

No. 695,901.

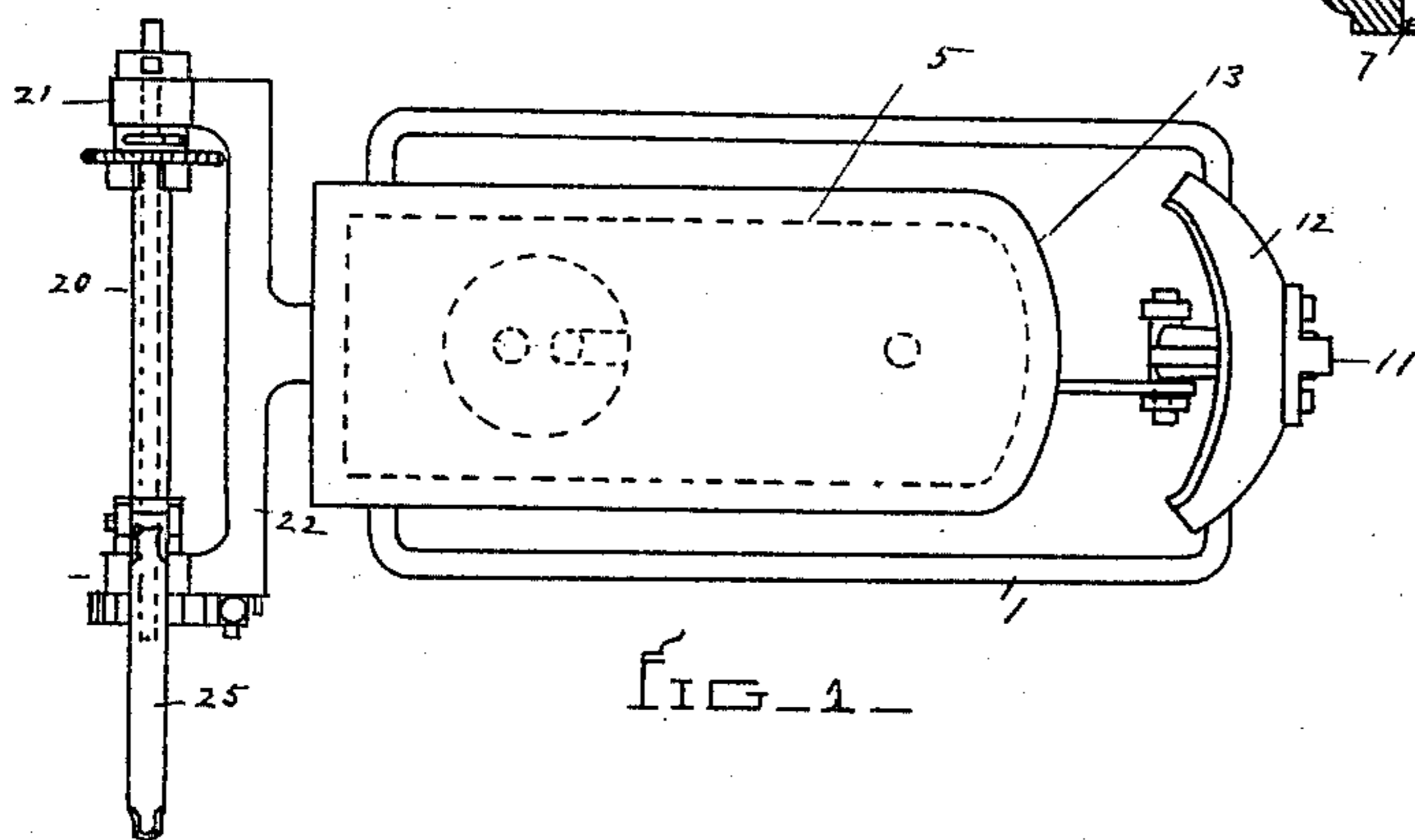
