

No. 702,687.

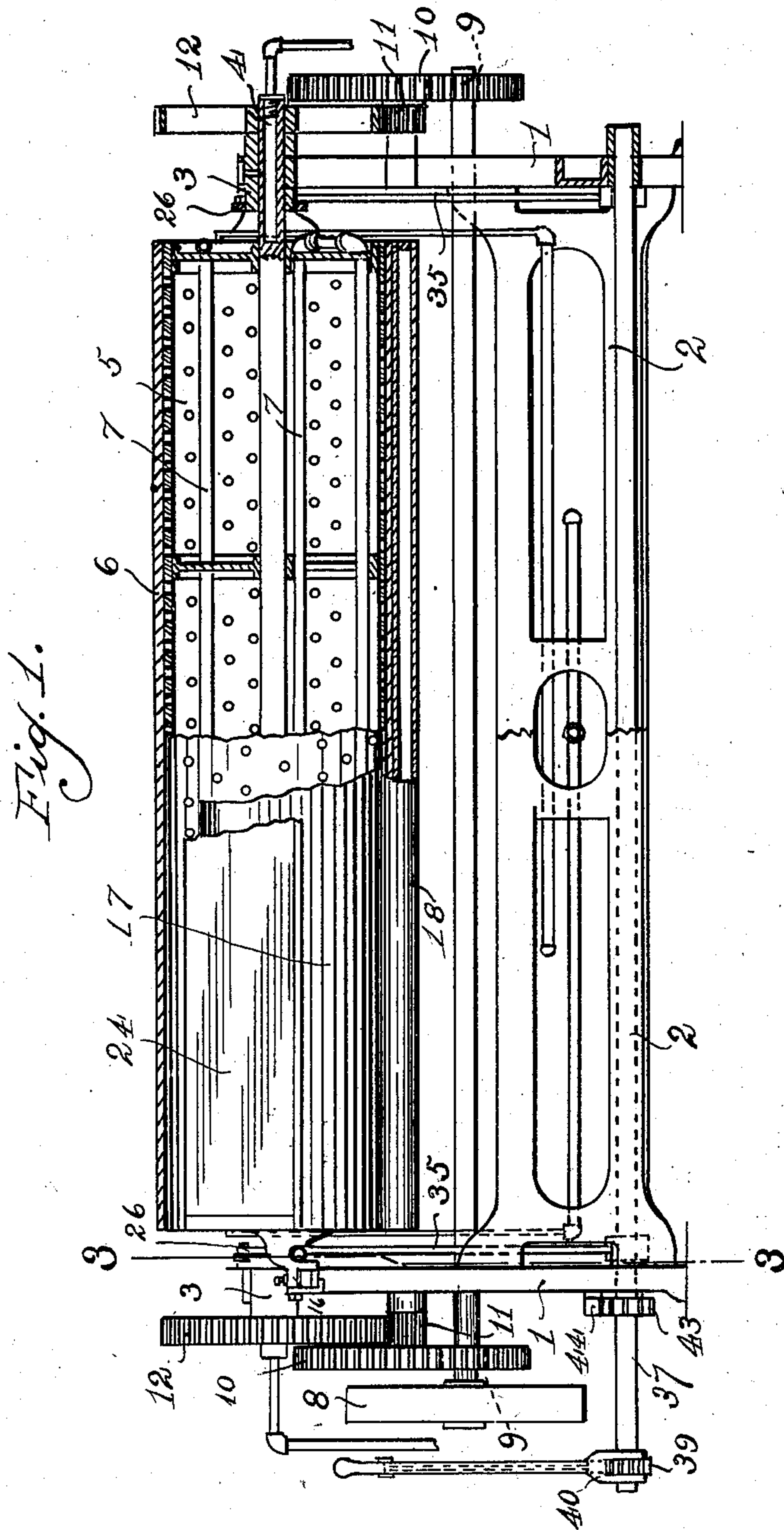
Patented June 17, 1902.

