

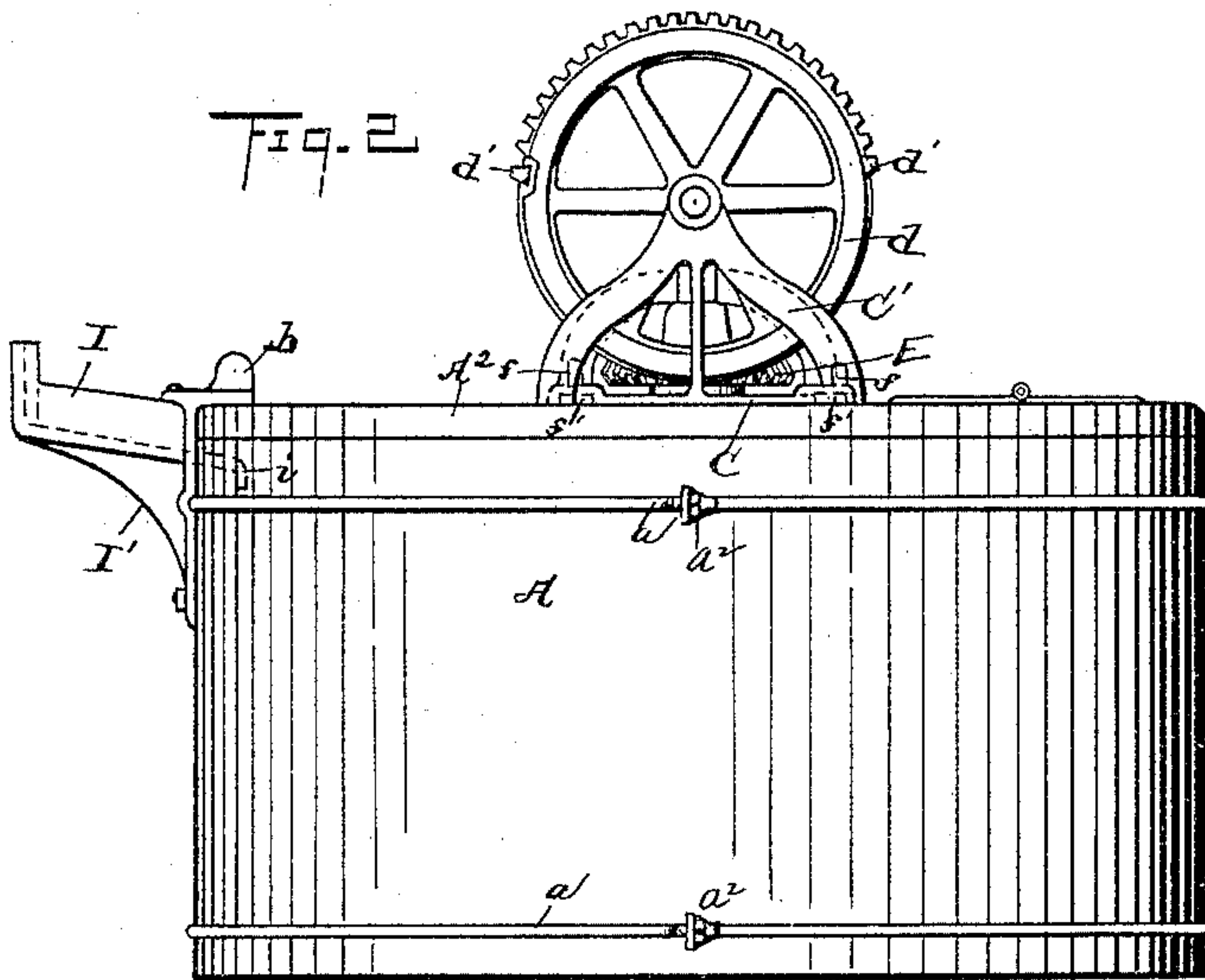
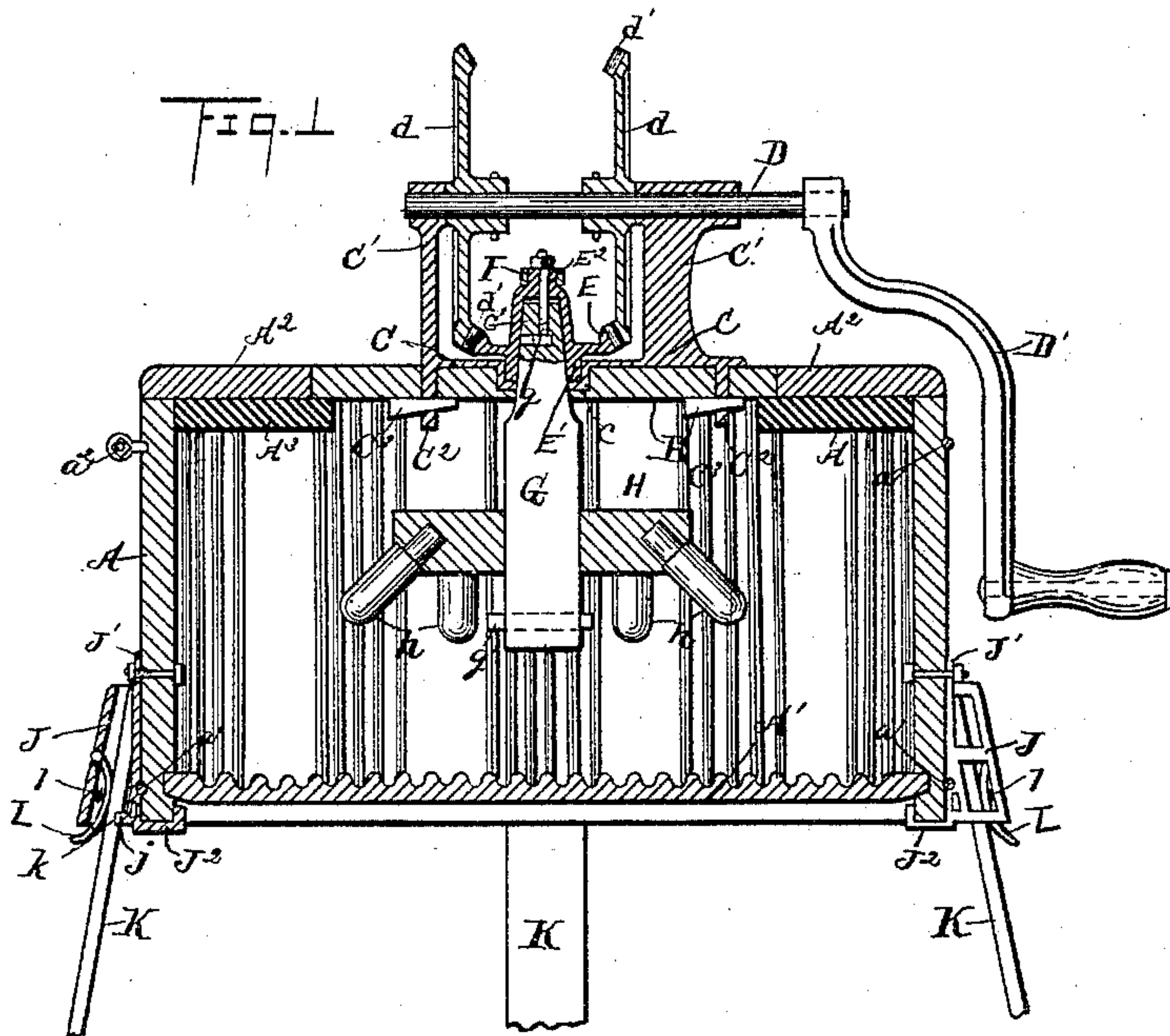
(No Model.)

