

No. 715,454.

Patented Dec. 9, 1902.

F. AUE.
BARREL WASHER.

Application filed Aug. 7, 1902.

(No Model.)

3 Sheets—Sheet 1.

FIG. 1.

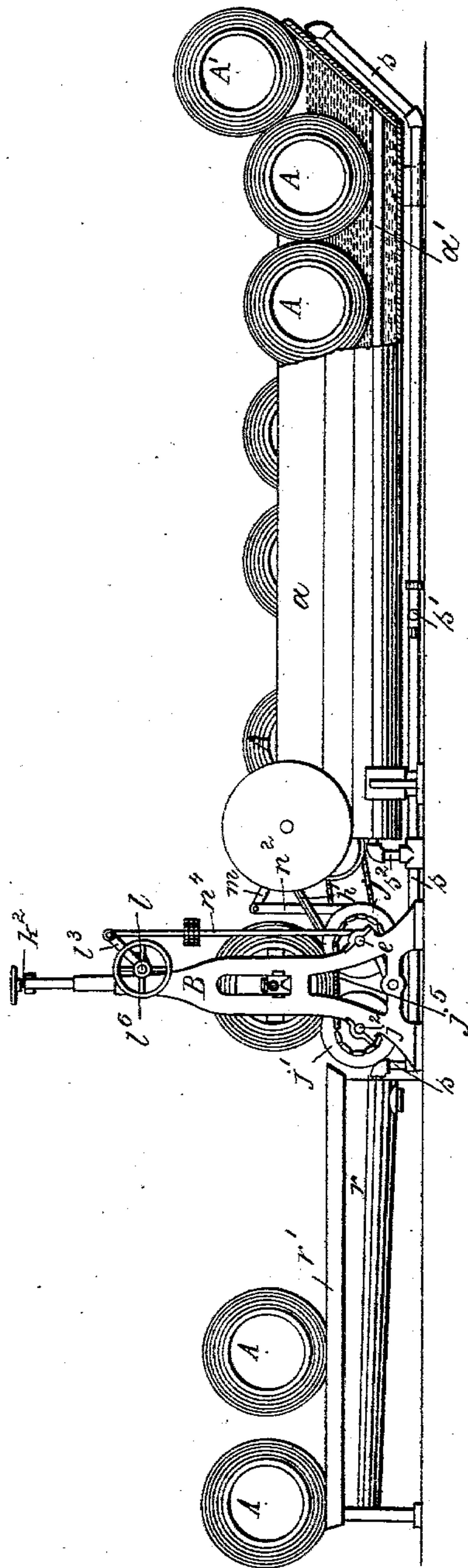
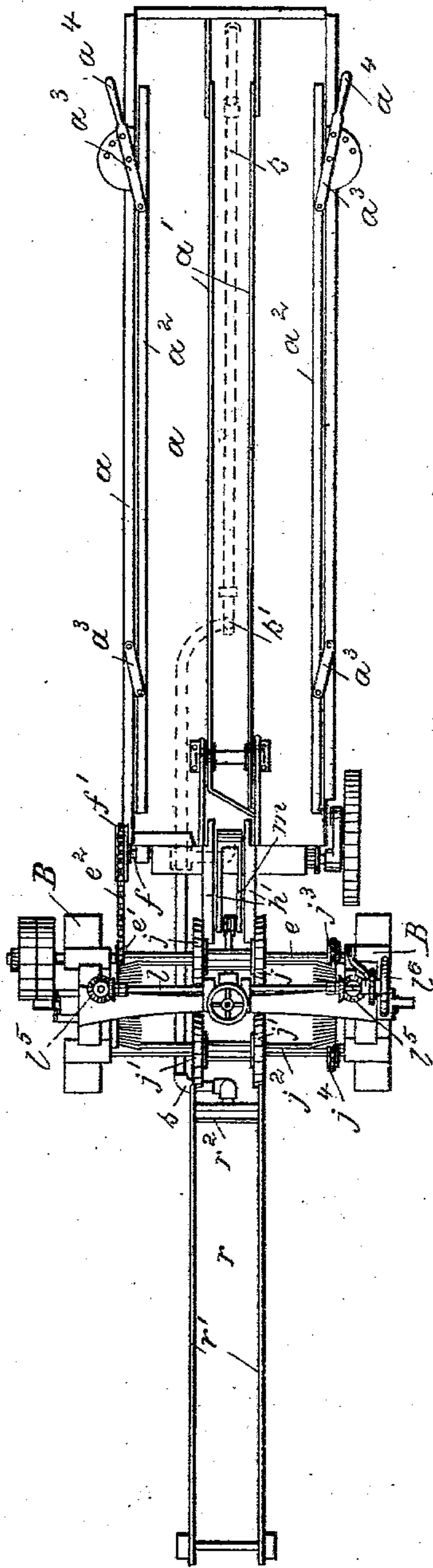


FIG. 2.



Witnesses:
Arthur J. Gump.
William Schurz.

Inventor:
Ferdinand Aue
by his attorneys
Reeder & Briesen

No. 715,454.

Patented Dec. 9. 1902.

F. AUE.

BARREL WASHER.

Application filed Aug. 7, 1902.

3 Sheets—Sheet 2.

(No Model.)

FIG. 4.

