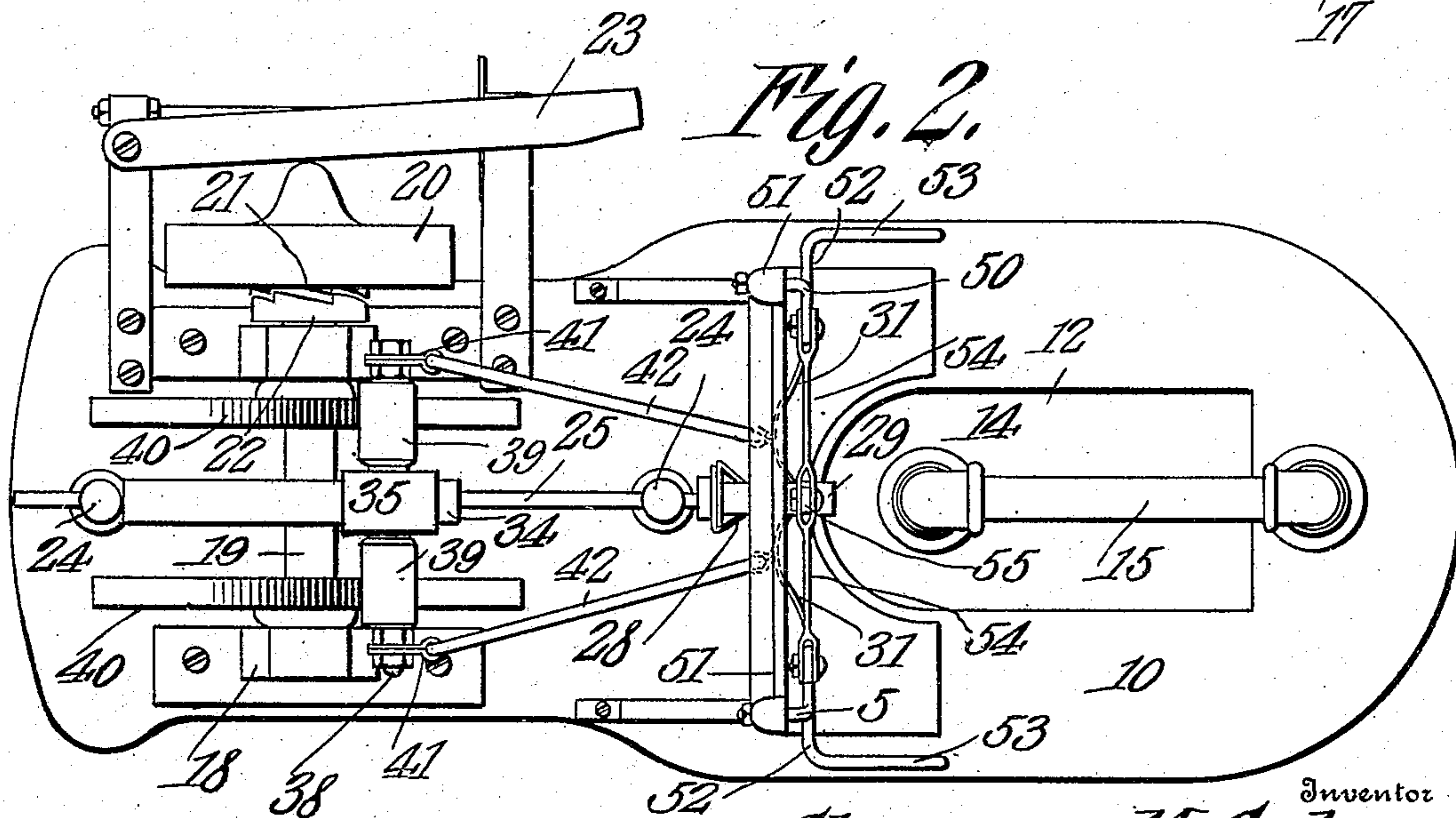


**CUFF SHAPER.**

936,761.

