

No. 750,243.

PATENTED JAN. 19, 1904.

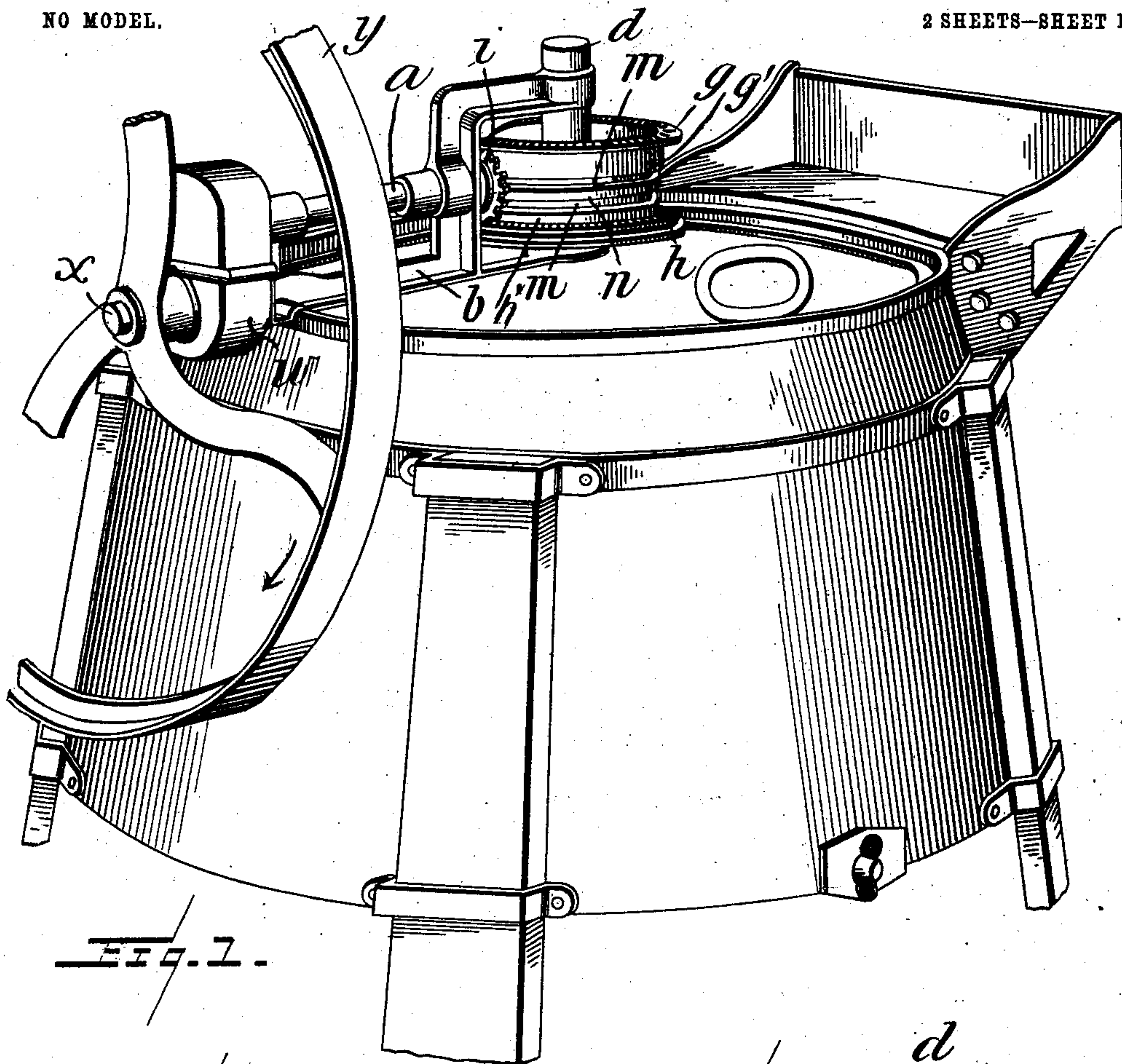
F. T. BROSI.

GEARING FOR WASHING MACHINES.

APPLICATION FILED JULY 31, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



III.2.

