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PATENTED NOV. 14, 1905.

P. E. BRADLEY.
APRON GUIDE FOR MANGLES.

APPLICATION FILED MAR. 6, 1905.

2 SHEETS—SHEET 1.

FIG. 1.

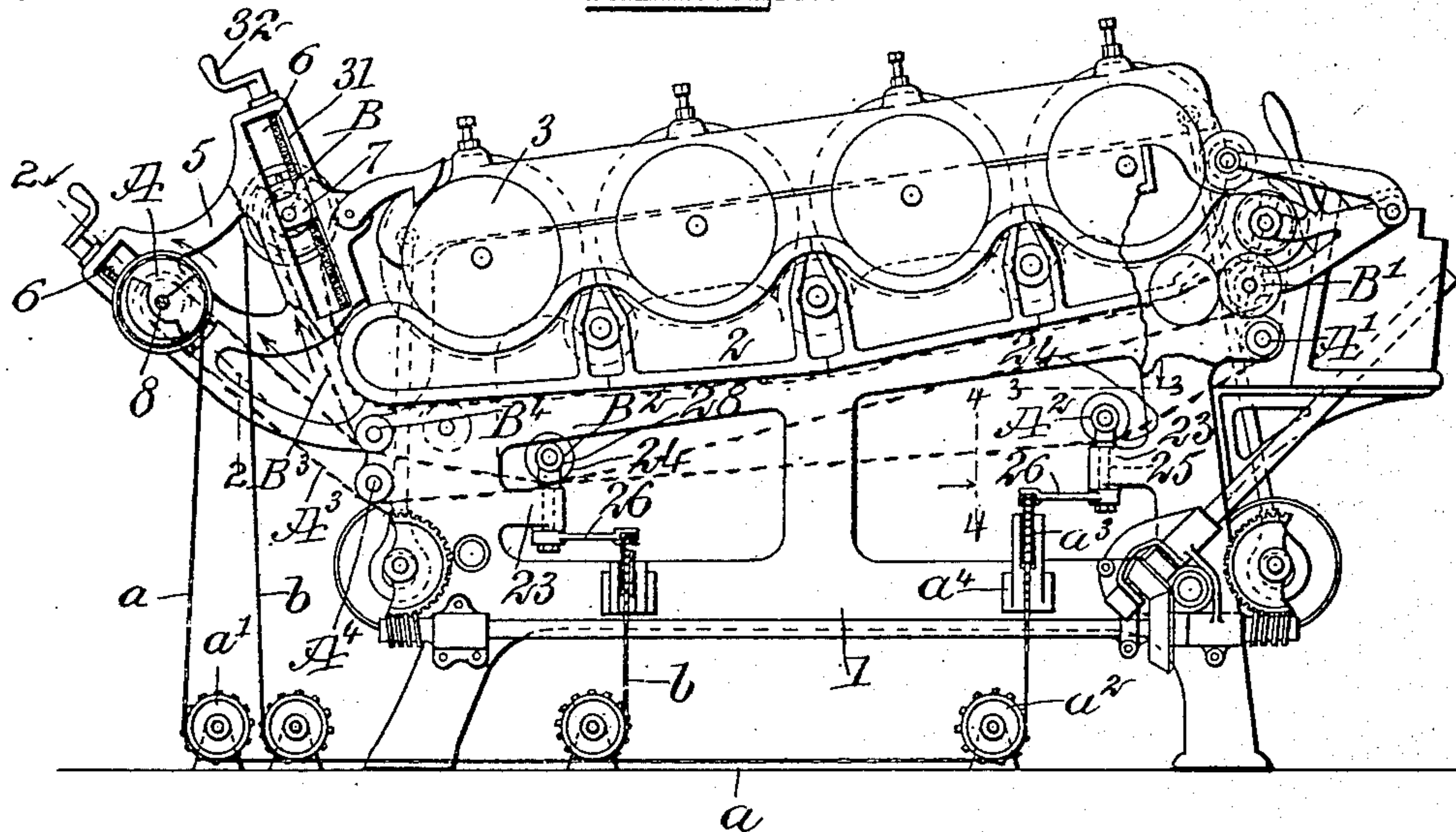
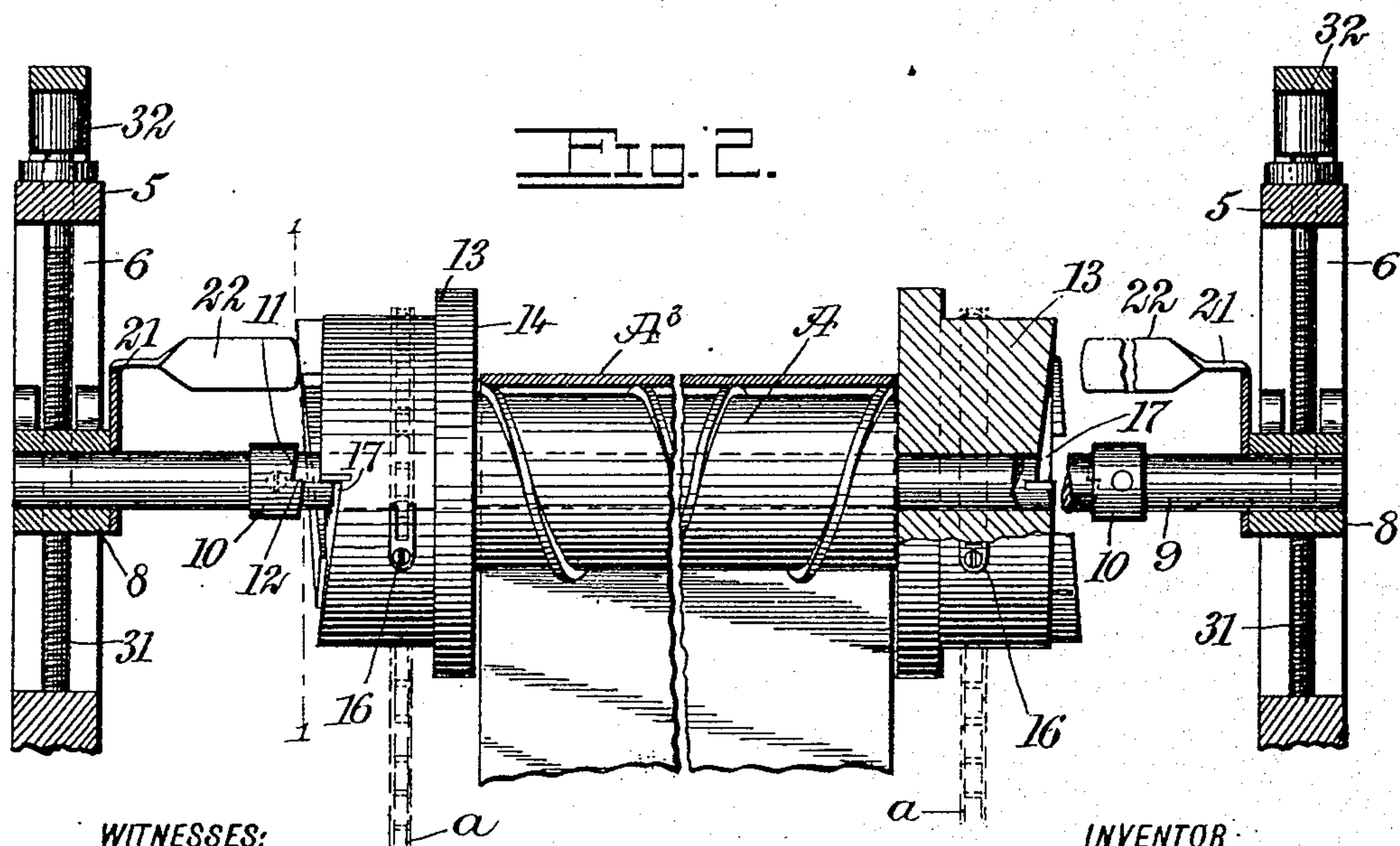


FIG. 2.