2 SHEETS—SHEET 1.



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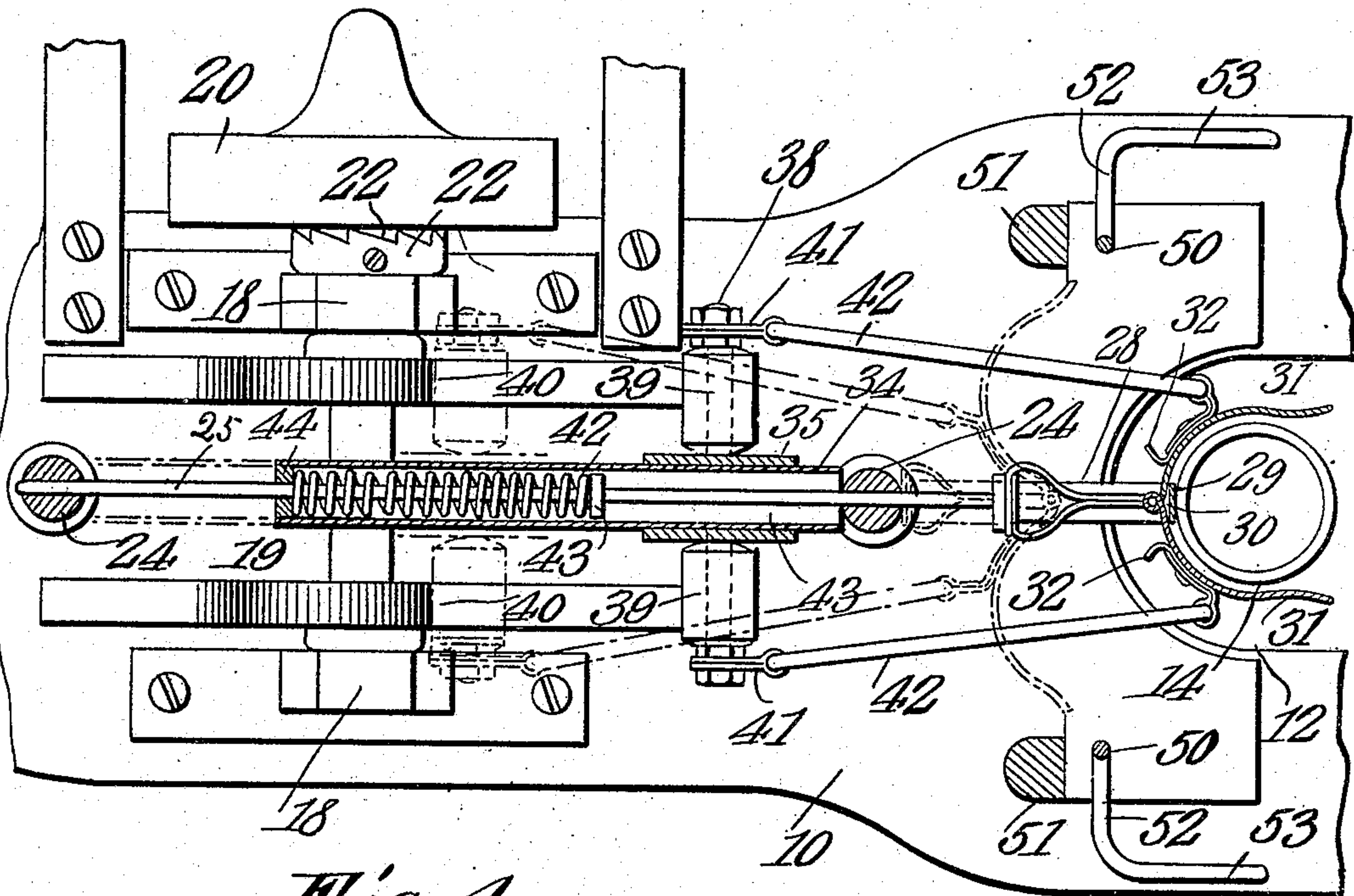