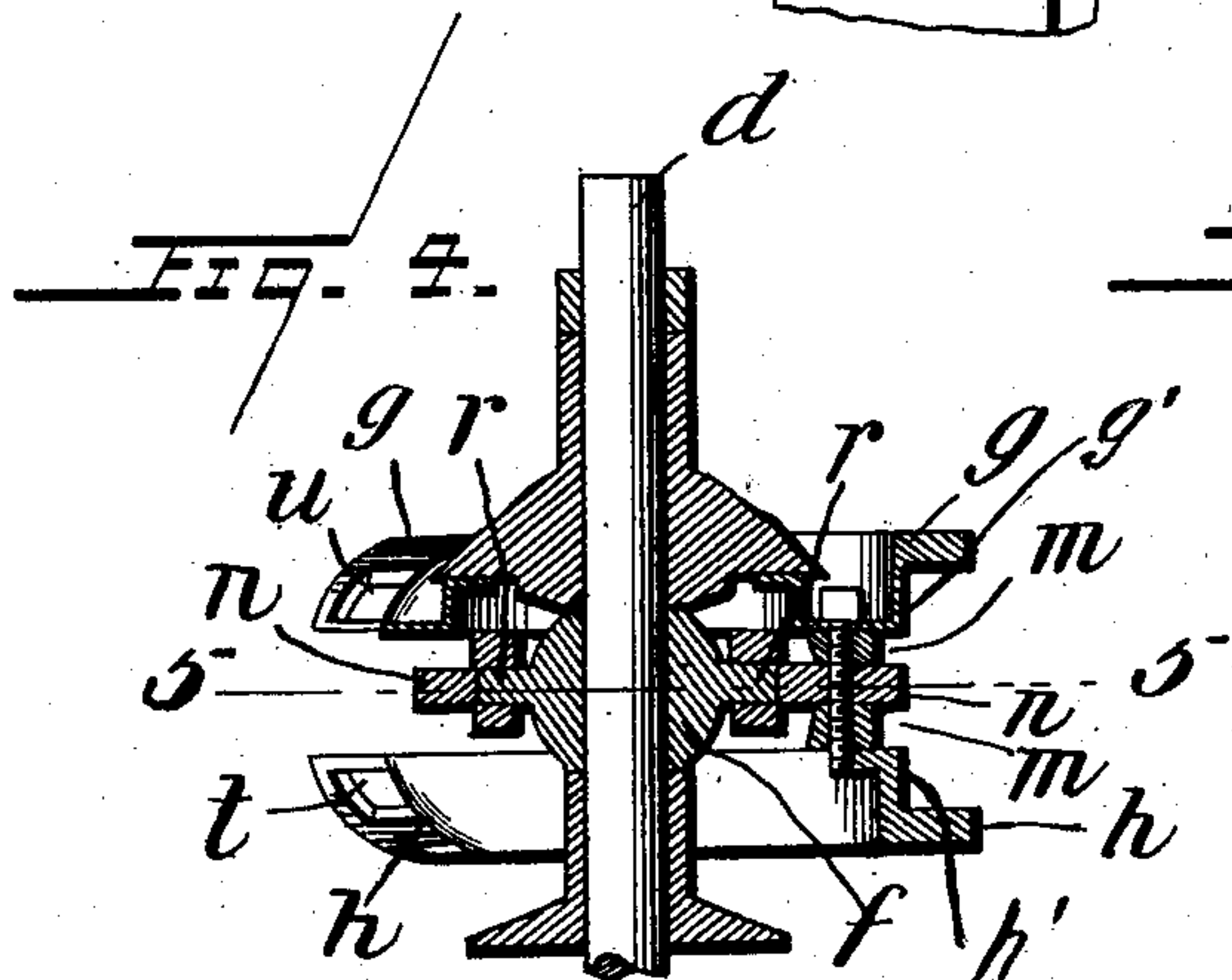


FIG. 4.

