No. 815,149. PATENTED MAR. 13, 1906.

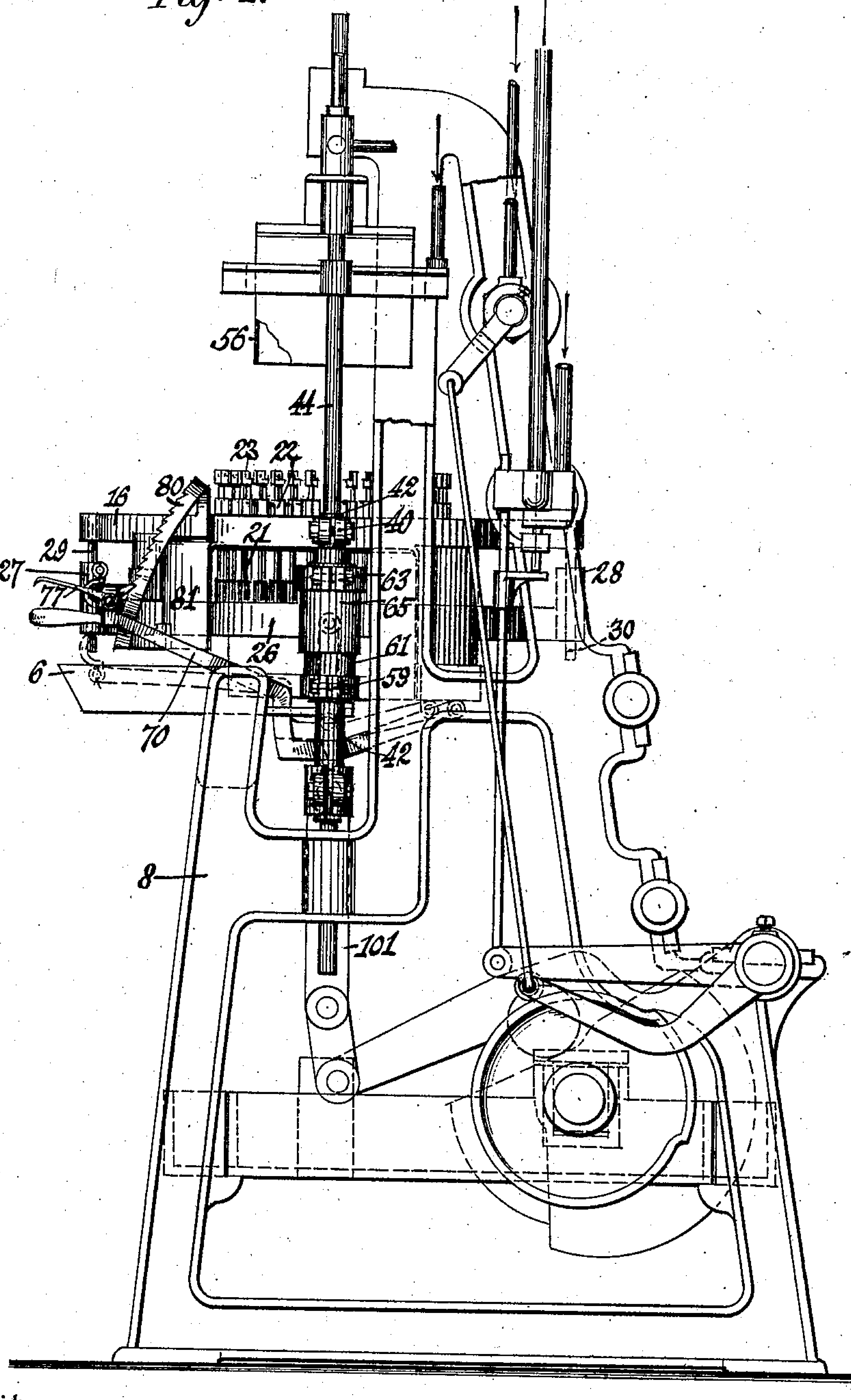
C. EICKEMEYER.

MACHINE FOR BLOCKING AND SHAPING HATS.

APPLICATION FILED DEC. 17, 1904. RENEWED AUG. 18, 1905.

5 SHEETS—SHEET 1.

Fig: 1.