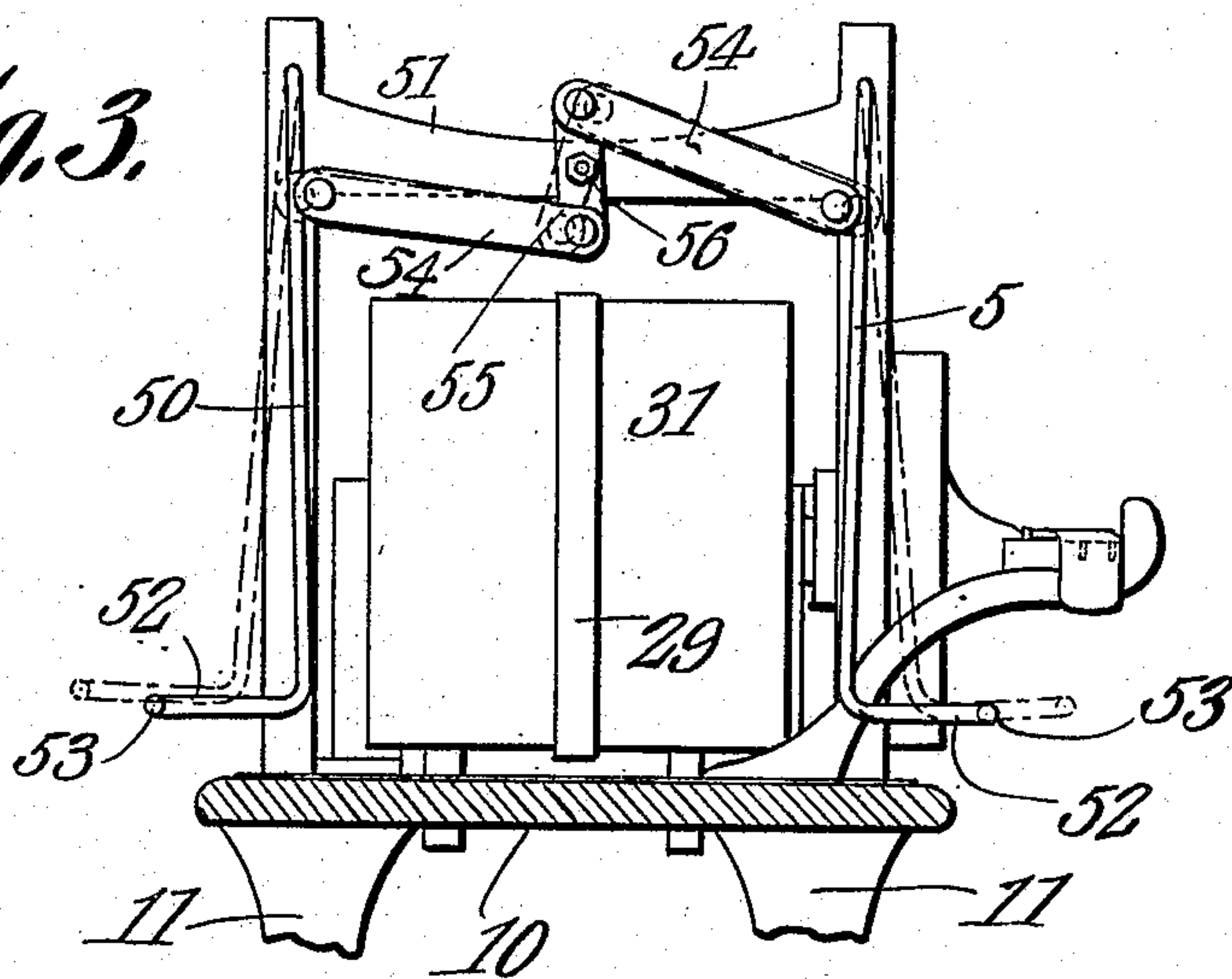
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2 SHEETS—SHEET 2.

