the desired degree of force by means of a set-screw 75. The cam, 45, is adjustably secured to the rock-shaft, 46, by a set-screw, 52, permitting the cam to be properly adjusted when the adjustable bed has been adjusted to the desired position.

On opposite sides of the lower disk, 6, are provided stationary slideway-supports, 60, along which the inner edge of the work-plate slides in approaching and leaving the disk. The top of these slideway supports is approximately tangential to the top of the lower disk, but the pivotal connection between the work-plate and its slide, 26, permits a rocking movement of the work-plate upon such pivotal connection to adapt its inner end to any desired variation in height in passing through the machine, as well as leaves its inner end under the control, as to height, of the disk 6. As a means for accurately locating the throat-plate and lower disk, 6, relatively to the needle, we have shown means for adjusting longitudinally the rock-shaft, 11, which passes through bearings at, 61 and 62, at the side of the machine. The bearing, 62, is shown in the form of an interiorly screw-threaded split-bearing, the members of which are adapted to be clamped tightly upon a bearing sleeve, 63, which is similarly exteriorly screw-threaded. A reduced end of the rock-shaft, 11, fits within the sleeve, 63, within which it is capable of rotative movement while longitudinal movement is prevented by means of a collar, 64, which is fixed upon the larger portion of said shaft in position to engage one end of the bearing sleeve, 63, and a nut, 65, fitting the screw-threaded outer end of said shaft, 11, and adapted to abut upon the opposite end of said bearing sleeve 63. When the screw, 66, which serves to draw together the members of the split bearing, 62, is loosened, the bearing sleeve, 63, can be rotated within the

bearing, 62, by means of a spanner or key adapted to fit the socket, 67, formed in a peripheral flange on said sleeve, said rotative movement serving, by reason of the screw-threaded connection between the sleeve and bearing, 62, to cause a longitudinal movement of the sleeve accompanied by a like movement of the rock-shaft 11. When the desired adjustment has been accomplished the bearing sleeve is locked in position by tightening the screw 66.

In the operation of the machine a plurality of work-plates will be employed, it only being necessary for the operator to clamp the work properly upon a work-plate and insert the same in the machine, after which the operation proceeds automatically, the plate and work passing out of the machine at the side opposite that at which they entered it, leaving the operator free to prepare another plate during the passage of the previously prepared plate through the machine.

What I claim as new and desire to secure by Letters Patent is

1. In a glove-tipping machine, the combination with the stitch-forming mechanism having a vertically operating needle; of a horizontally disposed work-plate having one edge adjacent to the path of the needle; means wholly subjacent to said work-plate for supporting the same in horizontal position; work-clamping mechanism on the under side of said work-plate; and means for retaining the clamped work folded over said edge of said plate.

2. In a glove-tipping machine, the combination with the stitch-forming mechanism; of a horizontally disposed work-plate having one edge adjacent to the path of the needle; means for clamping the work upon the underside of said plate; means for holding the clamped work folded over said edge of said plate; and plate-feeding mechanism on the under side of said plate.

3. In a glove-tipping machine, the combination with the stitch-forming mechanism; of a horizontally disposed work-plate having one edge adjacent to the path of said needle; means for clamping the work upon the under side of said plate; means for holding the clamped work folded over said edge of said plate; a gear-rack on the under side of said plate; and a gear-wheel engageable with said gear-rack and operatively connected with the driving mechanism of the machine.

4. In a glove-tipping machine, the combination with the stitch-forming mechanism; of a slideway; a slide movable along said slideway; a work-plate pivotally connected with said slide upon an axis extending parallel therewith, said plate having one of its edges parallel with said axis and adjacent to said stitch-forming mechanism; and means for holding the work upon said work-plate.

5. In a glove-tipping machine, the combi-

nation with the stitch-forming mechanism; of a work-plate having one edge adjacent to said stitch-forming mechanism; separate supports beneath said plate adjacent to said edge and the opposite edge thereof respectively; and work-holding mechanism on the underside of said plate between such supports.

