

(No Model.)

2 Sheets—Sheet 1.

H. F. MOELLER.  
CYLINDER WASHING MACHINE.

No. 335,710.

Patented Feb. 9, 1886.

Fig. 1.

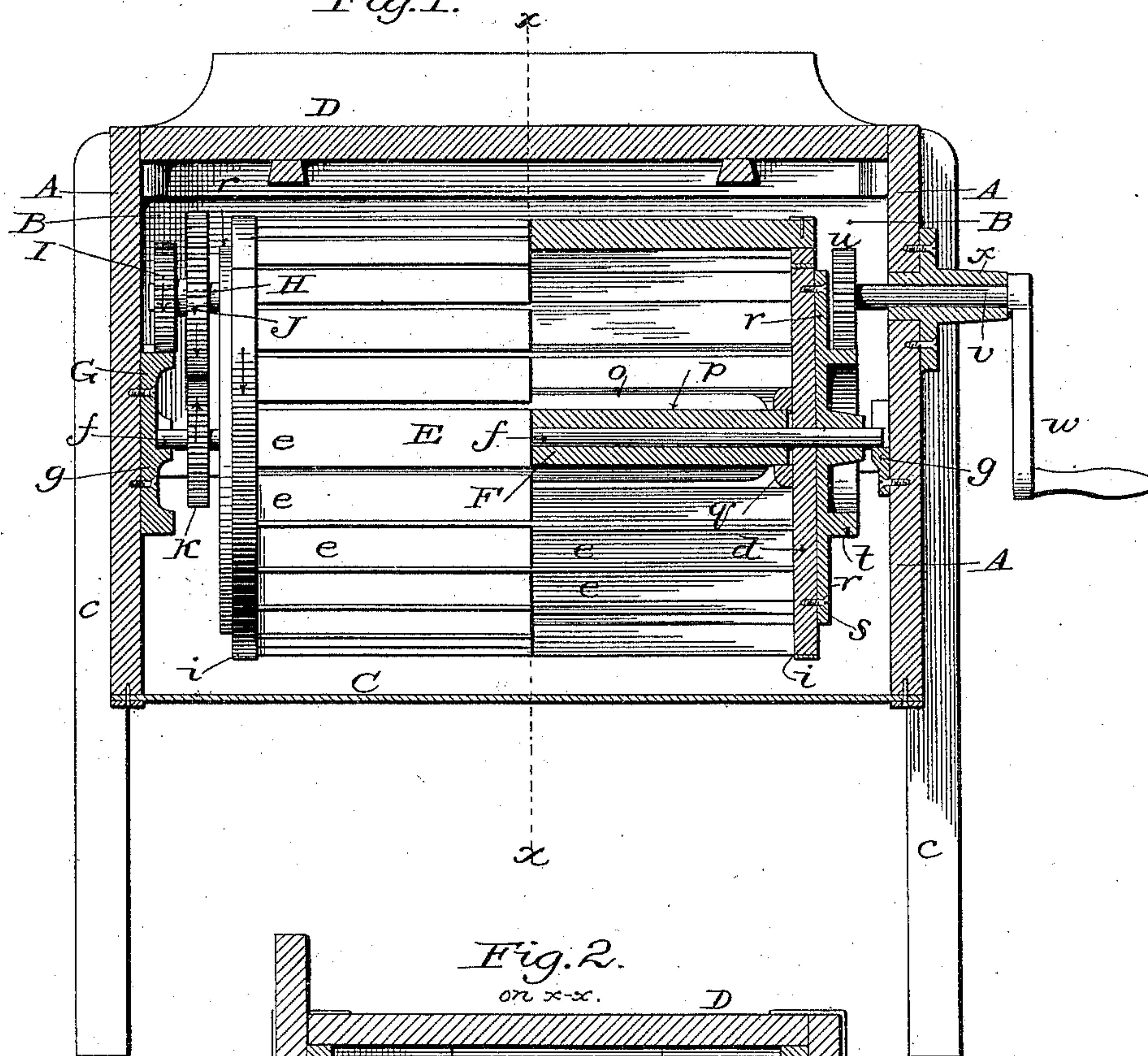
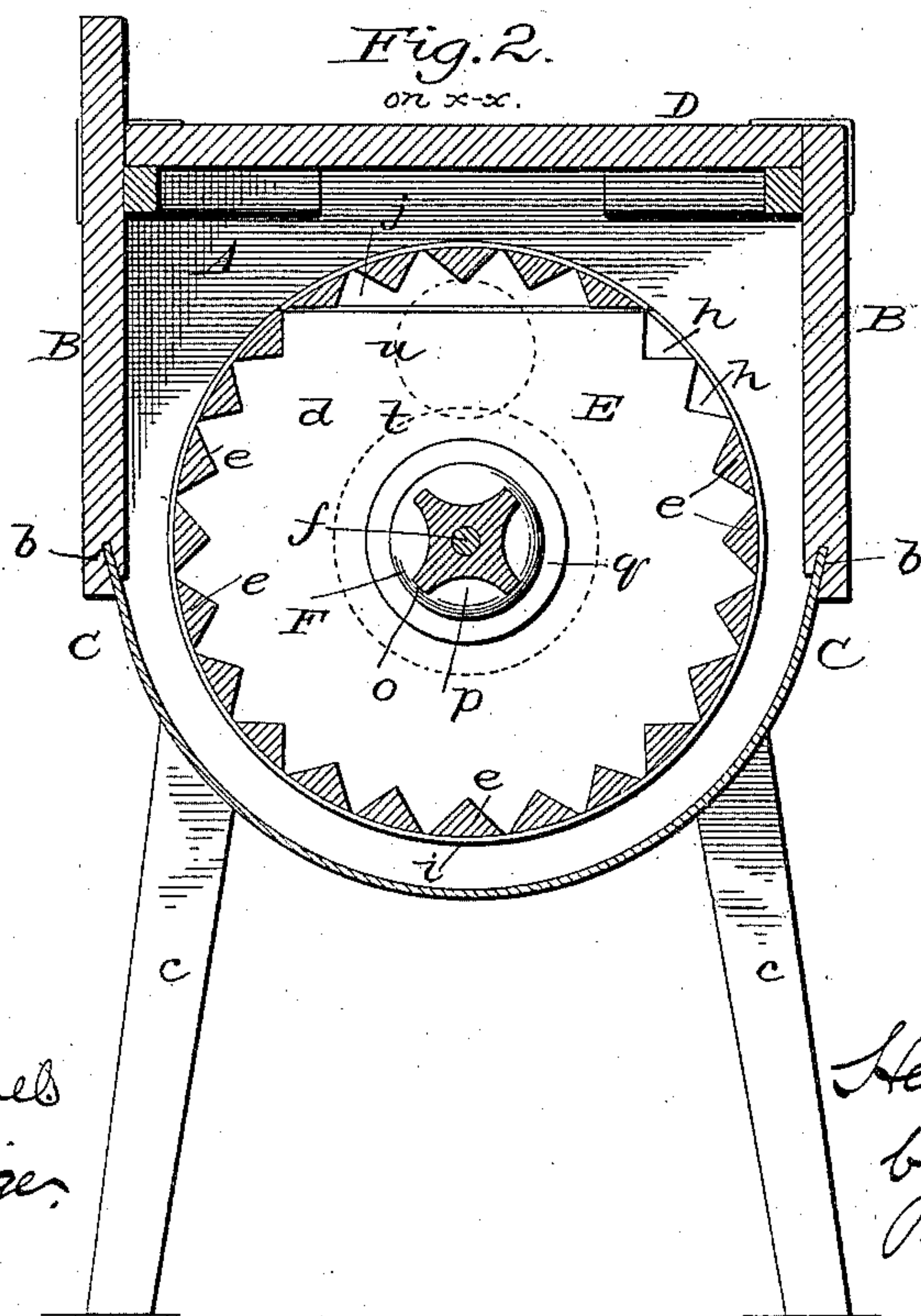