*Fig. 3.*



*Fig. 4.*

Witnesses

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# UNITED STATES PATENT OFFICE.

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## CUFF-SHAPER.

936,761.

Specification of Letters Patent.

Patented Oct. 12, 1909.

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*To all whom it may concern:*

Be it known that I, SHERMAN M. COLE, a citizen of the United States, residing at Anamosa, in the county of Jones and State of Iowa, have invented a new and useful Cuff-Shaper, of which the following is a specification.

This invention relates to laundry apparatus and has for its principal object to provide an improved machine for shaping or finishing cuffs and other articles.

A further object of the invention is to provide a machine in which the flat cuff as it comes from the ironing machine is bent around a heated core after slight dampening and held in position until thoroughly dried, provision being made for effecting the automatic discharge of the cuff from position after the shaping operation.

A still further object of the invention is to provide a novel form of centering means whereby the flat cuff is automatically adjusted to a central position before being pressed against the mold.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel details of construction and arrangement of parts, as will be more fully hereinafter described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the device may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a side elevation of a cuff shaping machine constructed in accordance with the invention. Fig. 2 is a plan view of the same. Fig. 3 is an end elevation of the machine with the mold and steam pipe removed. Fig. 4 is a sectional plan view of a portion of the machine drawn to an enlarged scale.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The working parts of the machine are supported on a suitable frame which includes a bed or table 10 mounted on standards 11 of any convenient height and near one end of the table is an opening 12 curved to approximately semi-circular form at one end and through which the finished cuffs or other ar-

ticles fall by gravity into any suitable receptacle. Extending vertically through this opening is a cylindrical mold 14 that is in the form of a steam drum which is supplied with steam of any suitable source by means of a pipe 15. From the lower end of the mold leads a pipe 16 at the end of which is a pet-cock 17 which is slightly open in order to allow the steam to escape gradually thereby maintaining a constant supply of fresh steam in the drum or mold 14.

The bed or table carries a pair of vertical standards 18 having openings for the reception of a transversely disposed shaft 19 and mounted loosely on the shaft is a belt pulley 20 having a clutch hub 21 which may be moved into engagement with a clutch collar 22 that is permanently secured to the shaft. Any suitable form of clutch operating mechanism may be employed, as for instance, the lever 23 illustrated in Fig. 2 of the drawings. The bed is further provided with a pair of standards 24 which are provided with openings forming guides for two horizontally disposed parallel rods 25 and 26 at the forward ends of which is arranged a former or shaper which operates to bend the cuff around the heated mold 14.

The former comprises a metallic frame 28 having a forwardly extending vertical bar 29 which in operation engages the central portion of the cuff and forces the same into contact with the mold. The frame 28 carries a vertical rod 30 on which are pivoted two curved wings 31 which are arranged to fold the cuff around the mold, these wings moving from the dotted line position shown in Fig. 4 to the full line position illustrated in the same figure, during the shaping operation. The opening movement of the wings is limited by a pair of stops 32 which are secured to the rear faces of the wings and are arranged to engage against the main frame 28 of the former when the wings have opened out to the position indicated in dotted lines.

Mounted loosely on the upper rod 25 is a tube 34 and the forward portion of the tube is rigidly secured within a cross head 35 having a depending arm 36 that is provided with an opening for the passage of the lowermost rod 26, this connection being merely for the purpose of preventing rotative movement of the cross head. From the opposite sides of the cross head project spindles 38 on which are mounted anti-fric-



tion rollers 39 which are arranged to be engaged by cams 40 that are secured to the main shaft 19. To the outer ends of the spindles 38 are secured arms 41 and from these arms extend links 42 which are pivotally connected to eyes at the rear of the forming or shaping wings 31.

Arranged within the tube 34 is a spring 42 that is coiled around the rod 25 and which bears at its forward end against a collar 43 rigidly secured to the rod and at its rear end against the closed end 44 of the tube. This spring is for the purpose of permitting the main frame of the former to stop in cuff clamping position while the wings continue the bending or shaping operation and it also serves as a means for returning all the parts of the former to the initial position after each operation.

The cuffs when delivered from the ironing machine are flat and they are taken one by one by the operator and the inner face of each cuff is slightly moistened, preferably by passing the same over the open end of a steam pipe, so that a central band of more or less width or extending the entire width of the cuff will be moistened. The cuff is then stood on one edge across the circular end of the opening 12 with its dampened face resting against the mold 14.

As the shaft 19 rotates in the direction indicated by the arrow in Fig. 1 the active faces of the cams which terminate at the point *x* will engage the rollers 39 and will impart forward movement to the cross head. The cross head will carry with it the tube 34 and movement will also be imparted to the rod 25 through the medium of the spring 42 until the former or shaper as a whole moves up against the cuff and forces the central portion of the same into contact with the cuff against the heated mold 14. During this portion of the movement the central strip 29 only of the former engages with the cuff while the wings remain in the open position. After the strip 29 has firmly clamped the cuff against the mold and the cams still continue to rotate, the spring 42 will be gradually displaced and the tube 34 will be carried forward while the rods 25 and 26 remain stationary and the folding wings 31 will thus be moved into engagement with the cuff and will gradually curve the same around the mold 14.

