

No. 664,607.

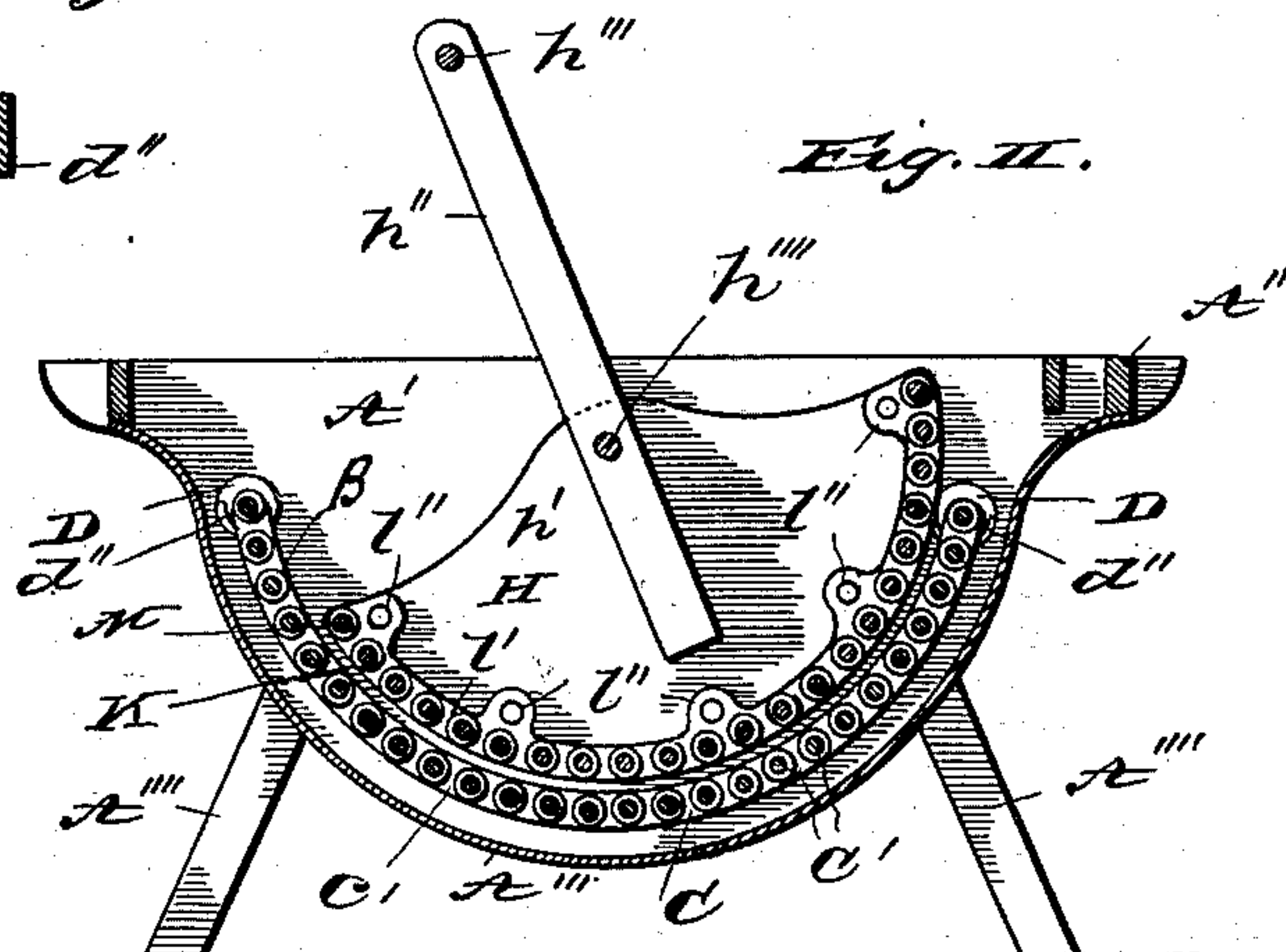
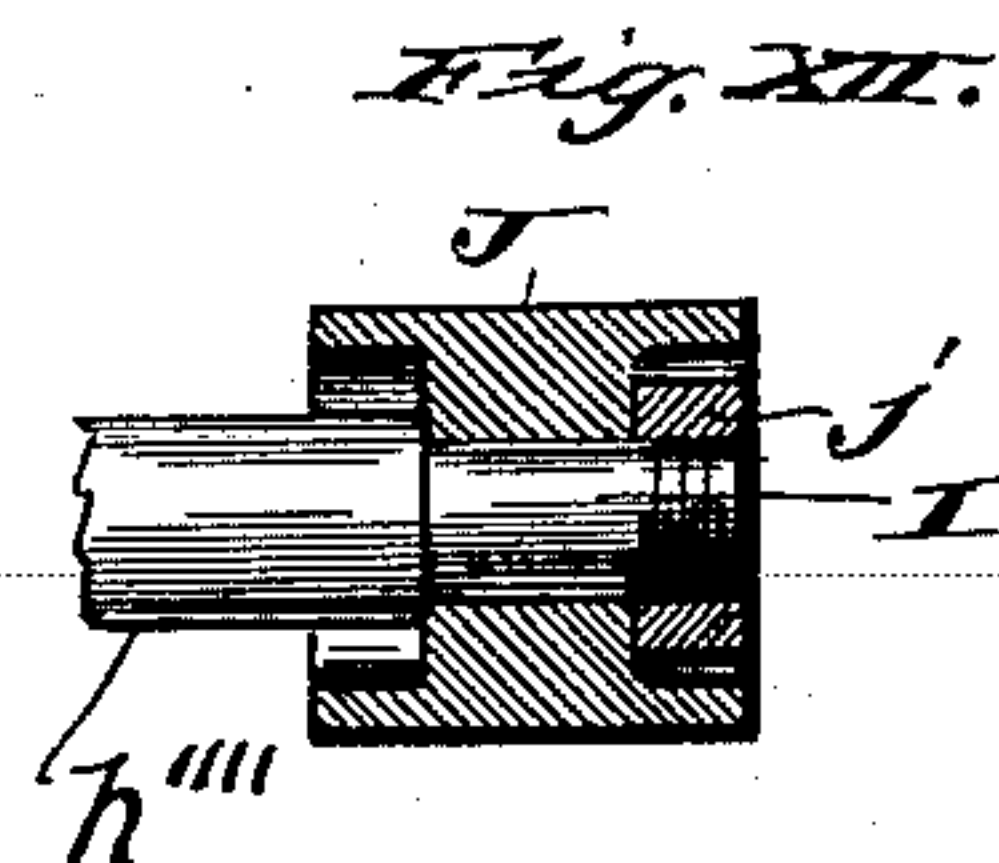