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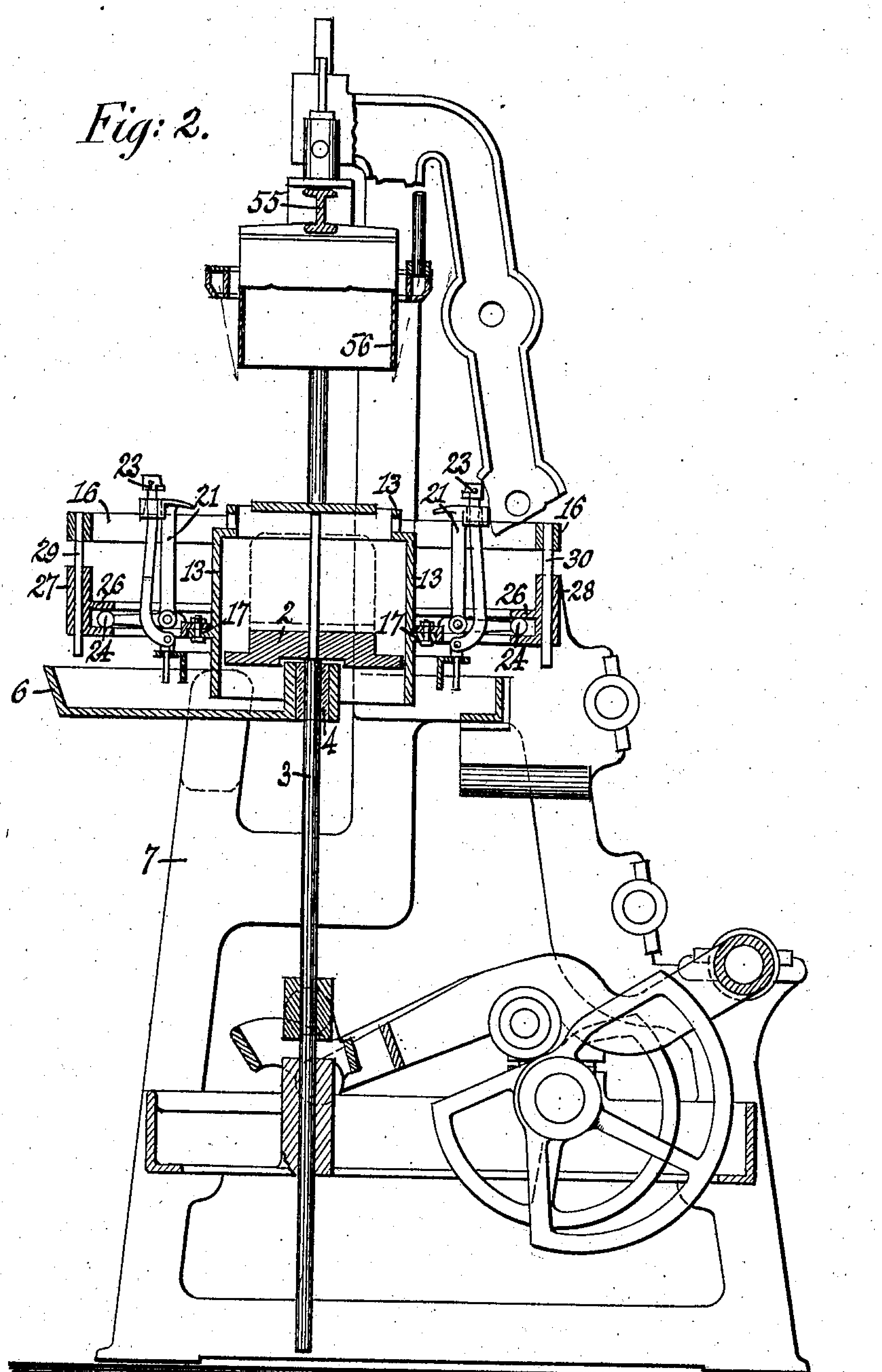
5 SHEETS—SHEET 2.

Fig: 2.