Fig. 2.  
on x-x.



Witnesses:

Jas. F. Duxhamel  
Walter S. Dodge

Inventor:

Henry F. Moeller,  
by Rodger Son,  
his Attys.

(No Model.)

2 Sheets—Sheet 2.

H. F. MOELLER.

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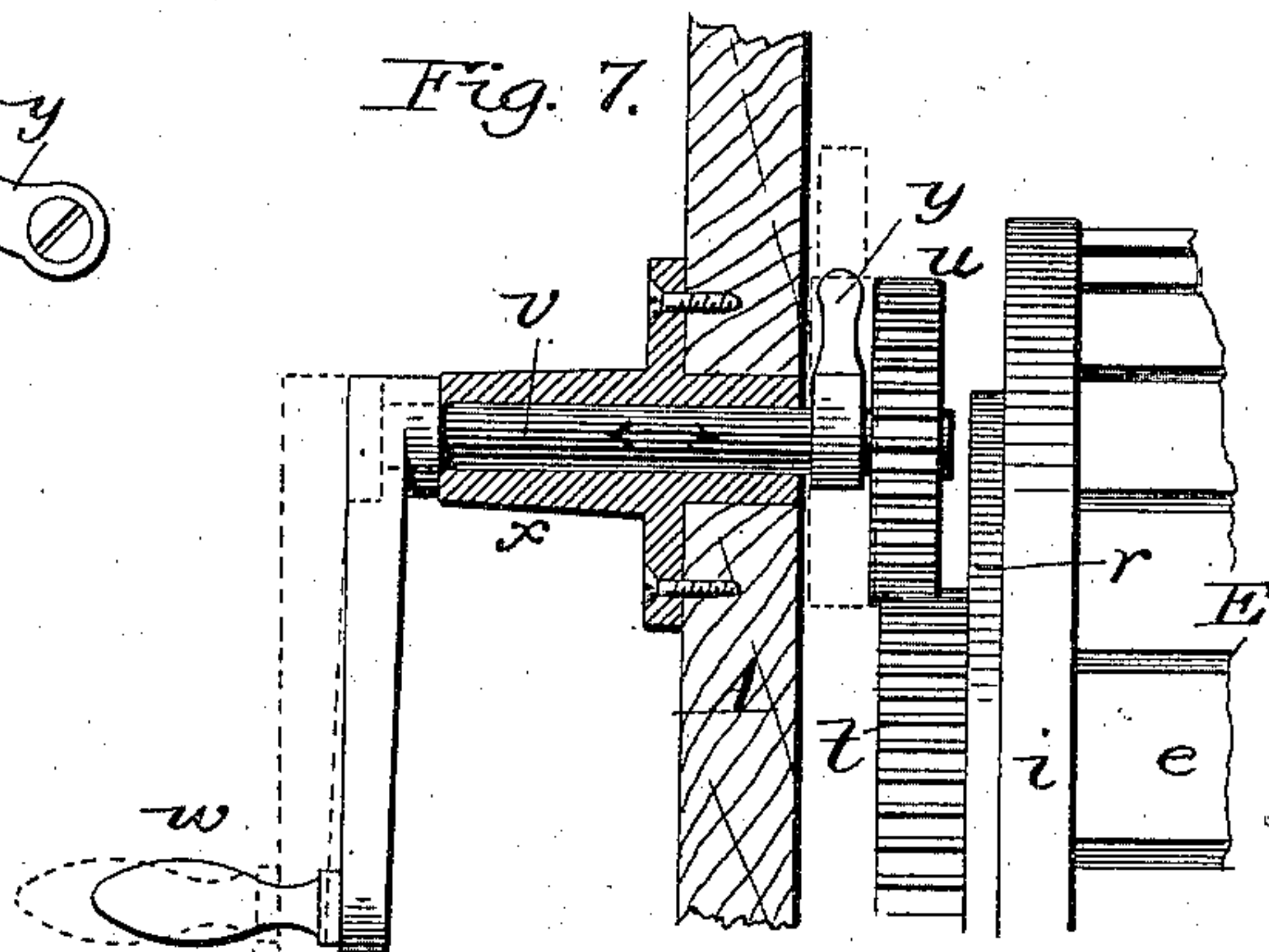
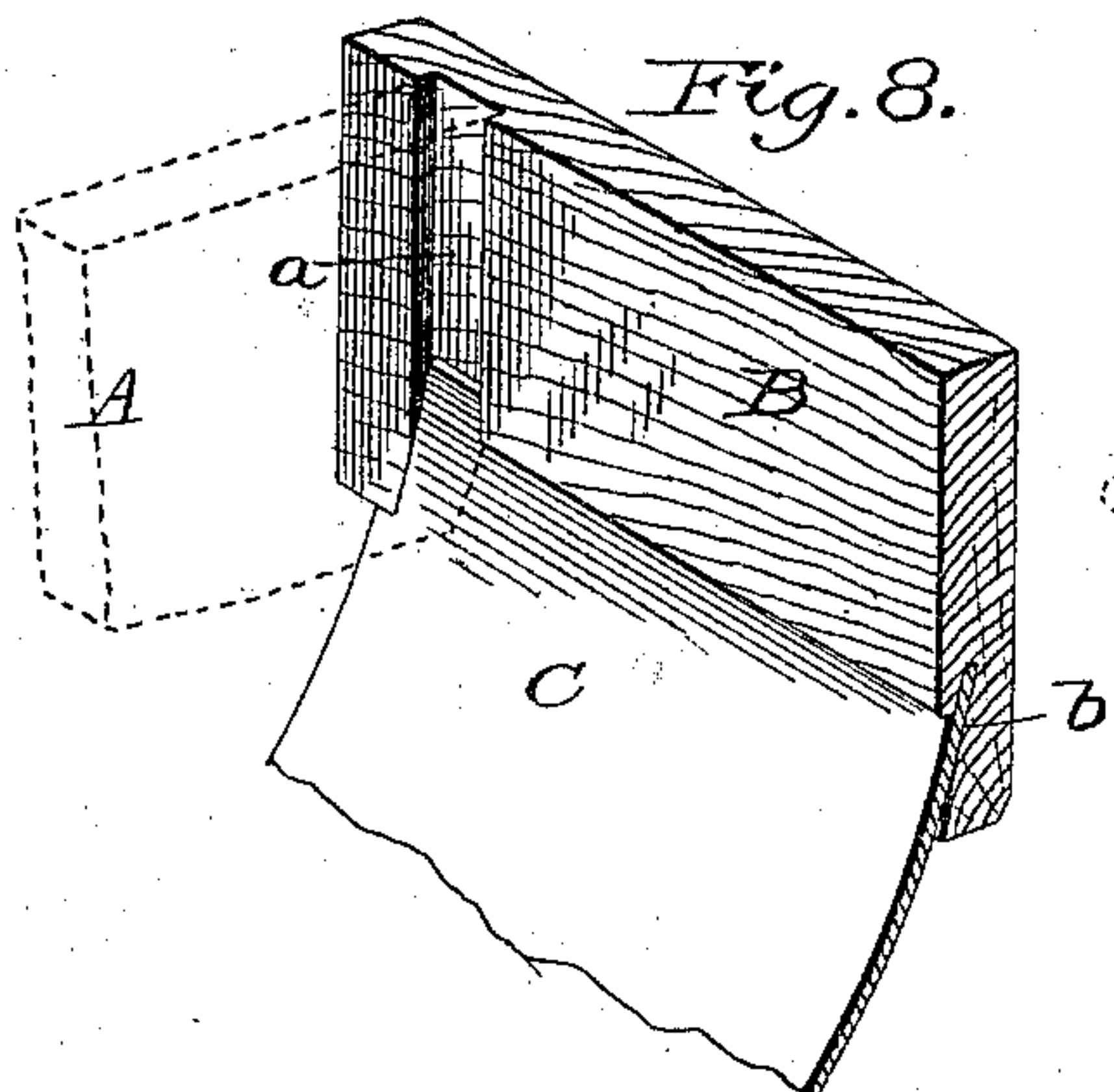