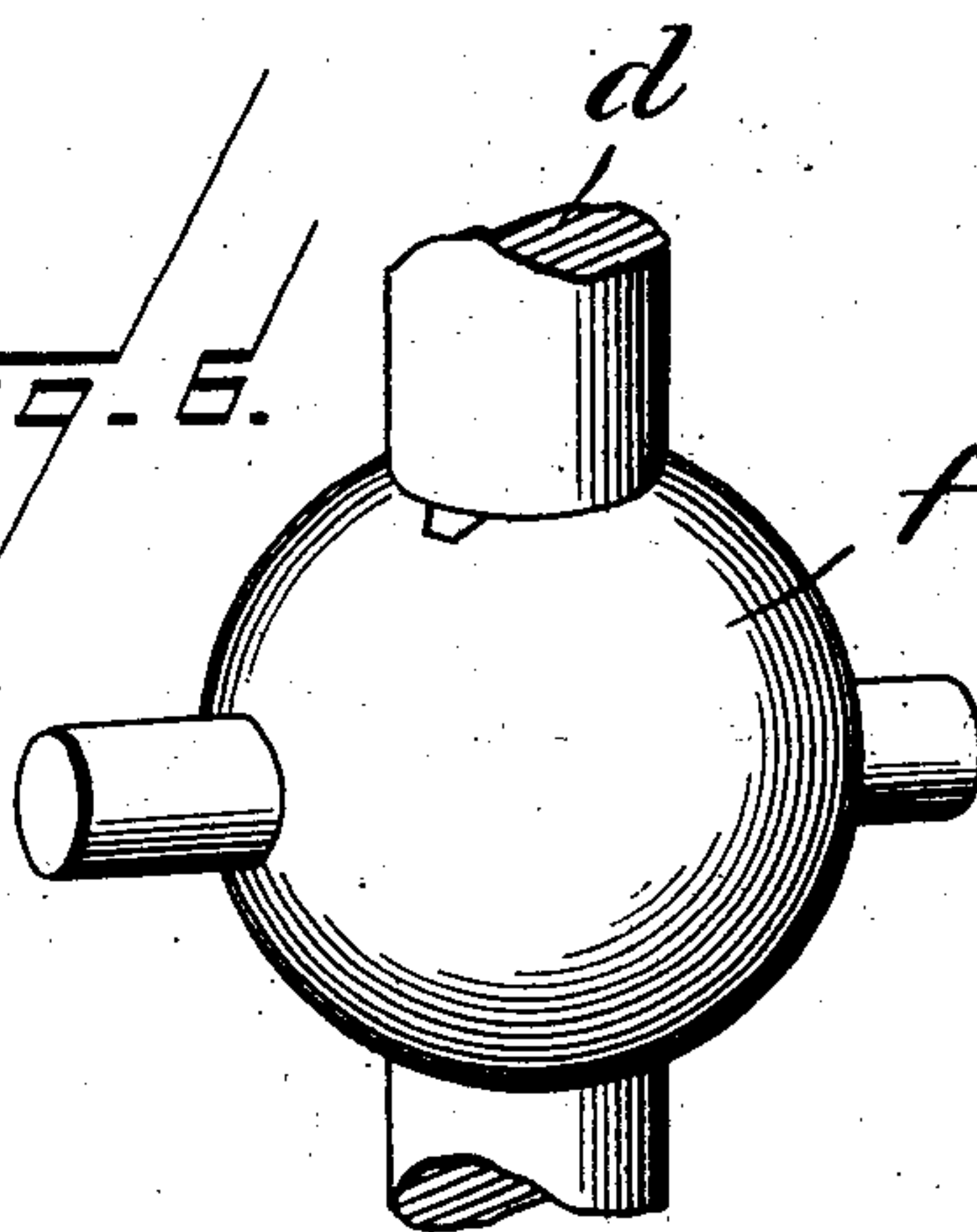


Fig. 6.

WITNESSES:

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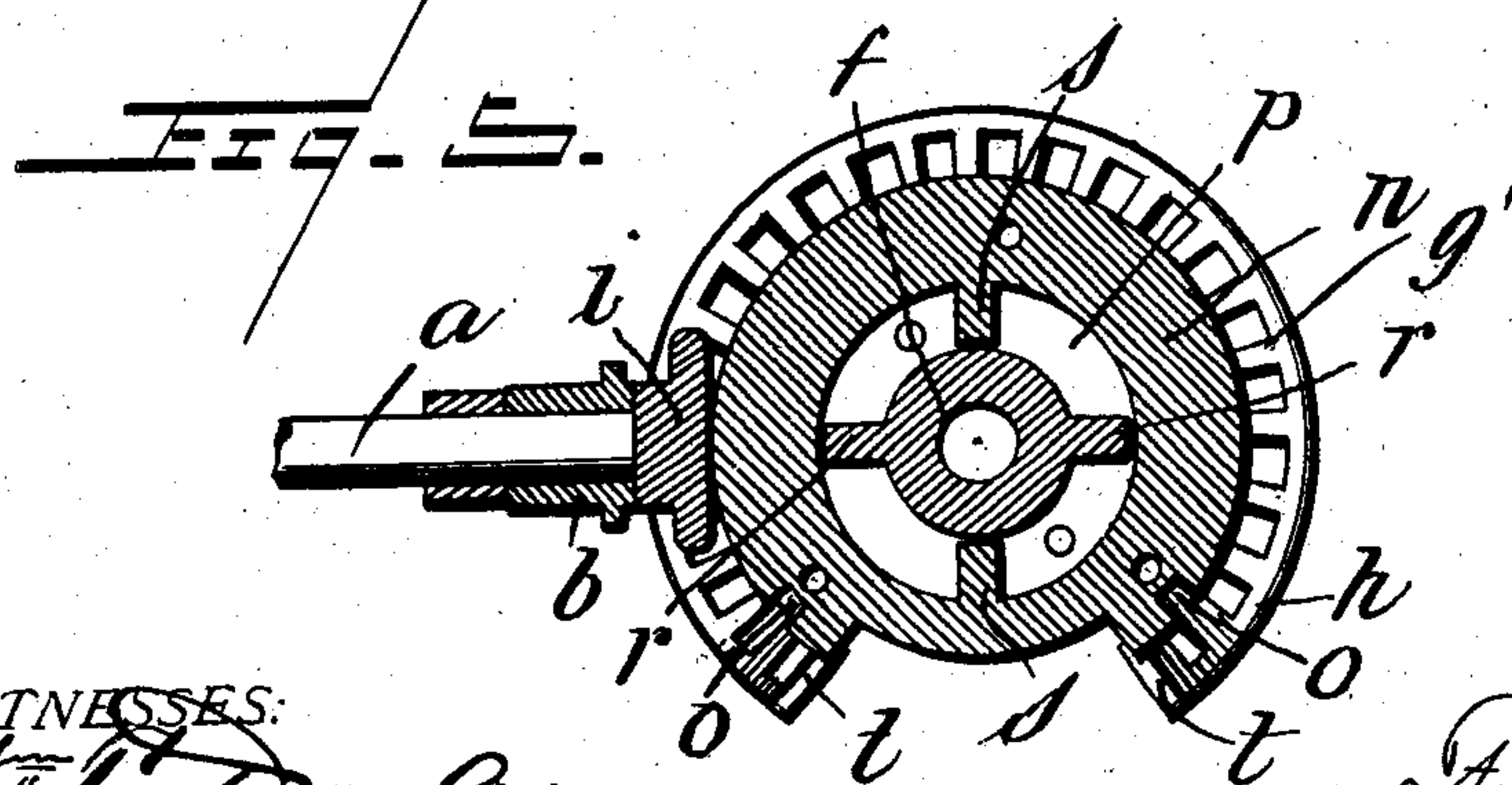
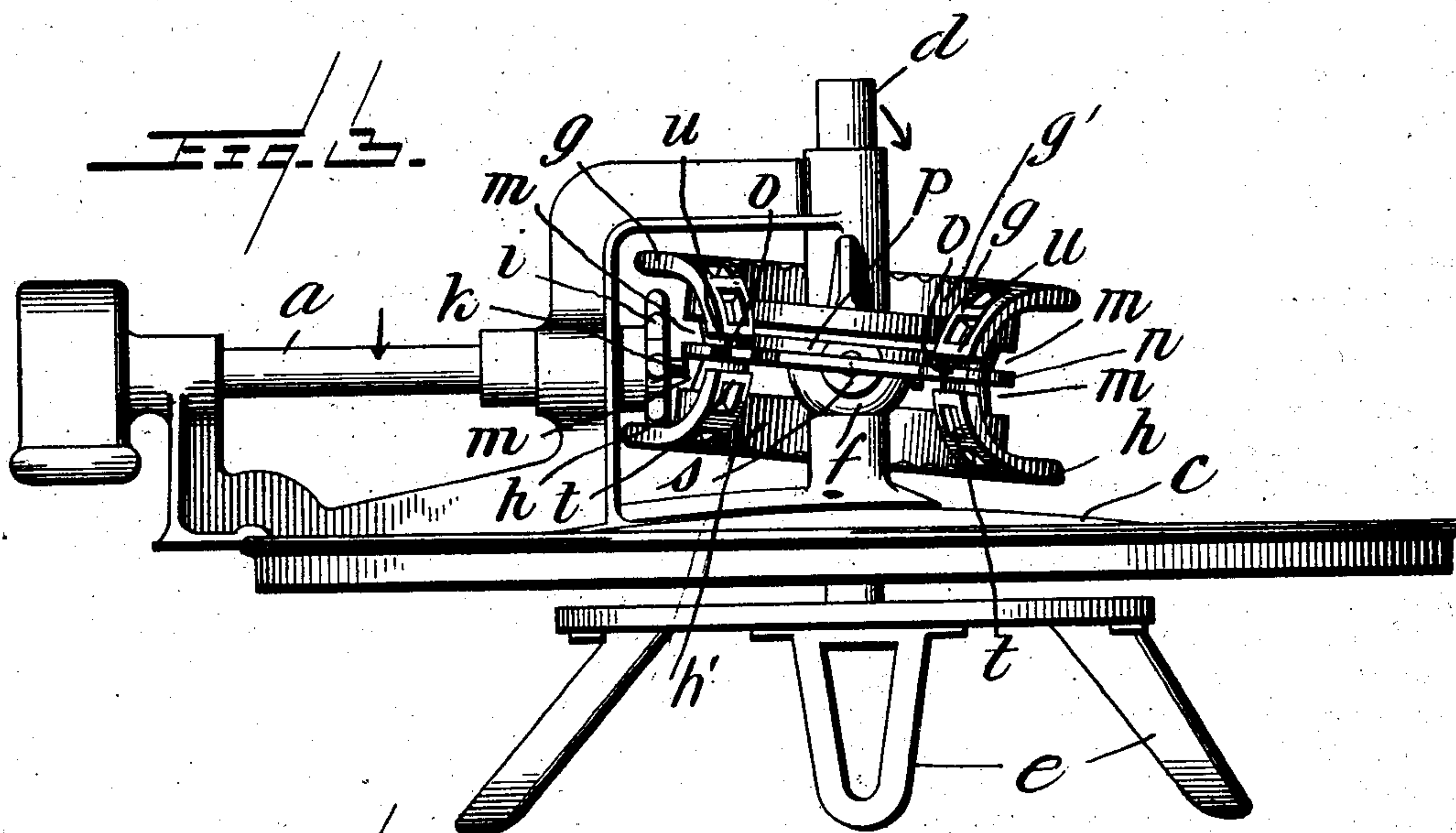