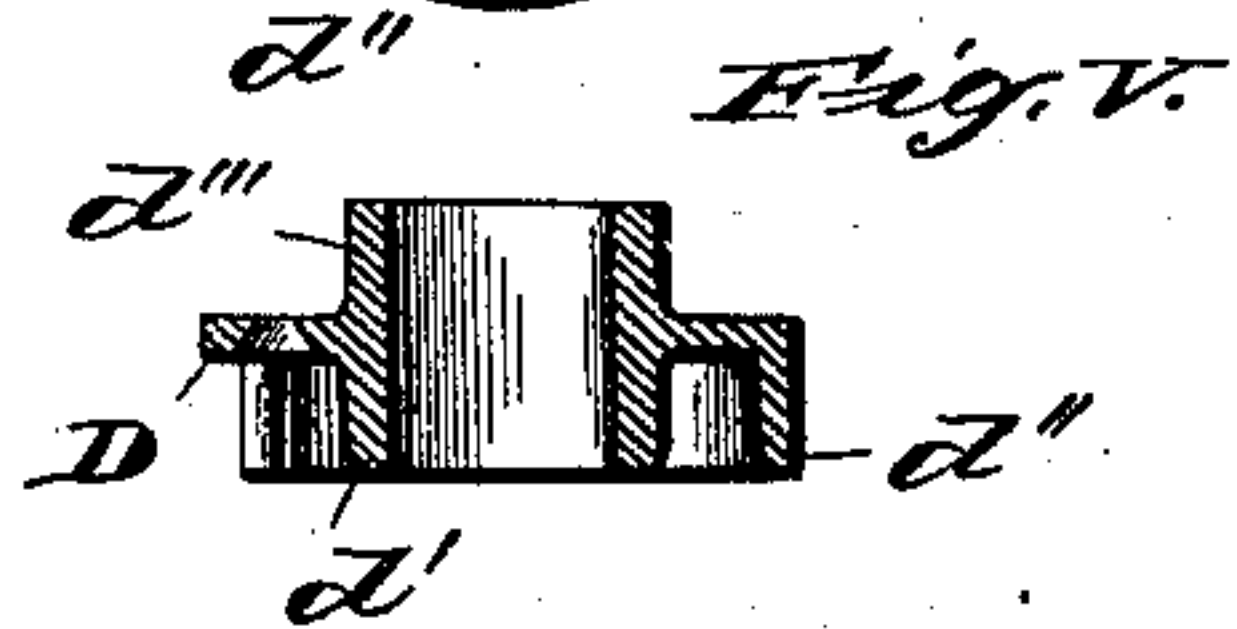
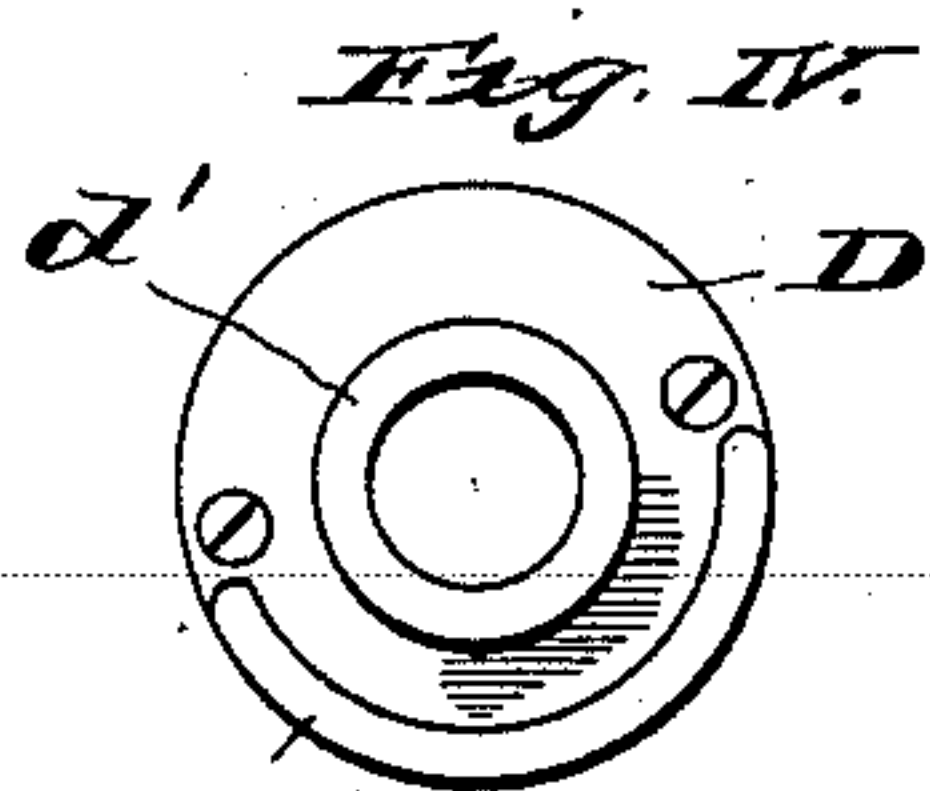
