

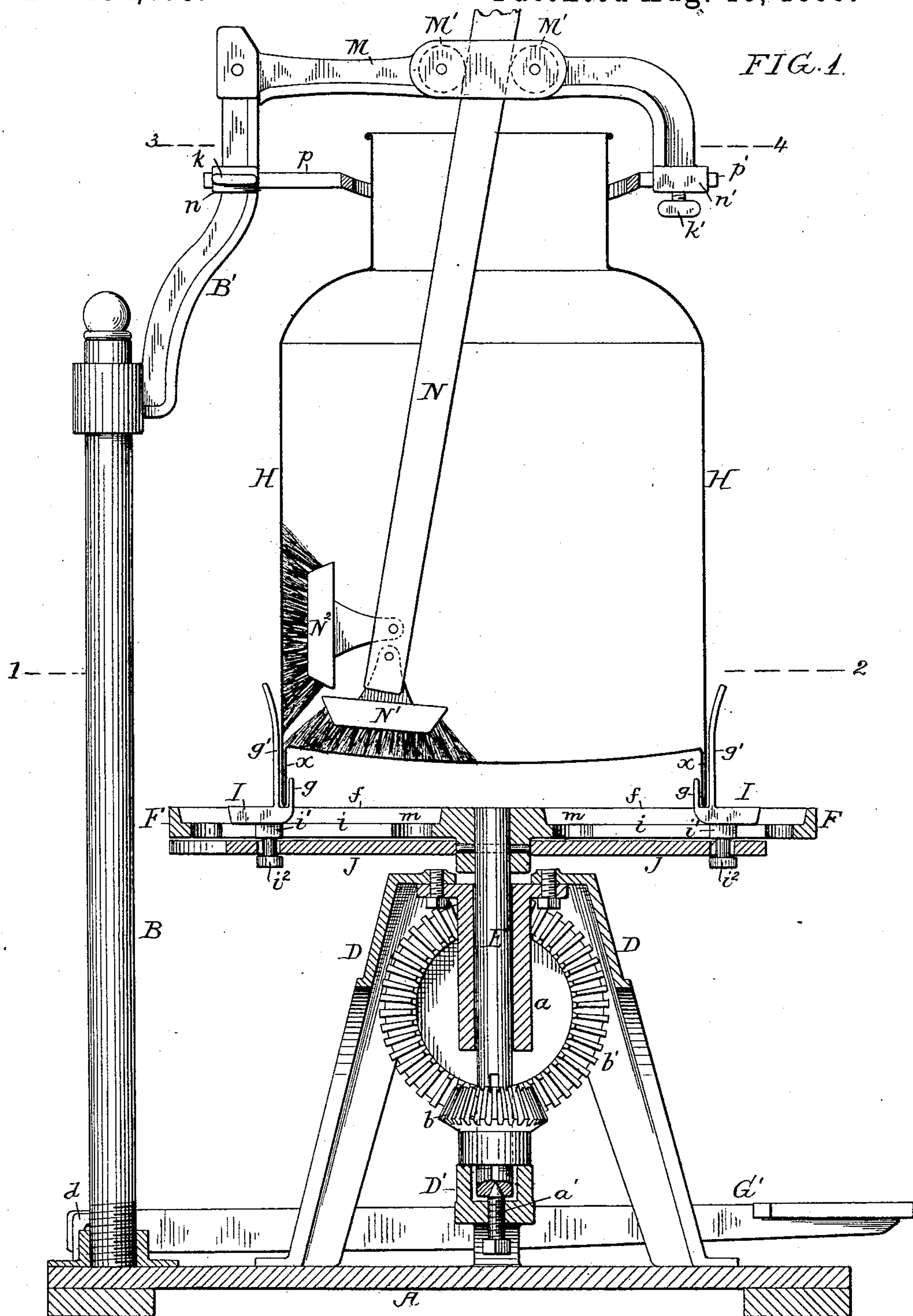
(No Model.)

3 Sheets—Sheet 1.

B. R. RAPP.  
MACHINE FOR WASHING MILK CANS.

No. 434,679.