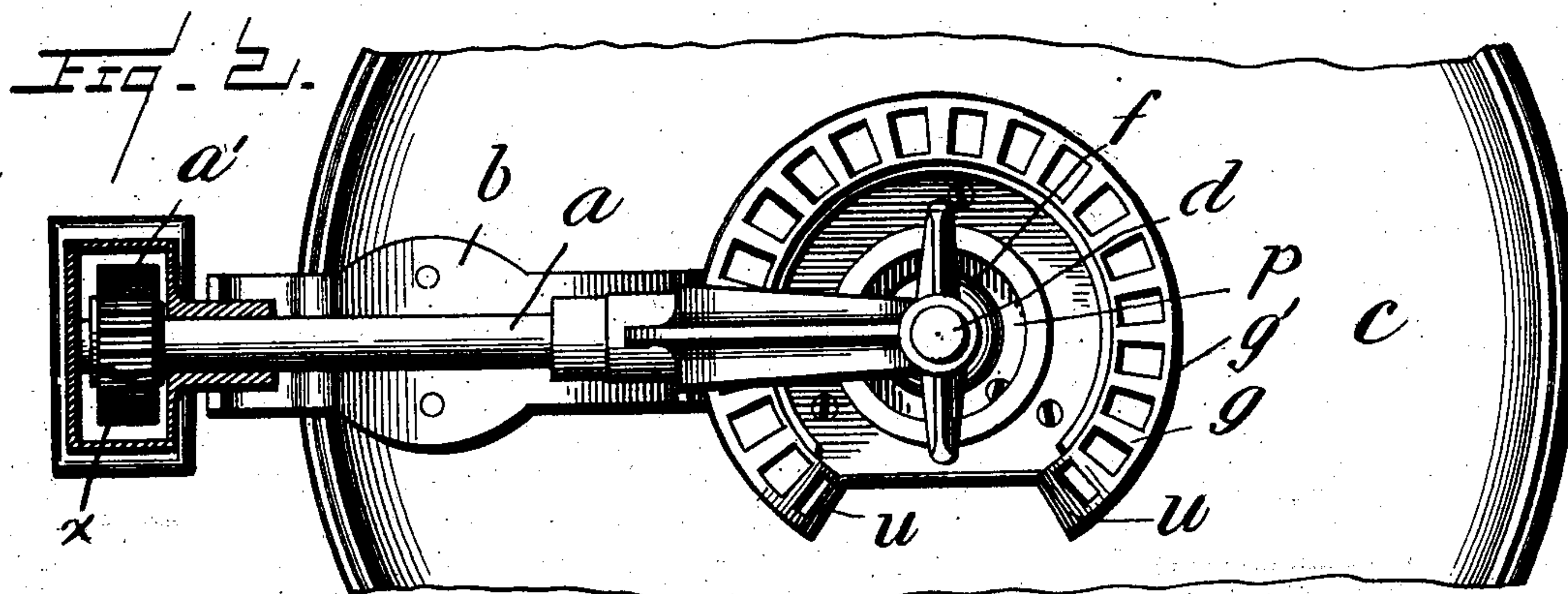
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GEARING FOR WASHING MACHINES.