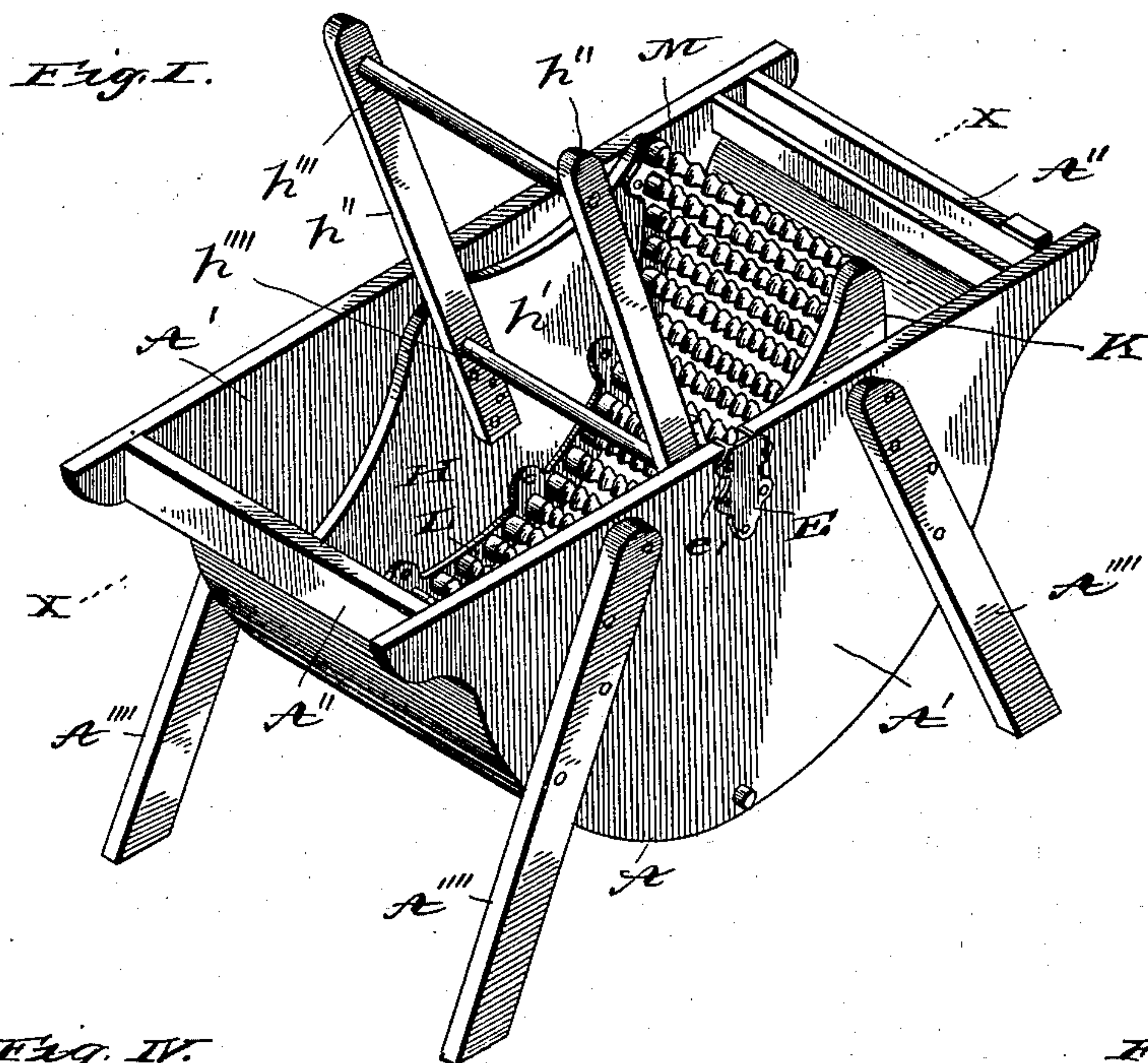
Patented Dec. 25, 1900.