3 Sheets—Sheet 1.

W. H. TURNBULL.  
WASHING MACHINE.

No. 444,737.

Patented Jan. 13, 1891.



WITNESSES

*Belle S. Lowrie*  
*Will B. Luge*

INVENTOR

*William H. Turnbull*  
*Leggett and Leggett*  
ATTORNEYS

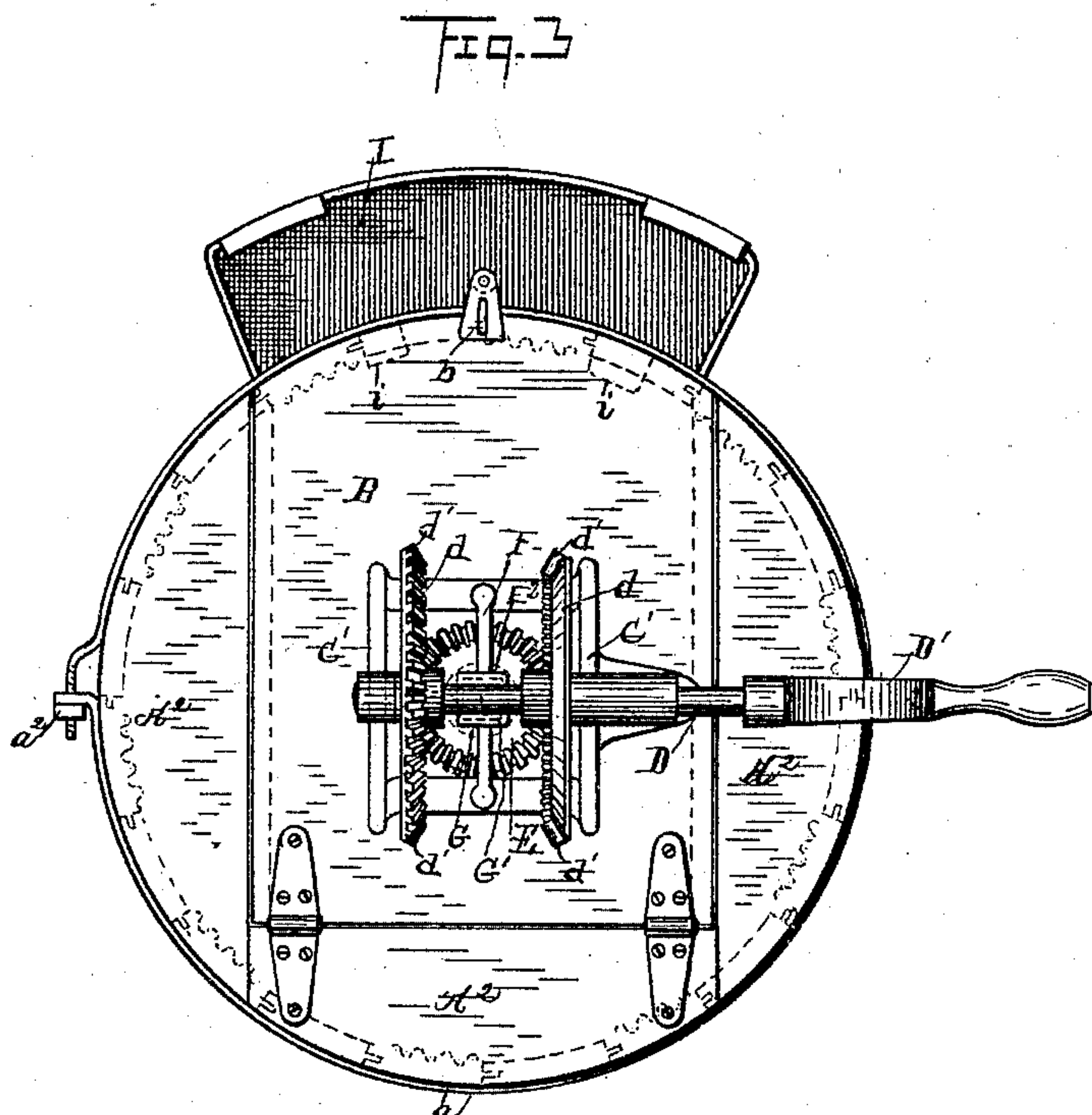
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Fig. 4.

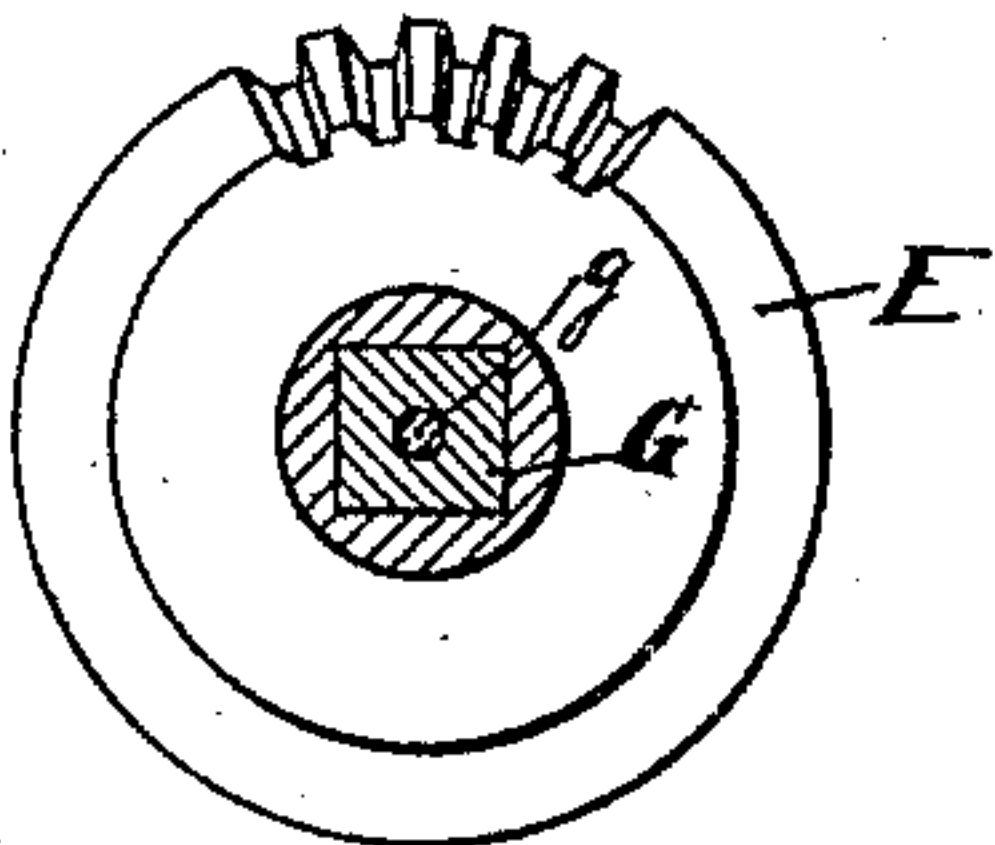


Fig. 5.