It will be obvious that the peripheries of the cams are for the most part concentric with the axis of the shaft 19 so that the former or shaper will be held in cuff clamping position during the greater portion of each complete rotative movement of the cams, the length of time the cuff is held in contact with the mold being sufficient to dry the cuff so that it will retain its proper shape. After the end portions of the cams pass beyond the rollers 39 the spring 42 will

be suddenly released and when expanded will cause the wings to move to open position and the entire former to move back to the dotted line position shown in Fig. 4 in readiness for a second operation while the finished cuff will fall by gravity through the opening 12 into any appropriate receptacle.

In order to automatically center the cuffs before the shaping operation a pair of centering rods 50 are employed. These rods are hung on a suitable frame 51 carried by the table and the lower ends are bent outward as indicated at 52 and thence forward to form a pair of horizontally disposed parallel arms 53 which are arranged to engage with the opposite ends of the cuff after the latter has been placed upon the table. The upper portion of the two rods 50 are connected by mating links 54 to the opposite ends of a two-armed lever 55 that is fulcrumed on a suitable pin 56 extending from the frame.

The weight of the centering rods is such that when a cuff is placed between the two arms 53 it will be automatically centered or so placed that the exact center of the cuff will be in alinement with the axis of the mold 14 and the central line of the shaper and in placing the cuff in position after one of the arms 53 is moved outward the other will move outward to precisely the same extent and then the arms will move inward by gravity and properly center the cuff. The centering device will of course be out of engagement with the cuff after the latter has been moved around the mold so that they cannot in any way interfere with the free discharge of the finished cuffs.

Having thus described the invention, what is claimed is:—

1. In a machine of the class described, a mold, a former or shaper comprising a central clamping strip and folding wings carried thereby, and means for first forcing the clamping strip into article engaging position and then completing the shaping operation by folding the wings around the mold.

2. In a cuff shaping machine, a heated mold, a clamping strip arranged to engage the central portion of the cuff and hold the same in contact with the mold, and a pair of wings pivoted to the strip and arranged to fold the ends of the cuff around the mold.

3. In a cuff shaping machine, a heated mold, a shaping device for curving the cuff around the mold, and an automatic means for centering the cuff prior to the folding operation.

4. In a cuff shaping machine, a mold, a shaping device for curving the cuff around the mold, a support for the flat cuff prior to the shaping operation, and automatic means for centering the cuff with relation to the mold.



5. In a machine of the class described, a mold, a shaper including a central clamping frame, and a pair of folding wings pivoted thereto, a cross head having a yieldable connection with the frame, a pair of links extending from the cross head to the wings, and means for operating said cross head.

6. In a cuff shaping machine, a mold, a former including a central clamping frame and a pair of folding wings pivoted thereto, means for limiting the opening movement of the wings, a cross head yieldably connected to the central frame, a pair of links connecting the cross head to the wings, and a pair of cams operating on said cross head and arranged at the completion of the cuff holding operation to hold the cuff firmly clamped against the mold.

7. In a cuff shaping machine, a mold, a reciprocatory shaping frame including a central clamping strip, a pair of folding wings connected thereto, a pair of rods connected to the central frame, a tube surrounding one of the rods, a compression spring interposed between said rod and tube, a cross head carried by the tube and having a pair of laterally projecting spindles, anti-friction rollers on said spindles, links extending from the outer ends of the spindles to the wings, and a pair of cams engaging said anti-friction rollers.

8. In a machine of the type described, a centering means comprising a pair of pendent rods, article engaging arms extending therefrom, and a connecting means for causing synchronous movement of the rods in opposite directions.

9. In a machine of the class described, a

centering means comprising a pair of pendent rods, article engaging arms projecting from the lower portions thereof, a two-armed lever, and links connecting the opposite ends of said levers to said rods.

10. In a machine of the class described a heated mold, and a former or shaper comprising a central clamping member slidably mounted, a pair of folding wings carried thereby, means for successively shifting the central clamping member and folding the wings, and means for holding the wings normally unfolded.

11. In a machine of the class described a heating mold, and a former or shaper comprising a central clamping member, means for moving said member along a straight line, a pair of oppositely disposed wings pivotally connected to said member and having concave clamping faces for partly surrounding the mold, and means for holding the wings normally extended to receive the mold therebetween.

12. In a cuff shaping machine a stationary heated mold, and a sectional former or shaper comprising a central clamping member movable along a straight line, and concave wings pivotally connected to said member and movable into position to clamp an article around the mold.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

SHERMAN M. COLE.

Witnesses:

W. A. HOGAN,  
H. G. A. HARPER.