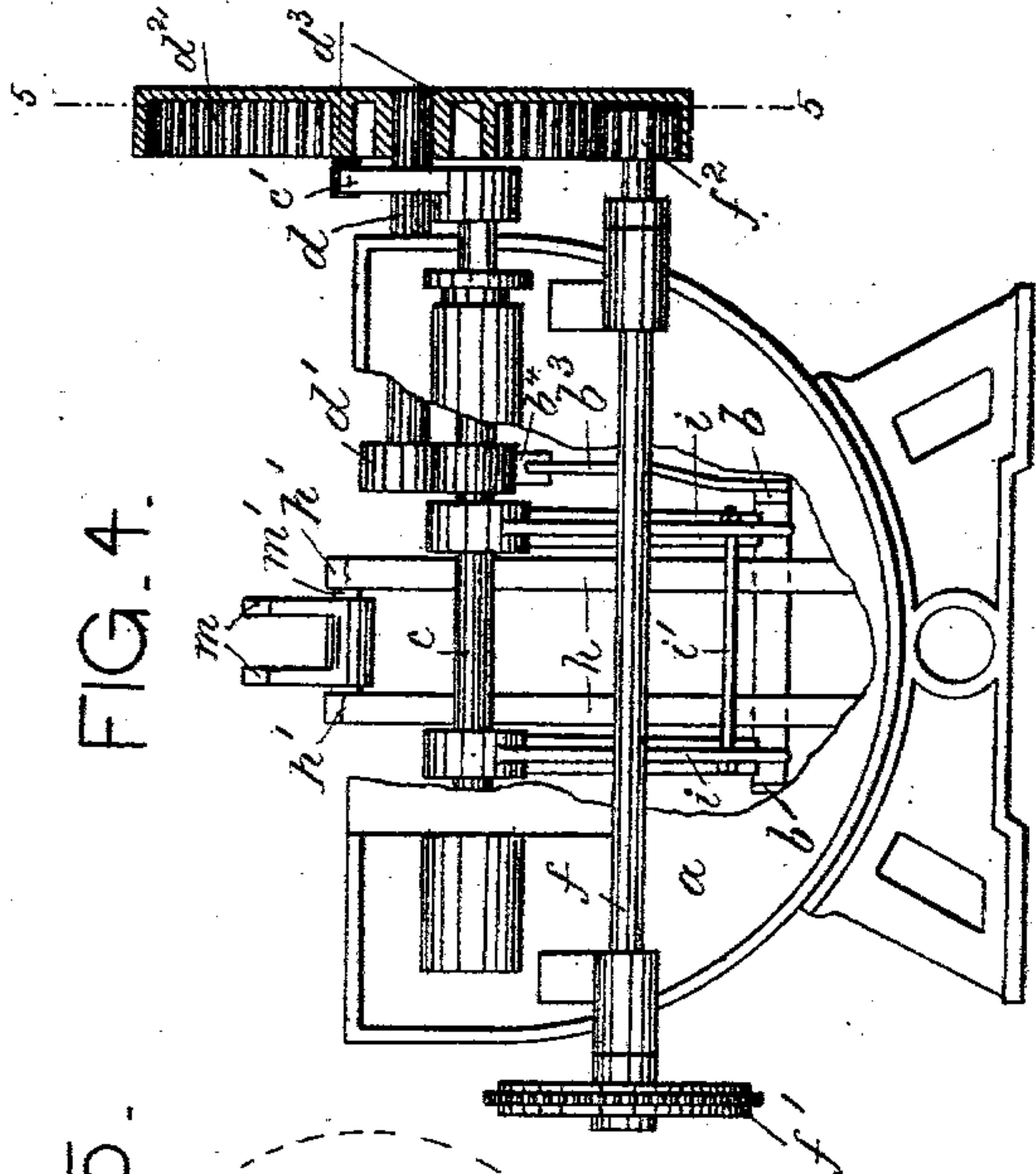


FIG. 6.