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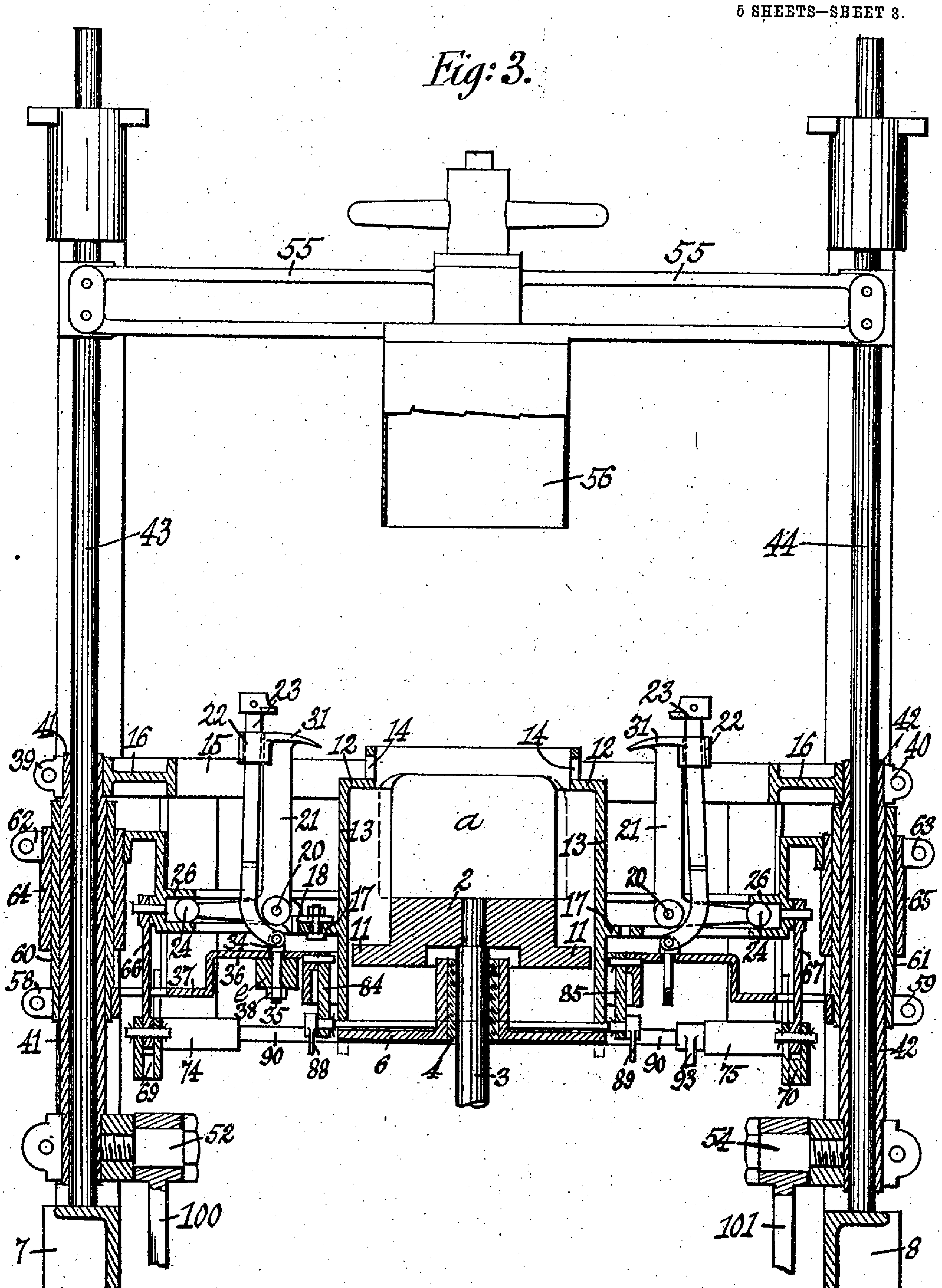
5 SHEETS—SHEET 3.

Fig: 3.