W. E. ANDRÉE.  
MANGLE.

(Application filed Feb., 27, 1902.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:

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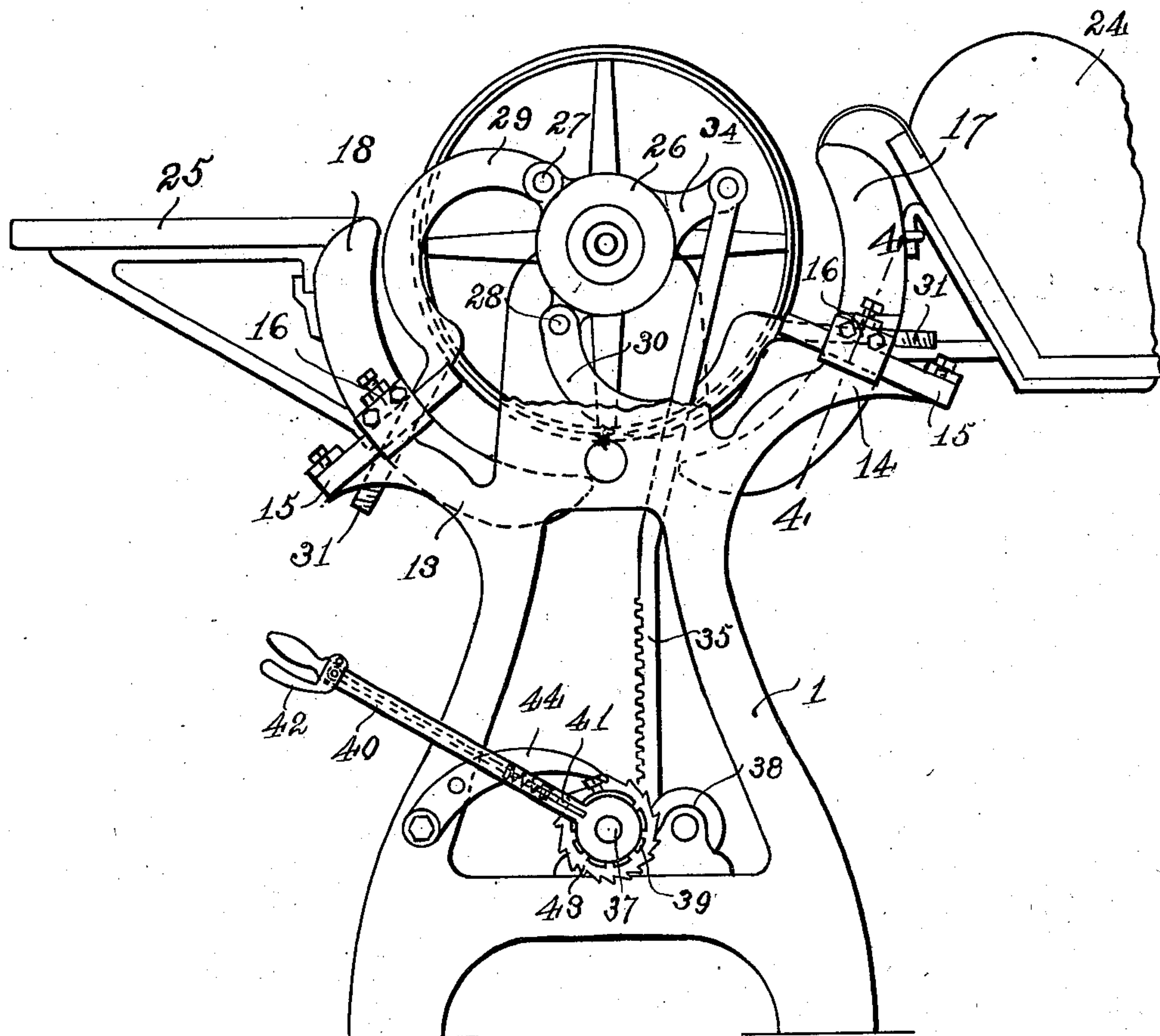
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3 Sheets—Sheet 2.