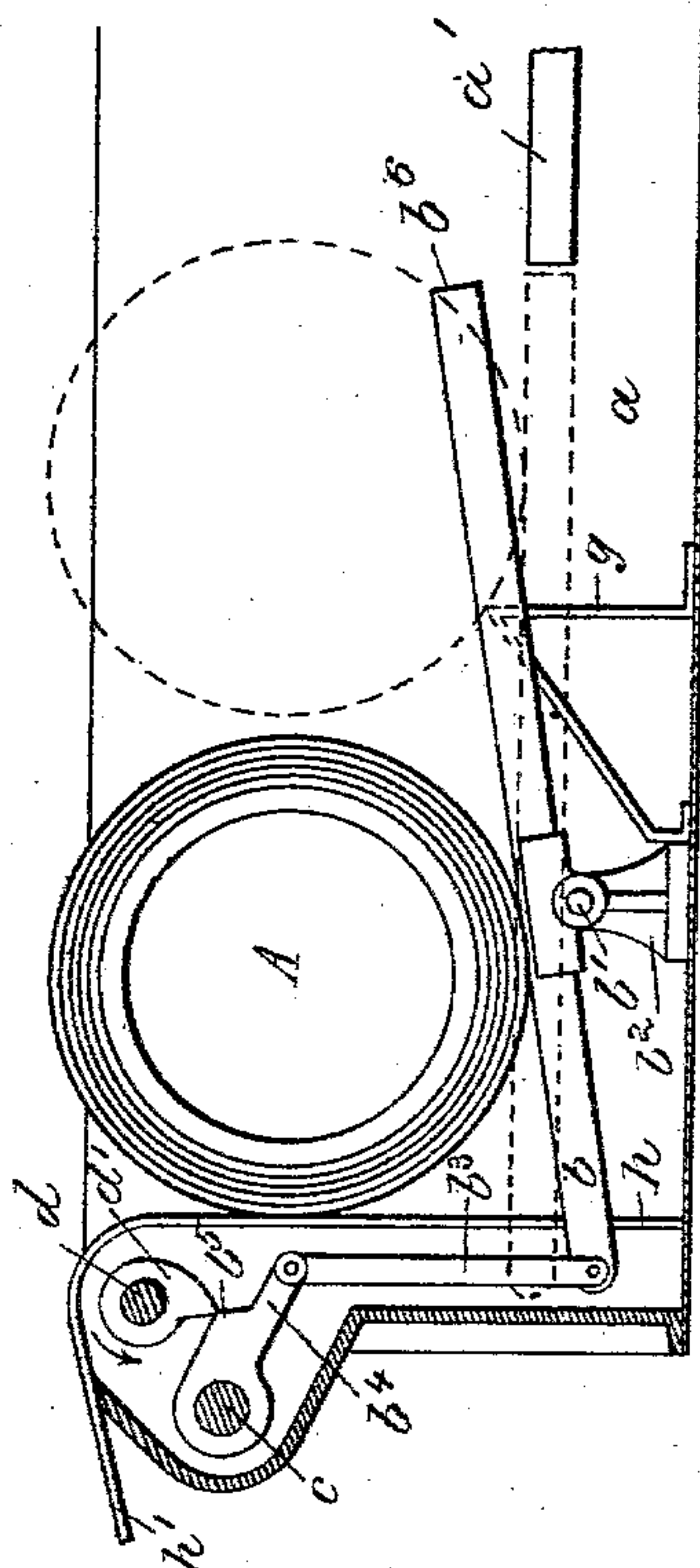


FIG. 5.