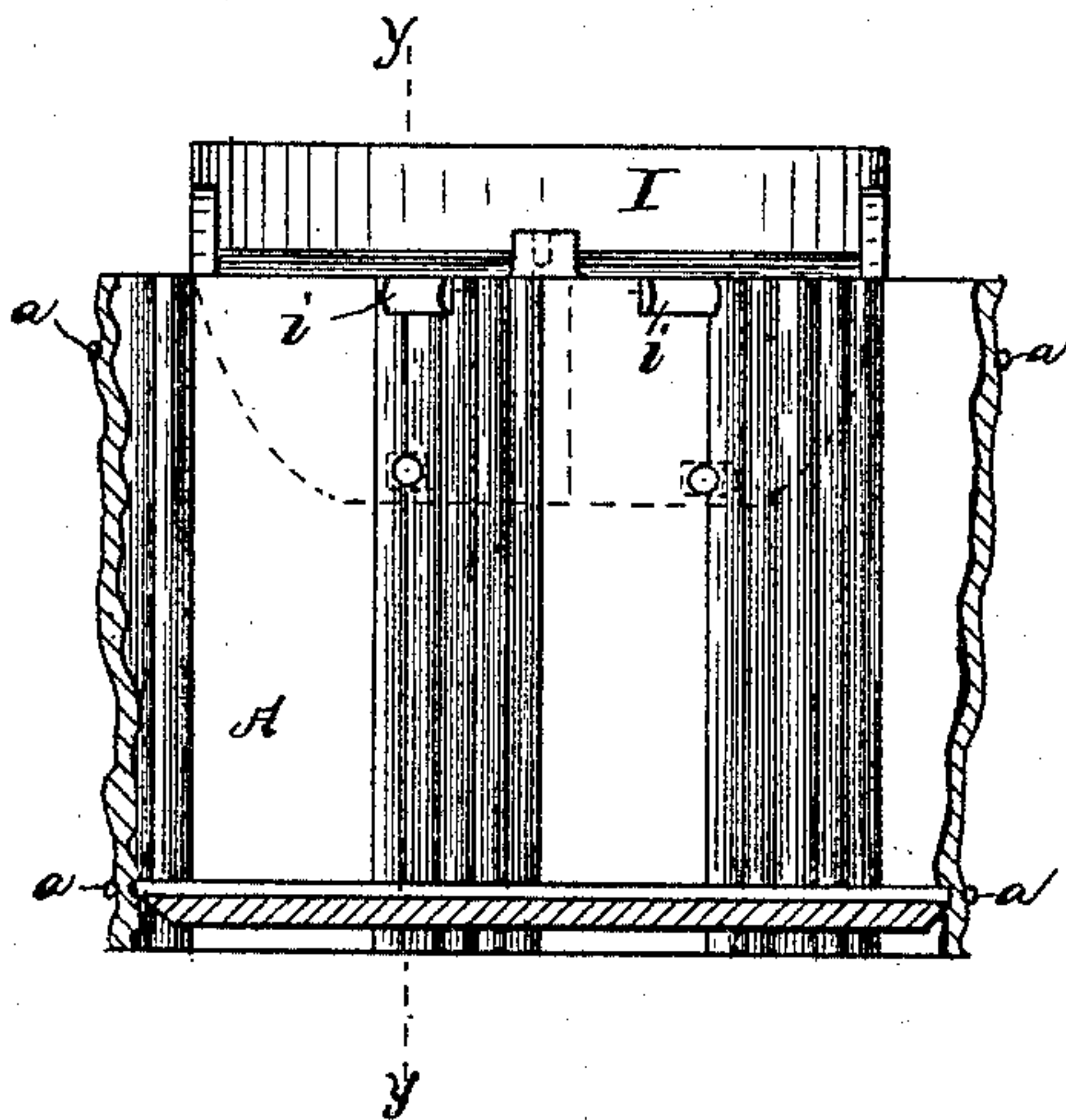


Fig. 6.

