

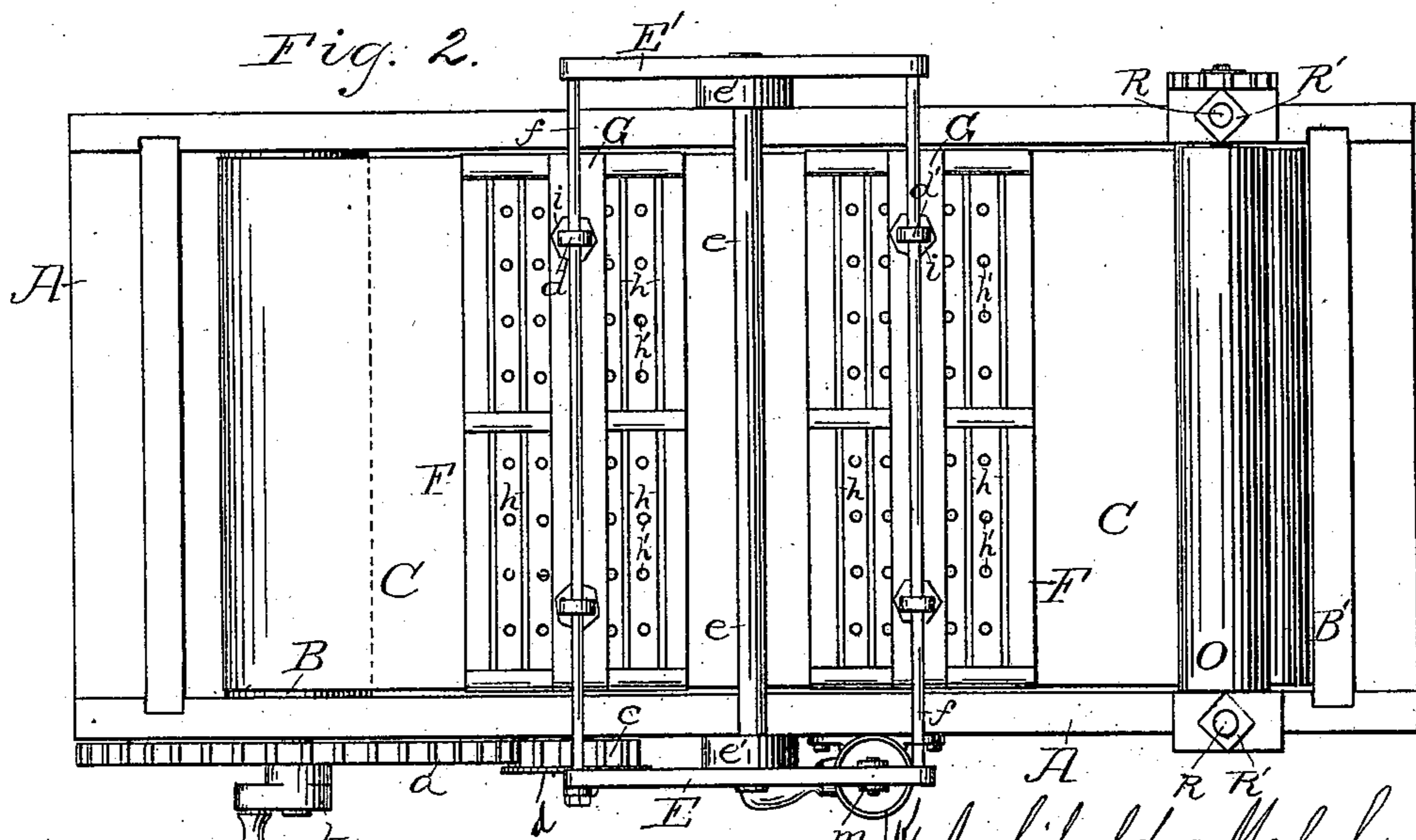