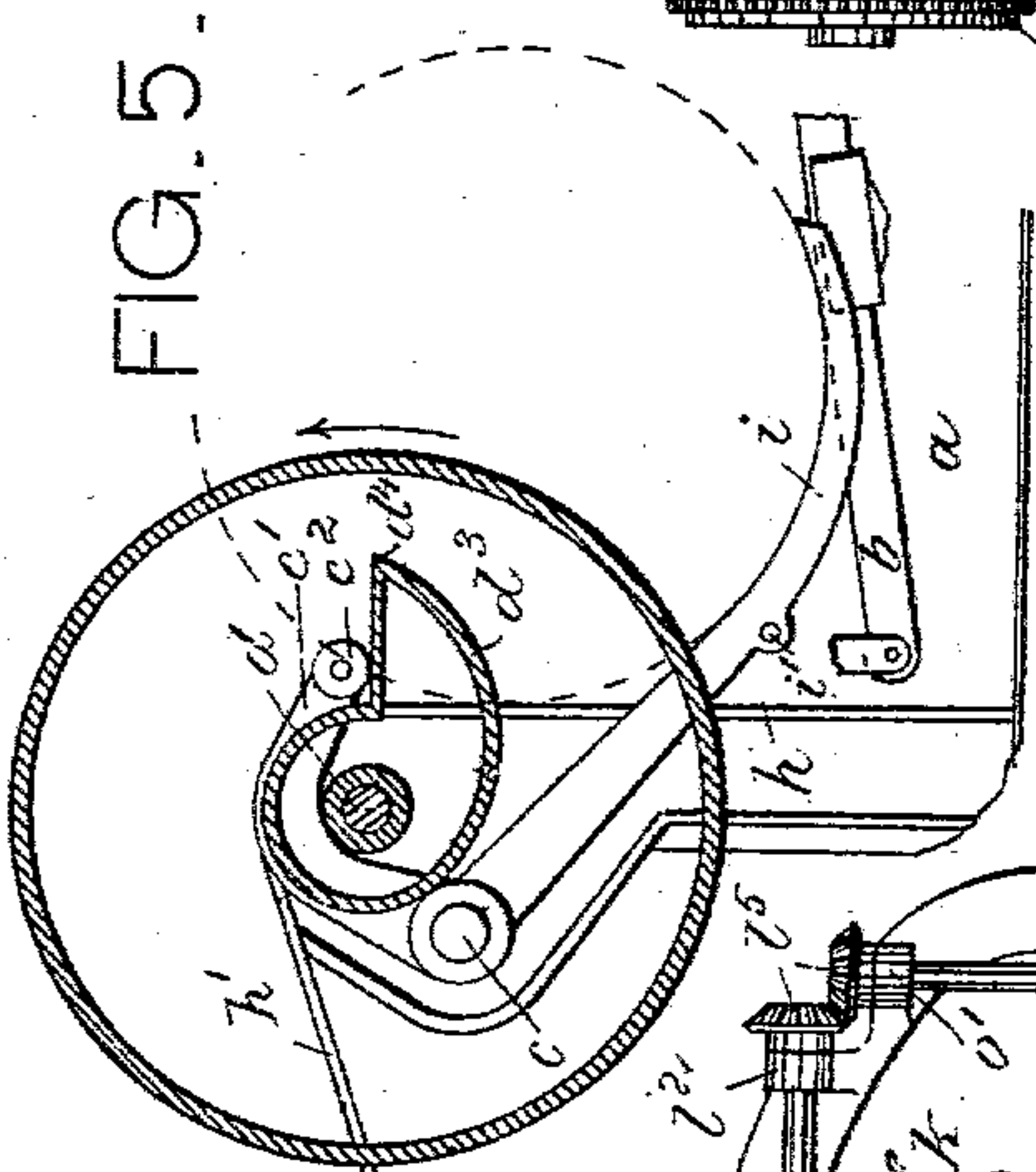
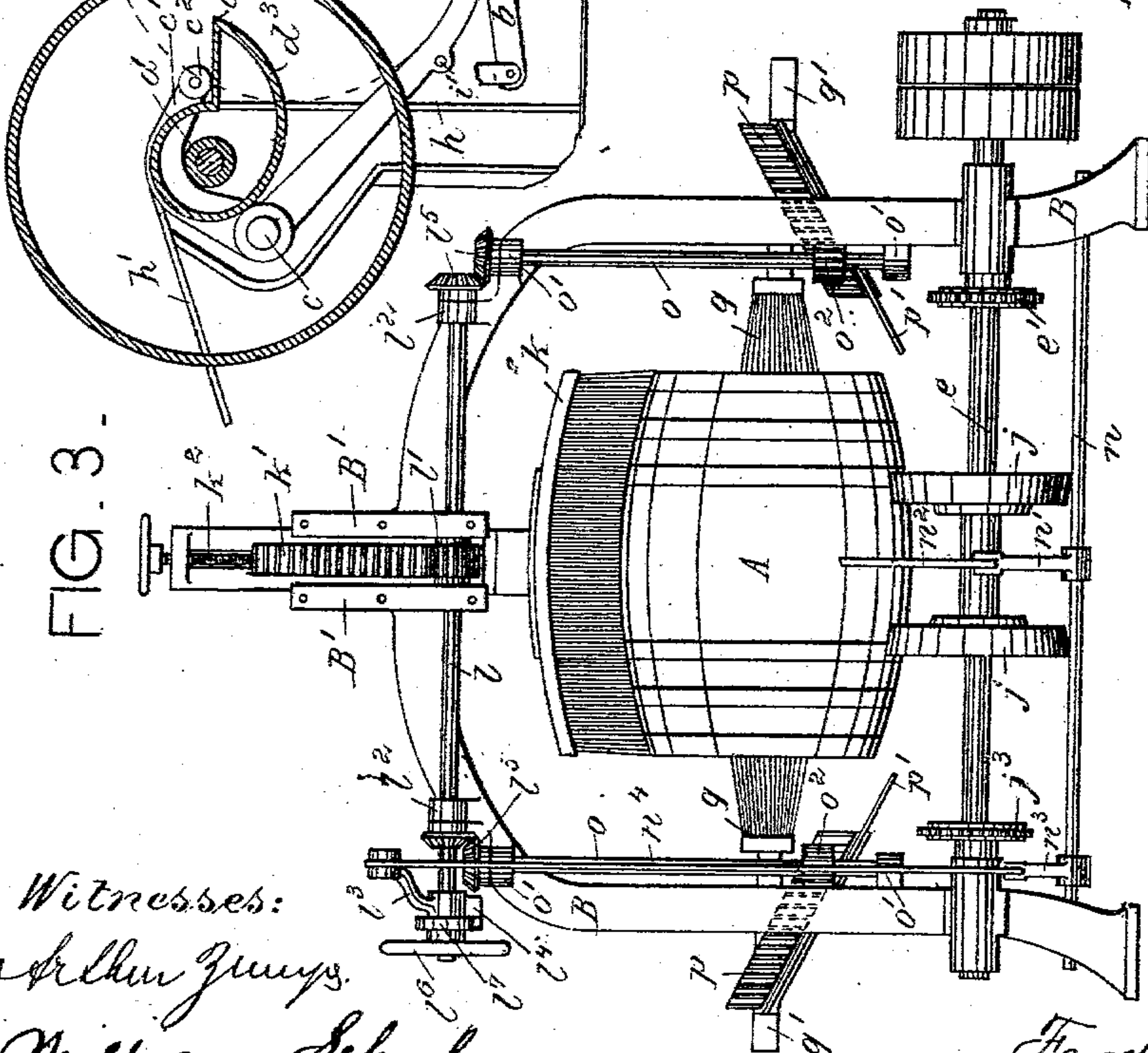


FIG. 3.



Witnesses:
Wilhelm Zump
Wilhelm Schuch

Inventor:

Ferdinand Aue
by his attornys
Reider & Bire

No. 715,454.

Patented Dec. 9, 1902.

F. AUE.
BARREL WASHER.

(Application filed Aug. 7, 1902.)

(No Model.)

3 Sheets—Sheet 3.

FIG. 8.