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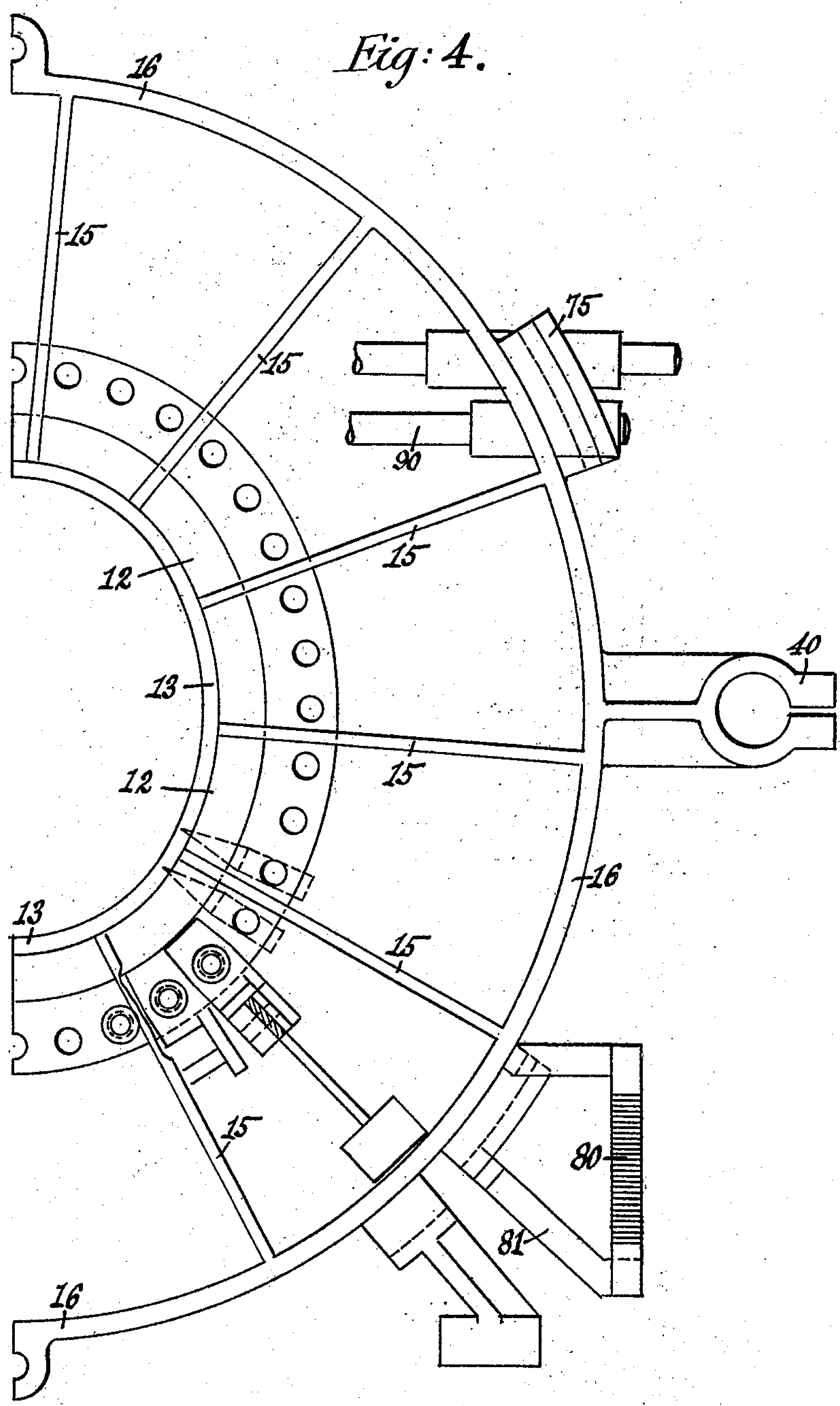
5 SHEETS—SHEET 4.

Fig: 4.



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5 SHEETS—SHEET 5.

Fig: 5.

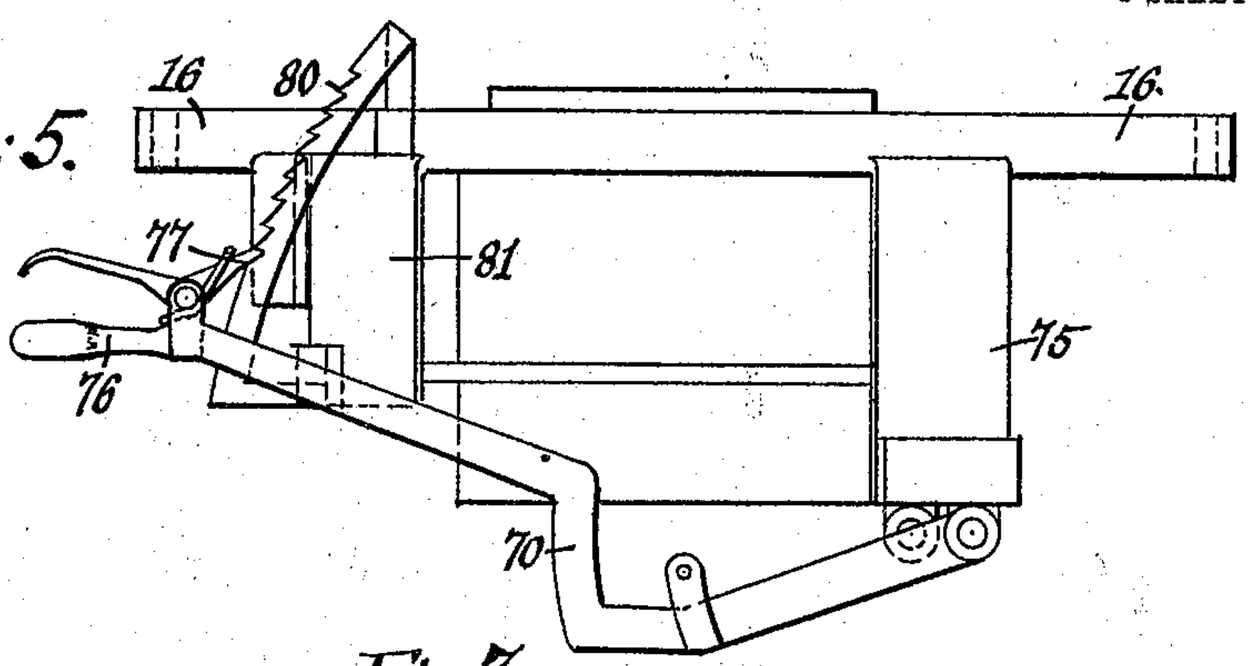


Fig: 7.