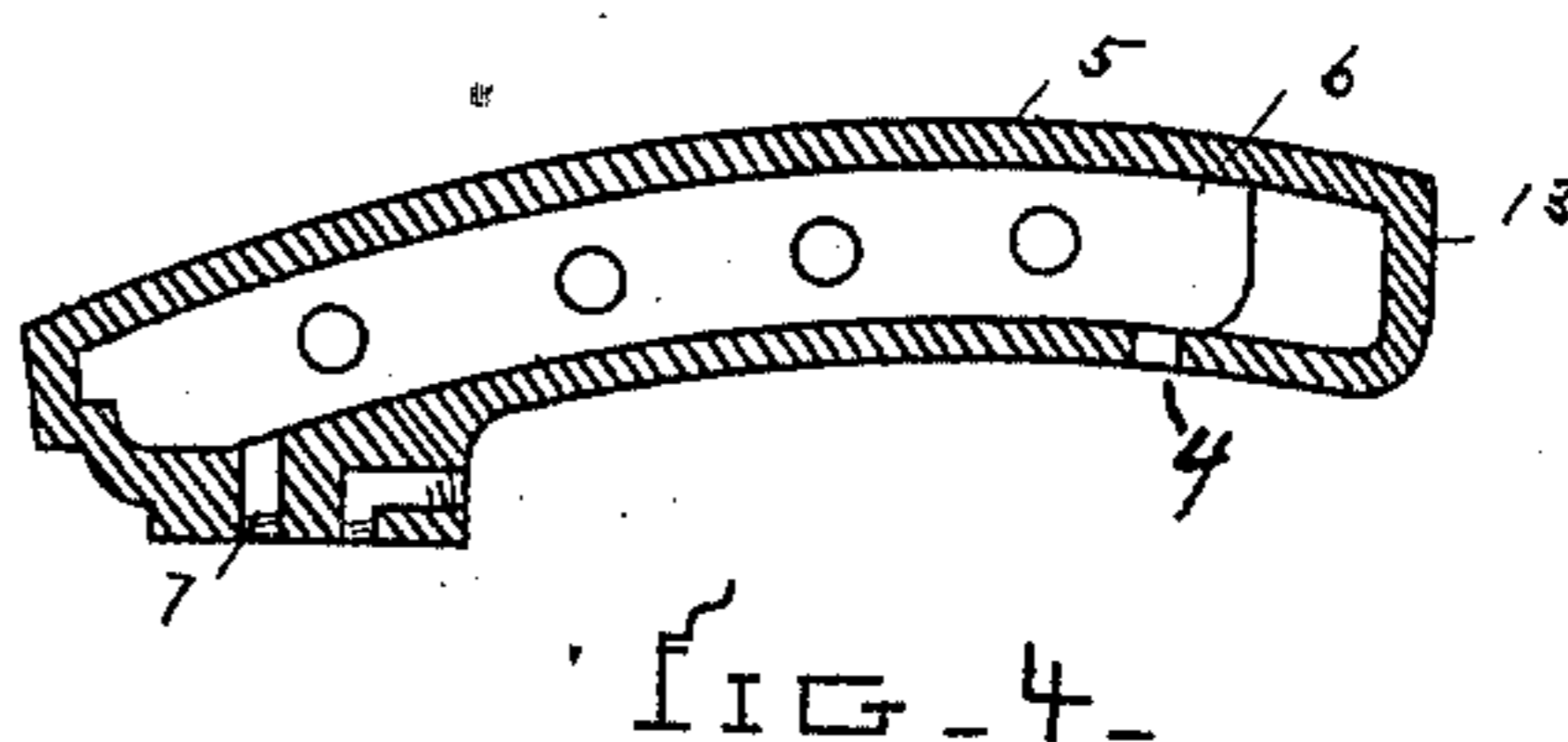