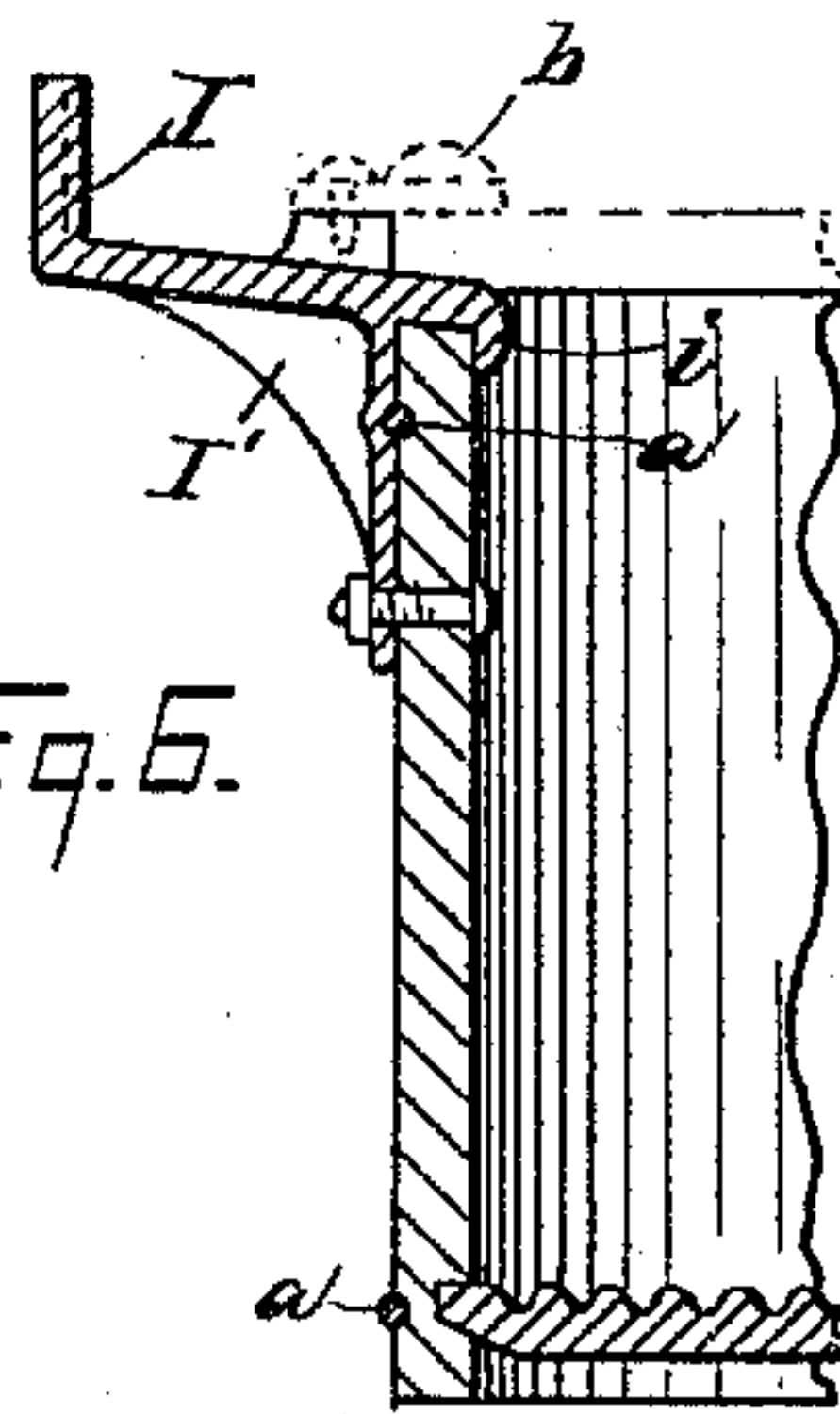


Fig. 7.