Fig: 6.

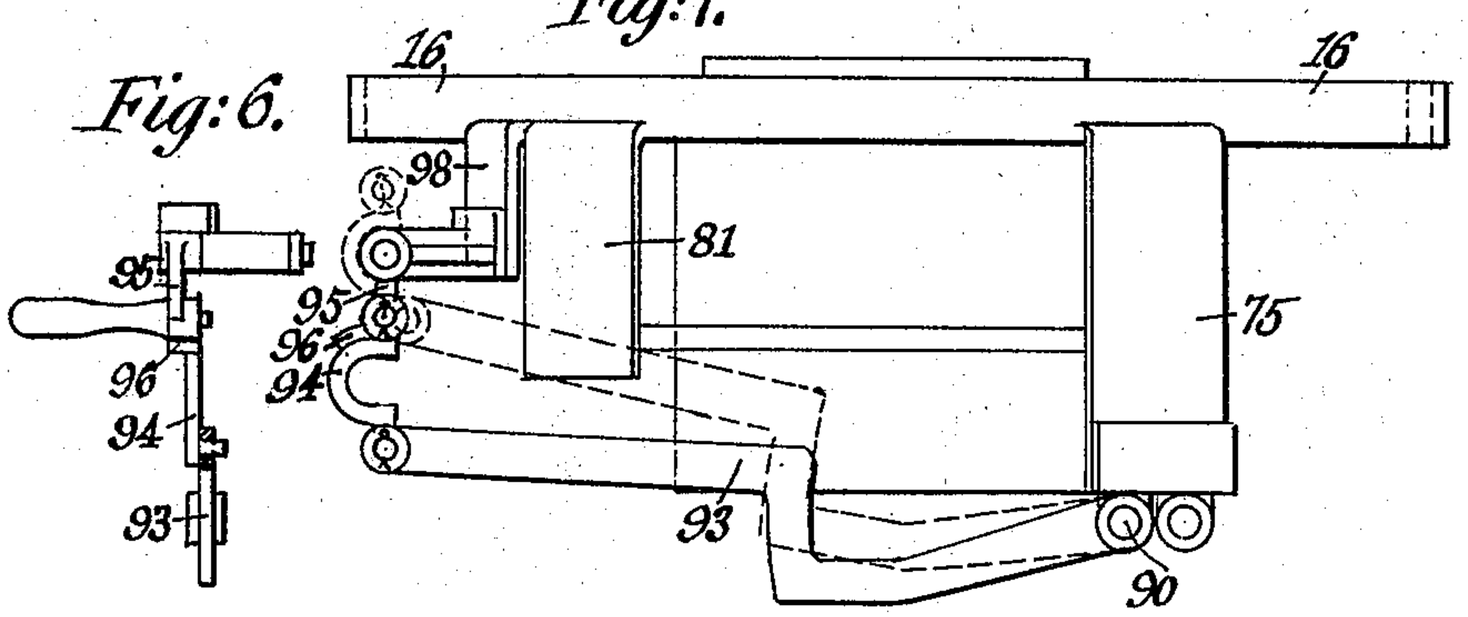


Fig: 8.

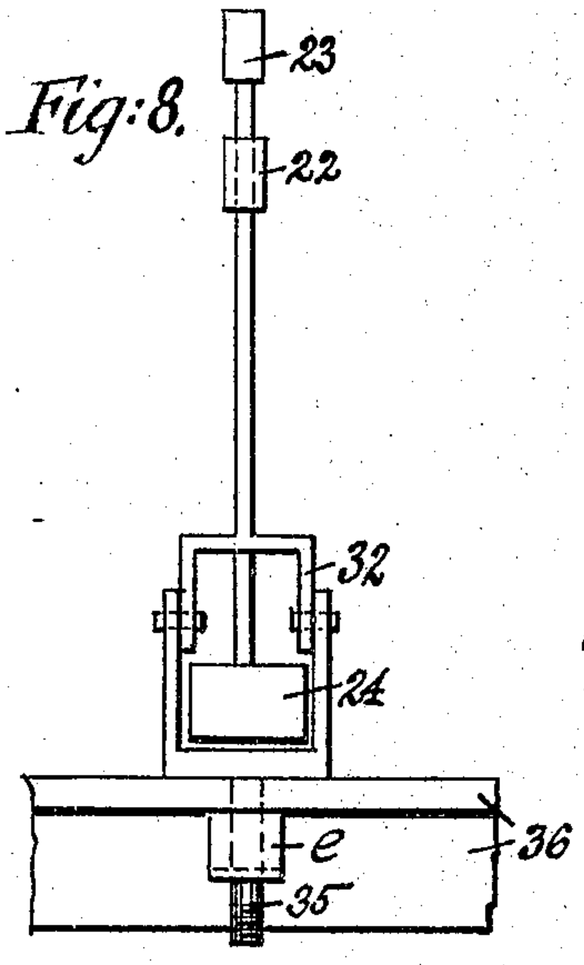


Fig: 9.