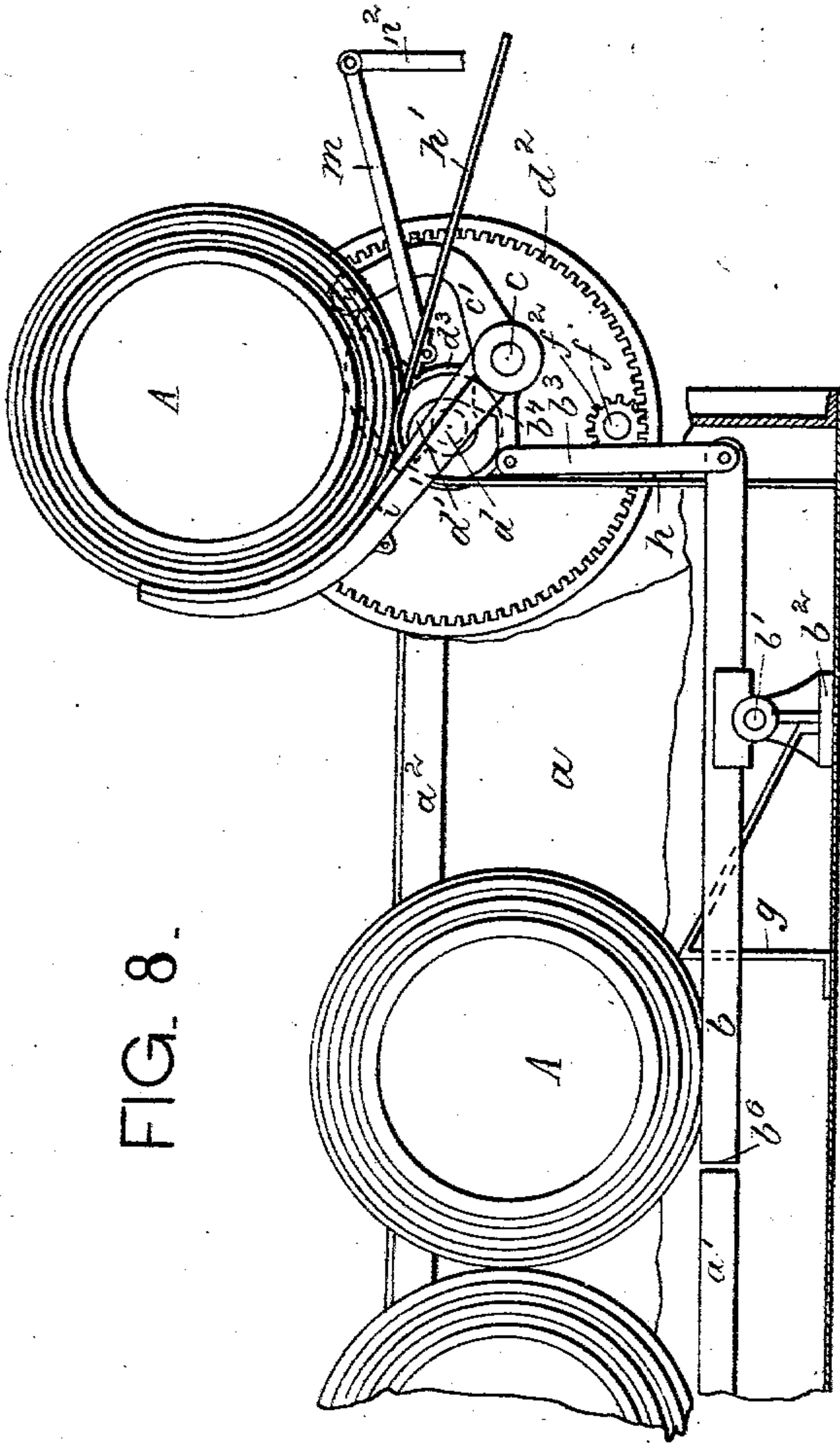


FIG. 7.