*Fig. 2*



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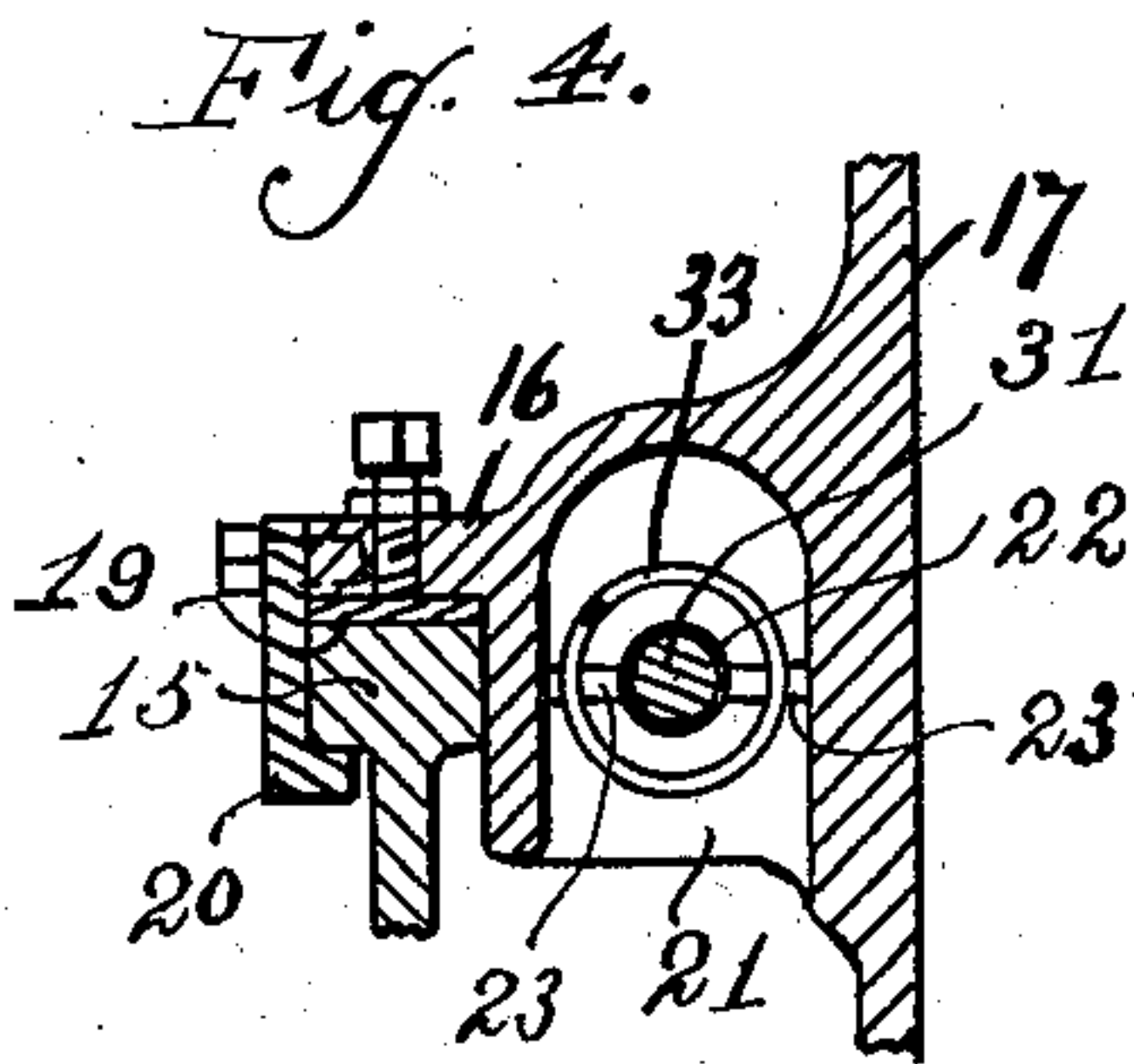
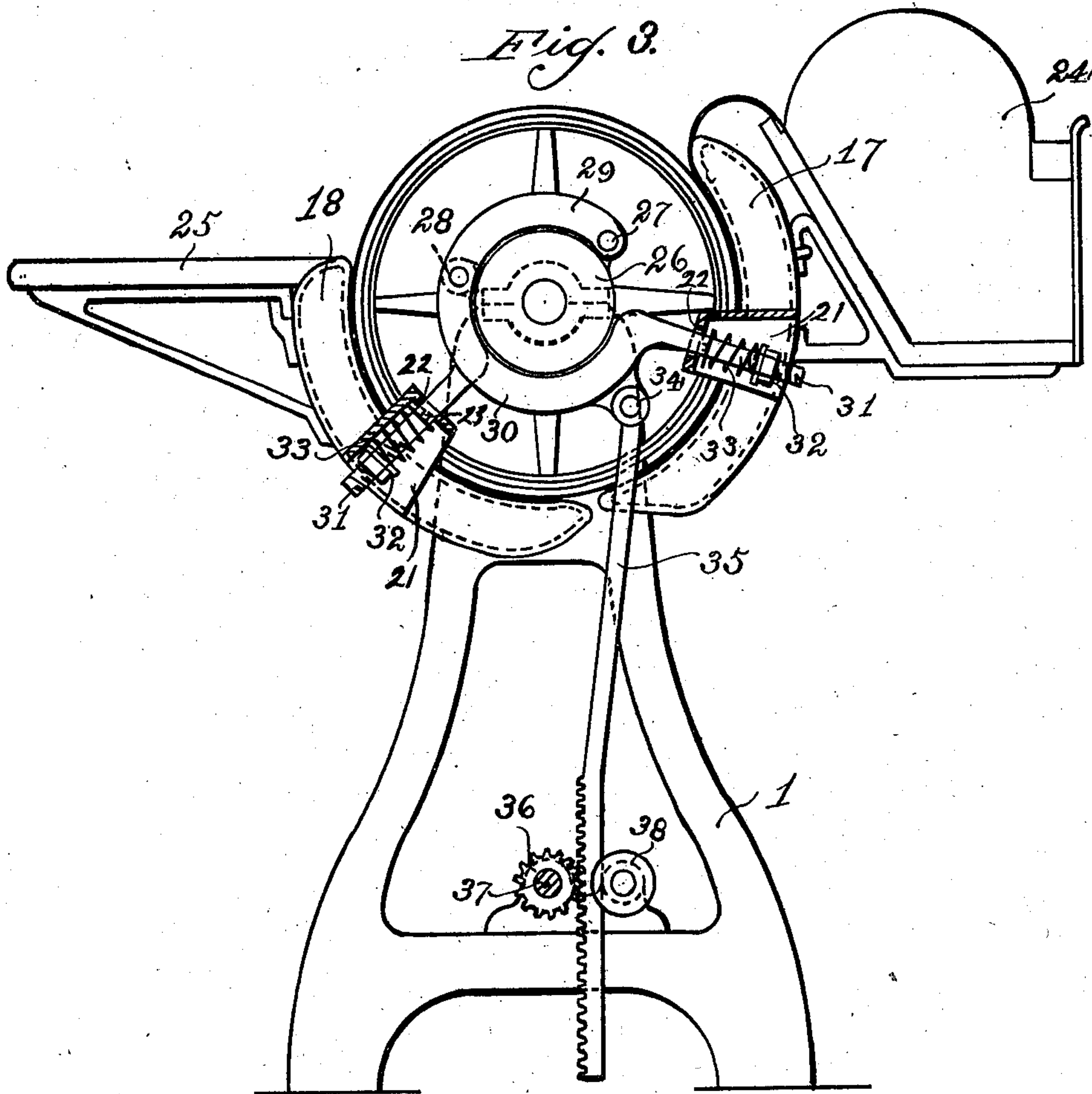
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# UNITED STATES PATENT OFFICE.