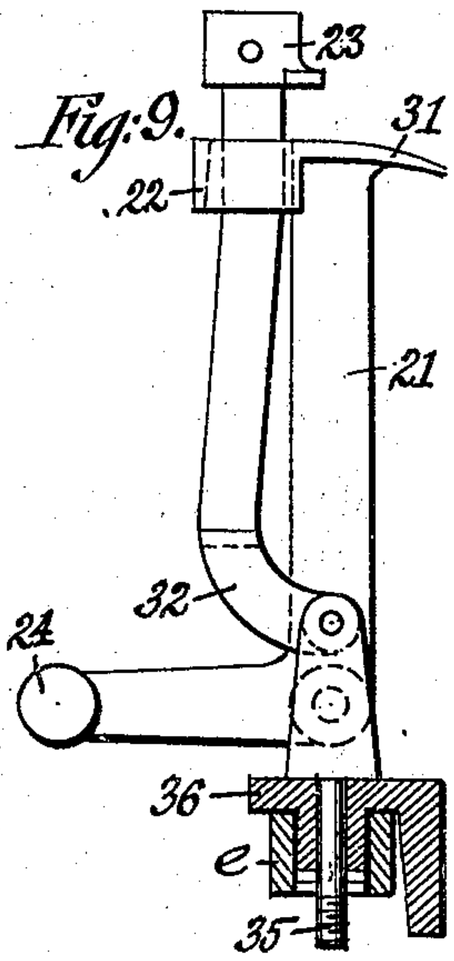
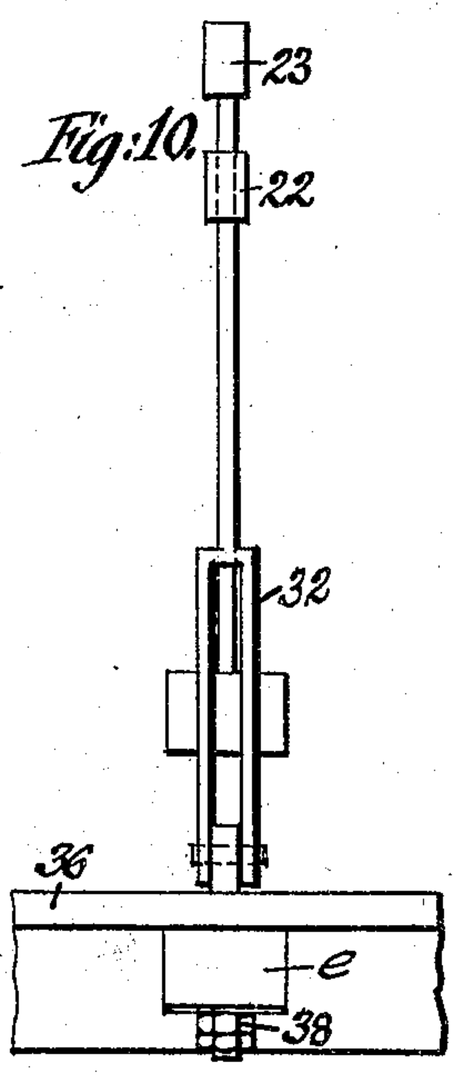


Fig: 10.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR BLOCKING AND SHAPING HATS.

No. 815,149. Specification of Letters Patent. Patented March 13, 1906.

Application filed December 17, 1904. Renewed August 18, 1905. Serial No. 274,676.

To all whom it may concern:

Be it known that I, CARL EICKEMEYER, a citizen of the United States, residing in Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Machines for Blocking and Shaping Hats, of which the following is a specification.

This invention relates to improvements in machines of the general type illustrated in United States Letters Patent No. 540,219, issued May 28, 1895, to Rudolph Eickemeyer. Machines of this construction operated to better lay the felt on the block and more properly define the band of the hat than machines previously constructed. In such machines, however, the brim of the hat was simply centered and unevenly clamped and no means were provided whereby the brim might be stretched either simultaneously with the blocking of the crown or at any time before the removal of the hat-body from the machine. Such operation was a subsequent one performed by other devices after removal of the hat from the blocking and banding machine.