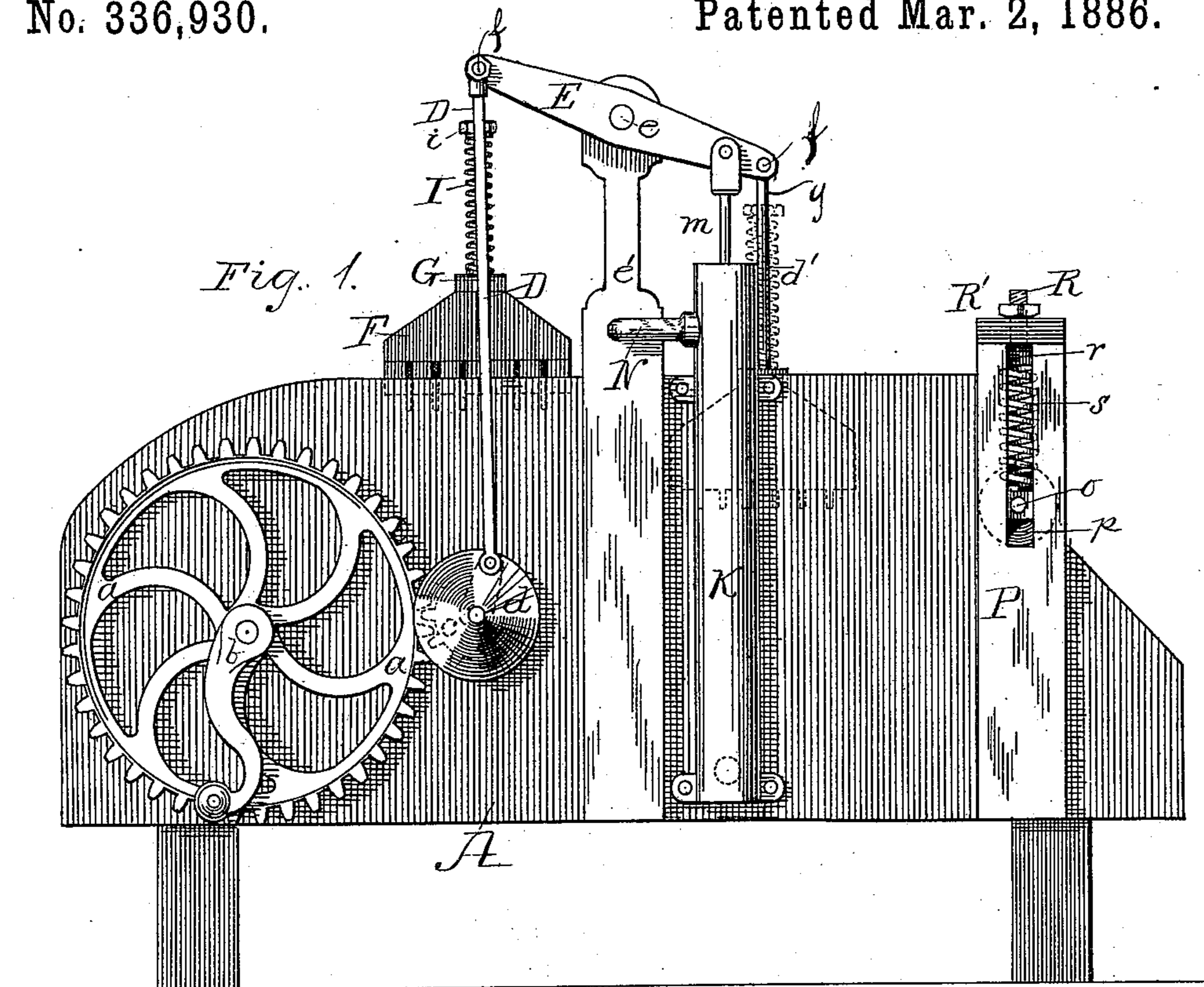
(No Model.)