Patented Aug. 19, 1890.



Witnesses:  
A. V. Groupe.  
A. Schleicher.

Inventor:  
Barnet R. Rapp  
by his Attorneys  
Howson & Howson

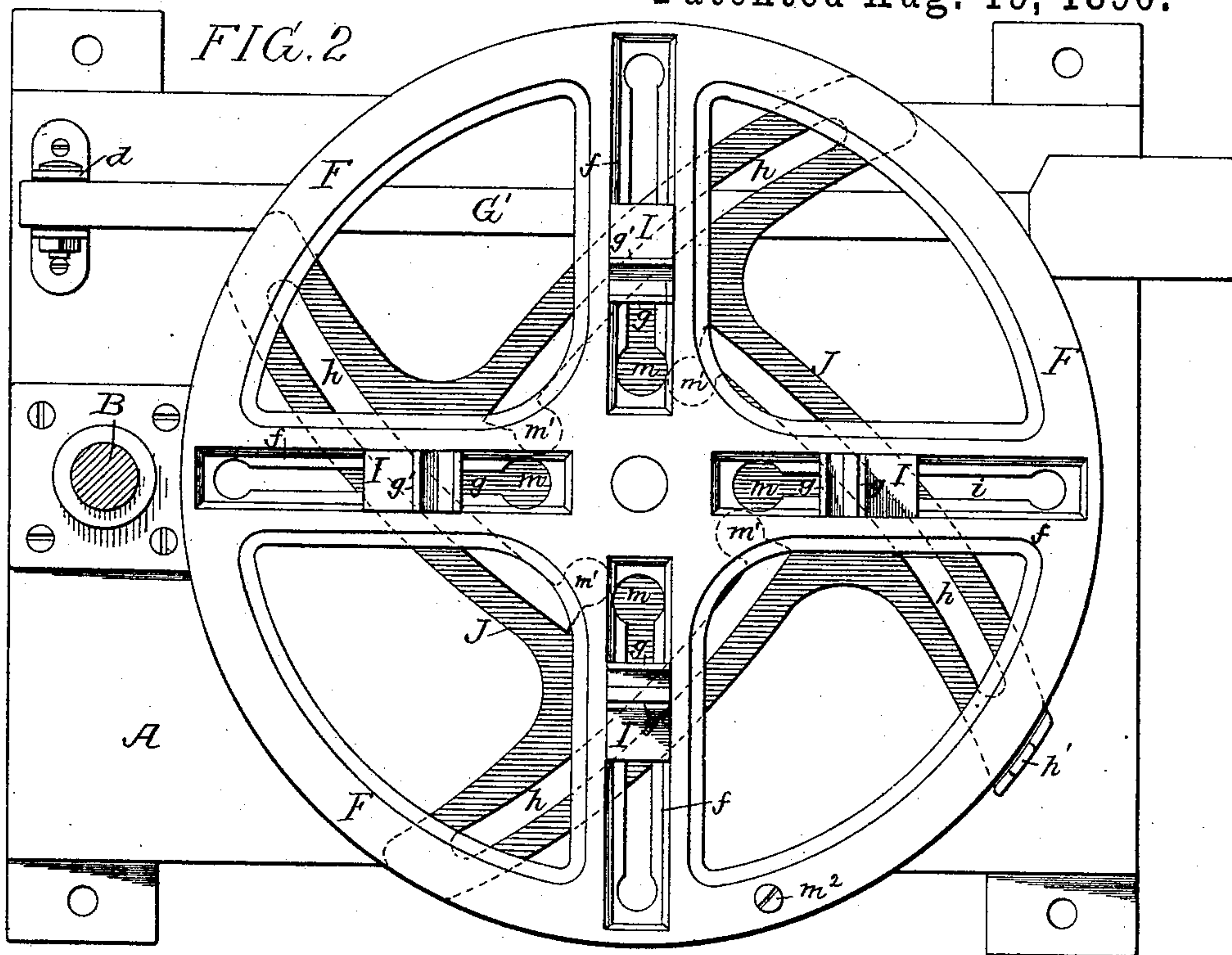
