

N. D. FAIRCHILD.
WASHING MACHINE.

No. 362,372.

Patented May 3, 1887.

Fig. 1.

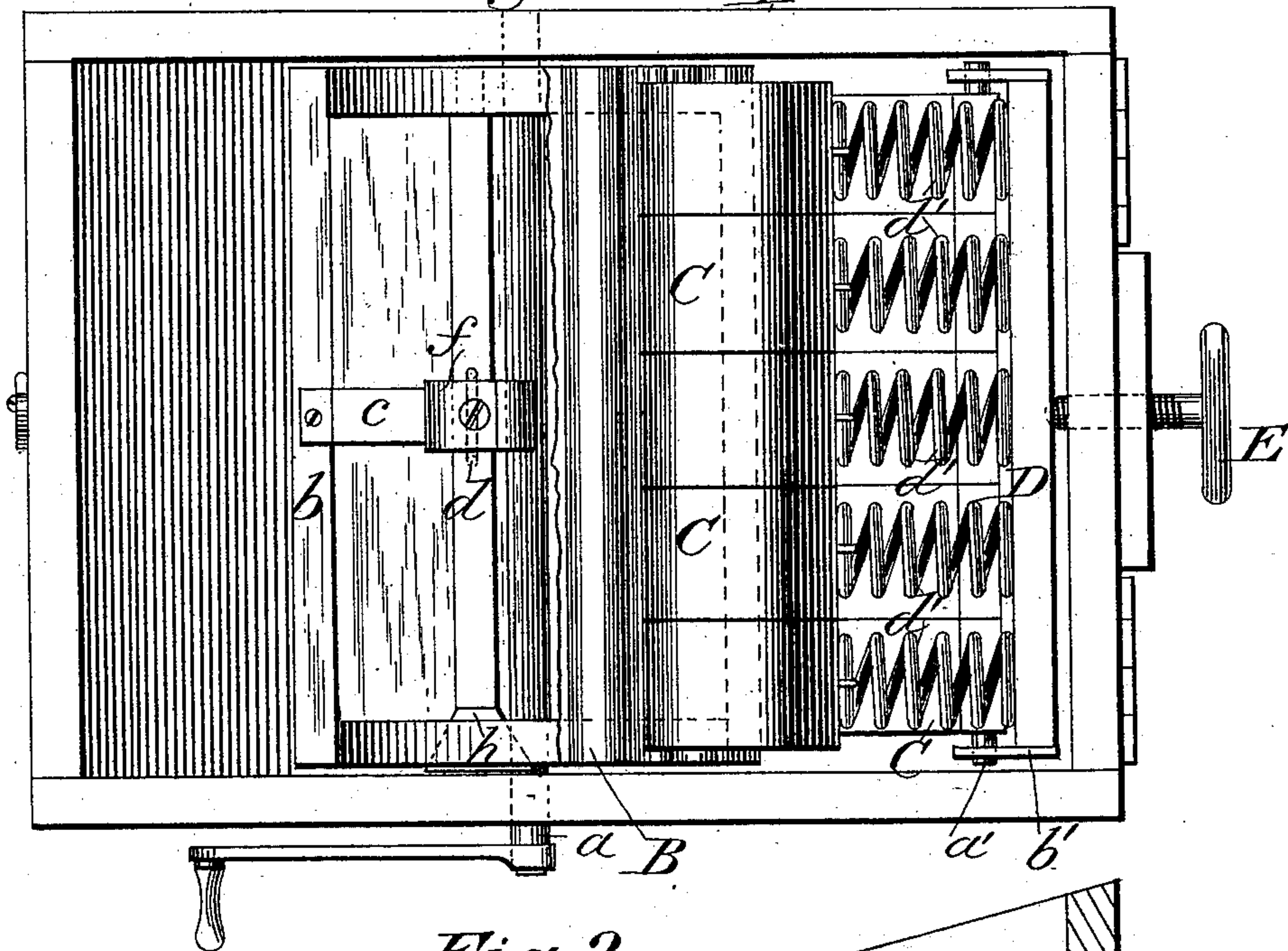
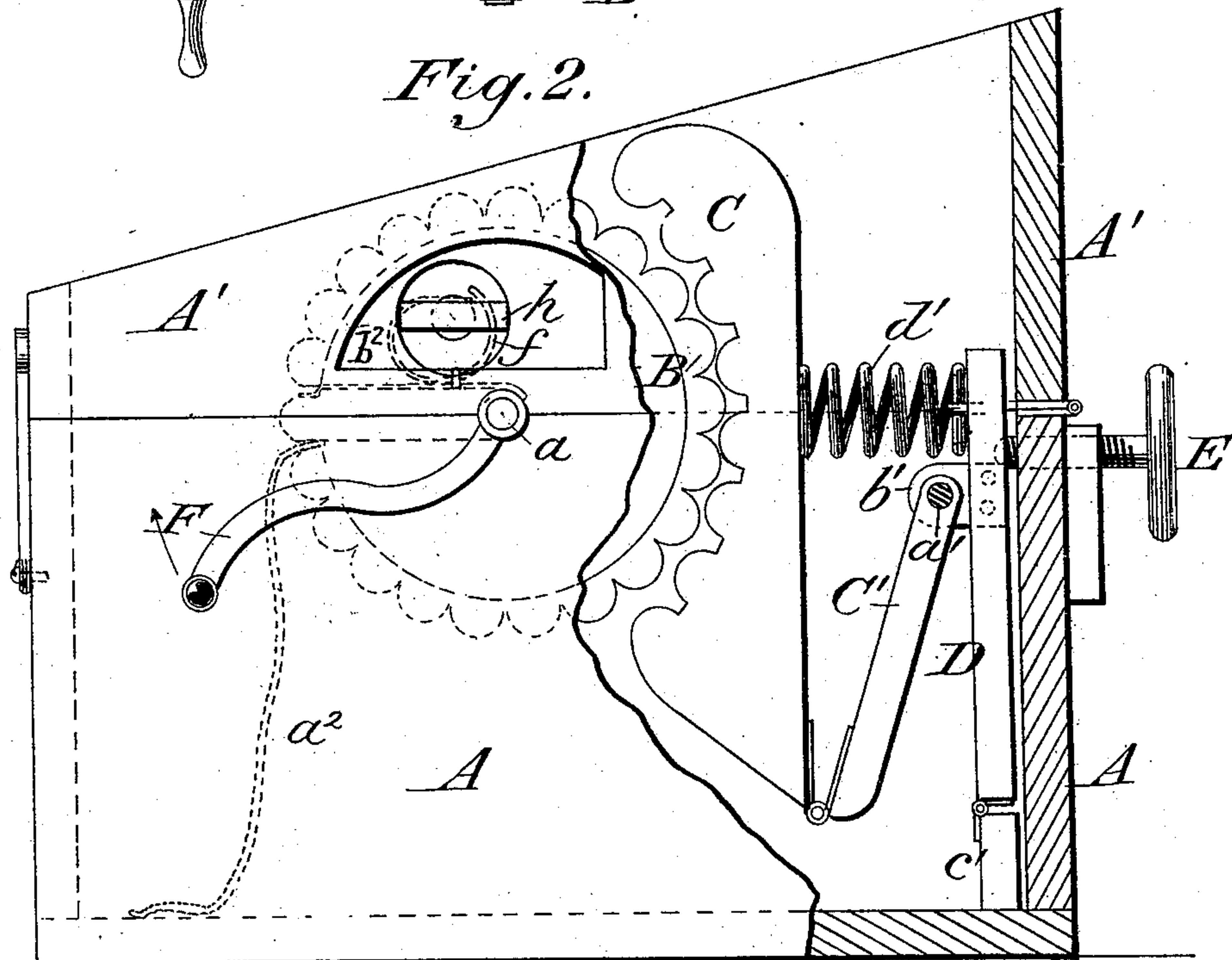