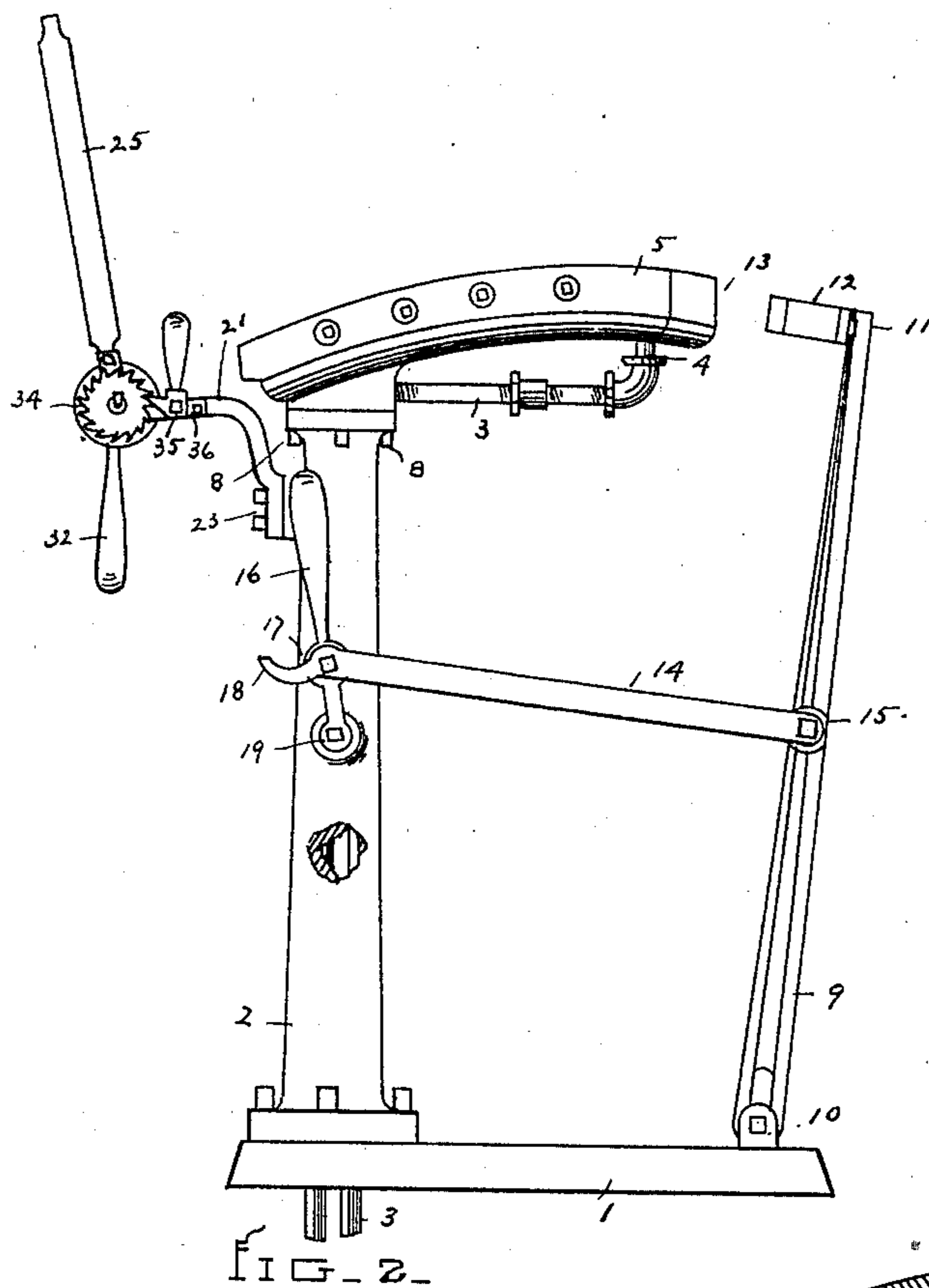
Patented Mar. 25, 1902.