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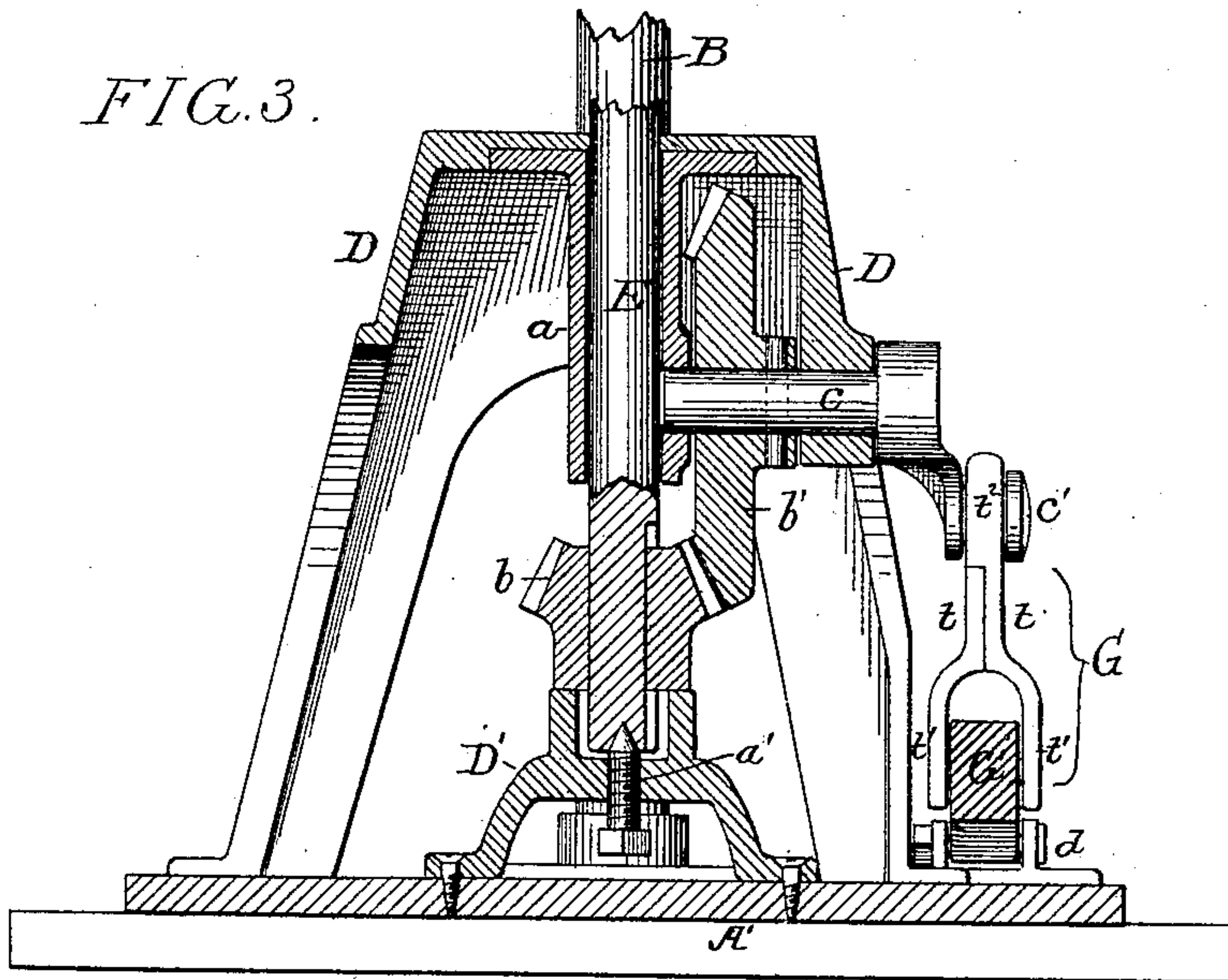
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*FIG. 3.*



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FIG. 5.