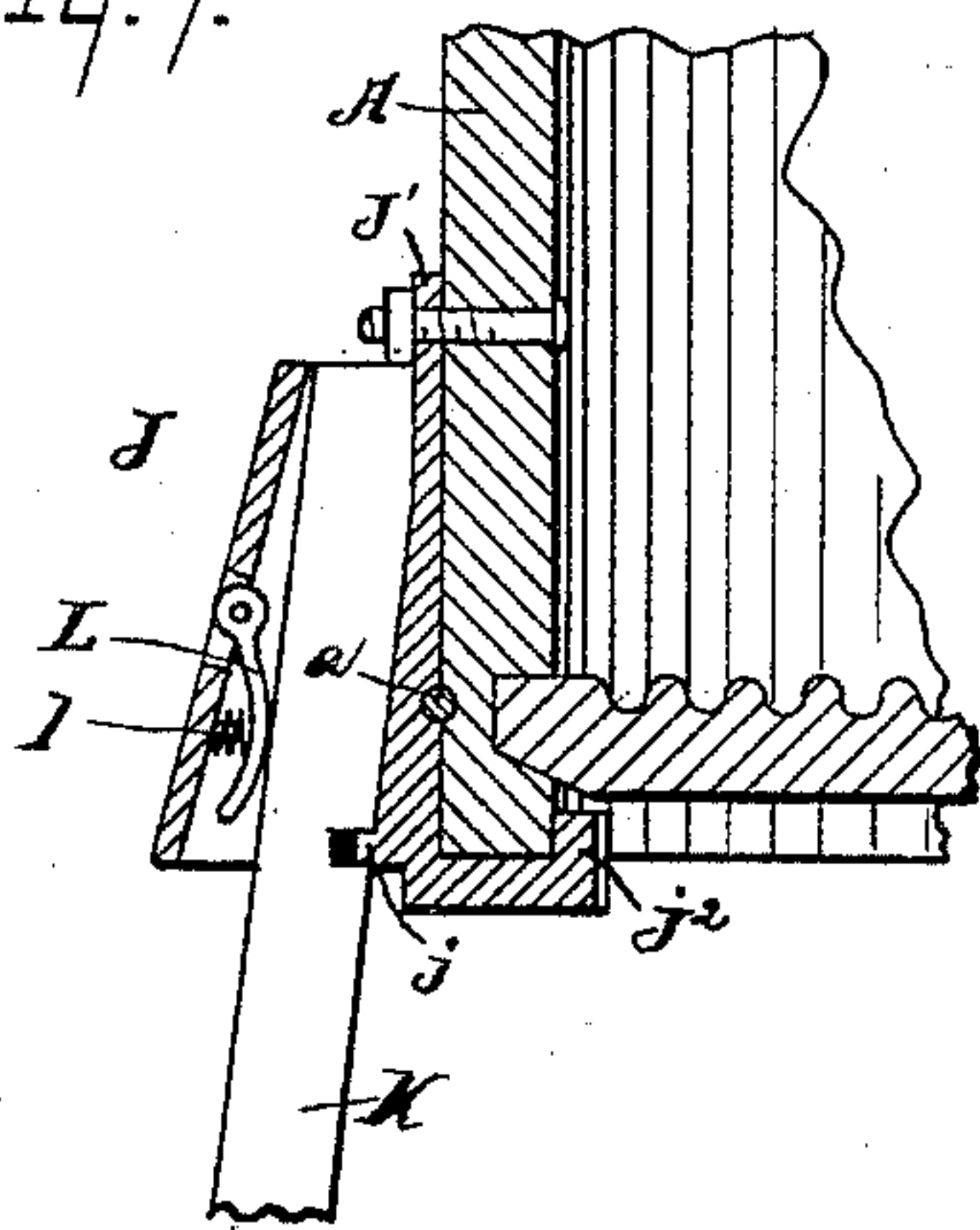


Fig. 8.