D. W. BOWMAN.
WASHING MACHINE.

(Application filed Aug. 23, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES—

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2 Sheets—Sheet 2.

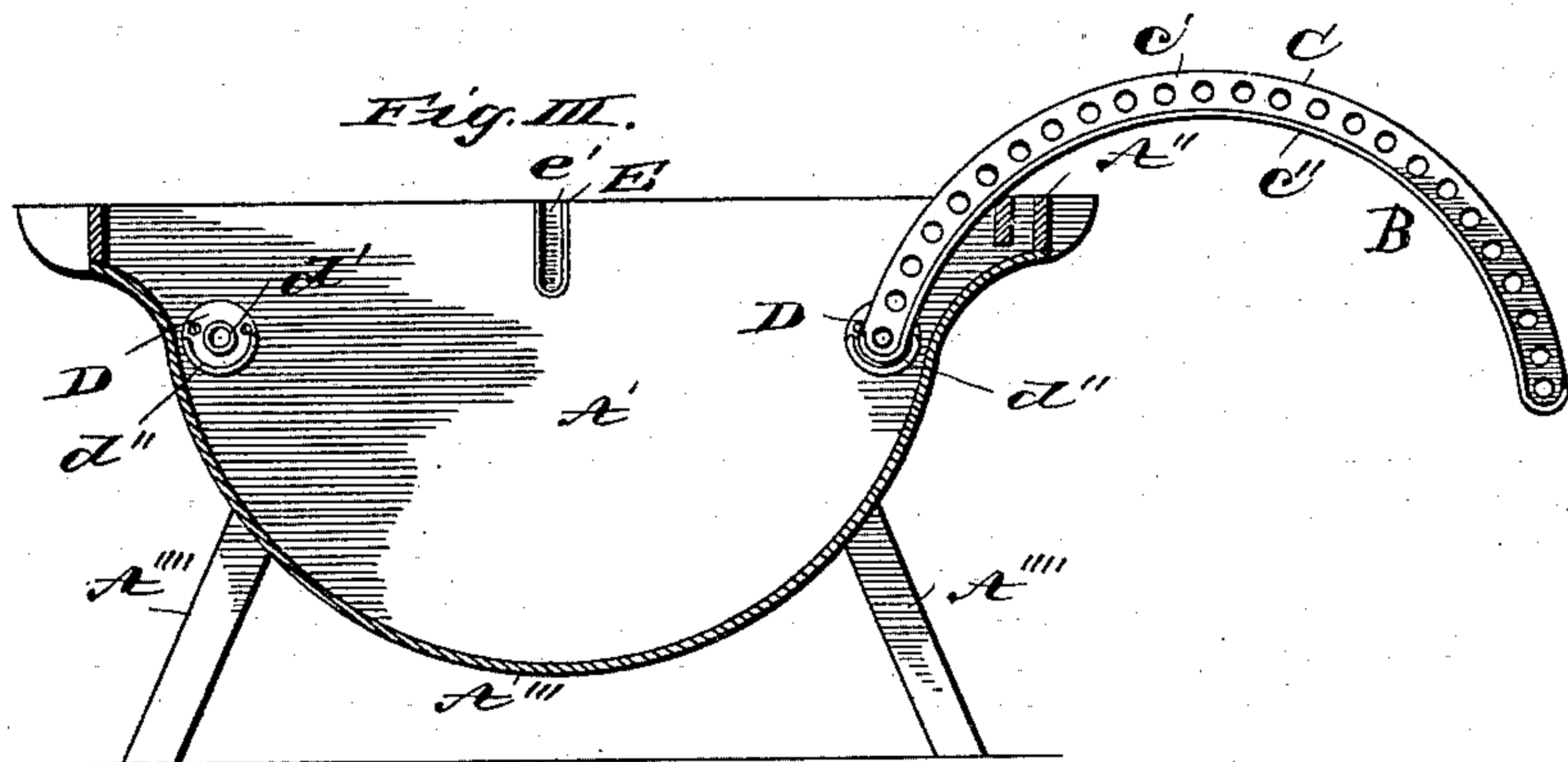


Fig. VII.

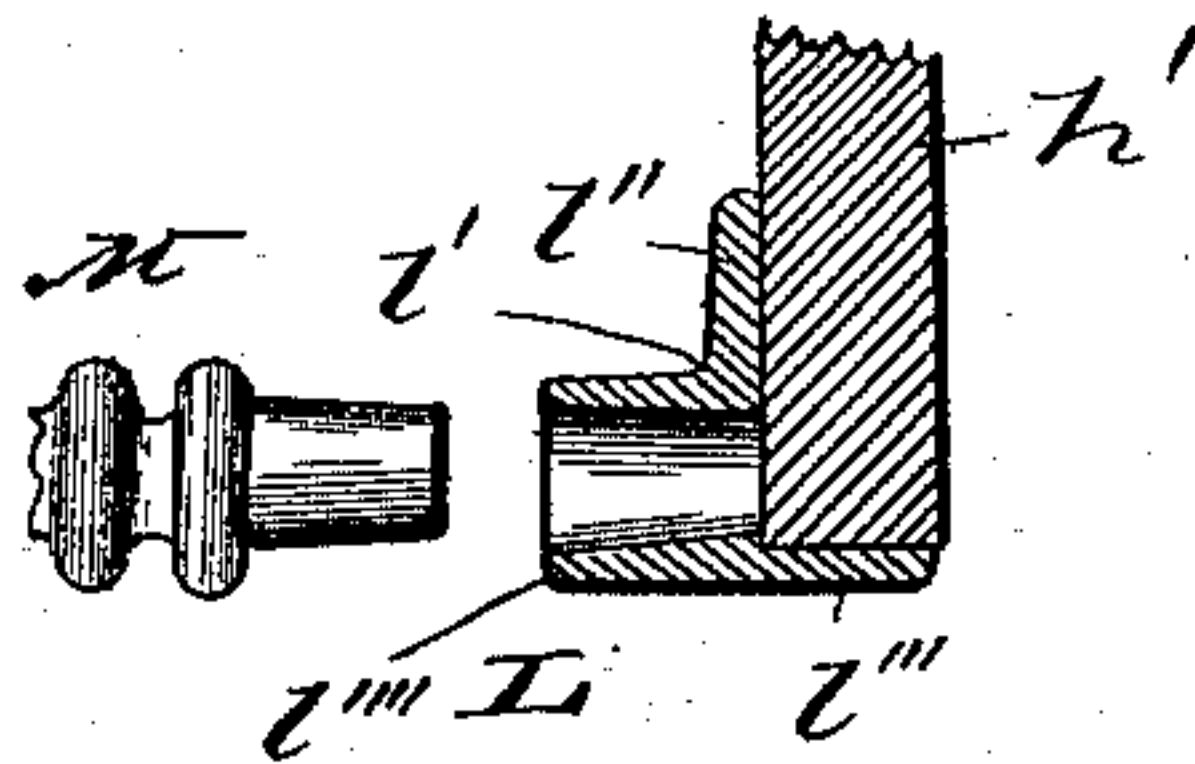


Fig. IX.