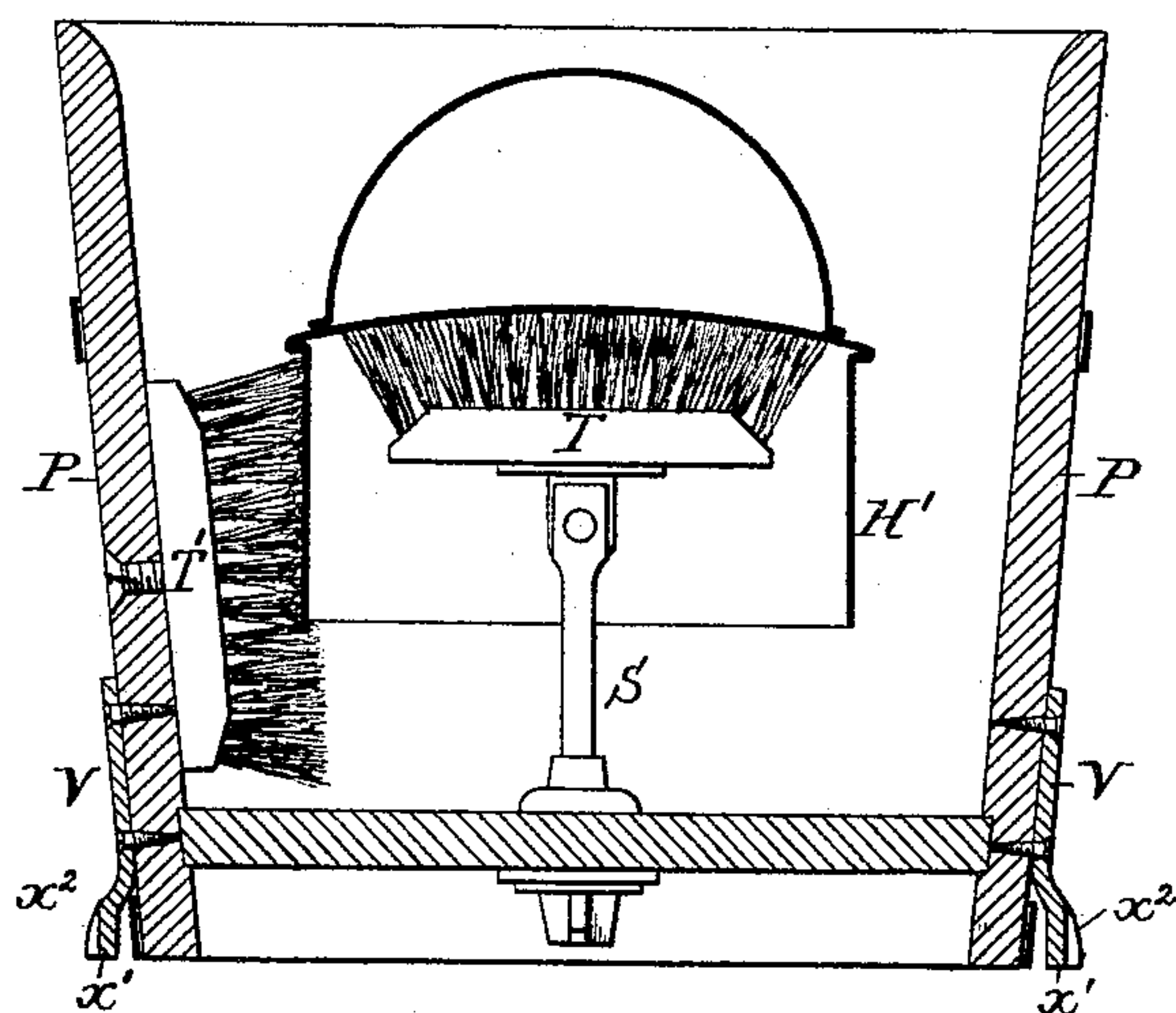