Fig. 2.



Witnesses

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Jas. W. Sears.

Inventor

Nelson D. Fairchild
By his Attorney *W. V. Burris*

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

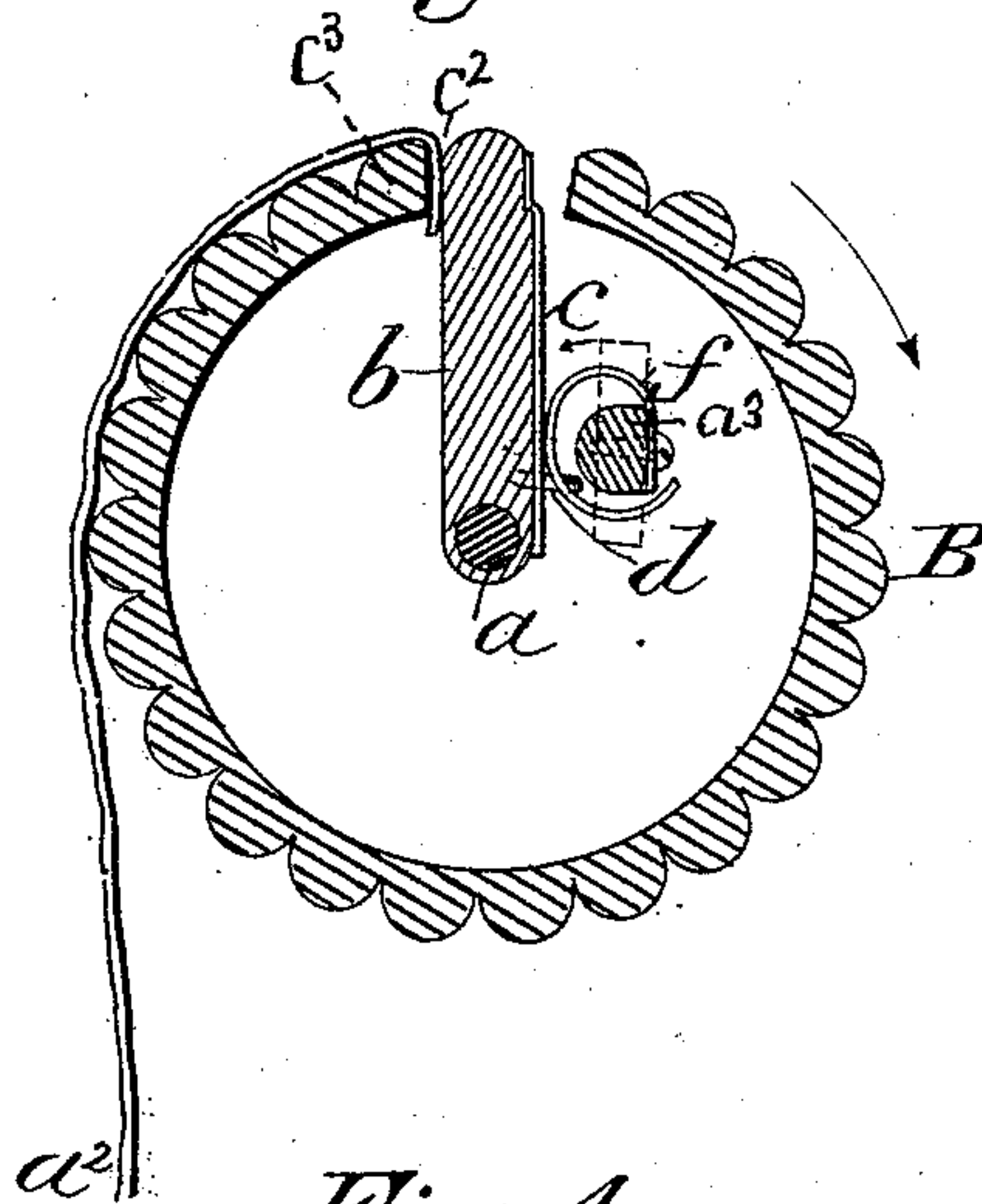


Fig. 4.