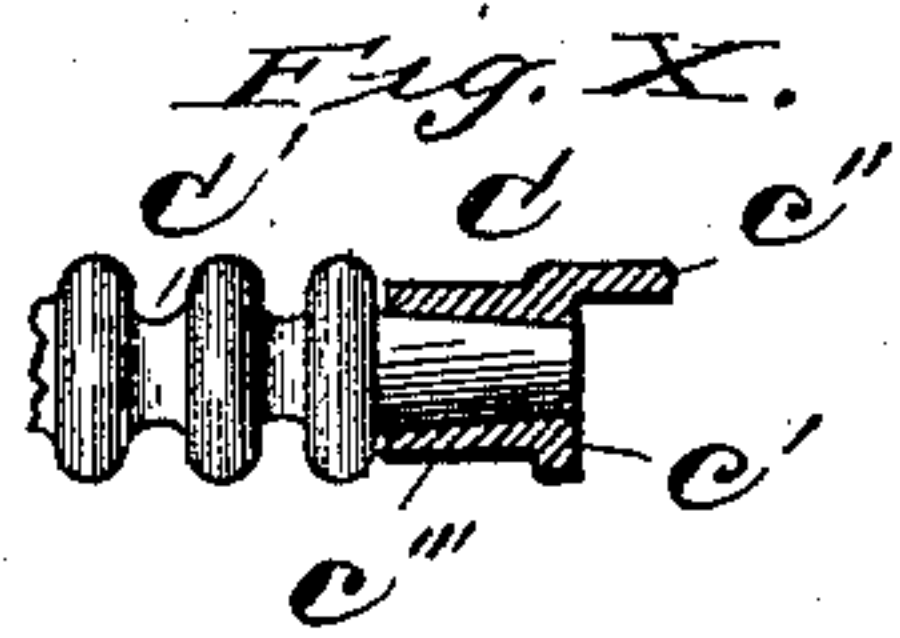
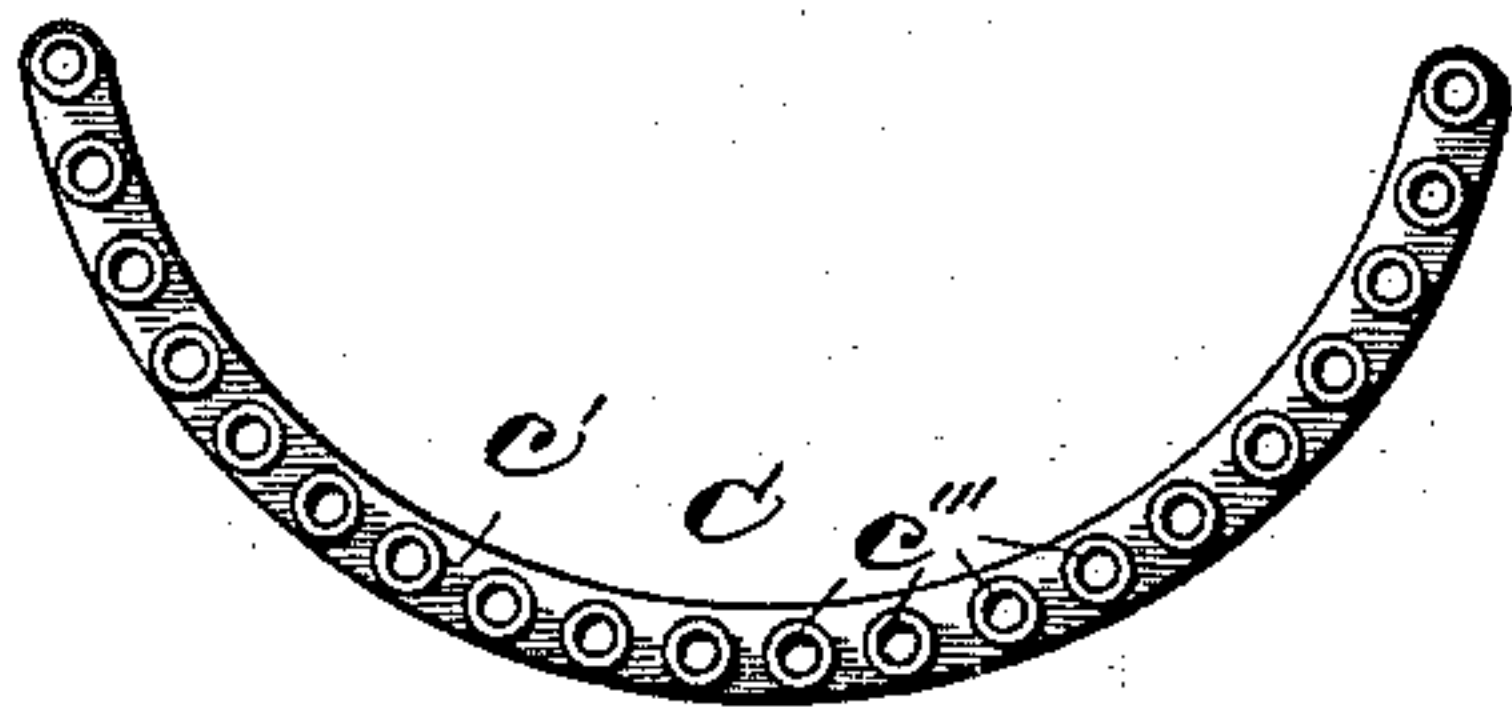


Fig. VI.