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NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FREDERICK T. BROSI, OF QUINCY, ILLINOIS.

GEARING FOR WASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 750,243, dated January 19, 1904.

Application filed July 31, 1903. Serial No. 167,729. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK T. BROSI, a citizen of the United States, residing at Quincy, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Gearing for Washing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to power-transmitting mechanism of that type which is employed for converting a rotary movement in a single direction into an oscillatory movement; and one of the primary objects thereof is to provide such mechanism which will be compact, inexpensive, and durable and which is particularly adaptable for driving the agitator of a washing-machine from an ordinary drive-shaft having constant rotary movement in one direction.

To this end the invention includes the combination and arrangement of component parts and the details of construction to be hereinafter described, and particularly pointed out in the claims.

While the invention is susceptible of various modifications, I have shown in the accompanying drawings and shall hereinafter describe in connection therewith what is now conceived to be the preferred embodiment of the same.

In the drawings, Figure 1 shows in perspective view a washing-machine equipped with my improved mechanism. Fig. 2 is a plan view of the mechanism. Fig. 3 is a side elevation of the same. Fig. 4 is a transverse sectional view thereof. Fig. 5 is a view on the line 5 5 of Fig. 4, and Fig. 6 is a detail view.

The invention includes generally a drive-shaft carrying a pinion, a driven shaft, and a pair of horizontally-disposed racks connected at their ends by substantially right-angularending portions or continuations thereof to provide in connection with the first racks one practically continuous elliptical rack with which the pinion referred to intermeshes.

As premised, my invention is designed particularly to be embodied in a washing-machine, and I have shown the same in the accompanying drawings in this association.

The drive-shaft (designated by the letter *a*) is shown as journaled in suitable bearings formed in a bracket *b*, which is bolted to the top or cover *c* of the washing-machine, and the driven shaft, which is indicated by the letter *d*, is shown as vertically-disposed, extending axially through the cover and carrying at its lower end an agitator *e*.

Fixed upon the shaft *d* is a hub *f*, from which the rack mechanism is supported so as to be capable of partaking of a tilting movement. This mechanism includes in the present exemplification of my invention two horizontally-disposed rack-sections *g h*, each curved to form part of a complete circle concentric to the shaft *d*, the adjacent ends of which are connected by vertically-disposed continuations or end sections which form, with the sections *g h*, a complete elliptical track.

Upon the inner end of the shaft *a* a pinion *i* is fixed, which works between the racks *g h* and is of slightly less diameter than the distance between the same, and consequently when in mesh with one of said racks said pinion runs free of the other. To retain the pinion in operative connection continuously with the endless rack, so as to drive the shaft *d* constantly during the rotation of the shaft *a*, means are provided for controlling the position thereof. This means preferably comprises a projection *k*, extending axially from the pinion, coacting with a guideway *m* in the rack-frame. This guideway is preferably formed by a ring *n*, interposed between the body portions *g'* and *h'* of the two rack-sections, to which said body portions are bolted with interposed spacing-lugs. The spaces formed by said lugs between the upper and lower sides of the ring and the edges of the body portions of the adjacent rack-sections constitute the horizontal portions of the guideway, and the vertical portion connecting said horizontal portions to provide an elliptical guide parallel with the elliptical rack is formed by recesses *o* in the periphery of said ring. The two rack-sections *g h* and the integral end continuations thereof are each cast in one piece with the body portion referred to and constitute, in combination with the ring described, what might be termed the "rack" mechanism. As