6. In a glove-tipping machine, the combination with the stitch-forming mechanism having a vertically operating needle; of a horizontally disposed work-plate having one edge thereof adjacent to said stitch-forming mechanism; a disk rotatively mounted beneath said edge of said plate adapted to engage the under side thereof; a support for said plate near its opposite edge; and means for supporting the work upon said plate.

7. In a glove-tipping machine, the combination with the stitch-forming mechanism having a vertically operating needle; of a horizontally disposed work-plate having one edge thereof adjacent to said stitch-forming mechanism; a disk rotatively mounted beneath said edge of said plate adapted to engage the under side thereof; a slideway extending beneath said plate along its opposite edge; a plate-supporting slide mounted in said slideway; and means for supporting the work upon said plate.

8. In a glove-tipping machine, the combination with the stitch-forming mechanism having a vertically operating needle; of a horizontally disposed work-plate having one edge thereof adjacent to said stitch-forming mechanism; a disk rotatively mounted beneath said edge of said plate adapted to engage the under side thereof; a slideway extending beneath said plate along its opposite edge; a slide movable along said slideway; a pivotal connection between said slide and said plate; and means for supporting the work upon said plate.

9. In a glove-tipping machine, the combination with the stitch-forming mechanism having a vertically operating needle; of a horizontally disposed work-plate having one edge thereof adjacent to said stitch-forming mechanism; a disk rotatively mounted above said edge of said plate adapted to engage the upper side thereof; a disk rotatively mounted below said edge of said plate adapted to engage the under side thereof; means for supporting said plate near its opposite edge; work-holding mechanism on the under side of said plate; and plate-moving mechanism beneath said plate.

10. A work-plate for glove-tipping machines, having work-holding mechanism and a feed-rack on one and the same side of the plate, and having on the opposite side of the plate a plain work-supporting surface.

11. In a glove-tipping machine, the combination with the stitch-forming mechanism,

comprising in part the needle, looper and throat-plate; of a work-plate having one edge thereof adjacent to said stitch-forming mechanism; a throat-plate-support adjustable transversely of said edge of said work-plate; means for securing said throat-plate-support in adjusted position and means for clamping upon the work-plate the work folded over said edge.

12. In a glove-tipping machine, the combination with the stitch-forming mechanism having a vertically operating needle; of a horizontally disposed work-plate having one edge adjacent to said stitch-forming mechanism; a support upon which said work-plate is movable in a direction parallel with said edge; and means for adjustably moving said work-plate-support toward and from the stitch-forming mechanism transversely of the direction of movement of the work-plate.

13. In a glove-tipping machine, the combination with the stitch-forming mechanism; of a work-plate having one edge adjacent to the stitch-forming mechanism; a slideway on the frame of the machine extending transversely of said edge of said work-plate; a slideway support adjustably movable along said slideway toward and from the stitch-forming mechanism; means for securing said slideway support in adjusted position; and a slide connected with said work-plate movable along a slideway in said slideway support parallel with said edge of said plate.

14. In a glove-tipping machine, the combination with the stitch-forming mechanism, comprising in part the needle, looper, and throat-plate; and means for adjusting said throat-plate relatively to said needle; of a work-plate having one edge thereof adjacent to said throat-plate; means for moving said work-plate in a direction parallel with said edge thereof; and means for adjustably moving said work-plate toward and from the stitch-forming mechanism transversely of said edge thereof.

15. In a glove-tipping machine, the combination with the stitch-forming mechanism, comprising in part the needle, looper and throat-plate; of a disk adjacent to said throat-plate; a work-plate having one edge adapted to rest upon said disk; a common-support for said disk and throat-plate; means for adjustably moving said support transversely of said edge of said work-plate; and means for securing said support in adjusted position.

In testimony whereof, we have hereunto set our hands this 19th day of May, 1906.

ALBERT M. BANKER.
FRANK CURTIN.

Witnesses:

NICHOLAS M. BANKER,
EDWARD AUSTIN.