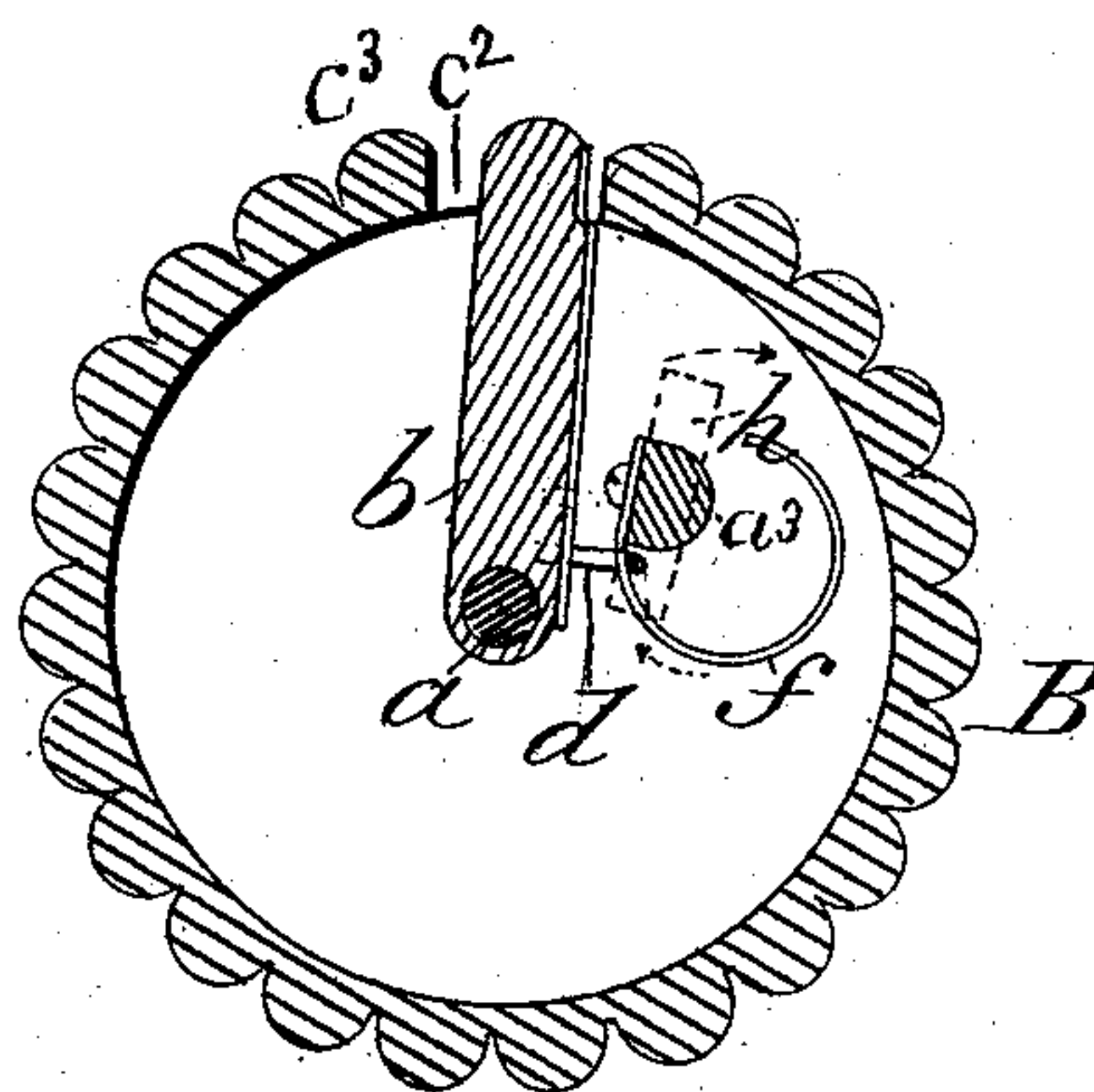
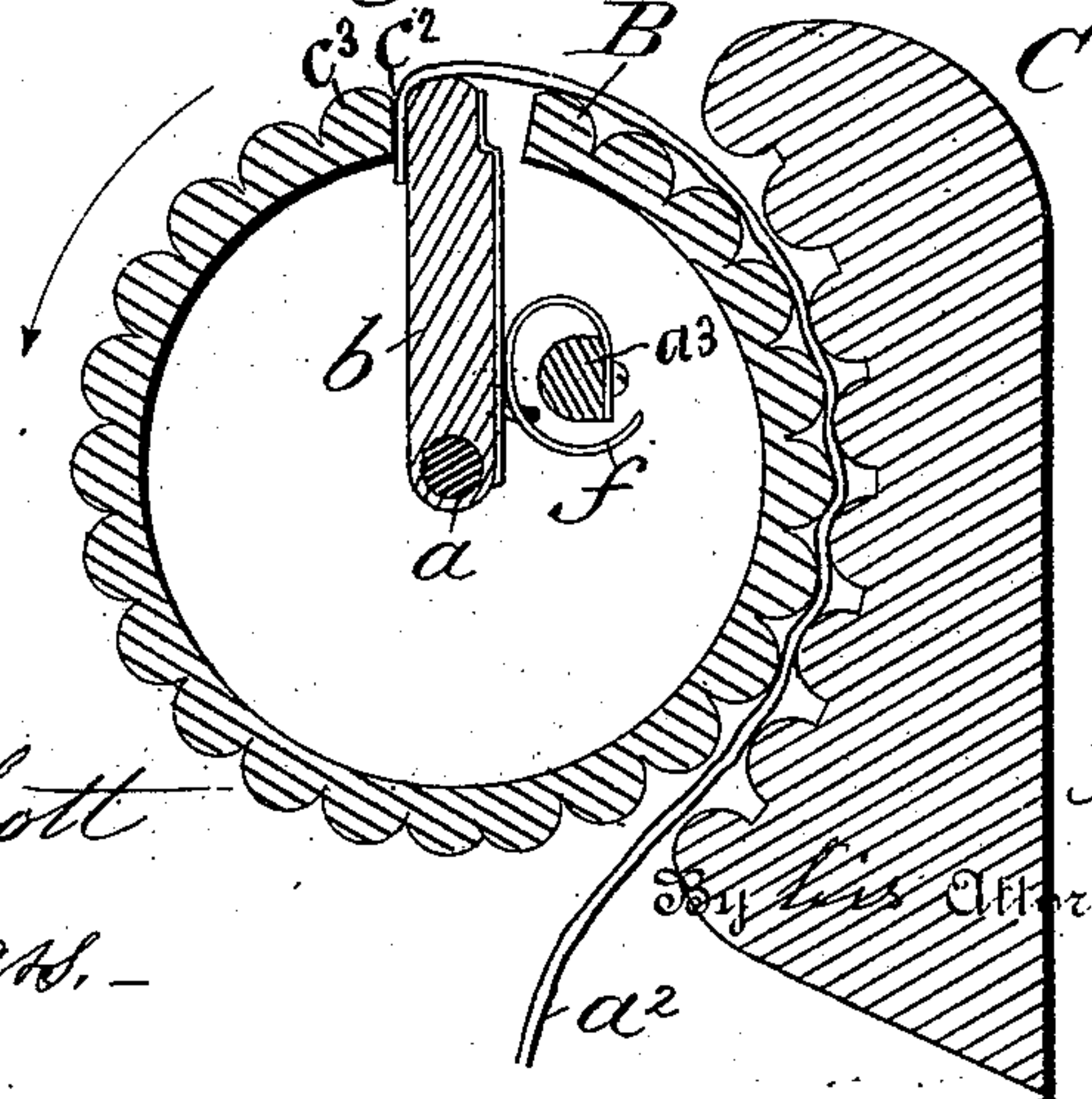