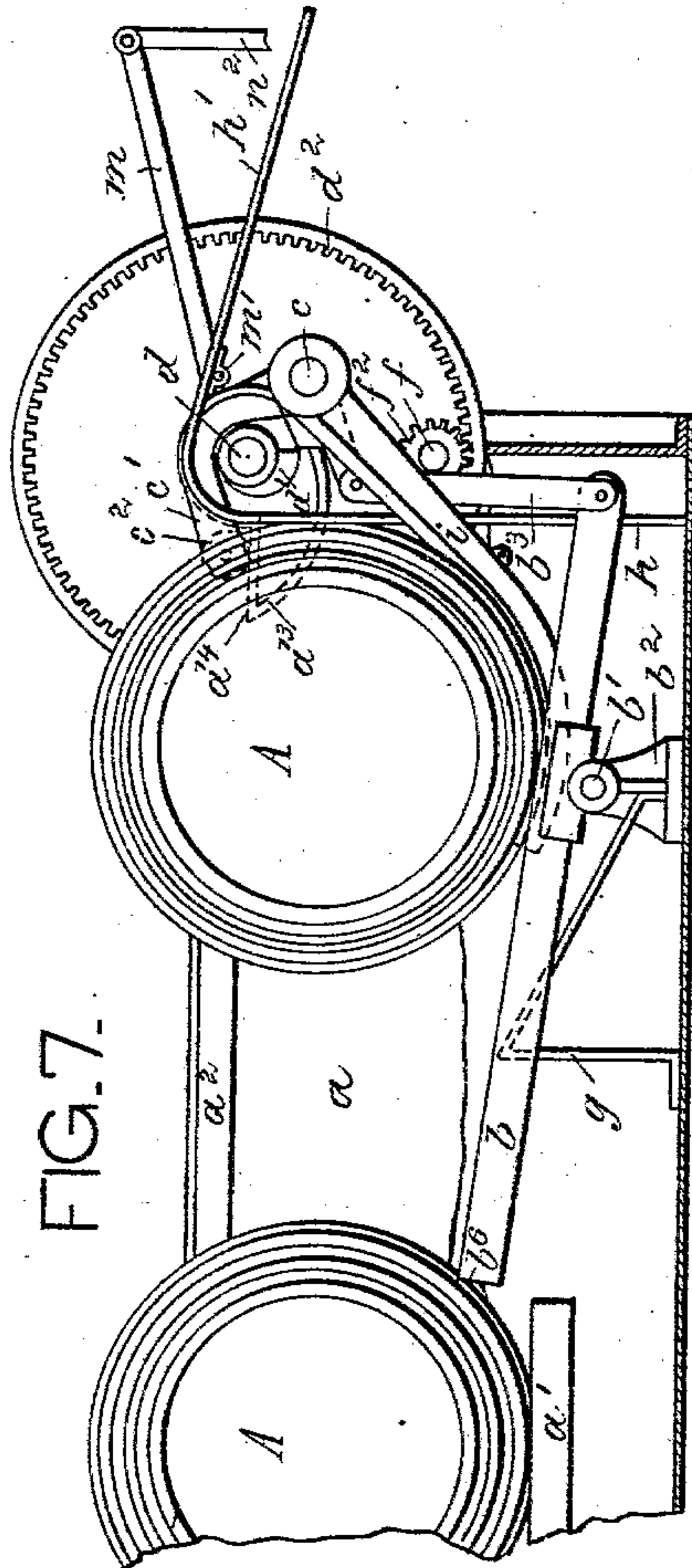
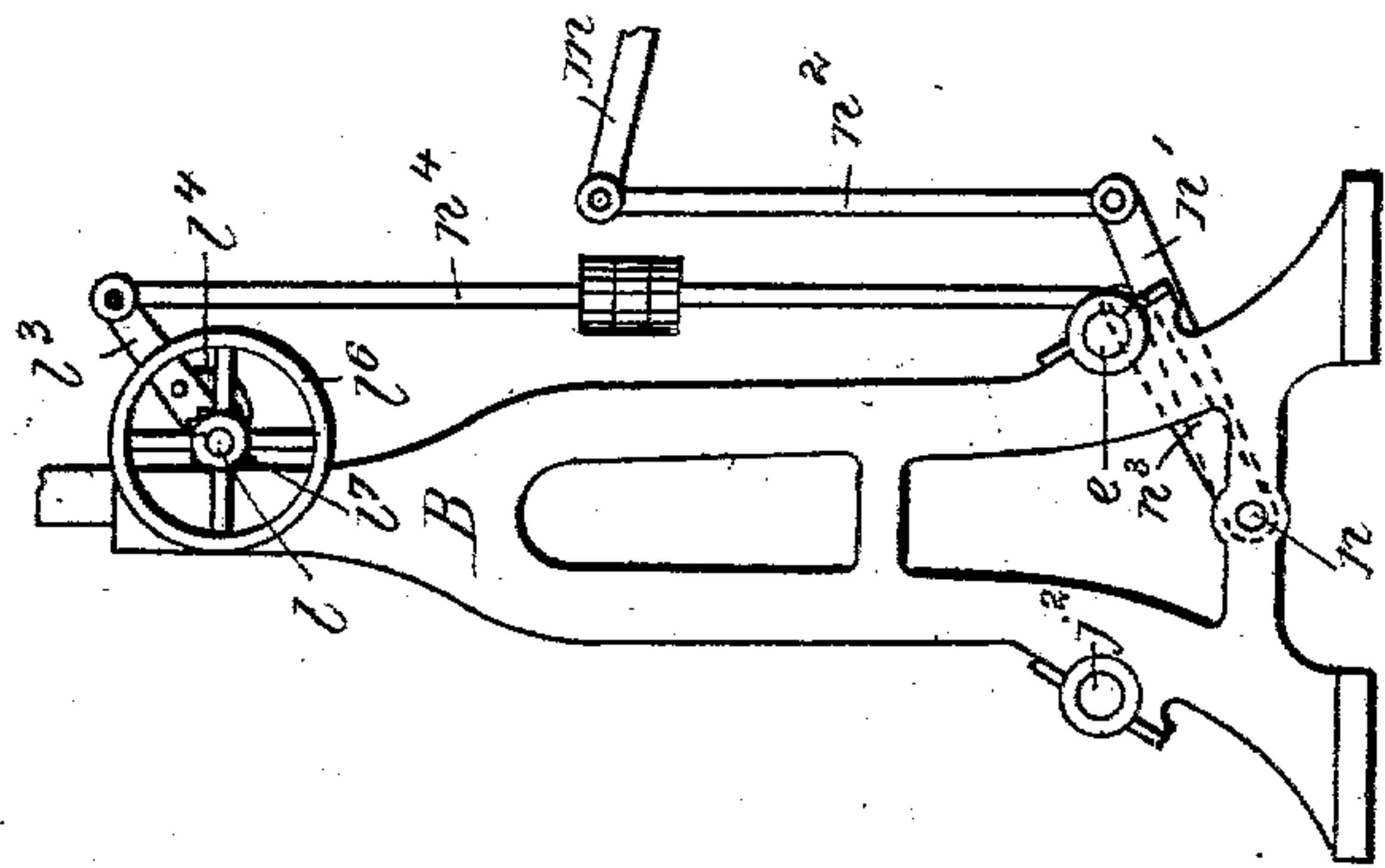


FIG. 9.