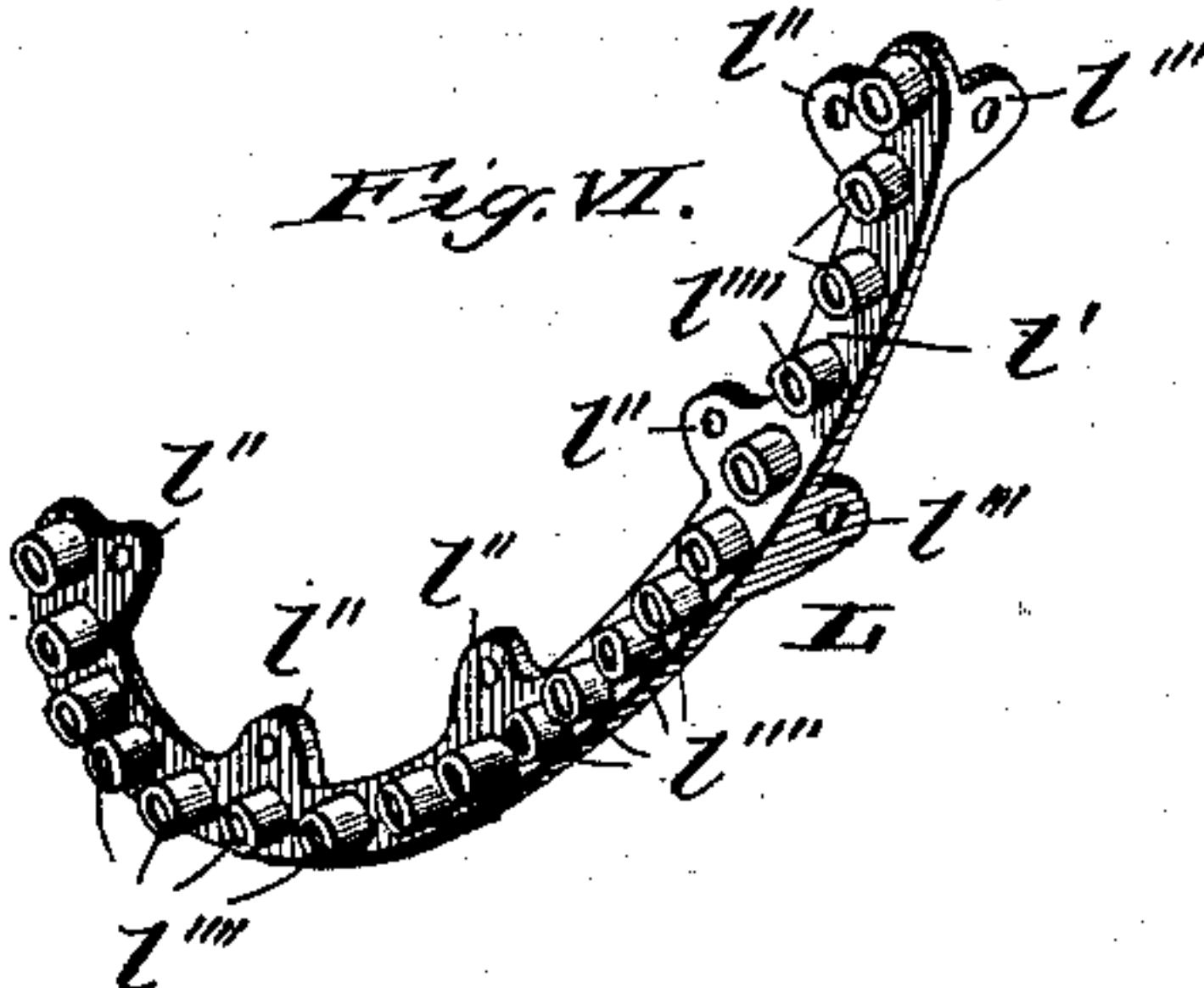
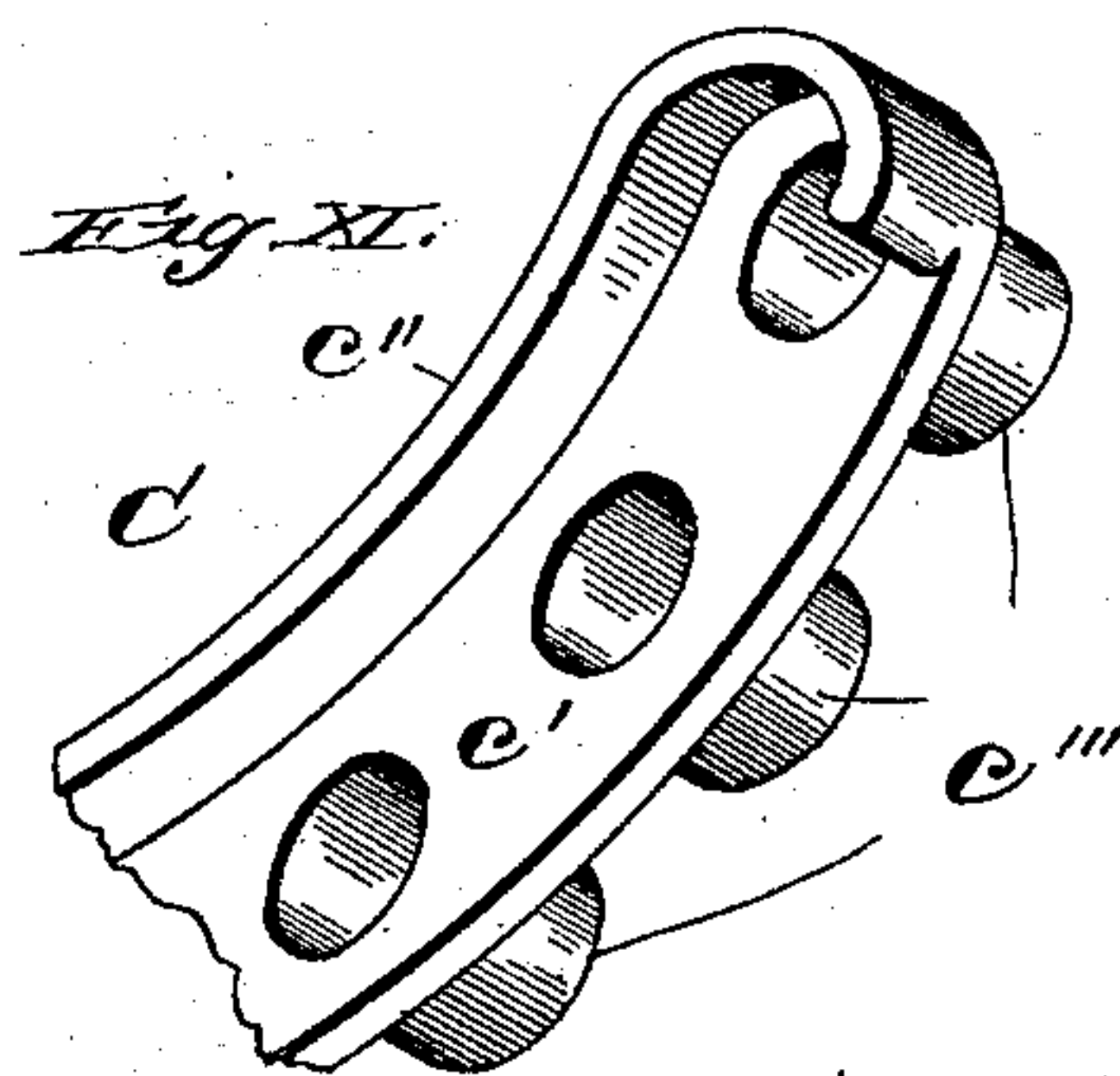