D. H. BENJAMIN.
IRONING MACHINE.

(Application filed Dec. 3, 1900.)

(No Model.)

3 Sheets—Sheet 1.



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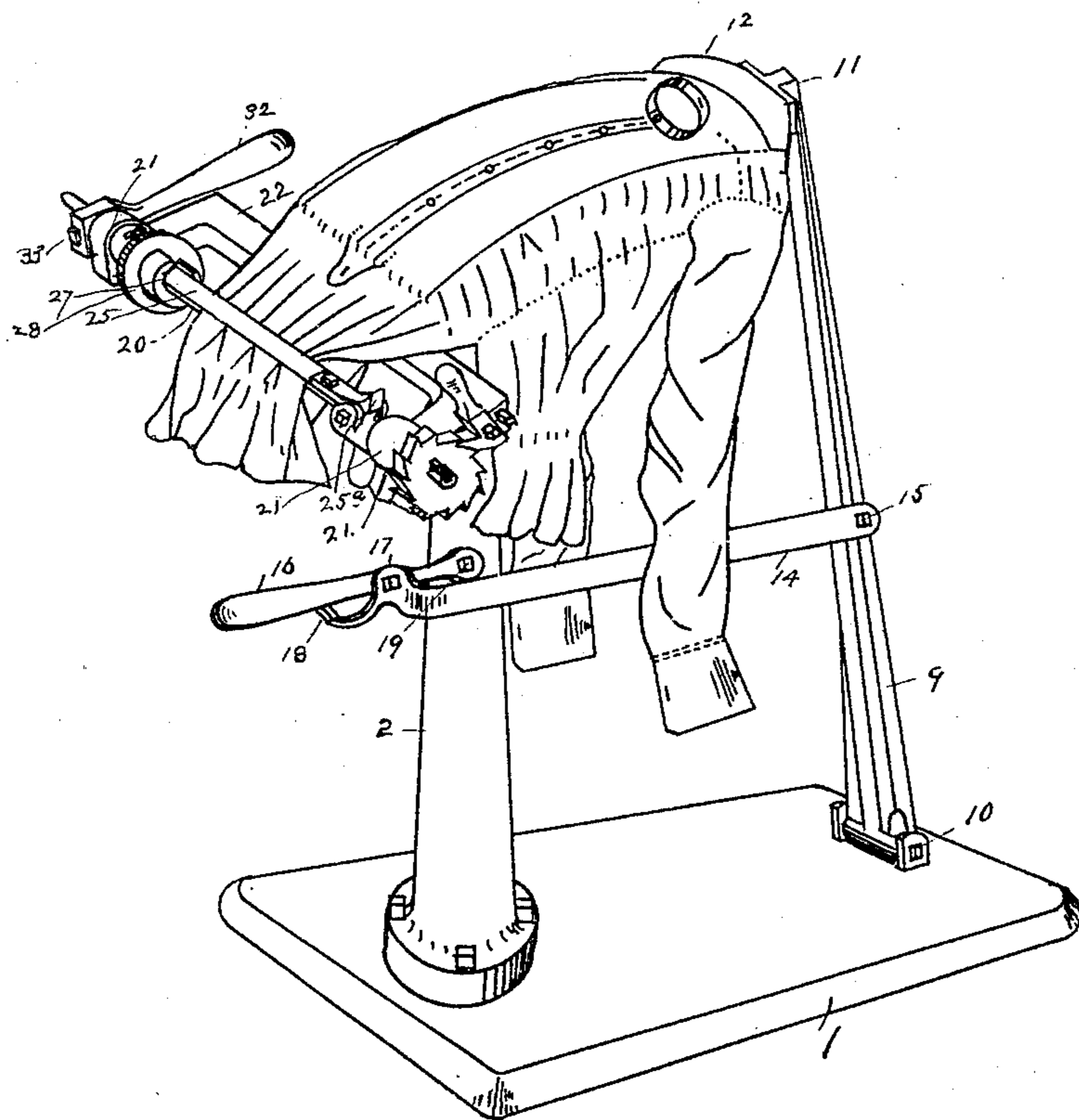


FIG. 3.