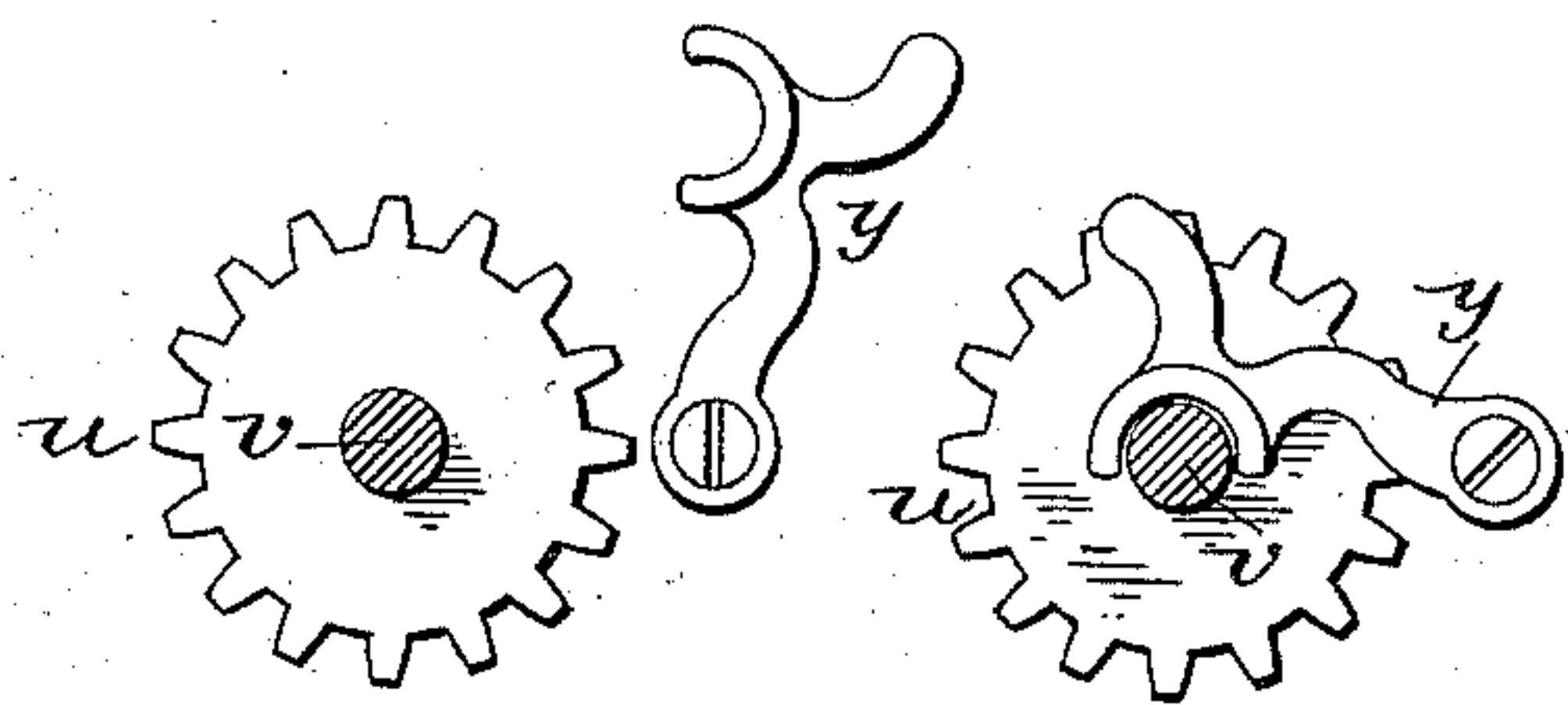
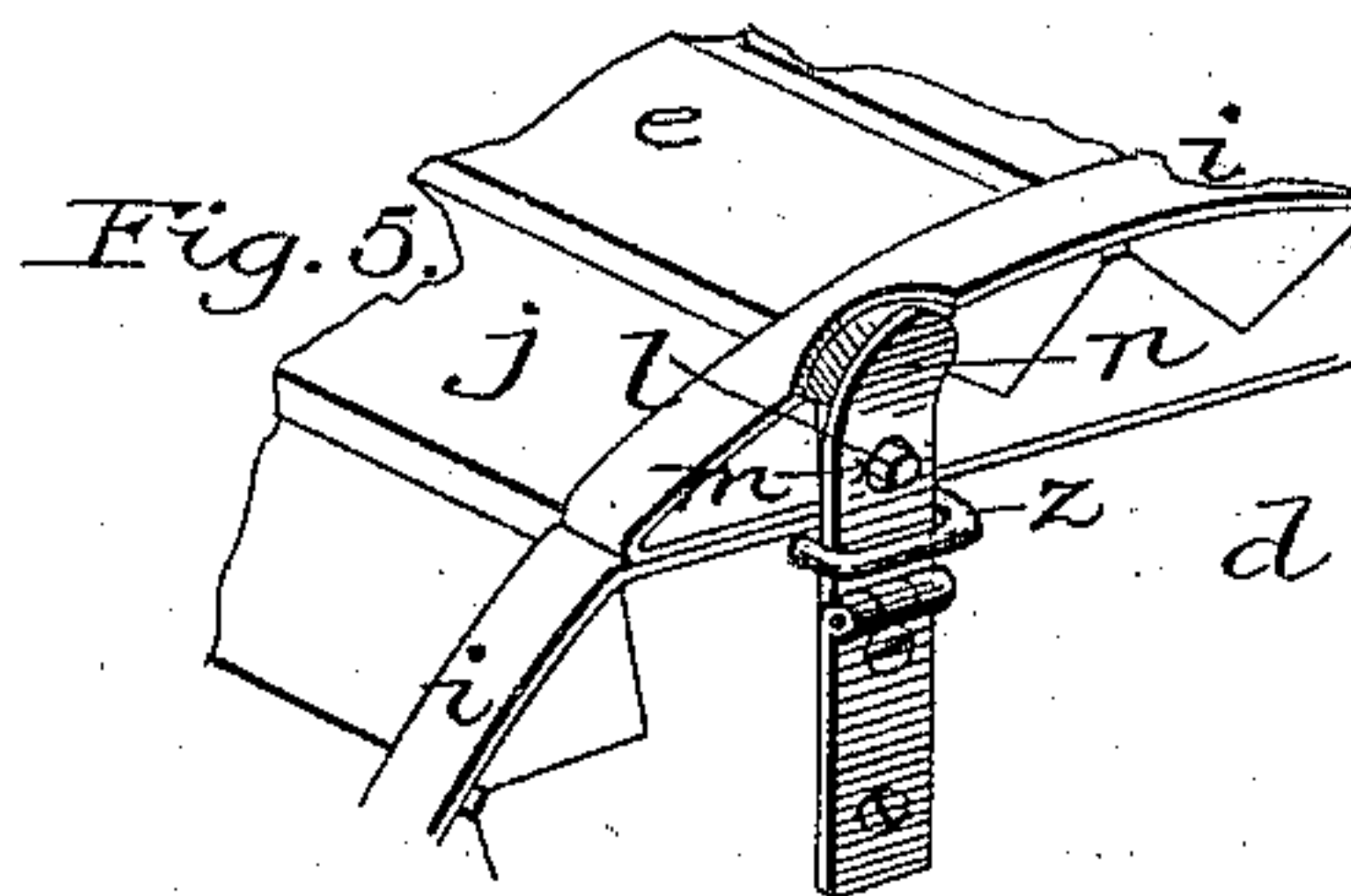
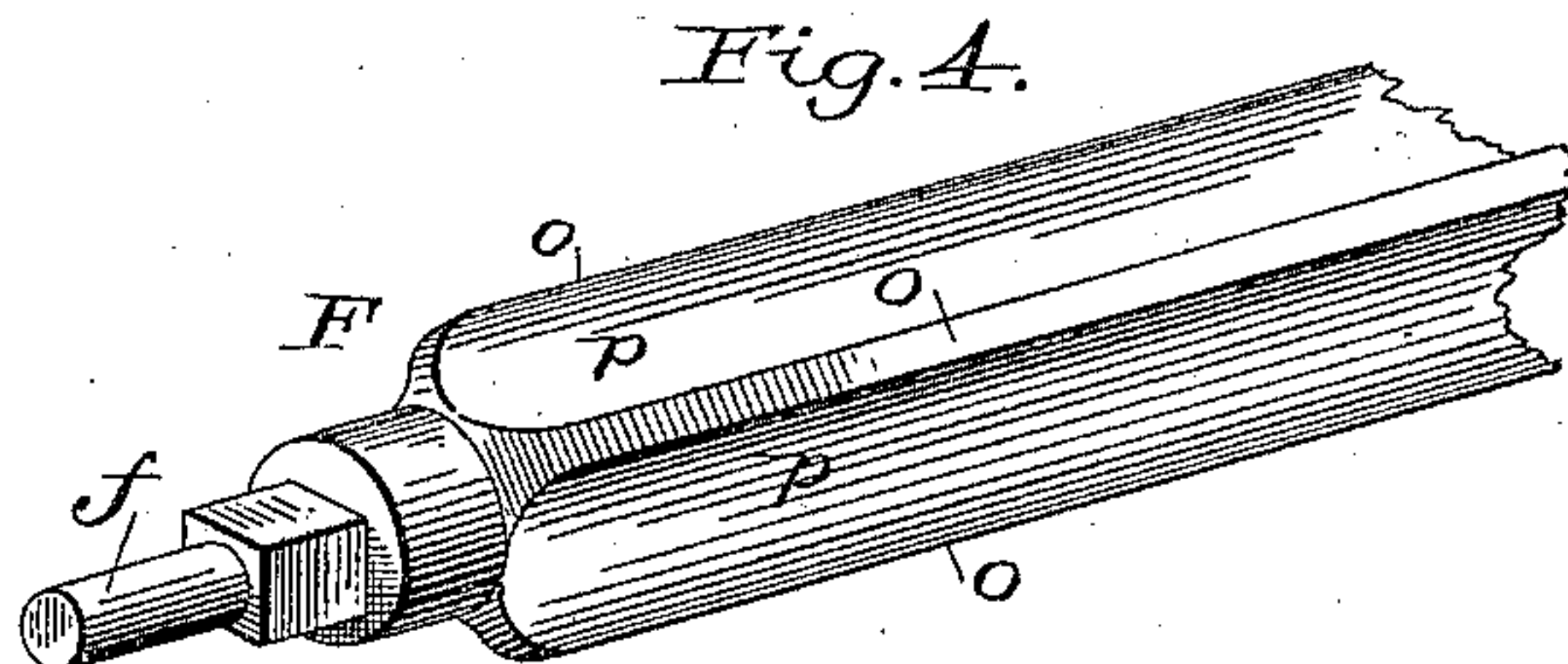