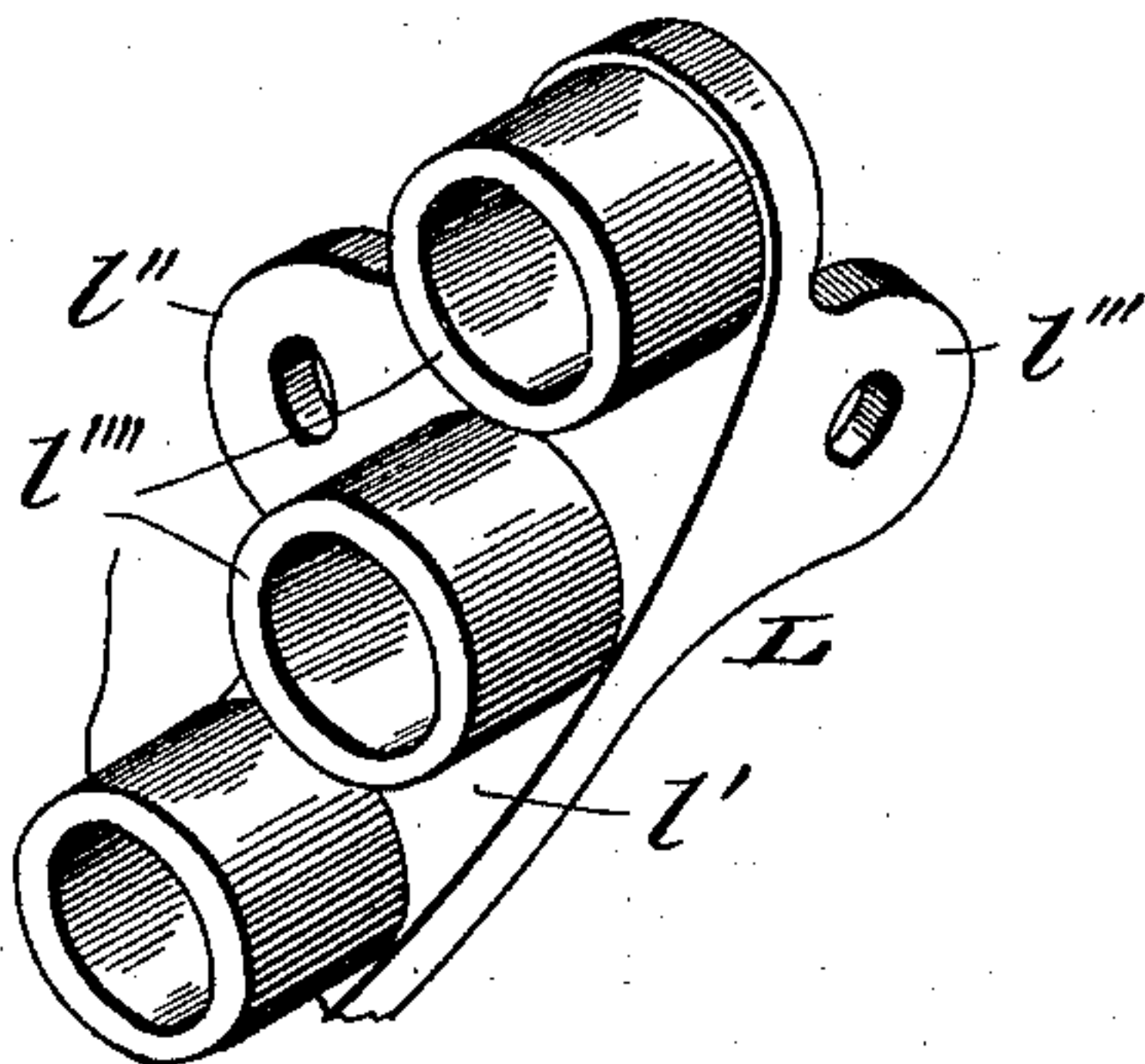