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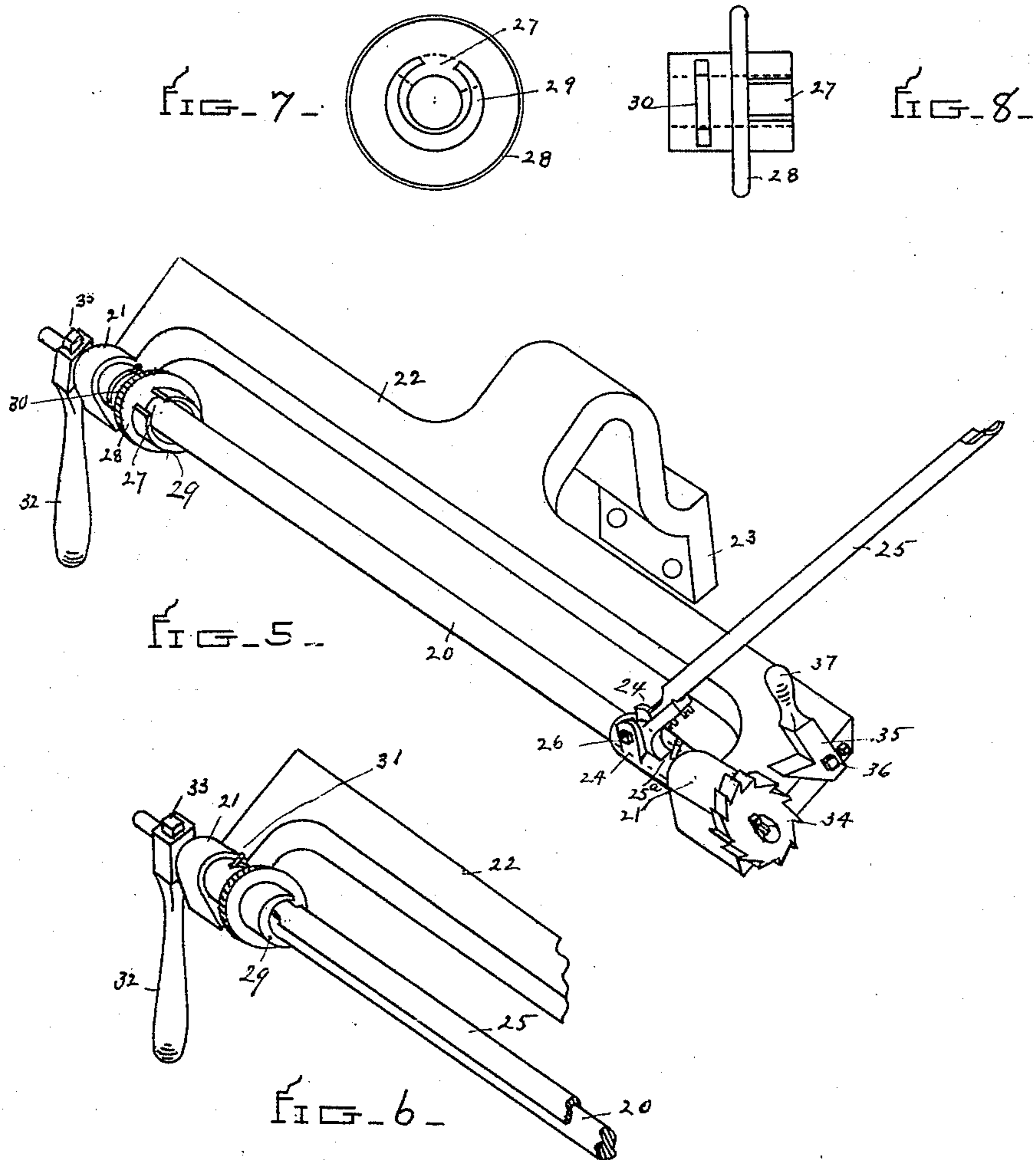
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UNITED STATES PATENT OFFICE.

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IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 695,901, dated March 25, 1902.

Application filed December 3, 1900. Serial No. 38,391. (No model.)

To all whom it may concern:

Be it known that I, DANA H. BENJAMIN, a citizen of the United States of America, and a resident of Ionia, county of Ionia, State of Michigan, (whose post-office address is Ionia, county of Ionia, State of Michigan,) have invented certain new and useful Improvements in Ironing-Machines, of which the following is a specification.