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

NELSON D. FAIRCHILD, OF DU BOIS, PENNSYLVANIA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 362,372, dated May 3, 1887.

Application filed November 4, 1886. Serial No. 217,952. (No model.)

To all whom it may concern:

Be it known that I, NELSON D. FAIRCHILD, a citizen of the United States of America, residing at Du Bois, in the county of Clearfield and State of Pennsylvania, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to washing-machines; and it consists of a ribbed cylinder provided with devices for holding in place the clothes to be washed, in combination with a yielding bed in sections placed transversely to the cylinder, each section being adapted to yield at
15 each end separately and independently of the other sections of the bed, as hereinafter fully set forth and claimed.

In the drawings, Figure 1 is a top view.
20 Fig. 2 is a side elevation with a portion of the casing removed. Fig. 3 is a cross-section of the cylinder, showing the clothes clamped in position. Fig. 4 is a cross section of the cylinder, showing the position of the clamping devices when the clothes are not clamped. Fig.
25 5 is a cross-section showing the clothes reversed on the cylinder.

The casing which forms the tank of the machine is in two sections, A A', hinged together, as shown. This tank may be made any required
30 size, and may be mounted on suitable legs or other supports in the required position.

B designates a ribbed cylinder mounted on a shaft, *a*, having its bearings at the top of the lower section of the casing. This cylinder is
35 provided with a longitudinal slot, *c*², to receive one end or edge of the clothes *a*², and is also provided with any suitable devices for clamping and holding in place the clothes. At present
40 I employ for this purpose an adjustable clamp plate or bar, *b*, hinged to the cylinder-shaft. This clamp-bar is provided with a friction-strip, *e*, and a staple, *d*, in position to receive and hold in place the spring-cam *f*, one end of
45 which is fastened to a shaft, *a*³, which has its bearings in the ends of the cylinder. The free end of the spring-cam is extended through the staple. One end of the shaft *a*³ is provided with a thumb-piece, *h*, for operating by hand
50 the clamping devices.

The bed of the machine is constructed in

separate nearly vertical sections C, placed transversely to the cylinder. The inner faces of these sections are ribbed and concaved transversely, as shown, to conform to the
55 ribbed convex surface of the cylinder, and the lower end of each section is hinged separately to one of the separate bars C', the upper ends of which bars are pivoted separately upon the bar *a*', having its bearings in plates *b*', attached
60 to the presser-board D. The lower edge of this presser-board is hinged to a bar, *e*', which is fastened to the tank-casing. Each section of the bed is provided with a tension-spring, *d*', having its bearings against the back of the
65 section and against the inner side of the presser-board.