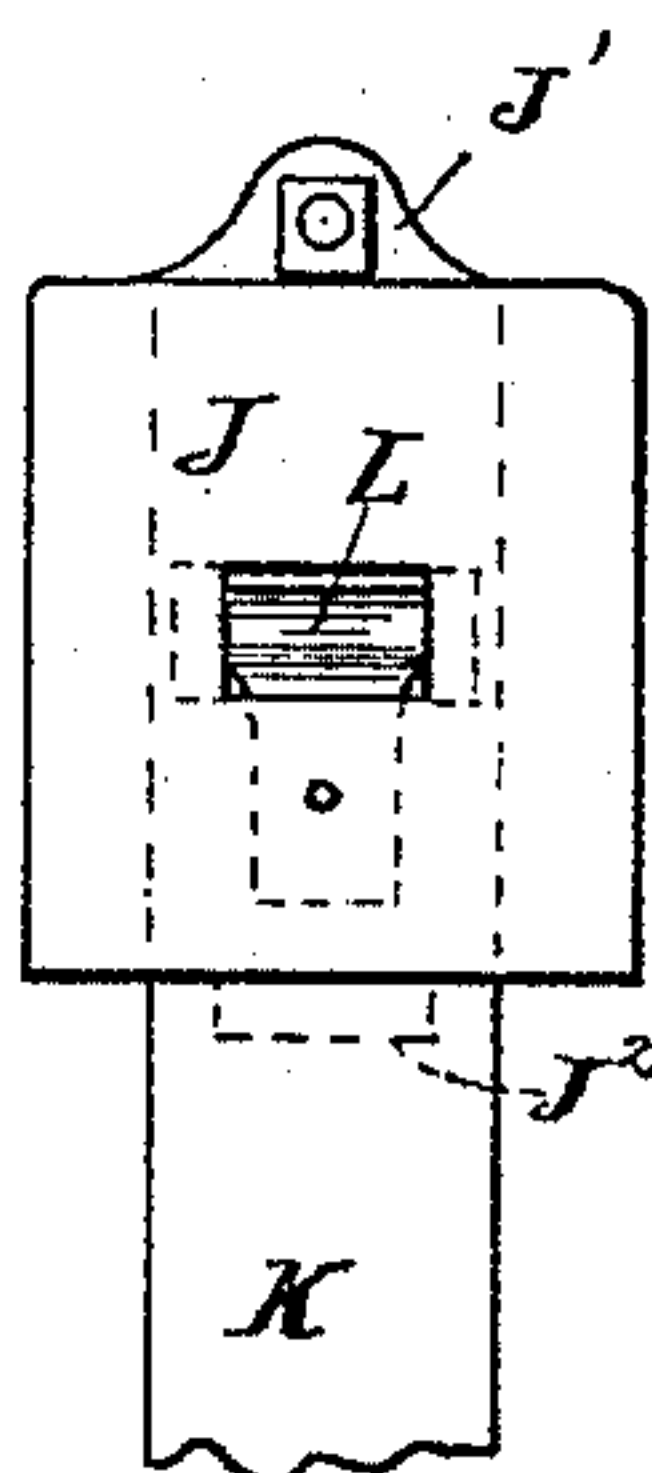
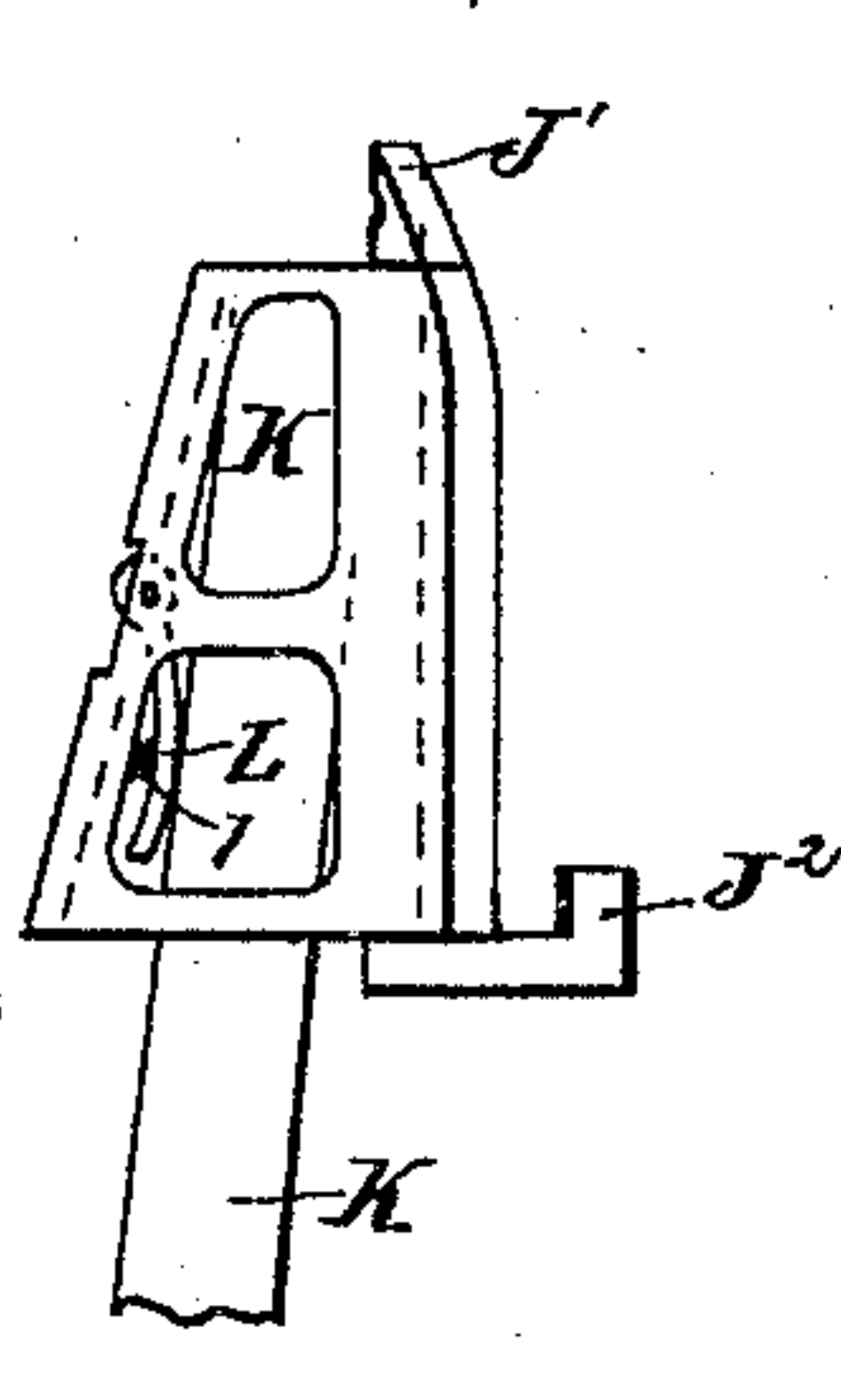


Fig. 9.



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# UNITED STATES PATENT OFFICE.

WILLIAM H. TURNBULL, OF FORT WAYNE, INDIANA.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 444,737, dated January 13, 1891.

Application filed September 30, 1889. Serial No. 325,527. (No model.)

*To all whom it may concern.*

Be it known that I, WILLIAM H. TURNBULL, of Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Washing-Machines; 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 pertains to make and use the same.

My invention relates to improvements in washing-machines; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation in section through the center of the machine. Fig. 2 is a side elevation taken at right angles to the view shown in Fig. 1, the leg-sockets being removed. Fig. 3 is a plan. Fig. 4 is a plan, partly in section, of wheel E detached, showing more especially a section of the hub and of the stem operating therein. Figs. 5 and 6 are elevations in section showing more especially the manner of attaching apron I to the tub. Fig. 7 is an elevation in section, and Figs. 8 and 9 are respectively front and side elevations, showing more especially the bracket for receiving the legs and the mechanism for securing the legs in place in the bracket.