WILLIAM E. ANDRÉE, OF CHICAGO, ILLINOIS, ASSIGNOR TO NELSON & KREUTER, OF CHICAGO, ILLINOIS, A FIRM.

## MANGLE.

SPECIFICATION forming part of Letters Patent No. 702,687, dated June 17, 1902.

Application filed February 27, 1902. Serial No. 95,853. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. ANDRÉE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mangles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a novel construction in a mangle of that class in which the garments to be ironed are passed between a padded cylinder and steam-chests, and has for its object to provide simple and efficient means for moving the steam-chests into and out of contact with said padded cylinder; and it consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a front elevation, partly in longitudinal section, of a machine constructed in accordance with my invention. Fig. 2 is an end elevation of same, the gearing being removed and the steam-chests shown out of action. Fig. 3 is a vertical transverse section on the line 3 3 of Fig. 1. Fig. 4 is a fragmentary detail section on the line 4 4 of Fig. 2.

Machines of this class are particularly designed to iron table-cloths, sheets, napkins, &c., which generally are not starched, and hence do not require the same degree of pressure as starched fabrics. In some cases, however, such articles are starched, and in such instances it is essential that the steam-chests be movable a sufficient distance from the cylinder to provide ample room for cleaning the inner surfaces of the chests, the starch being apt to adhere to same and form dry clots, which greatly hamper the ironing and frequently cause the article to be ironed to bunch up and clog the machine. It is not only necessary that the steam-chests be movable for a considerable distance, but it is equally essential that the devices controlling same be rapidly operative and at the same time afford efficient means for obtaining the requisite pressure of the steam-chests against the cylinder when in action.