WITNESSES:

L. Almquist
J. D. Ammer

INVENTOR

Perry E. Bradley

BY

Mumford
ATTORNEYS

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Fig. 3.

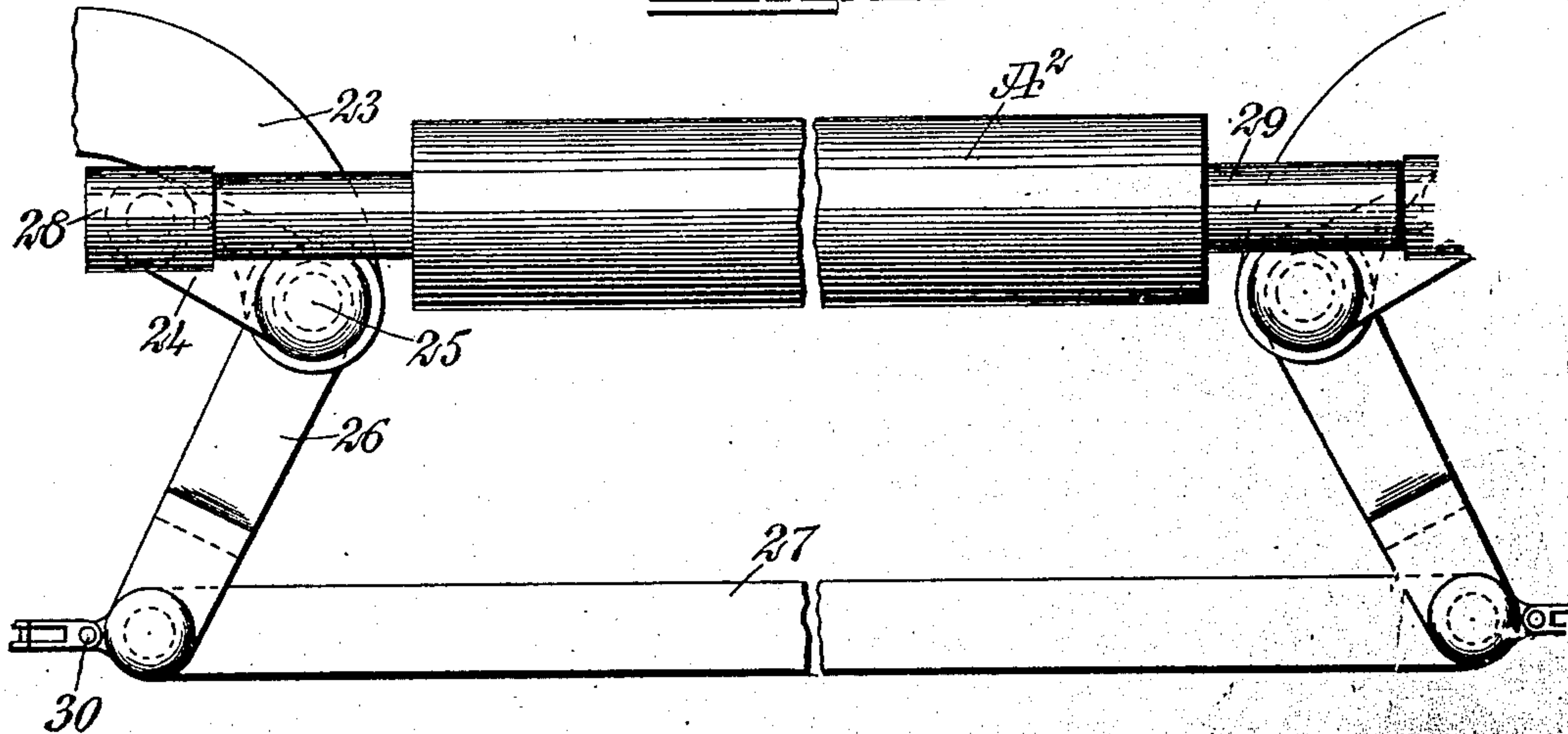


Fig. 4.