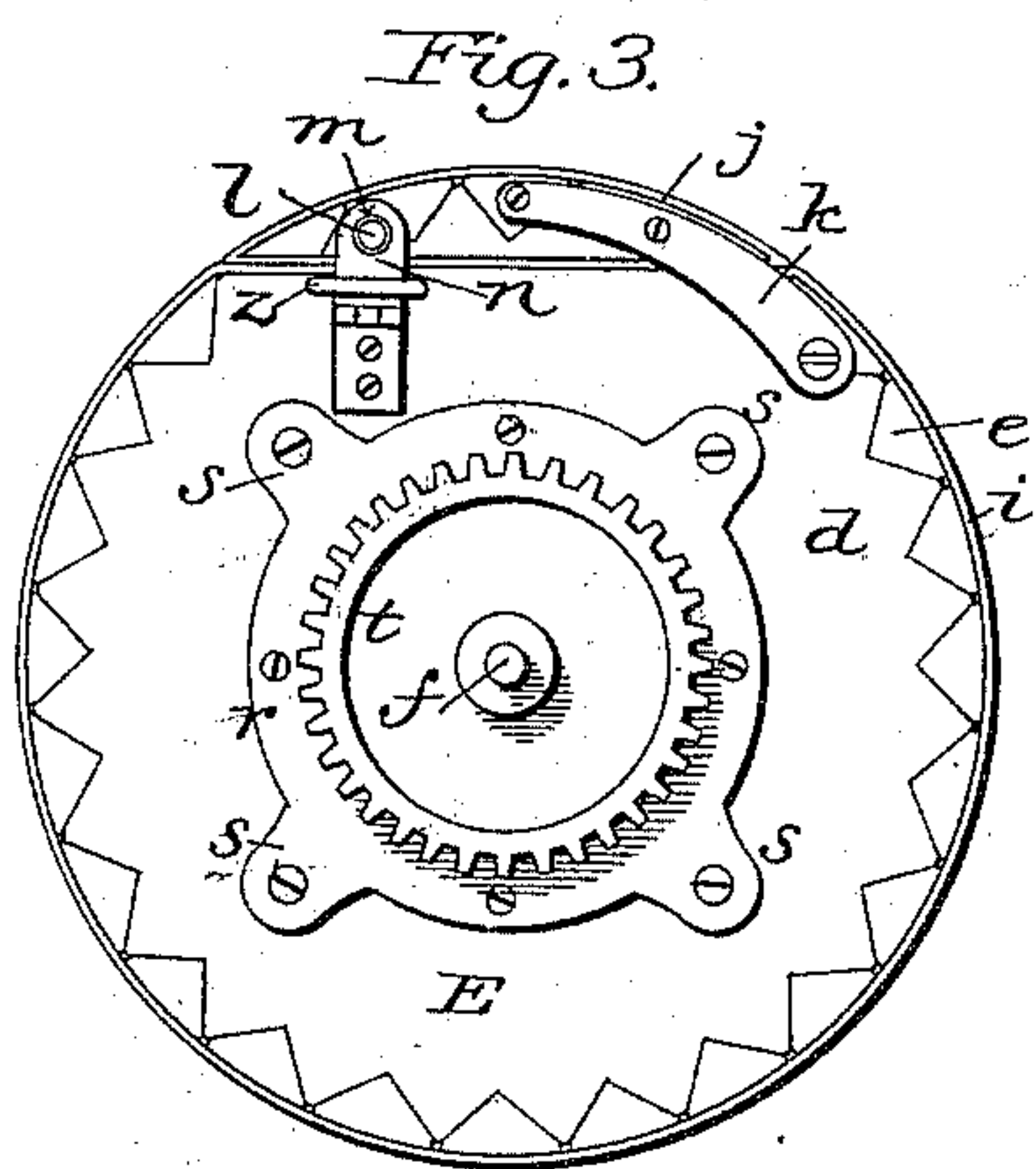
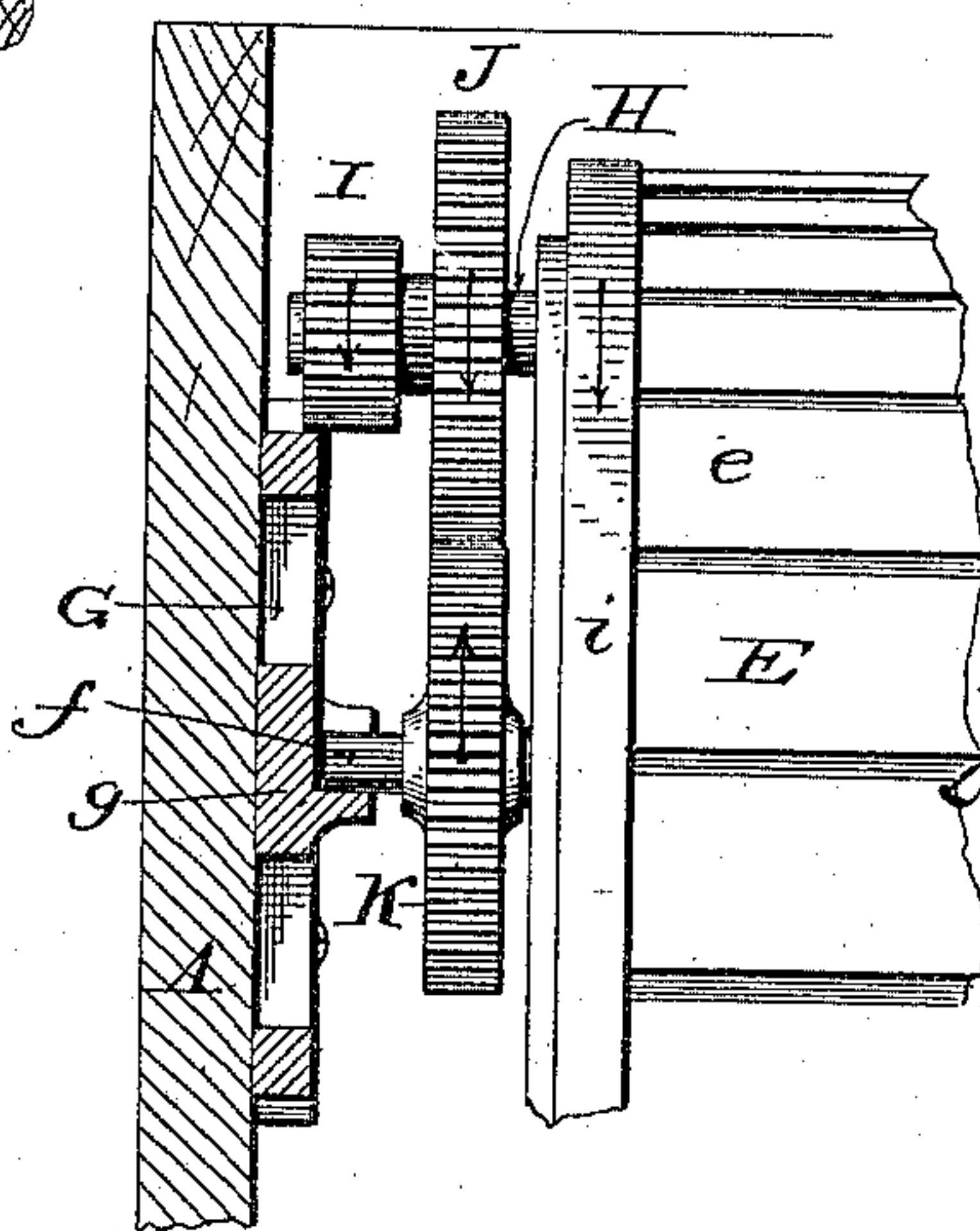