10 My invention relates to a machine for ironing the bosoms of shirts and shirt-waists; and it consists in the mechanism hereinafter more fully pointed out and claimed.

15 The purpose of my invention is to provide a machine for ironing from the inside a shirt or shirt-waist, so as to leave on the external surface of the bosom a dead finish and at the same time to properly size and starch the bosom and give it the requisite stiffness for
20 use.

While I preferably use sizing or starching in the process of ironing, I do not, however, restrict myself to this feature of my invention, as the bosom may be ironed by my machine without the use of starch or other sizing.

25 Having described the purposes of my invention in general terms, I will now proceed to describe the same with reference to the figures illustrated in the drawings.

30 In the drawings, Figure 1 represents a plan or top view of my ironing-machine ready to receive the article to be operated upon. Fig. 2 is a side elevation of Fig. 1. Fig. 3 represents a perspective view of my machine with the shirt-bosom in the ironing position in the machine. Fig. 4 is the longitudinal cross-section of the stationary heatable ironing-plate, and Fig. 5 illustrates details of construction of the rotating and holding stretcher.
35 Fig. 6 represents details of construction of the rotating holding device, broken parts indicating portions removed. Fig. 7 represents a front view of the rotating sleeve, and Fig. 8 illustrates a side view of Fig. 7.

45 Having described my invention with reference to the figures illustrated in the drawings, I will now proceed to describe the same with reference to the details of construction, in which similar numerals of reference will refer
50 to corresponding parts in the several views.

I provide base 1, on which I mount tubular standard 2. Through this standard I pass a steam or heating pipe 3, which connects with the stationary ironing-plate at 4. The stationary ironing-plate 5 is curved in the direction of its length, as best illustrated in Figs. 2 and 4, and crosswise it is substantially straight, although it may be slightly curved from the center to the side edges of the ironing-plate. The stationary ironing-plate forms a steam-chamber 6, Fig. 4, the steam being admitted into the chamber at 4 through pipe 3. The outlet 7 to receive the return-pipe for carrying the condensed steam back to the boiler is at the lower portion of the chamber. (Best illustrated at Fig. 4.) The stationary ironing-plate on its upper curved face is polished, and the ironing-plate is rigidly secured to standard 2 by bolts, nuts, or tap-screws 8, so as to be held stationary.

70 The machine being in the open position, (illustrated in Figs. 1 and 2,) the shirt or shirt-waist is drawn over the stationary ironing-plate into the position illustrated in Fig. 3. When the neckband is fastened, the upper portion of the bosom and neckband is drawn to the proper position on the stationary ironing-board, where it is held at the neck or shoulders by the operation of mechanism which I will now proceed to point out more particularly.

On the base-plate I mount pivoted standard 9, pivoted to the base at 10 and carrying at 11 on its free end the curved-faced jaw 12, conforming to the general contour of the curved end of the stationary ironing-plate 5, as best illustrated in Figs. 1 and 2 at 13, for engaging, clamping, and holding the neck and shoulder portions of the shirt-waist in a fixed position on the stationary ironing-plate, on which the same has been adjusted preparatory to ironing the same. For operating pivoted standard 9 I provide connecting-bar 14, pivotally secured to standard 9 at 15, so as to swing on its pivoted point. The opposite end of connecting-bar 14 is pivoted to handle 16 at 17. The connecting-bar 14 has an extended end 18 to arrest the downward movement of handle 16 when it reaches its proper position. Handle 16 is pivoted to standard 100

2 at 19, which forms a swinging or pivoted point for handle 16, which being pivoted to connecting-bar 14 forms a movable lever, so that when handle 16 is moved from its position in Fig. 2 into the position shown in Fig. 3 handle 16 rests on curved end 18 of connecting-bar 14. Handle 16 being swung into position shown in Fig. 3 below the horizontal line of pivoted point 19 of the handle holds the neck and shoulder of the garment firmly against the curved end 13 of the stationary ironing-plate. When the garment is properly ironed, handle 16 is moved from the position shown in Fig. 3 into position shown in Fig. 2, when the neck and shoulder portion of the garment can be removed from the machine.