Witnesses:
Arthur Jump.
William Schuy.

Inventor:
Ferdinand Aue
by his attorney
Roeder & Priebe

UNITED STATES PATENT OFFICE.

FERDINAND AUE, OF NEW YORK, N. Y.

BARREL-WASHER.

SPECIFICATION forming part of Letters Patent No. 715,454, dated December 9, 1902.

Application filed August 7, 1902. Serial No. 118,743. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND AUE, a citizen of the United States, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Barrel-Washers, of which the following is a specification.

This invention relates to a barrel-washer in which the barrels are conveyed from the soaking-tank to the scrubber and the brushes are automatically operated in a novel and reliable manner.

In the accompanying drawings, Figure 1 is a front elevation of my improved barrel-washer; Fig. 2, a plan thereof; Fig. 3, a side view of the scrubber; Fig. 4, a detail of the lifting mechanism; Fig. 5, a section on line 5 5, Fig. 4; Fig. 6, a detail of the tilting frame. Figs. 7 and 8 are details of the lifter, showing it in different positions; and Fig. 9, a detail of the brush-actuating levers.

The letter *a* represents the soaking-tank of my improved barrel-washer, provided with a pair of lower horizontal rails *a'* and a pair of upper horizontal guide-rails *a''*, the rails *a'* constituting a run that conducts the barrels *A* to the tilting frame, hereinafter described. In order to accommodate barrels of different dimensions, the rails *a''* are connected to the sides of the tank *a* by pivoted links *a'''*, Fig. 2, so that by swinging said links inward or outward by means of handles *a''''* the distance between the rails *a''* may be altered. The rear ends of rails *a'* terminate within the tank *a* opposite the front end of a tilting frame *b*, fulcrumed at *b'* to support *b''*. The frame *b* is connected by link *b'''* to a lever *b''''*, turning loosely on a rock-shaft *c* and having nose *b'''''*. The lever *b''''* is engaged by a cam *d'*, fast on shaft *d*, which receives continuous rotatory motion from power-shaft *e* in the following manner: The shaft *e* carries chain-wheel *e'*, that drives counter-shaft *f* by chain *e''* and chain-wheel *f'*. A gear-wheel *f''*, fast on shaft *f*, intergears with internal gear-wheel *d''*, fast on shaft *d*. When the cam *d'* engages the nose *b'''''* of lever *b''''*, it will tilt the forward end of frame *b* upward, Fig. 7, while when the cam has cleared the nose the frame will be swung into a horizontal position by its overweighted forward end, Fig. 8. Through the open center of frame *b* projects in front of the lifter, hereinafter described, a fixed stop *g*, which intercepts and holds back the

foremost barrel until the frame *b* is tilted so as to rise above the stop. After the barrel has cleared the stop it rolls down along the frame *b* and against the upright lower sections *h* of a pair of bent guide-rails having downwardly-inclined upper sections *h'*. While the barrel rolls along the frame *b* it becomes engaged by the oscillating lifter, which is arranged above the frame and is composed of a pair of hooks *i*, connected by rod *i'* and fast on rock-shaft *c*. This shaft is provided with a lever *c'*, carrying roller *c''*, which engages a cam *d''*, formed on the inner face of gear-wheel *d''*.

The operation as thus far described is as follows: The frame *b* being in a horizontal position, the foremost barrel *A* will by the weight of the rearmost barrel *A'*, transmitted through the intermediate barrels, be rolled upon frame *b* until checked by stop *g*. The frame *b* being now tilted by cam *d'*, the frame *b* is raised with its forward end above stop *g*, and the barrel *A* being thus liberated will roll down the inclined frame until arrested by abutments *h*. While thus rolling along frame *b* the barrel has become engaged by the lifter *i*, which is in its lowermost position, Fig. 7. The lifter is then swung upward by cam *d''* to throw the barrel upon the inclined rails *h'*. After the barrels have thus been carried out of the tank *a*, Fig. 8, the roller *c''* clears the nose *d''''* of cam *d''*, and consequently the lifter *i* will descend to its normal position by gravity, whereupon the cam *d'* will clear the nose *b'''''* of lever *b''''*, so that the frame *b* will resume its normal horizontal position. While the frame *b* is tilted the next succeeding barrel *A* is rolled against its upwardly-projecting forward edge *b''*, ready to be pushed against stop *g* by the string of barrels as soon as frame *b* is swung downward. The run *h'* delivers the barrel upon a series of supporting-cones *j j'*, revolving in the same direction, so as to rotate the barrel and to subject all its parts to the action of the brushes. The cones *j* are fast on power-shaft *e*, while the cones *j'* are fast on a counter-shaft *j''*, driven from shaft *e* by sprocket-wheels *j''' j''''* and chain *j''''''*. The brush *k*, engaging the side of the barrel, is provided with a rack *k'*, adapted to slide in guideway *B'* of the machine-frame *B*. A set-screw *k''* permits the brush to be raised and lowered within the guide, so as to have an independent adjustment. The rack *k'* meshes

into a pinion l' , adapted to be keyed to a shaft l , which is rocked in one direction within its bearings l^2 by the weight of the barrel A descending along the run h' and is rocked in the other direction by the weight of the brushes.