E designates a set-screw having threaded bearing through a hole in the back end of the tank-casing, and the inner end of the set-
70 screw impinges against the back of the presser-board, for regulating the pressure of the springs upon the sections of the bed and for adjusting them to the different thicknesses of the clothes to be washed. For example, in washing clothes
75 of ordinary strength and thickness, the set-screw should be set forward so as to produce greater pressure than when fine delicate fabrics are to be washed; and when heavy fabrics and a number of thicknesses of ordinary fabrics are
80 to be run through the machine the set-screw must be turned back to give the required space for such fabrics. Any number of articles or layers of fabrics which will pass between the cylinder and bed without too great
85 friction or pressure upon the springs may be placed upon the cylinder to be washed at the same operation of the machine. Similar clamping devices may be placed at the opposite side of the cylinder for holding at the
90 same time a large number of small articles—such as collars, cuffs, &c.—which extend only partly around the cylinder, and which articles may be washed in the same operation of the machine.

95 Instead of placing the sectional bed in nearly the vertical position, as shown, it may be placed at an angle of forty-five degrees to the plane of the bottom of the tank, or at any other desired position over the cylinder, so
100 that the required pressure upon the cylinder may be produced partly by the weight of the

bed, in which case very light springs only will be required for the purpose of regulating the pressure, as before described.

The cylinder should be mounted so that its lower surface will be from four to six inches from the bottom of the tank, which should be kept supplied with water sufficient to extend from one to three inches above the lower surface of the cylinder. The successful operation of the machine does not depend upon an exact height of the cylinder or quantity of water in the tank.

In operating the machine, the tank being supplied with water, one edge of the clothes is placed in the slot c^2 , between the clamp-plate b and the edge of rib c^3 of the cylinder, the free portion of the clothes extending down in the tank to the left of the cylinder, as shown. The thumb-piece h being then turned to the right, as indicated by the arrows in Fig. 4 of the drawings, causes the spring-cam f to impinge against the friction-plate c on the clamp-bar b , pressing the bar tightly against and firmly holding the edge of the clothes, as shown in Figs. 3 and 5 of the drawings. To release the clothes from the cylinder, the thumb-piece is turned to the left, as indicated by the arrow in Fig. 3, which movement releases the spring-cam from pressure upon the bar b , and by catching against the staple d opens the clamp, as shown in Fig. 4 of the drawings. The clothes being adjusted and clamped in position, as set forth, the crank is turned in the direction indicated by the arrow in Fig. 2 of the drawings. This operation, it will be seen, causes one side only of the clothes to be rubbed by the yielding bed. When this side of the clothes has been cleansed, the cylinder is revolved in the reverse direction, which reverses the position of the clothes, exposing their reverse side to the rubbing process of the yielding bed, as shown in Fig. 5 of the drawings.

The drawings show a machine having a bed

with five sections only; but it is evident that the size and number of these sections may be varied, as desired, without departing from the principle of my invention. These sections of the bed, being constructed and arranged to yield at both ends separately and independently of each other, enable them to adjust themselves to the irregularities in the thicknesses of the clothes and of the surfaces of the cylinder, and enables all portions of the clothes to be subjected to equal pressure and rubbing by the yielding bed, and enables the machine to thoroughly and rapidly cleanse the clothes.

The casing A' is provided with an opening, b^2 , to afford access to the thumb-piece h for adjusting by hand the clamping devices, as set forth.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a washing-machine tank, A , and a revolving cylinder, B , provided with devices adapted to hold the clothes upon the cylinder, of the yielding bed in sections C , placed transversely to the cylinder, each hinged to a separate pivoted bar, C' , the hinged pressure-board D , the tension-springs d' , one of which is placed between each section of the bed and the pressure-board, and the tension-screw E , arranged to regulate the tension upon the sections of the bed, substantially as and for the purposes described.

2. The combination, with the revolving roller B , provided with the longitudinal slot c^2 , of the hinged or pivoted clamp-bar b , the shaft a^3 , provided with the thumb-piece h , and the spring-cam f , attached to the shaft, substantially as and for the purposes described.

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

NELSON D. FAIRCHILD.

Witnesses:

W. C. PENTZ,
GEO. SCHWEM.