For holding and stretching the front or bosom portion of the garment taut, so that the threads of the garment come into parallel lines, the garment being clamped or secured to the curved end of the stationary ironing-plate, as illustrated in Fig. 3, and for holding the garment during the process of ironing I provide an opening and closing device, which consists in roller 20, supported in bearings 21 21, Figs. 5 and 6, in bracket 22, which is supported at 23 by tap-screws to tubular standard 2, so as to be held rigid thereto. Roller 20 is so mounted as to be rotated or partially rotated for drawing the garment taut on the ironing-board. Near one end of roller 20 and secured thereto are a pair of ears 24, in which I pivot the swinging arm 25 at 26. The arm 25 has curved end 25^a, which engages the roller for supporting the swinging arm in the position illustrated in Fig. 5, the swinging arm being in the position illustrated in Figs. 1, 2, and 5. A portion of the garment to be operated on is drawn over the roll tightly, the operator taking care to see that the threads in the bosom are drawn straight. The swinging arm 25 is then dropped into position shown in Fig. 3 over the garment on the roll, and the free end of arm 25 drops through opening 27 in the flange of rotating sleeve 28, which is mounted on roller 20, and the rotating sleeve is then partially turned, so that the free end of the swinging arm is held inside of collar-flange 29, (best illustrated in Fig. 6,) the wedge-shaped internal arrangement of flange 29 being so provided as to wedge and hold down the free end of the swinging arm on the garment lying between the swinging arm and the roll. The movement of the rotating sleeve is limited by slot 30, Fig. 8, which engages pin 31 in the roll, and thereby limits the movement, so as to prevent the rotating sleeve from being moved too far when the free end of the arm is locked or unlocked. On the end of roll 20 I provide lever-arm 32, secured to roll 20 by means of screw or its equivalent 33 and so arranged as to operate the roll for stretching the garment on the stationary ironing-plate by turning the roll and the swinging arm in the direction necessary to draw the garment taut on the stationary ironing-

board. For holding the garment in the position to which it may be drawn I provide on the end of roll 20 ratchet-wheel 34, secured to roll 20, which ratchet is engaged by ratchet-pawl 35, pivoted at 36 to bracket 22, the upper or handle end being arranged to be operated for latching and unlatching the same for tightening and holding or for releasing the garment when the ironing has been completed.

Modifications and changes will readily be suggested to one skilled in the art without departing from my invention.

In a machine with a stationary ironing-plate being heated with steam or other means of heating—such as gas, gasolene, or any other method of heating the plate to the required degree of heat—the garment is drawn over the stationary ironing-plate and is engaged at the neck and shoulder portions and held to the end of the ironing-plate in a fixed position. When the garment is straightened and the surface to be ironed is adjusted by the operator to the right position, the swinging arm is moved downward and held in this position by the rotating sleeve on the roll. When the operator then draws the garment to be ironed to the requisite degree of tightness, he takes a sponge or other absorbent of liquid wet or moistened with water or diluted liquid starch and carefully runs it over the bosom of the garment until he takes out all wrinkles. The solution of starch or other liquid mixture for sizing or stiffening the article to be ironed can be applied thereto before the article is stretched on the ironing-plate by the moistened sponge.

I have discovered that by stretching the article over with its inner surface against a heated smooth-faced ironing-plate and smoothing the shirt-bosom or portion of any other article out on such plate with soft material merely to remove wrinkles and produce intimate contact between the cloth article and the smooth heated surface that the outer surface of said article will be provided with an exceedingly attractive and desirable "dead" finish as distinguished from the highly-polished smooth ironed surface produced by pressing the article—shirt-bosom, for instance—between an ironing-board and a heated plate. It should be noted that in producing this dead finish on the outer or exposed surface of the garment I do not employ pressure except in so far as slight pressure is used in smoothing out wrinkles, and do not press the garment between two opposing members, and hence not only produce the effect desired, but avoid the complicated or expensive structures and elements necessary where pressure is employed.