Fig. 9.



Witnesses:

Jas. F. Duffanel  
Walter A. Dodge

Inventor:

Henry F. Moeller  
by Rodger L. L. Attye



# UNITED STATES PATENT OFFICE.

HENRY F. MOELLER, OF DAVENPORT, IOWA.

## CYLINDER WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 335,710, dated February 9, 1886.

Application filed June 1, 1885. Serial No. 167,252. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY F. MOELLER, of Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Cylinder Washing-Machines, of which the following is a specification.

My invention relates to that class of machines commonly designated as "cylinder" washing-machines, and has for its object to improve the construction and operation of the same.

In the drawings, Figure 1 is a vertical longitudinal section; Fig. 2, a section on the line *xx* of Fig. 1; Fig. 3, an end view of the cylinder; and Figs. 4 to 9, inclusive, views illustrating certain details hereinafter more fully set forth.

This invention is designed as an improvement upon that for which Letters Patent of the United States were granted to me, bearing date March 6, 1883, and numbered 273,584.

A A indicate the heads or ends of the machine, B B the sides, C the bottom, and D the cover.

The heads A, sides B, and top or cover D are made of wood, and the bottom C, which is curved, is made of zinc, galvanized sheet-iron, or like thin metal.

In order that the bottom C may be firmly secured in place and a water-tight joint be secured, I adopt the construction shown in Fig. 8.

The sides B are formed with vertical grooves *a*, into which the heads are seated; and they are also formed with grooves *b* in their lower edges, which grooves extend from the vertical groove *a* at one end to the corresponding groove at the other end. In these grooves *b* are inserted the edges of the curved zinc bottom C, as clearly indicated in Fig. 8.

The heads A, when in place in the grooves *a*, tend to retain the curved bottom in place, as the latter extends across the full width of the groove *a*, as shown in Fig. 8.

It will be seen that I am enabled to produce a strong and water-tight joint between the parts A B C, and that I am enabled to dispense with nails or screws along the lower edge of the sides, though rivets or light nails may be used, if deemed desirable.

The tub or body thus constructed is supported upon legs *e*, or in any other suitable manner.

E indicates the cylinder, consisting of heads

*d d* and longitudinal V-shaped bars or rods *e*, connecting the heads, said cylinder E being carried by a shaft, *f*, mounted in bearings *g g*, secured to the heads or ends of the tub, as shown in Fig. 1.

As shown more clearly in Fig. 2, the heads *d* are provided with a series of V-shaped notches or recesses, *h*, in which the correspondingly V-shaped bars *e* are seated, the notches *h* being of such a distance apart as not to allow the bars *e* to touch one another. This is to allow the water to enter and leave the cylinder readily.

As shown in Figs. 1 and 2, the notches *h* are cut away entirely across the narrow edge or periphery of the heads *d*, so as to allow the ends of the bars *e* to come flush with the outer face of the heads. This construction is advantageous in that it forms a bearing or seat of considerable width for the bars *e*, and strengthens the cylinder to a great extent.

In order to retain the bars *e* in place, I provide a metallic band, *i*, preferably zinc, which extends over the ends of the bars *e*, as shown in Figs. 1, 2, and 3, and through each of the bars *e* and the band *i*, I pass a nail or a screw, which extends preferably into the head and secures the parts firmly together.

In order to allow the clothes to be placed in the cylinder E, I provide the latter with a hinged section or door, *j*, (shown in Figs. 2, 3, and 5,) said section forming about one-fifth of the circumference of the cylinder. The door *j* is carried at each end by a hinge, *k*, secured to the heads and to the door, as clearly shown in Fig. 3, and to keep said door or hinged section closed I provide the latter with a pin or stud, *l*, which enters a hole, *m*, in the hinged catch *n*, secured to the heads *d*.