The present invention relates to means for stretching the brim and taking out all unevenness in the felt between the band and the outer edge of the brim, while the hat-body is centered and properly clamped throughout the blocking operation on a machine of the type mentioned. A set of annularly-arranged lower brim-clamping jaws are provided and a set of upper brim-clamping jaws. Said jaws are mounted in a manner and by means differing from clamping-jaws heretofore employed in the stretching-machines—for example, in the machines of United States Letters Patent No. 361,353, issued to Rudolph Eickemeyer April 19, 1887, whereby increased wearing-surface is obtained and whereby the clamping-jaws are so controlled as to properly coöperate with the automatic blocking devices.

The invention consists in the combination in a hat blocking and stretching machine of a vertically-guided main supporting-ring surrounding said hat-block, lower clamping-jaws pivoted to said supporting-ring, a clamping-ring slidably mounted on sleeves of the supporting-ring, upper clamping-jaws pivoted to said clamping-ring, a stretching-ring slidably mounted on said clamping-ring and engaging said lower clamping-jaws, operating devices connected with said supporting-ring and clamping-ring for operating the latter relatively to the former for closing said clamping-jaws, means for locking said operating devices to the supporting-ring, a stretching-lever connected with said supporting-ring and with said stretching-ring, and means for locking said stretching-ring to the supporting-ring; and the invention consists, further, in certain details of construction and combinations of parts which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation, with parts removed, of a machine embodying my invention. Fig. 2 is a vertical section on the same scale as Fig. 1. Fig. 3 is a vertical transverse section, on a larger scale, of a portion of the machine, showing in detail the brim-clamping devices. Fig. 4 is a plan view of a portion of the clamping-jaw, supporting-ring, and connected parts. Fig. 5 is a side elevation of a lever mechanism for operating the clamping-jaws for stretching the hat-brim. Figs. 6 and 7 are respectively a front elevation and a side elevation of a lever mechanism for operating the clamping-jaws for clamping the hat-brim. Figs. 8 and 9 are respectively a rear elevation, on an enlarged scale, and a side elevation of the clamping-jaws; and Fig. 10 is a rear elevation of a modified form of the same.

Similar characters of reference indicate corresponding parts.

Referring to the drawings, *a* indicates the hat-block. Said block is secured to a suitable rest 2, mounted on a central spindle 3, adapted to move vertically in a suitable bearing in the trough 6 of the machine, which extends between the side frame 7 and 8. The block-support 2 is provided with a flange 11, adapted to engage with a shoulder 12 of a main supporting-ring 13 16. Said main supporting-ring 13 is provided at its upper portion with openings 14 and with radiating-ribs 15, which connect the inner portion of said ring with an outer rim portion 16 of the same. The inner portion of the ring is provided with a laterally-extending flange 17, on which are supported, by suitable bolts, brackets 18. To

said brackets are pivoted, by means of suitable fulcrum-pins 20, bell-crank clamping-jaws 21. Each lever is provided at its upper end with a vertically-slotted projection 22, in which is guided the upper clamping-jaw 23. The lower arms of the lower clamping-levers 21 extend outwardly from the center of the machine instead of toward the center, whereby the use of a larger stretching-ring 26 with increased wearing-space for the bosses 24 at the outer ends of said lower arms is obtained and the use of larger bosses permitted. The stretching-ring 26 is provided with lugs 27 28, one at the front and one at the rear of the machine, whereby said stretching-ring is guided on vertical guide-rods 29 and 30, respectively, carried by the main supporting-ring. Each jaw 21 carries at its upper portion a rest 31 for the hat-brim. Each jaw 23 is forked at its lower end, as indicated at 32, Figs. 8, 9, and 10, so as to avoid interference with the lower portion of the jaw 21, and is pivoted to a suitable standard 34, secured by a bolt 35 to a flange 36 of a clamping-ring 37. The standard 34 is secured yieldingly to the flange 36 by means of nut 38, between which and the flange 36 is located a yielding washer *e*, of rubber or any other suitable elastic material.

The supporting-ring 13 16 is secured at its sides by means of suitable clamps 39 and 40 to sleeves 41 42, respectively, which slide on side rods 43 44, secured in position by any suitable means in the side frames of the machine. To the lower end of said sleeves are wrist-pins 52 54, to which are secured, respectively, suitable connecting-rods 100 101, whereby the supporting-ring and its connected parts are raised and lowered at the proper times.

A cross-head 55 is secured by any suitable means stationarily in position above the supporting-ring and clamping-jaws. Said cross-head carries the banding-shell 56, secured thereto by any suitable means—such, for instance, as those shown in the United States Letters Patent No. 540,219, previously referred to.