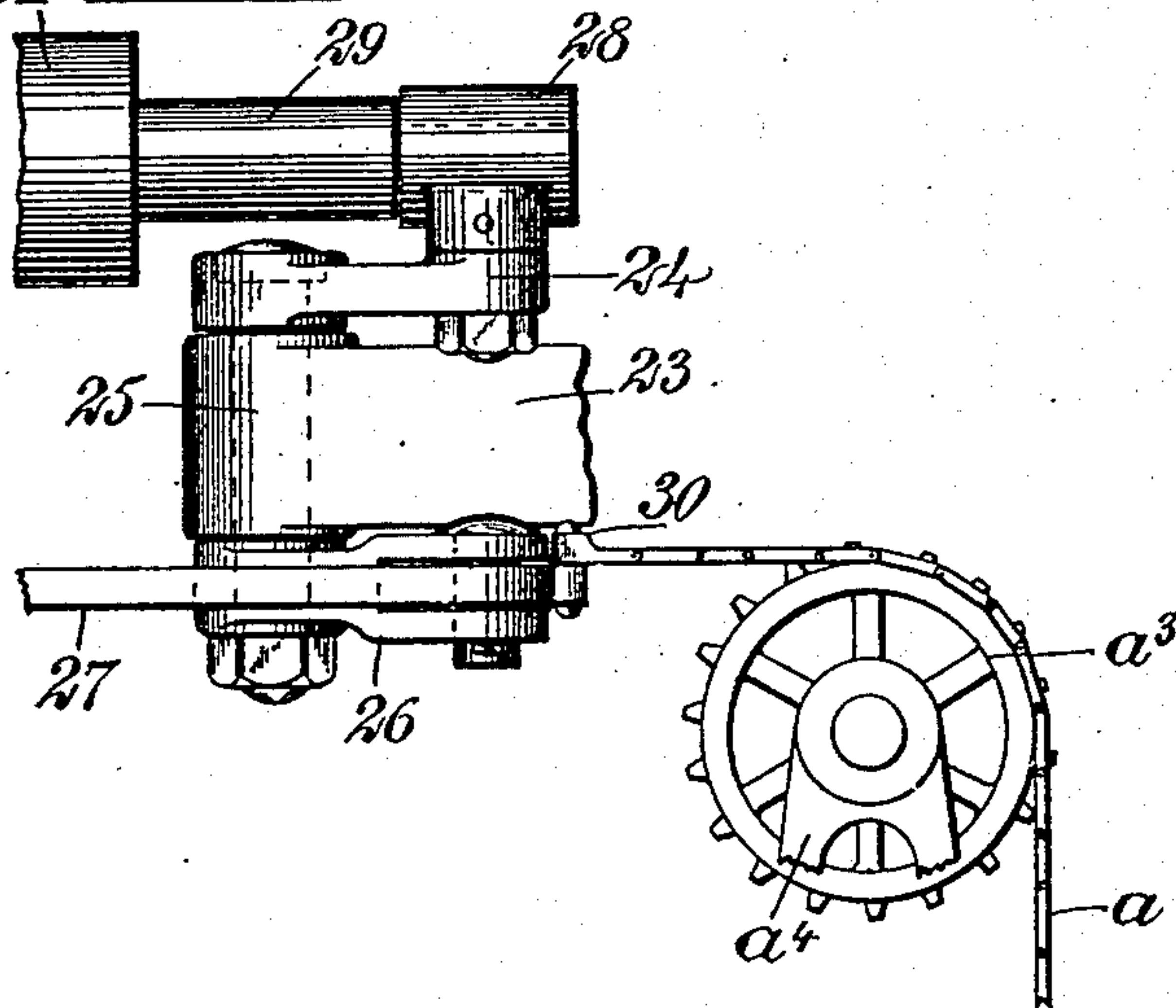
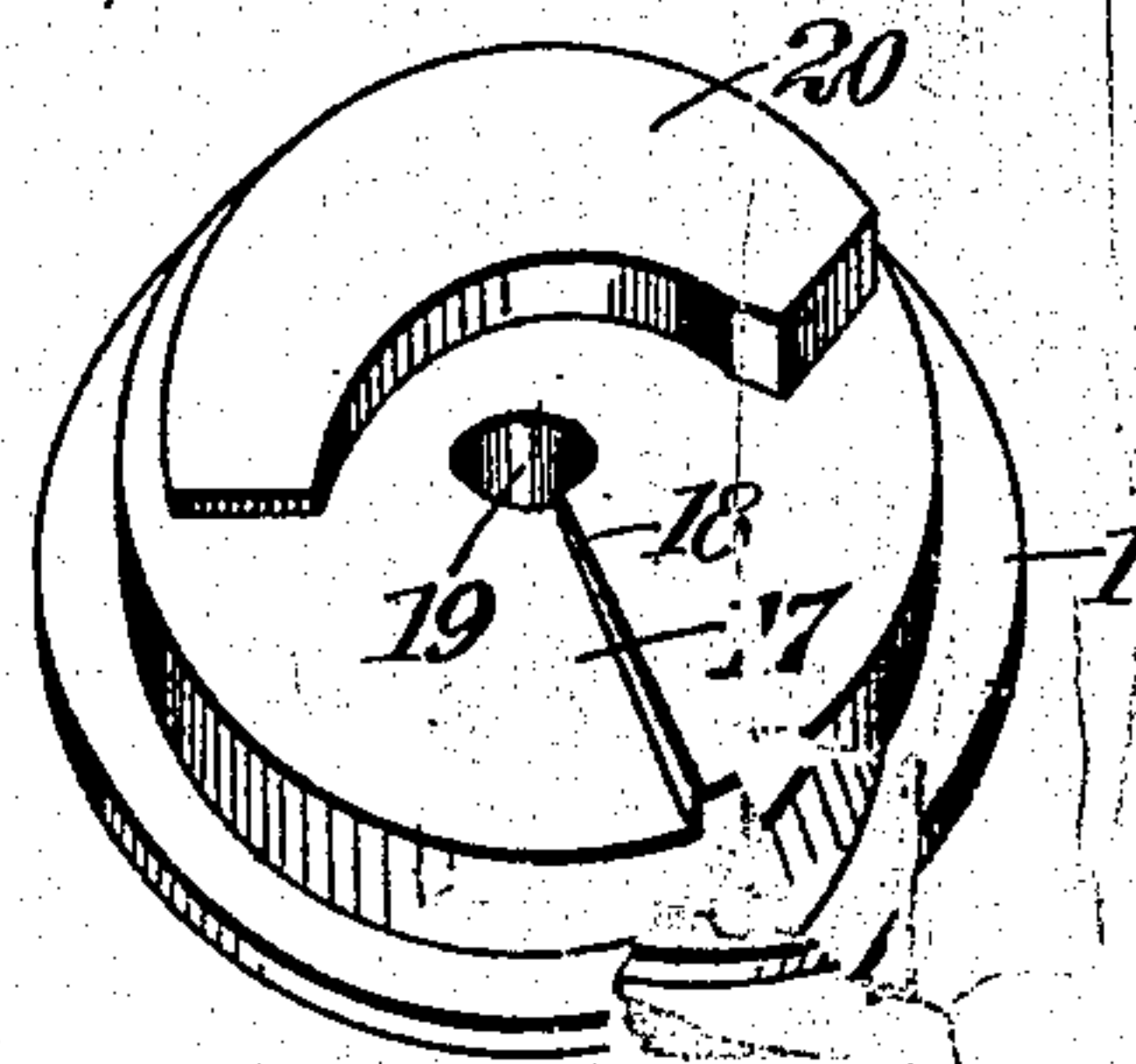