My present invention relates particularly to the last-named devices, which I will now proceed to describe.

Referring now to said drawings, 1 indicates the end pieces of the frame of the machine, which are suitably connected by trusses 2. The said end members 1 carry the journal-boxes 3, in which the hollow shaft 4 of a hollow cylinder 5 is journaled. The said cylinder 5 is perforated and is completely covered with padding 6, of any suitable material. Said cylinder 5 carries several coils of pipe 7, connected with said hollow shaft 4, the latter being suitably connected with a source of supply of steam. In this manner the said cylinder 5 is mildly heated to an extent sufficient to keep the padding 6 perfectly dry. The said shaft 4 is suitably geared to a source of power by means of the pulley 8 and gears 9, 10, 11, and 12, said gearing being duplicated at both ends of the machine to avoid torsional strains and provide greater strength. Said end members 1 of the frame are provided at each side with arms 13 and 14, each carrying an enlarged guide-rail 15 at its upper end, which extends radially to the shaft 4. On each of said guide-rails 15 a shoe 16 is movable, the latter being integral with and projecting from each end of each of the steam-chests 17 and 18. The said shoes 16 each consist of a flat flange resting upon the said guide-rail 15 or upon a plate 19, loosely mounted in said shoe and sliding on said guide-rail, said plate being used for purposes of adjustment by means of a set-screw, as will be obvious. To the outer edge of said flange a downwardly-extending L-shaped plate 20 is secured, which engages the outer and one of the lower faces of the guide-rail 15 and serves to prevent lateral movement between the latter and the shoe. Formed between said shoes 16 and the ends of the steam-chests 17 and 18 are pockets 21, open on their outer and lower ends and provided on their inner walls with openings 22, the inner faces of the said inner walls of said pockets 21 being provided on diametrically opposite sides of said openings with horizontal ribs 23, whose function will be hereinafter fully described. The said steam-chests 17 and 18 are of the same or approximately the same length as said cylinder 5 and are so



formed that their inner or contact faces are of the same contour as the outer face of the cylinder, so that when in action said inner faces will bear upon the padding 6 equally at all points. One of said chests carries a receptacle 24, adapted to receive the articles to be ironed, and the other thereof carries a table 25, adapted to receive the ironed articles. The said chests when in action cover about two-thirds of the surface of the cylinder, their lower edges being close together at such time. The said chest 18 is beveled on its inner face at its lower edge to prevent the end of the article operated upon from bunching at this point, as will be obvious.

The guide-rails 15 are inclined downwardly, so that the natural tendency of the steam-chests will be to move away from the cylinder. Hence little power is required to throw the chests out of action. The said chests are operated by means of collars 26, revolvably mounted on the journal-boxes 3. Each of said collars is provided with two projections 27 and 28 on its periphery, located about one hundred and ten degrees apart, and to said projections arms 29 and 30 are pivotally secured. Each of said arms is curved concentric with said collar adjacent its connection with the latter and terminates in a straight end 31, extending radially from said curved portion. Said straight end portion 31 of each arm passes through the opening 22 in one of said pockets 21 and is provided at its outer end with a nut 32, threaded thereon, between which nut and said inner wall of said pocket 21 a spring 33 is interposed. Said spring 33 bears at one end upon the ribs 23 on said inner wall of said pocket, said ribs acting as a fulcrum upon which the spring can turn. The said openings 22 are also of such size relatively to said end portions 31 of said arms as to allow the latter considerable play. When said steam-chests are in action, the end portions 31 of said arms extend practically radially from said collars at points diametrically opposite the connections of said arms with said collars, while the curved portions of said arms embrace said collar, said arms being held a little past dead-center by the engagement of said curved portions thereof with said collars. By turning said collar in one direction the said arms will be turned on their pivots and thrust outwardly therefrom, thus throwing the steam-chests out of action, and by turning said collar in the opposite direction the steam-chests will be drawn in contact with the cylinder.

I desire to call particular attention to the fact that in drawing the steam-chests toward the cylinder the arms are given a sweeping stroke, little power being required for the main part of the movement, while during the last portion of the stroke the leverage obtained increases, so that the desired pressure of the steam-chests against the cylinder is easily obtained.