A represents the tub, alternate staves being corrugated on the inside, as shown in dotted lines, Fig. 3. The lower head A' is secured in crozings in the usual manner, the upper face of this head being corrugated, as shown. The upper head consists of pieces A<sup>2</sup> A<sup>2</sup> A<sup>2</sup> nailed to the top end of the staves, with pieces A<sup>3</sup> secured underneath on two sides and projecting inward, say, a half of an inch, more or less, to furnish seats for the cover B, the latter being hinged, as shown, to the top head and secured at the opposite end by button b. The hoops a consist of round rods set in circumferential grooves of the tub, the one end of a hoop being screw-threaded and passed through an eye made in the other end of the hoop, with a nut a<sup>2</sup> to tighten the hoop, as shown more clearly in Fig. 3, by which arrangement the tub can always be kept from leaking.

Mounted on cover B is a metal frame comprising base C and brackets C', the base having two or more depending legs C<sup>2</sup>, that extend through holes in the cover, these legs having slots in which are inserted keys C<sup>3</sup> for holding the frame down firmly upon the cover. With such construction by removing the keys the metal frame and attachments are easily removed from the cover for shipping or other purposes, and are as easily returned to their place and secured. The heads of brackets C' are bored laterally and constitute journal-boxes for shaft D. This shaft is provided with crank D' and with fractional beveled gears d d. These gears are set facing each other, as shown, and alternately engage pinion E in common, the arrangement being such that by turning the crank continuously in either direction the rotative movement imparted to pinion E is reversed as the different gears d d alternately engage the pinion. To as far as possible break the shock and deaden the sound caused by reversing the pinion, the terminal teeth d' d' of each fractional gear are of vulcanized rubber or of other material that will yield a trifle. These teeth d' are preferably set in dovetailed grooves in the gear, so that these teeth may be removed and others substituted. Hardwood teeth will be found serviceable for this purpose, although they are less durable than teeth of vulcanized rubber.

Plate C has a depending hollow hub c counterbored from the top to receive the depending hub E' of pinion E. The upwardly-projecting hub E<sup>2</sup> of the pinion is reduced in size near the top, and the reduced section thereof is journaled in the bore of bridge-tree F, the latter being secured to plate C. The securing-bolts f of the bridge-tree are preferably "cast in" the end of the bridge-tree, and plate C is recessed at c' on the under side thereof to receive nut f', so that the under side of plate C presents a flat surface for resting on the cover, except of course the central hub aforesaid that is supposed to fit in the hole of the cover. In the square tapering socket of pinion E fits the square section G' of the wooden stem G, the latter being held to its seat by means of bolt g. On this square stem is loosely mounted disk or



head H, the latter being provided with a series of pegs *h*, the latter having rounded ends for engaging and rubbing the clothes. A pin *g'* extends through a hole made near the bottom of the stem, and the projecting end thereof holds head H from falling off the stem in case of tilting the cover on its hinges.

I is an inclined apron for attaching a wringer, this apron having ears *i*, (shown in Figs. 2, 3, 5, and 6,) that hook over the ends of the staves, the apron having also a depending bracket I' for engaging the outside of the tub to which it is bolted.

While using a wringer, cover B will of course have been turned back to give access to the inside of the tub for removing the clothes, in which case the water from the wringer will be returned back to the tub.

J J are metal leg-sockets for receiving the legs K. Each casting J has a lip J' bolted to the tub, and flanges J<sup>2</sup> adapted to hook under the chines, as shown. Each casting has an internal rib *j*, that engages a corresponding notch *k* of the leg. The lower open end of the socket is considerably larger than the thickness of the leg. Consequently the leg has play enough laterally at the bottom of the socket to admit of passing the leg past the rib, and a plate L is hinged on the inside of the socket, with spring *l* for pressing the plate against the leg, thereby holding the leg in position with its notch engaging the rib. By pulling outward on the bottom of the leg the spring is compressed and notch *k* is disen-

gaged from rib *j*, whereupon the leg may be removed. In preparing the goods for shipment the legs are usually removed and tied in a bundle, and the metal frame and attachments are removed from the cover, the parts being easily assembled when wanted for use or for the retail trade.

What I claim is—

1. In a washing-machine, the combination, with tub having a hinged cover, of inclined apron located opposite the free end of the cover, such apron having flanges adapted to hook over the edges of the tub, and having a depending bracket secured to the outside of the tub, substantially as set forth.

2. In a washing-machine, the combination, with tub, of metal leg-sockets secured to the tub, each socket having an ear at the top for attaching to the tub and having flanges at the bottom adapted to hook under the chines of the tub, the socket having an internal rib, a detachable leg having a corresponding notch for engaging such rib, and spring for holding the leg yieldingly in position in the socket, with the notch thereof engaging the internal rib of the socket, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 2d day of August, 1889.

WILLIAM H. TURNBULL.

Witnesses:

T. H. HABERKORN,  
T. W. KUHNE.