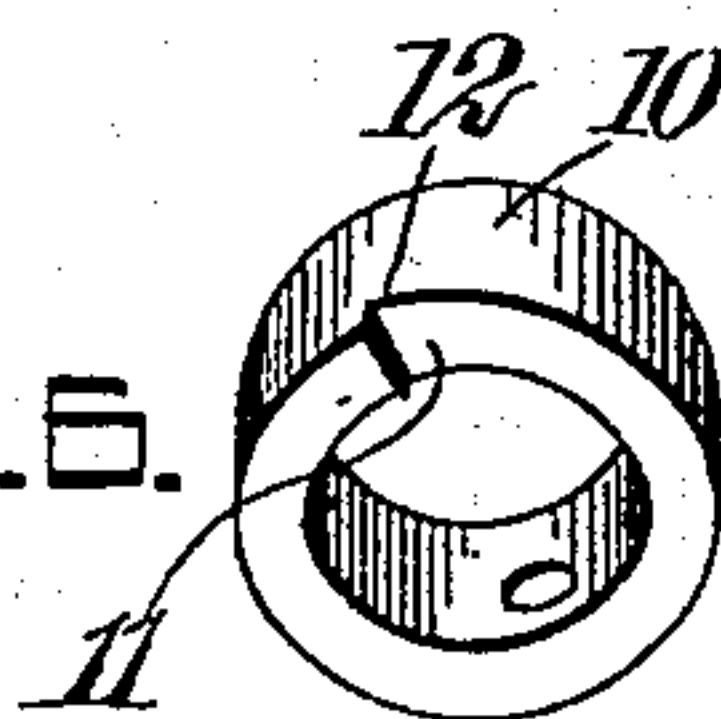
Fig. 5.