In order to prevent the movable leaf of the hinged catch *n* from falling too far back, I provide a staple or guard, *z*, against which the upper part of the catch rests when the section *j* is opened.

The ends of the hinged door *j* are encircled by a metallic band, *i*, in the same manner as the ends of the main body of the cylinder.

Both faces of the parting line of the door *j* and cylinder E will, upon reference to Figs. 2, 3, and 5, be seen to be covered and protected by the band *i*.

The shaft *f*, upon which the cylinder E



turns, is provided with cylindrical ends, which are carried in the brackets or bearings *g*, said brackets or bearings being slotted vertically, as shown in Fig. 1, to allow the cylinder to be

5 lifted bodily out of the tub.

Securely fastened to the shaft *f* is an inner roll or bar, *F*. This roll or bar may be secured upon the shaft *f* by means of screws, or the shaft may be squared, as indicated in Fig. 10 4, in which case I prefer to make the roll *F* in two parts and to fasten them together by screws. This prevents the shaft *f* turning independently of the roll. The roll *F* is polygonal in cross-section, and is provided with 15 radial ribs or blades *o*, as clearly indicated in Figs. 1, 2, and 4, and between said ribs or blades are concave depressions *p*, extending lengthwise of the cylinder. When the clothes are lifted by the larger cylinder *E*, they fall 20 upon the edges of the ribs or blades *o* of roll *F* and cause the latter to turn in an opposite direction from cylinder *E*. The cylindrical ends of the roll *F* fit and revolve within rings *q*, secured concentrically about the shaft *f* on 25 the heads *d*, as shown in Figs. 1 and 2, said rings *q* preventing clothes and other articles from getting in around the ends of the roll *F*, and being torn thereby.

In order to support and give strength to the 30 heads *d*, I provide each with a plate, *r*, preferably of cast metal, said plates covering a large portion of the heads, and provided with arms *s*, as shown in Fig. 3. These plates *r* are secured in place by screws or in any other 35 suitable manner.

As shown in Figs. 1, 3, and 7, one of the plates *r* is provided with a gear-wheel, *t*, which meshes with a pinion, *u*, carried by a shaft, *v*. The shaft *v* is provided with a crank or handle, 40 *w*, and revolves in a tubular sleeve or box *x*, in the head *A*, as clearly indicated in Fig. 7, the shaft *v* being of a length greater than the length of the sleeve *x*, in order that said shaft *v* and its pinion *u* may have a longitudinal 45 movement.

When it is desired to impart motion to the cylinder *E*, the shaft *v* is moved inward until its pinion *u* meshes with the gear *t* on the cylinder, and in order to keep said gears in 50 mesh I provide a pivotal dog, *y*, which drops down between the pinion *u* and head *A* and prevents end movement of the shaft.

When it is desired to remove the cylinder *E* from the machine, the dog *y* is thrown up- 55 ward, as indicated in Fig. 6, and the shaft *v* is slid longitudinally outward, thereby moving its pinion *u* out of mesh with the gear-wheel *t*, as indicated in Fig. 1, and by dotted

lines in Fig. 7. The cylinder *E* can then be lifted bodily out of the tub, the bearing *g* 60 being slotted vertically for this purpose, as above mentioned.

It will be seen that the only opening through the heads *A* of the machine is above the water- 65 line, and thus leakage is obviated.

In order to insure the positive movements of the cylinder *E* and the roll *F* in opposite directions, I adopt the construction shown in Fig. 1, and more clearly in Fig. 9.

*G* indicates a stationary plate secured to one 70 of the heads *A*, provided on its periphery with gear-teeth, said plate being preferably provided with the slotted bearing *g* for the shaft *f*.

The bearing *g* may be made separate and independent from the plate *G*, if desired, but 75 I prefer to cast them all in one piece, as it gives strength to the heads *A*.

Attached to and moving with the cylinder *E* is a shaft, *H*, carrying the double gear 80 wheels *I J*, the former to mesh with the gear-plate *G* and the other to mesh with the gear *K*, firmly keyed or otherwise secured to the shaft *f*, as shown in Fig. 9. As the cylinder is rotated the shaft *H*, carried thereby, travels 85 around with it, the gear-wheel *I* receiving motion from the stationary gear-ring *G*, the motion thus secured being transmitted by gear *J* to the gear *K* on shaft *f*.

The direction the gears take is indicated by arrows in Fig. 9, and it will be seen upon ref- 90 erence to said figure that cylinder *E* and gears *I J* have a direction contrary to that of gear *K*.

Having thus described my invention, what I claim is—

1. In a cylinder washing-machine, the com- 95 bination of a tub or receptacle, a cylinder, a shaft therefor, slotted bearings for said shaft, a gear-wheel mounted upon the cylinder, and a pinion meshing with said gear and movable longitudinally out of mesh with the gear, as 100 set forth.

2. In a cylinder washing-machine, the combination of a tub or receptacle, cylinder *E*, shaft *f* therefor, slotted bearings *g*, gear-wheel 105 *t*, shaft *v*, provided with handle *w* and pinion *u*, and pivoted dog *y*, all arranged as shown.

3. In a washing-machine, the combination of a tub or receptacle, cylinder *E*, provided with shaft *H* and gears *I J*, shaft *f*, provided with roller *F* and gear *K*, and stationary gear- 110 plate *G*, all arranged as shown.

HENRY F. MOELLER.

Witnesses:

L. M. FISHER,  
P. J. SMITH.