Fig. VIII.



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UNITED STATES PATENT OFFICE.

DANIEL W. BOWMAN, OF TOLEDO, OHIO, ASSIGNOR TO HARRY R. WADE,
OF SAME PLACE, AND JOSEPH N. CLOUSE, OF ST. LOUIS, MISSOURI.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 664,607, dated December 25, 1900.

Application filed August 23, 1899. Serial No. 728,181. (No model.)

To all whom it may concern:

Be it known that I, DANIEL W. BOWMAN, a citizen of the United States of America, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

My invention relates to washing-machines in which an oscillating convex corrugated rubber-head coacts with a concave corrugated fixed rubber portion.

The objects of my invention are to provide a substantial metallic socket-fastening for each one of the transverse bars forming the corrugated coacting rubbers, by means of which the said bars may retain their full strength and be seated firmly in metallic sockets arranged on a curved bar for each side, thus giving great strength to the working parts and also lessening the friction on the working parts, and, further, to make all internal parts removable for cleansing purposes. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my invention complete. Fig. 2 is a longitudinal vertical section on lines *x x*, Fig. 1. Fig. 3 is a side view showing the lower rubber removed in the arc of a circle to throw the same out of the suds-receptacle. Fig. 4 is a face view of one of the pivot-supports. Fig. 5 is a cross-section view of one of the pivot supports. Fig. 6 is a perspective view of one of the upper-rubber metal segments. Fig. 7 is a cross-section of one of the upper-rubber metal segments. Fig. 8 is an enlarged detail perspective view of one end of the upper-rubber metal segment. Fig. 9 is an inside face view of one of the lower-rubber metal segments. Fig. 10 is a cross-section view of one of the lower-rubber metal segments. Fig. 11 is an enlarged detail perspective view of one end of the lower-rubber metal segment. Fig. 12 is an enlarged section view of one of the upper-rubber rollers and pivot.

Similar letters refer to similar parts throughout the several views.

Referring to the description and the drawings, A represents the suds-receptacle, formed

of side boards A', cross-bars A'', and a metal bottom A''', properly secured thereto and the whole supported upon legs A''''.

B represents the lower rubber, formed of metal suspension side segments C and transverse beaded rods C'. Each side segment C is formed of one solid piece having a flat web part *c'* of nearly a half-circle, on the inner edge of one side of which is a flange projection *c''*, which extends around the ends of the web *c'*. The other side is provided with a series of round sockets *c'''*, projecting out from it, each one of which forms a seating for one end of one of the beaded rods C', which is driven into it, and when the whole series of sockets are filled with a side segment C on each side a substantial concave web is formed which just fits loosely inside of the suds-receptacle and conforms to the circle of its bottom and fits over the four pivot-supports, these supports being seated in the sides of the suds-receptacle and screwed fast, each consisting of the plate D, the inside surface of which is provided with a central projecting flange *d'* and an outer segment of a flange *d''* and a back boss or flange *d'''*, which is seated in the sides of the suds-receptacle and makes a firm fastening for it when screwed down. The center projecting flange *d'* and the outer segment of a flange *d''* form a support and a lock for the lower rubber B, so that when it is in position it rests firmly on these four pivot-supports and may be lifted squarely up and taken out or turned over either way and be locked in, as shown in Fig. 3, thus making all parts of the machine accessible for cleaning after using. In the side boards A' A' of the suds-receptacle are secured hangers E E for the upper rubber H. These hangers are provided with internal vertical slot-bearings *e'*, which allow the pivots on the upper rubber H to rise and fall and the rubber to accommodate itself to the amount of clothes between the two rubbers and also to allow of the upper rubber being taken entirely out of the machine when desired.

The upper rubber H consists of the solid ends or heads *h' h'*, the arms *h'' h''*, the handle-rod *h'''*, and the pivot-bar *h''''*. The bearings on the end of the pivot-bar are provided with pivots I I and rollers J J to decrease the

friction when the machine is being operated. Further, in the construction of this upper rubber I propose to form it with metal side segments L L, consisting of a curved metal web l' on each side having flanges l'' and l''' to screw it to the sides and edges of the heads h' h' and a series of round sockets l'''' to receive the ends of the transverse beaded rods M, thus constructing the upper curved rubber-section after the manner of the lower one and making the upper rubber strong and substantial in itself.

Having thus described the various parts of my machine and their relation to each other, the manner of operating the machine is, briefly, as follows: Having prepared a suitable amount of suds to nearly cover the rubbers, the clothes are then placed between or passed through between the rubbers and are thoroughly rubbed between them, carrying on the operation as hard or as gently as desired by the oscillating movement of the upper rubber,

suiting the rubbing to the amount of cleaning needed.

I am aware that oscillating rubbing washing-machines have been used and patented before. I therefore do not claim such a construction, broadly; but

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

In a washing-machine the pivot-supports for the lower concave rubber each consisting of the plate D, provided with a center flange and an outer segment of a flange, in combination with the segments C, each provided with an outer border-flange which turns and interlocks with said pivot-supports as shown and described.

Signed by me at the city of St. Louis and State of Missouri this 19th day of August, 1899.

DANIEL W. BOWMAN.

Witnesses:

KATHERINE SMITH,
EDNA RYAN.