The clamping-ring 37 is secured by means of clamps 58 59 to sleeves 60 61, respectively, which sleeves are mounted to slide on the sleeves 41 42, respectively, of the supporting-ring. The stretching-ring 26 is secured by means of clamps 62 63 to sleeves 64 65, slidably mounted on the sleeves 60 61, respectively, of the stretching-ring. To the stretching-ring are pivoted links 66 67, which are connected at their opposite ends to levers 69 70, respectively, fulcrumed at their rear ends to suitable brackets 74 75, depending from the supporting-ring 13 16. Each lever 69 70 is provided with a handle 76 and a spring-pawl 77, engaging a rack 80, secured to the rim 16 and to a bracket 81 of said rim.

To the clamping-ring 37 are pivoted links 84 85, the opposite lower ends of which are connected, respectively, with levers 88 89, which levers are fulcrumed at their rear ends by means of a rock-shaft 90, to which they are secured, to brackets 74 75, respectively, of the supporting-ring. To the rock-shaft 90 is fixed a forwardly-extending lever 93, which is provided at its forward portion with a toggle-lever-locking mechanism comprising a crank 94, pivoted to said lever 93, and at its front to a link 95 and having a handle. The link 95 is provided with a stop 96, adapted to abut against the crank 94. Said link is fulcrumed to a bracket 98, projecting from rim 16 of the supporting-ring.

The operation of the machine is as follows: The hat-body is placed in upright position, with the brim of the hat resting upon the faces 31 of the lower clamping-jaws. The lever 93 is now depressed by means of the handle on link 95 into the position indicated in full lines in Fig. 7. By this operation the lever 93 operates through rock-shaft 90 and levers 88 89 and links 84 85 the clamping-ring 37 in downward direction, whereby the heads of the upper clamping-jaws 23 are depressed upon the hat-brim and the latter thereby clamped between said heads and the rests 31 of the lower clamping-jaws. The levers 69 70 are now depressed to the desired extent, whereby links 66 67 are moved in downward direction, drawing downwardly the stretching-ring 26. Thereby the clamping-jaws 21 23 are swung together outwardly upon their pivots, thereby stretching the brim. When the hand-levers 69 70 are drawn to the desired point, the pawl 77 is permitted to engage the rack, whereby the levers and the clamping-jaws are locked in the position to which they have been moved. The further operations of blocking take place in the sequence set forth in the patent hereinbefore referred to, No. 540,219. During the operation of blocking the brim-holding device described securely holds the brim, so that all unevenness of the felt is stretched out of the brim during the blocking process. The hat then receives a jet of water, which sets the stiffening. The operations of raising the brim-clamping device and hat-block *a* to the banding-shell and the admission of steam to the shell at the proper time for laying the crown upon the block may all be performed by devices similar in construction to those shown in the patent referred to, and need not be here specifically described. When the banding and blocking of the hat, together with the stretching of the brim, have been accomplished, the levers 69, 70, and 93 are released, so that the clamping-jaws may return to their original position, and the hat-block, with the banded and stretched hat thereon, is then removed and a fresh block placed in position within the supporting-ring.

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

1. In a hat blocking and stretching machine, the combination of a vertically-guided hat-block, a banding-shell, a vertically-guided main supporting-ring surrounding said hat-block, lower clamping-jaws pivoted to said supporting-ring, a clamping-ring slidably mounted on sleeves of the supporting-ring, upper clamping-jaws pivoted to said clamping-ring, a stretching-ring slidably mounted on said clamping-ring and engaging said lower clamping-jaws, operating devices connected with said supporting-ring and clamping-ring for operating the latter relatively to the former for closing said clamping-jaws, means for locking said operating devices to the supporting-ring, a stretching-lever connected with said supporting-ring and with said stretching-ring, and means for locking said stretching-ring to the supporting-ring.

2. In a hat blocking and stretching machine, the combination of a vertically-guided hat-block, a banding-shell, a vertically-guided main supporting-ring surrounding said hat-block, lower bell-crank clamping-jaws pivoted to said supporting-ring, the lower arms of said clamping-jaws being outwardly directed, a clamping-ring slidably mounted on sleeves of the supporting-ring, upper clamping-jaws pivoted to said clamping-ring, a stretching-ring at the outer side of said clamping-jaws and engaging the outwardly-directed arms of the lower jaws, said stretching-ring being slidably mounted on said clamping-ring, operating-levers connected with said supporting-ring and clamping-ring for operating the latter relatively to the former for closing said clamping-jaws, means for locking said operating-levers to the supporting-ring, a stretching-lever connected with said supporting-ring and with said stretching-ring, and means for locking said stretching-ring to the upper ring.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CARL EICKEMEYER.

Witnesses:
J. H. TARBELL,
G. A. LEE.