premised, this mechanism is supported from the hub f in such a manner that it may tilt as the pinion reaches the ends of the elliptical track. In the present exemplification of my invention the supporting means referred to include a ring p , arranged within and concentric with the first ring, pivoted to the hub at diametrically opposite points $r r$ and pivoted to the first ring at diametrically opposite points $s s$ a quarter-turn from the pivotal connections $r r$. In the operation of the mechanism, assuming that the pinion is in mesh with the upper rack g and the shaft a is rotating in the direction indicated by the arrow, the shaft d will be tilted in the direction indicated by the arrow until the end portion t of the rack comes into mesh with the pinion, when the entire rack mechanism will be lifted and the pinion in the continued rotation of the same will mesh with the rack h . The direction of rotation of the shaft d will then be reversed, and upon the pinion coming into mesh with the end u of the rack or end portion of the continuous rack the entire rack mechanism will be depressed and the pinion will reengage with the teeth of the rack g .

The shaft a , hereinbefore described, is driven from a shaft x , having a hand-operating wheel y . For transmitting the rotation of the shaft x , which finds bearings in suitable brackets secured to the tank of the machine, a pair of pinions $a' x'$ are employed, which are fixed to the shafts $a x$, respectively, and said pinions are consequently separated each time the cover is thrown back and automatically reengaged upon the cover being closed, the pinion a' when in operative position resting directly upon the pinion x' . The pinions are housed in a sectional casing w , one section of which is carried by the cover and constitutes a part of the bracket b , while the other section of the casing is carried by the tank.

The construction and operation of my invention will be understood upon reference to the foregoing description and accompanying drawings, and it will be appreciated that the arrangement and combination of parts recited may be varied within a wide range without departing from the spirit and scope thereof.

Having thus described my invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In transmitting mechanism and in combination, a drive-shaft, a driven shaft, rack mechanism comprising parallel sections and end-connecting portions, a hub on the driven shaft, supporting means interposed between the same and the rack mechanism to permit of the tilting of the latter, and a pinion carried by the drive-shaft coacting with the rack, substantially as described.

2. In transmitting mechanism and in com-

bination, a drive-shaft, a driven shaft, rack mechanism comprising parallel sections and end-connecting portions, a hub on the driven shaft, supporting means interposed between the same and the rack mechanism to permit of the tilting of the latter, including a ring pivoted to the hub and to the rack mechanism, and a pinion fixed to the drive-shaft, substantially as described.

3. In transmitting mechanism for converting a rotary movement in one direction into an oscillatory movement and in combination, a drive-shaft, a driven shaft, rack mechanism including two horizontally-disposed rack-bodies carrying rack-sections curved in a horizontal plane, and end continuations curved in substantially vertical planes, a ring interposed between said body portions and separated a distance therefrom to provide a guideway, a hub on the driven shaft, a second ring arranged in the first concentric therewith, pivots diametrically arranged for connecting the rings, other pivots diametrically arranged for connecting a second ring to the hub, and a pinion mounted on the drive-shaft, substantially as described.

4. In transmitting mechanism for converting a rotary movement in one direction into an oscillatory movement and in combination, a drive-shaft, a driven shaft, rack mechanism associated with the latter comprising two horizontally-disposed rack-bodies carrying rack-sections curved in a horizontal plane and end continuations curved in substantially vertical planes, a hub on the driven shaft, supporting means interposed between the same and the rack mechanism to permit of the tilting of the latter and a pinion carried by the drive-shaft coacting with the racks, substantially as described.

5. In a transmitting mechanism for converting a rotary movement in one direction into an oscillatory movement and in combination, a drive-shaft, a driven shaft, rack mechanism associated with the latter comprising two horizontally-disposed rack-bodies carrying rack-sections curved in a horizontal plane and end continuations curved in substantially vertical planes, a hub on the driven shaft, supporting means interposed between the same and the rack mechanism to permit of the tilting of the latter and a pinion designed to engage with first one and then another section of the rack, a projection upon said pinion coacting with a guideway between said rack-sections, substantially as described.

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

FREDERICK T. BROSI.

Witnesses:

JENNIE CRANSTON,
H. M. SWOPE.