WITNESSES:

L. Almquist.
J. D. Runner

Fig. 6.



IN WITNESS

Per
 BY

UNITED STATES PATENT OFFICE.

PERRY E. BRADLEY, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO A. T. HAGEN & CO., (INCORPORATED,) OF ROCHESTER, NEW YORK.

APRON-GUIDE FOR MANGLES.

No. 804,578.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed March 6, 1905. Serial No. 248,478.

To all whom it may concern:

Be it known that I, PERRY E. BRADLEY, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Apron-Guide for Mangles, of which the following is a full, clear, and exact description.

This invention relates to the guiding of aprons used on laundry machinery, such as mangles.

The object of the invention is to provide improved means for preventing the aprons from creeping laterally upon their rollers.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is substantially a side elevation, partly in section on the line 1 1 in Fig. 2, of a mangle to which my invention has been applied, certain parts being broken away, as will appear. Fig. 2 is a section taken substantially upon the line 2 2 of Fig. 1, certain parts being represented as broken away. Fig. 3 is an enlarged plan taken substantially upon the line 3 3 of Fig. 1, showing mechanism just below this point, the parts of the said mechanism being broken away, as will appear.

Fig. 4 is a fragmentary elevation taken on the line 4 4 of Fig. 1. Fig. 5 is a perspective representing a collar which constitutes a feature of the invention, and Fig. 6 is also a perspective representing another collar which constitutes a feature of the invention.

Before proceeding to a detailed description of the construction and arrangement of the parts it may facilitate the disclosure of the invention to state that the mangle illustrated and to which the invention has been applied is provided with two aprons, which are both illustrated in Fig. 1 as provided with independent guiding or controlling means. Hence it will be understood that the mechanisms about to be described are substantial duplicates of each other.