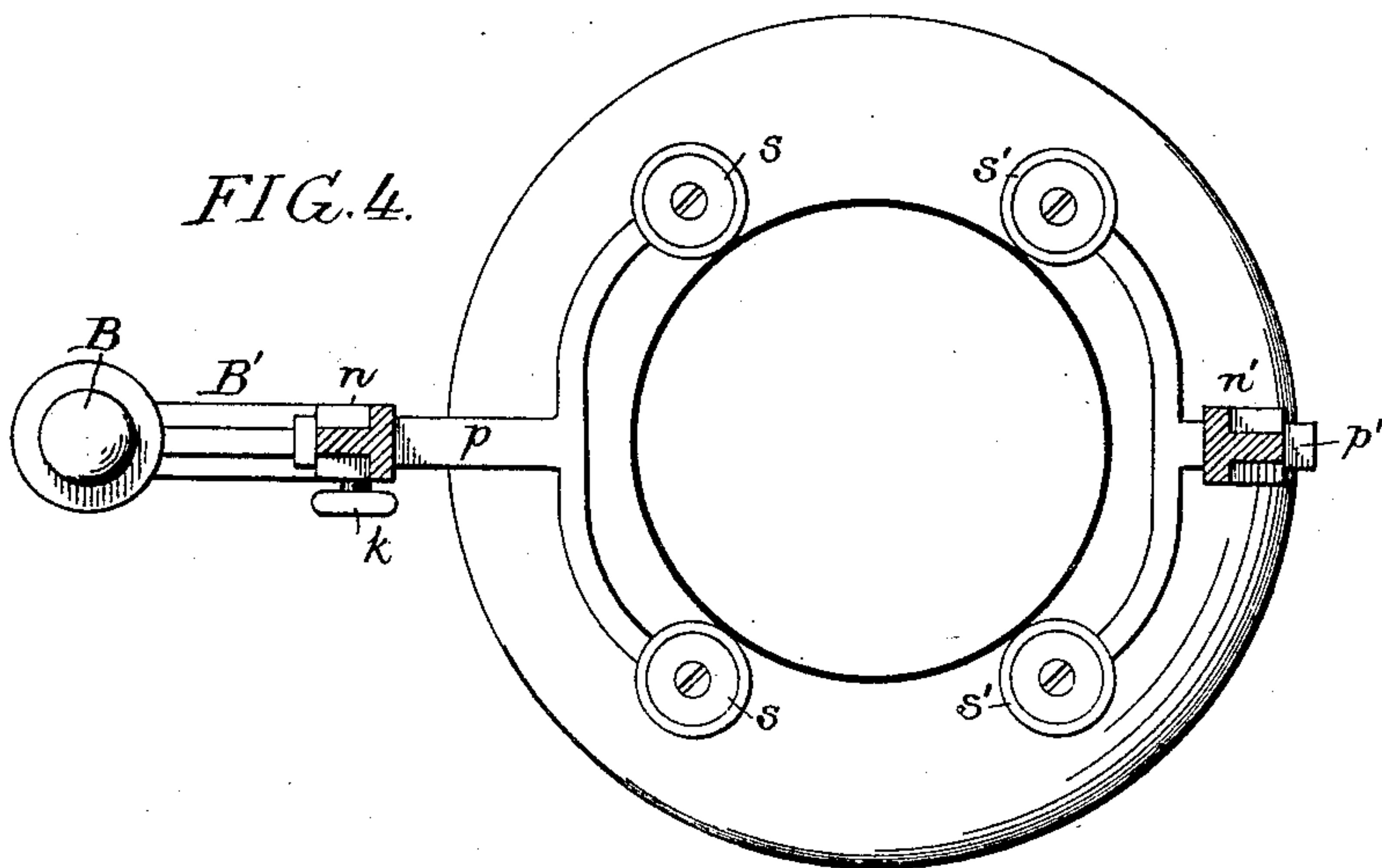