Attention is further called to the fact that

by means of the formation of the arms 29 and 30 the disks or collars 26 are held a little past dead-center when the steam-chests are in action, thereby obviating the use of additional locking means, while at the same time the pressure from both sides on said disks or collars is equalized, which is obviously very advantageous. Through the medium of the springs 33 the pressure of the steam-chests against the cylinder is rendered yielding, so as to readily accommodate various thicknesses of fabrics to be ironed. Each of the said collars is operated by means of an arm 34 thereon, to which a rack-bar 35 is pivotally secured at one end, said rack-bar meshing with a pinion 36 on a shaft 37, journaled in the lower ends of the end members 1 of the frame, being held in mesh with said pinion by means of an idler 38. Mounted on said shaft 37 is a ratchet-wheel 39 and adjacent same a lever 40 is loose on said shaft, said lever being provided with a spring-actuated dog 41, engaging said ratchet-wheel, and which is operated to throw same into and out of engagement with the latter by means of a hand-lever 42 on said lever 40. A second ratchet-wheel 43 is rigidly mounted on said shaft and is engaged by a pawl 44 on the frame, said last-named ratchet-wheel and pawl being adapted to further lock the steam-chests in position against the cylinder, said locking devices being provided for greater safety. By means of the lever 40 said shaft 37 may be turned in either direction when the pawl 44 is thrown out of engagement with the ratchet-wheel 43, as will be obvious. The said steam-chests are thus easily and quickly operated.

I claim as my invention—

1. In a mangle, the combination with the cylinder and the frame carrying guides, steam-chests supported upon and movable on said guides toward and away from said cylinder, of disks revolvably mounted on said frame concentric with said cylinder, projections on said disks, and arms pivotally connected at one end with said projections and at their other ends with said steam-chests, whereby when said disks are revolved said steam-chests will be moved.

2. In a mangle, the combination with the cylinder, the frame carrying guides, and the steam-chests supported upon and movable on said guides toward and away from said cylinder, of devices for imparting motion to said steam-chests, comprising disks revolvably mounted on said frame, peripheral projections on said disks, arms having curved ends adapted to embrace said disks connected at said curved ends with said projections and at their other ends with said steam-chests, whereby when said disks are revolved said arms will impart reciprocatory motion to said steam-chests, said motion being variable and exerting variable leverage on said chests.

3. In a mangle, the combination with the cylinder, the frame carrying guides, and steam-



5 chests supported upon and movable on said guides toward and away from said cylinder, of disks revolubly mounted on said frame concentric with said cylinder, peripheral pro-  
 10 jections on said disks, arms connected at one end with said peripheral projections and at their other ends with said steam-chests, springs interposed in said connections, and devices for revolving said disks.

15 4. In a mangle, the combination with the cylinder, the frame carrying guides, and steam-chests supported upon and movable on said guides toward and away from said cylinder, of disks revolubly mounted on said frame,  
 20 peripheral projections on said disks, arms connected at opposite ends with said disks and said steam-chests, said arms having each one end bent concentric with said disks and adapted to embrace the latter when said  
 25 steam-chests are in contact with said cylinder, and means for revolving said disks to move said chests, said disks being adapted to impart variable motion to said arms and exert variable leverage on said chests.

5 5. In a mangle, the combination with the cylinder, the frame carrying guides, and steam-chests supported upon and movable on said guides toward and away from said cylinder, of disks revolubly mounted on said frame,  
 10 peripheral projections on said disks, arms connected at opposite ends with said disks and said steam-chests, springs interposed in

said connections, said arms being concentric with said disks at one end and adapted to embrace the latter when said steam-chests are  
 15 in action, means for revolving said disks to impart motion to said steam-chests, and means for locking said disks against revolution in one direction to hold said steam-chests compressed against said cylinder.

20 6. In a mangle, the combination with the frame, a cylinder revolubly mounted thereon, and guides on said frame extending radially from the axis of rotation of said cylinder, of steam-chests supported upon and movable on  
 25 said guides, disks revolubly mounted on said frame concentric with said cylinder, peripheral projections on said disks, and arms having semicircular ends concentric with said  
 30 disks secured at one end to said peripheral projections and adapted to embrace said disks, and connected at their other ends with said steam-chests in alinement with said guides,  
 35 whereby when said steam-chests are in action said disks will be held a little past dead-center by said arms, thereby locking said steam-chests against movement.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. ANDREÉ.

Witnesses:

RUDOLPH WM. LOTZ,  
 E. F. WILSON.