Referring more particularly to the parts, 1 represents the frame of a four-roll mangle, said frame supporting a chest 2, above which the four rolls 3 are mounted. At one extremity the frame is provided with the usual extensions 5, which are provided with inclined guideways 6 for boxes 7 and 8, arranged in pairs on opposite sides of the machine, as

shown. These boxes support worm-rollers A and B, respectively, over which aprons A³ and B³ pass. These aprons are indicated in dotted lines and pass as follows: The inside apron B³ passes down from the roller B, as indicated, so that its upper course passes along the under side of the chest 2. At its forward extremity it passes around a roller B' and returns, passing under a roller B². Beyond this point it passes over another roller B⁴ before returning to the roller B. The outer apron A³ in its lower course passes under a roller A⁴, which corresponds to the roller B⁴, referred to above. Passing rearwardly from this roller the under course of this apron extends rearwardly and passes under a guide-roller A², and passing upwardly in an inclined direction from the roller A² this apron passes around a roller A'. From this point the upper course of the lower apron follows substantially the same directions as the lower course of the inner apron, passing under the rollers B² and B⁴ aforesaid.

As indicated above, the arrangement for effecting the guiding of the aprons is duplicated for each apron. The mechanism to be described now in detail is that used in connection with the outside apron A³.

Referring especially to Fig. 2, a shaft 7 is provided, which is rotatably mounted in boxes 8 at its extremities, and upon this shaft the roller A aforesaid is rigidly secured. At points near the boxes 8 the shaft 9 is provided with rigid collars 10, provided on their inner faces, respectively, with a notch or recess 11 presenting an abrupt shoulder 12. Between the extremities of the roller A and these collars 10 wheels or collars 13 are loosely mounted, said wheels or collars being provided on their faces adjacent to the roller with flanges 14. The bodies of the collars 13 are provided with chains α , which are attached at 16 and pass, as indicated, toward the floor. On the faces of the collars 13 which lie adjacent to the collars 10 recesses 17 are respectively provided, the same presenting abrupt shoulders 18, radiating from the bores 19 of the collars 13, as indicated most clearly in Fig. 5. In addition to the recesses 17 the outer faces of the collars 13 are provided with cam-cheeks 20. The purpose of these cam-cheeks 20 will appear more fully hereinafter.

To the inner faces of the boxes 8 brackets 21 are attached, the same presenting an

which project substantially parallel with the shaft 9, as indicated. The inner extremities of these arms terminate adjacent to the outer faces of the collars 13, and they operate in a manner which will appear more fully hereinafter to throw the wheels out of operation.

Referring now especially to Figs. 3 and 4, in which the manner of mounting the roller A^2 is illustrated, the frame 1 is provided with arms or brackets 23, upon which short arms 24 are rotatably mounted by means of a vertical pin 25, as shown. The lower extremity of each of these pins 25 is attached rigidly to a main arm 26, and these main arms 26 are connected by a link 27. Upon the extremities of the short arms 24 bearings 28 are swiveled, as will be readily understood, and in these bearings 28 are received the reduced extremities of the shaft 29 of the guide-roller A^2 .

It has been customary in practice with such a mounting for the guide-roller A^2 as that described to employ an operator who shifts by hand the roller in either direction, so as to control the position of the apron on its main rollers. Thus if the operator observed that the apron was creeping toward the right he would operate the roller toward the left, and this movement of the roller would bring about in a short time a correct position of the apron on its roller. The mechanism described in connection with the worm-roller A affords means for performing this function automatically. To this end a connection is made through the chains a aforesaid to the link 27.

The course of the chains on both sides of the machine is identical. The one on the right is shown in Fig. 1. The chain passes down from the vicinity of the roller A to a point near the floor, where it passes under a guiding sprocket-wheel a' , whence it passes forwardly just above the floor to a second guiding sprocket-wheel a'' . Passing vertically from this point this chain passes around a third guiding sprocket-wheel a''' , mounted in a suitable bracket a^4 , attached at a convenient point to the frame 1. The chain at this point leads inwardly horizontally, so as to make a connection at 30 (see Figs. 3 and 4) with the extremity of the link 27.