FIG. 4.



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# UNITED STATES PATENT OFFICE.

BARNET R. RAPP, OF WEST CHESTER, PENNSYLVANIA.

## MACHINE FOR WASHING MILK-CANS.

SPECIFICATION forming part of Letters Patent No. 434,679, dated August 19, 1890.

Application filed December 17, 1889. Serial No. 334,040. (No model.)

*To all whom it may concern:*

Be it known that I, BARNET R. RAPP, a citizen of the United States, and a resident of West Chester, Chester county, Pennsylvania, have invented certain Improvements in Machines for Washing Milk-Cans, of which the following is a specification.

My invention consists of certain improvements in the can-washing machine for which Letters Patent No. 357,049, dated February 1, 1887, were granted to myself and A. L. Talley, the objects of my present improvements being to provide for confining the can to the rotating base-plate more readily than in the patented machine, to insure the easy rotation of the can, to provide for the effective guidance or steadying of the neck of the can, to render the brushing devices of the machine more effective than before, and to improve certain of the minor details of the machine. These objects I attain in the manner herein-after set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view, partly in elevation, of a can-washing machine constructed in accordance with my invention. Fig. 2 is a sectional plan view on the line 1 2, Fig. 1, with the can removed. Fig. 3 is a section, partly in elevation, of the driving devices of the machine, the section being taken on a line transversely to that of Fig. 1. Fig. 4 is a sectional plan view on the line 3 4, Fig. 1. Fig. 5 is a sectional view of the device for cleaning the lid of the can.

A is a fixed base or foundation plate, secured to which, near one side, is an upright post or standard B, and mounted centrally upon the base-plate A is a fixed frame D, which carries a sleeve *a*, forming a bearing for a shaft E, which carries the rotating base-plate F, upon which the can is mounted, the lower end of the shaft E being stepped upon a set-screw *a'*, carried by a frame D', as shown in Figs. 1 and 3, so that the rotation of said shaft E can be effected with the minimum of friction. The lower portion of the shaft E is grooved for the reception of a spline in the hub of a bevel-pinion *b*, which is driven by a bevel-wheel *b'*, carried by a horizontal shaft *c*, having its bearings in the frame D and sleeve *a*, as shown in Fig. 3, the outer end of

this shaft having a crank *c'*, which is connected by a pitman G to the operating-treadle G', the latter being hung to a suitable bracket *d* on the base-plate A, as shown in Fig. 2. The groove in the shaft E for the reception of the spline in the hub of the bevel-wheel *b* extends to the lower end of the shaft, so that the rotating base-plate with its shaft can be removed vertically at any time for inspection or repairs, and can be readily reinserted.

The rotating base-plate F, which carries the can, has radial grooves *f* in its upper face, and in these grooves are guided the sliding can-carriers I, each of which has two upwardly-projecting flanges *g g'*, the outer flange *g'* being the longest, and being flared outward at the upper end, so as to guide the projecting rim or flange *x* at the bottom of the can into the groove formed between the two flanges *g g'*, so that the can will be supported by the carriers I, and will be carried around with the same as the base-plate F is rotated. Each of the grooved portions of the rotating plate F has a slot *i* for the reception of a stem *i'* on one of the can-carriers, this stem projecting downward beyond the rotating plate F and being adapted to an eccentric slot *h* in a cam-plate J, which is hung upon and is free to turn around the hub of the plate F, a projection *h'* at the outer end of said plate serving as a means whereby it may be turned in one direction or the other.

Before applying a can to the can-carriers the latter are moved radially toward or from the center of the plate F until they are in proper position to receive the flange *x* at the bottom of the can, which is then applied to the grooved portions of the carriers and serves to lock the latter in position radially without the use of set-screws or other securing means for retaining them in position. The stem *i'* of each of the can-carriers I has at the lower end an enlarged head *i<sup>2</sup>*, which prevents the withdrawal of the carrier I in the ordinary working of the machine; but at the inner end of each slot *i* is an enlarged opening *m*, and at the inner end of each slot *h* is an enlarged opening *m'*, as shown in Fig. 2, and when the carriers have been moved inwardly to an extent sufficient to bring their stems in line with these openings they may



be removed vertically and likewise replaced. A set-screw  $m^2$  on the rim of the rotating plate F, however, prevents any such movement of the cam-plate J as will bring the stems of the carrier-blocks I into the openings  $m m'$  during the ordinary operation of the machine, this set-screw having to be removed before the release of the blocks I can be effected. It will be evident that the enlarged openings may be formed at the outer ends of the slots  $h$  and  $i$  and the set-screw  $m^2$  located so as to prevent undue movement of the cam-plate J in the opposite direction, if desired.