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

1. In an ironing-machine, the combination of a standard, an ironing-plate fixed thereto and adapted to be internally heated and provided with a polished upper face adapted to have a garment stretched tightly thereover

with the inner surface of the garment in intimate contact with said polished face, a movable jaw below said upper face of the plate and beyond and cooperating with one end edge of said plate, and stretching means arranged beyond the opposite end of the plate, substantially as described.

2. An ironing-machine for producing a "dead" finish consisting essentially of a support, a curved internally-heated ironing-plate having a smooth upper surface adapted to have a garment tightly and smoothly stretched over the same with the inner surface thereof in intimate contact with said heated surface and the outer garment-surface to be finished exposed, a movable clamp opposite and cooperating with one end edge of said plate, and a stretching device at the opposite end of the plate to draw the garment over and hold the same smoothly down on the heated surface of the plate, substantially as described.

3. An ironing-machine for producing a "dead" finish consisting essentially of a standard, a hollow internally-heated ironing-plate at one end fixed to the upper end of said standard and longitudinally curved upwardly therefrom and provided with a water-exit at its lower end, a steam-supply pipe opening into said plate, said plate having the polished longitudinally-curved top surface, a manually-operated clamp cooperating with one end of said plate to clamp the garment thereto, and a stretching device arranged at the opposite end of said plate, substantially as described.

4. In combination, a base, a vertical post rigid therewith, a horizontally-disposed internally-heated ironing-plate above and secured on the upper end of said post and having a smooth top surface to receive the garment to be finished, a vertically-disposed arm at its lower end fulcrumed to the base, a jaw carried by the upper end of said arm and arranged opposite and cooperating with one end edge of the plate in clamping the garment thereto, a hand-lever fulcrumed to said post, a connection from said hand-lever to said arm, and a stretching device for stretching the garment on said plate, substantially as described.

5. In combination, a base, a post, an ironing-plate adapted to be internally heated and fixed on said post and having a smooth top surface to receive the garment, a swinging arm provided with a jaw movable toward and from one end of said plate to cooperate therewith in clamping the garment to said end of the plate, a hand-lever fulcrumed to the post, a connection pivotally joined to said arm and at its opposite portion pivotally joined to said

lever and provided with an extension adapted to engage the lever when moved to its limit of movement in one direction to lock the jaw in clamping position, substantially as described.

6. In combination, a post, an ironing-plate fixed on the upper end thereof and adapted to be internally heated and having a smooth top surface to receive the garment, means to clamp the garment at one end of said plate, a bracket at the opposite end of said plate and secured to said post, a stretching-roller mounted in said bracket and provided with means for clamping the garment thereto and for winding the same thereon, substantially as described.

7. In combination, a post, a horizontally-disposed heated ironing-plate rigidly secured on the upper end of said post and having a smooth top surface, means to secure a garment at one end of said plate, a bracket, a stretching-roller mounted in said bracket and provided with a hinged clamping-section, and a slotted sleeve having a limited axial movement on said roller and adapted to receive the free end of said section through the slot and clamp the same between the inner surface of the sleeve and surface of the roller, substantially as described.

8. In combination, a post, a horizontally-disposed heated ironing-plate secured on the upper end of said post and having a smooth upper surface and a rounded end edge, a vertically-swinging arm provided with a clamping-jaw beyond and conforming to said end edge and cooperating therewith, means to swing and lock said arm, and stretching means beyond the opposite end of the heated plate, substantially as described.

9. In combination, a post, a heated horizontally-disposed plate rigidly secured thereon, stretching means opposite one end of said plate, a swinging arm fulcrumed at its lower end and at its upper end provided with a clamping-jaw cooperating with the opposite end of said plate, and an operating and locking mechanism for said arm comprising a hand-lever fulcrumed to said post, a pull connection therefrom to said arm, and a stop device, whereby the lever and connection can be held beyond the dead-center to lock said jaw to said plate, substantially as described.

Signed by me at Ionia, Michigan, this 27th day of November, 1900.

DANA H. BENJAMIN.

Witnesses:

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JNO. M. INMAN.