In order to rock the shaft, I hang above run h' upon a pivot m' a forked lever m , which is arranged in the path of the barrel and will be depressed by the same, so as to turn a counter-shaft n by rod n^2 and lever n' . The counter-shaft in turn swings shaft l by lever n^3 , rod n^4 , and a bent lever l^3 , that embraces shaft l . This lever may be coupled to shaft l by a pawl l^4 , engaging a ratchet-disk l^7 of a hand-wheel l^6 , adapted to be keyed to shaft l .

The shaft l is intergeared by beveled wheels l^5 with upright shafts o , turning in bearings o' of frame B. The shafts o carry pinions o^2 , meshing into inclined racks p , secured to the holders q' of the brushes q , which engage the heads and chimes of the barrel. The inclined racks p move along inclined guideways p' of frame B and in this way the brushes by the rotation of shafts o in one direction are simultaneously moved outward and upward, while by the rotation of the shafts in the opposite direction they are simultaneously lowered and moved inward.

As the barrel descends along run h' and tilts lever m the brushes q are thus withdrawn to accommodate the barrel, while when the barrel has cleared the lever m and has become seated upon cones $j j'$ the brushes are moved inward to engage the revolving barrel and scrub the same.

To set the brushes to barrels of different sizes, the pawl l^4 is thrown out of ratchet-disk l^7 to uncouple lever l^3 from shaft l , and said shaft l is then given a turn by hand-wheel l^6 , by means of which the three shafts $l o o$ are turned, and all three brushes are simultaneously drawn either inward or outward. After the proper adjustment has been made the pawl l^4 is again thrown into engagement with ratchet-disk l^7 to reclamp shaft l to its operating mechanism.

It will be seen that owing to the inclined position of the guides p' and racks p every inward adjustment of brushes q is accompanied by a simultaneous downward adjustment, and vice versa. This is necessary because the brushes when set to a shorter height of a barrel must also be set to the corresponding reduced diameter of the same.

After the barrel has been thoroughly scrubbed by the brushes it will be displaced from cones $j j'$ by the following barrel and will be thrown upon a run r' of a rinsing-tank r . Within this tank the barrel is emptied through its bung-hole, the water returning from tank r to the front of tank a by pipe s , which contains a steam-injector s' . An outlet branch s^2 also connects pipe s with the rear end of the tank, so that the injector draws the water simultaneously out of tank r and the back of tank a , heats the same, and forces it into the front of tank a . In this

way a circulation of the water is established that assists in moving the barrels along run a' . A screen r^2 in tank r , back of the mouth of pipe s , prevents any sediments from being carried into the pipe.

It will be seen that by my invention the barrels are automatically conveyed from the soaking-tank to the scrubber without interference and that the brushes are automatically operated to first accommodate and then closely hug the barrel. At the same time the brushes may be readily adjusted to conform to the various sizes of the barrels to be cleaned.

What I claim is—

1. A barrel-washer provided with a soaking-tank, a tilting frame having an opening, a lifter, and a fixed stop that projects through the opening of said frame, substantially as specified.

2. A barrel-washer provided with a barrel-run, a lever in the path of the barrel, a rock-shaft, means for operatively connecting said rock-shaft to the lever, a brush, and a pinion and rack for operatively connecting the rock-shaft to the brush, substantially as specified.

3. A barrel-washer provided with a pair of head-brushes, a side brush, intergeared shafts for operating the same, a lever arranged in the path of the barrel, and means for operatively connecting said lever to one of said shafts, substantially as specified.

4. A barrel-washer provided with a pair of upright shafts, pinions mounted thereon, inclined racks engaged by the pinions, head-brushes secured to the racks, a horizontal shaft intergeared with the upright shafts, and means for rocking the horizontal shaft, substantially as specified.

5. A barrel-washer provided with a pair of upright shafts, a horizontal shaft intergeared therewith, brushes operatively connected to the shafts, means for simultaneously turning the shafts, and means for rocking the horizontal shaft, substantially as specified.

6. A barrel-washer provided with a horizontal shaft, a pair of upright shafts intergeared therewith, brushes operatively connected to the shafts, a lever for rocking the horizontal shaft, and means for uncoupling said lever from said shaft, substantially as specified.

7. A barrel-washer provided with a soaking-tank, a run, a tilting frame back of the run, a lifter above the tilting frame, a second inclined run upon which the barrel is adapted to be thrown by the lifter, a lever above said second run, a series of intergeared brush-operating shafts, and means for operatively connecting said lever to one of said shafts, substantially as specified.

Signed by me at New York city, New York, this 6th day of August, 1902.

FERDINAND AUE.

Witnesses:

WILLIAM SCHULZ,
F. V. BRIESEN.