At the upper end of the post or standard B is a bracket B', to the upper end of which is hung an arm M, and the central portion of the latter is provided with anti-friction rollers M', serving as guides for the brush-rod N, the latter having at its lower end two brushes N' and N<sup>2</sup>, the former for bearing upon the bottom of the can and the latter for contact with the side of the can, both brushes being independently pivoted to the rod N, so that they are independently free to accommodate themselves to the internal shape of the can.

To a socket  $n$  on the bracket B' is adapted an arm  $p$ , forked at its outer end, and carrying a pair of anti-friction rollers  $s$ , preferably coated with rubber or other elastic or semi-elastic material, and to a similar socket  $n'$  on the outer end of the arm M is adapted an arm  $p'$ , carrying anti-friction rollers  $s'$ , these rollers thus serving to provide at equidistant points around the neck of the can an anti-friction support for said neck, so that the upper part of the can is properly supported and steadied without any such friction thereupon as will interfere with its free rotation. The arms  $p p'$  can be adjusted radially in the sockets  $n n'$  so as to accommodate themselves to can-necks of different diameters, the arms being secured in position after adjustment by means of thumb-screws  $k k'$ .

The device for washing the lid of the can consists of a bucket P, Fig. 5, having an upright stem S, carrying at its upper end the horizontal brush T for cleaning the under side of the top of the lid, the bucket itself having at one side a brush T' for bearing upon and cleaning the side or flange of the lid. To the bucket are secured plates V, which are bent outward at their lower ends so as to form flange-sections  $x'$  for entering the grooves between the flanges  $g g'$  of the carriers I, the outer faces of these flange-sections  $x'$  being preferably recessed, as at  $x^2$ , for the reception of the outer flanges  $g'$  of the carriers, so as to insure the rotation of the bucket with the rotating plate F. So far as the rotating devices are concerned, therefore, the bucket is the equivalent of the can.

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

1. The combination of the horizontal plate and means for rotating the same, with can-carriers guided on said plate and having projecting stems, and a cam-plate having slots for the reception of said stems, substantially as specified. 65

2. The combination of the horizontal plate and means for rotating the same, can-carriers guided on said plate and grooved for the reception of a flange at the bottom of the can, stems projecting from said carriers, and a cam-plate having slots for the reception of said stems, substantially as specified. 70 75

3. The combination of the horizontal plate and means for rotating the same, can-carriers guided on said plate and each having inner and outer flanges forming a groove for the reception of a flange at the bottom of the can, the outer flanges of the carriers being flared outwardly at their upper ends, substantially as specified. 80

4. The combination of the can-carriers, the rotating plate having grooves for guiding the carriers, and slots for the stems of the same, said slots being enlarged at one end to permit of removal of the stems, and a cam-plate having slots for the reception of the stems, likewise enlarged at one end, substantially as specified. 85 90 95

5. The combination of the rotating plate carrying the can, the brush-rod, a brush pivoted thereto and located beyond the end of the same, and a brush pivoted to the rod above the end of the same and projecting laterally beyond the rod, each of said brushes being free to swing independently of the other, substantially as specified. 100

6. The combination of the rotating plate carrying the can with opposite forked guides for the neck of the can, each of said guides carrying a pair of anti-friction rollers serving as a bearing for said can-neck, substantially as specified. 105

7. The combination of the rotating plate carrying the can, a standard at one side of the same, a bracket secured to or forming part of said standard, an arm pivoted to said bracket, forked arms free to slide in sockets on said bracket and arm, and anti-friction rollers carried by said forked arms and serving as bearings for the neck of the can, substantially as specified. 110 115

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BARNET R. RAPP.

Witnesses:

JNO. W. RUSSELL,  
WILLIAM H. TOMPKINS.