In the operation of the device, referring especially to Fig. 2, if the apron A^3 should tend to creep toward the left the loose collar 13 at the left would be engaged by the edge of the apron and moved longitudinally along the shaft 9. If this movement of the apron continues sufficiently, the outer face of the collar 13 would eventually be brought against the inner face of the corresponding collar 10 and an engagement would be made between the shoulders 18 and 12, whereupon the rotation of the shaft 9 and roller A would be imparted to the collar 13. If the collar 13 rotated, it would actuate the corresponding chain and

would operate to take up a quantity of the same. Pulling upon the left-hand chain in this manner would evidently move the guide-roller A^2 in a direction opposite to that in which the apron was creeping. In this way the creeping of the apron would be overcome, and it would be returned automatically to its normal central position. The same operation would occur if the apron should move toward the right instead of toward the left, the movements then being transmitted to the guide-roller through the chain lying on the opposite side of the machine.

The purpose of the brackets 21 with their arms 22 will now appear. In this connection reference is had to Fig. 2. It should be understood that as the suggested rotation of the collar 13 occurs in order to replace the apron in its normal position a continued rotation of the collar would bring about an engagement between the cam-cheek 20 and the extremity of the arm 22, as shown. This arm 22 projects to such a degree that it affords means for throwing the collar inwardly in such a way as to disconnect the shoulders 12 and 18, returning the collar 13 to its normal position at the end of the roller A.

From the operation described it will now be understood that the collars 13 in connection with the collars 10 constitute clutch connections which are closed automatically by the creeping of the apron in either direction. Furthermore, both of these clutches are automatically thrown out when a sufficient movement of the guide-rollers A^2 or B^2 has been produced.

The application of the invention in no way interferes with the normal operation of a mangle. The boxes 7 and 8 would, as usual, be mounted upon adjusting-screws 31, which would enable the tautness of the aprons to be readily adjusted by cranks 32.

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

1. In a laundry-machine, in combination, an apron, a roller affording means for controlling the position of said apron, means for mounting said roller to shift longitudinally and automatic means for shifting said roller by the lateral creeping of said apron.

2. In a laundry-machine, in combination, a shaft, a roller, an apron passing over the same, a loose collar on said shaft adjacent to said roller and adapted to be engaged by the edge of said apron, and mechanism actuated by said roller, for moving said apron toward a central position.

3. In a laundry-machine, in combination, a roller, an apron passing over the same, a shaft on which said roller is mounted, a collar fixed on said shaft, a second collar loose on said shaft and adapted to engage said first collar, said second collar being adapted to engage the edge of said apron, and a mechanism op-

erated by said second collar, for returning said apron toward a central position.

4. In a laundry-machine, in combination
5 an apron, a guide-roller adapted to be shifted
laterally with respect to said apron, a chain
leading from said guide-roller and controlling
the same, and a wheel over which said chain
passes and lying adjacent to the edge of said
apron, said wheel affording means for actu-
10 ating said chain when engaged by said apron.

5. In a laundry-machine, in combination, a
roller, an apron passing over the same, a shaft
connected with said roller, a wheel rigid on
said shaft, a collar rigid on said shaft and
15 adapted to engage said wheel, mechanism ac-
tuated by said wheel for returning said apron
toward a central position, said wheel having
a cam-cheek, and a fixed member adapted to

engage said cam-cheek, to disconnect said
wheel and collar. 20

6. In a laundry-machine, in combination, a
roller, an apron passing over the same, a guide-
roller over which said apron passes and af-
fording means for controlling the position
thereof, means for mounting said last roller, 25
to move laterally, chains extending from said
last roller to points adjacent to said first roller,
and mechanism, actuated by said apron at said
first roller, for controlling said chains.

In testimony whereof I have signed my name 30
to this specification in the presence of two sub-
scribing witnesses.

PERRY E. BRADLEY.

Witnesses:

F. D. AMMEN,

JNO. M. RITTER.