2 Sheets—Sheet 1.

A. MALCOLM.
WASHING MACHINE.

No. 336,930.

Patented Mar. 2, 1886.



Witnesses:

Edward W. Schirach
H. Thackendoff.

Archibald Malcolm,
Inventor:
by James H. Coyne,
Atty

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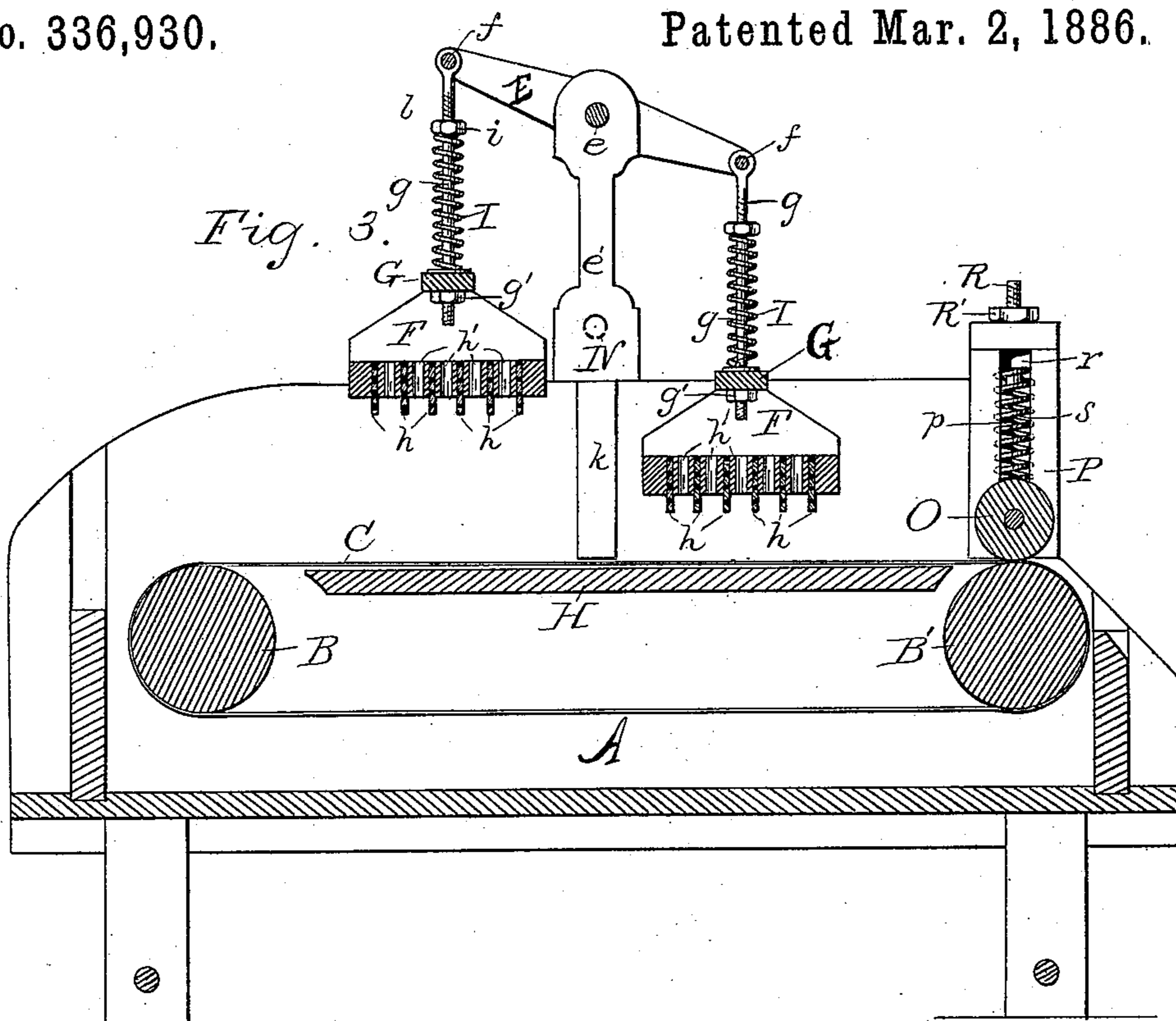
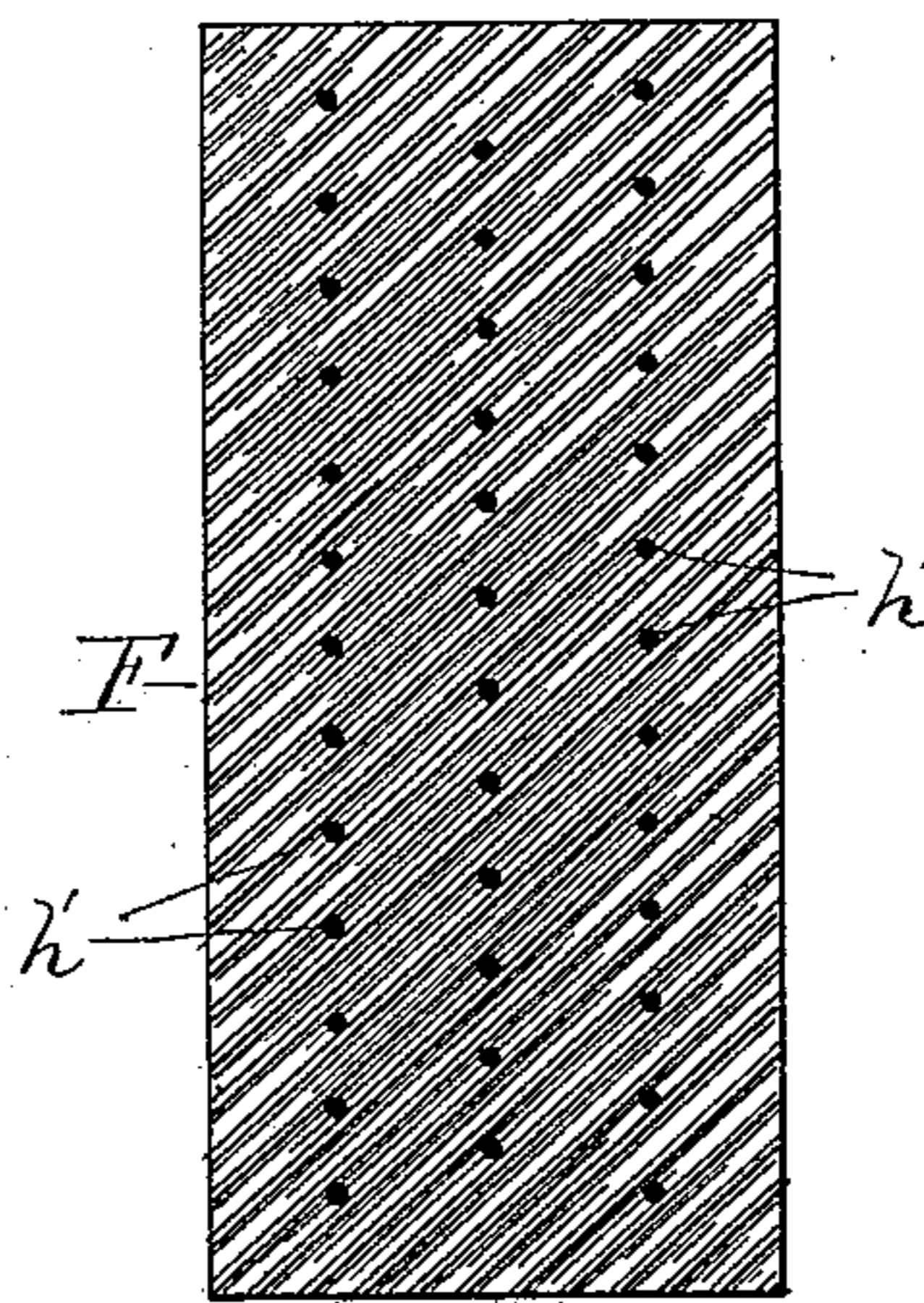
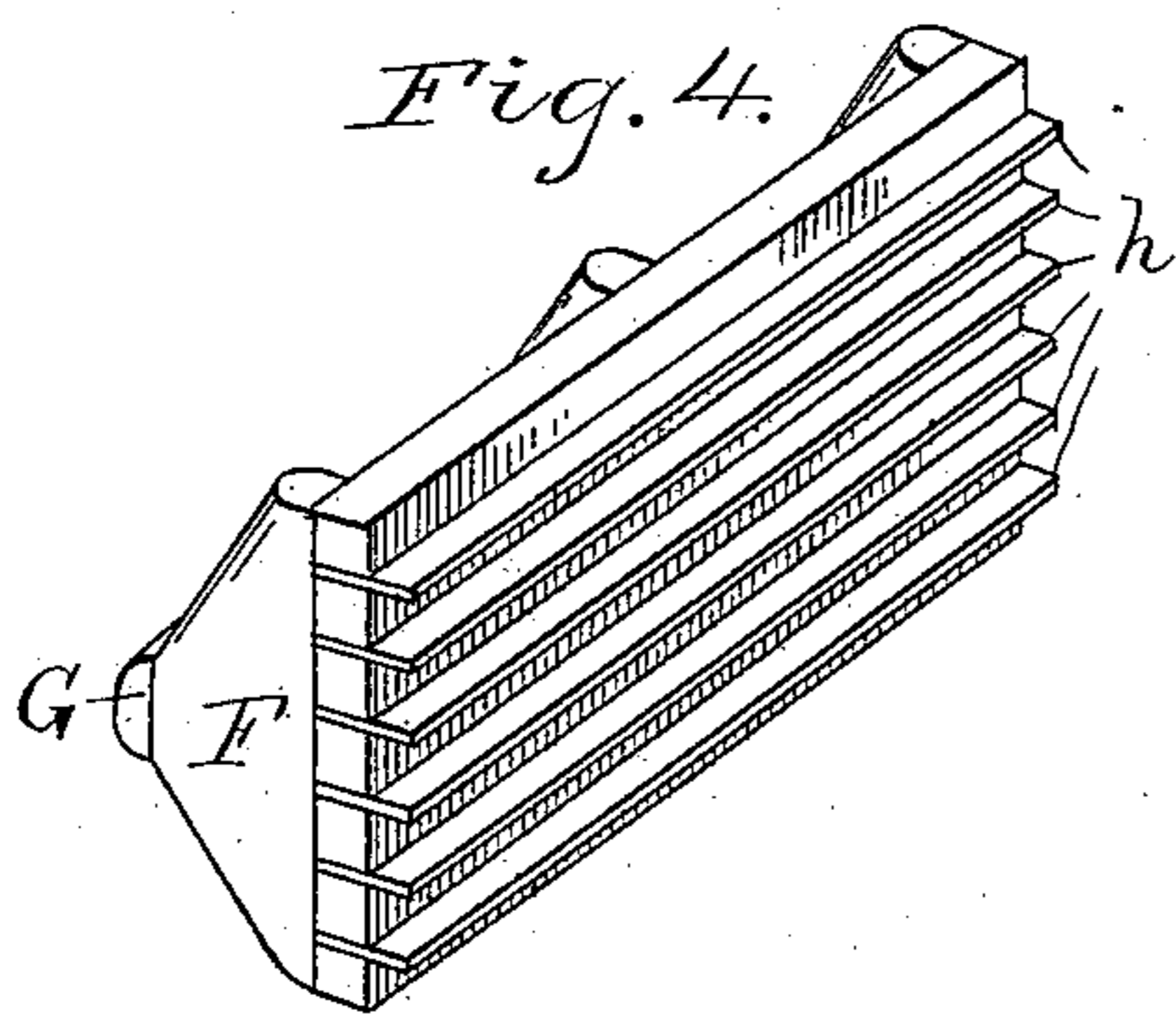


Fig. 5.



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UNITED STATES PATENT OFFICE.

ARCHIBALD MALCOLM, OF CHICAGO, ILLINOIS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 336,930, dated March 2, 1886.

Application filed February 7, 1885. Serial No. 155,213. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD MALCOLM, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of my invention is to furnish a new and improved washing and wringing machine, which is thorough and effective in its work.

In the drawings, Figure 1 is a side elevation of my improved washing-machine. Fig. 2 is a plan view thereof. Fig. 3 is a longitudinal vertical section taken on line *x x*, Fig. 2; and Figs. 4 and 5 are detail views showing, respectively, a perspective view of one of the beaters and a modification thereof.

Reference being had to the drawings, A represents a water-trough, preferably of a rectangular shape. Journaled in the sides a sufficient distance above the bottom and near each end of said trough are rollers B B', which are connected by an endless canvas apron, C. On the end of one of the journals of roller B, which extends through the side of said trough, is a large gear, *a*, and beyond or still nearer the extremity of said journal is a crank, *b*, by means of which the machine may be operated. If it is desired to operate the same by steam-power, a pulley may be substituted for the crank. The large gear *a* meshes with the pinion *c*, which is journaled in the side of the trough on about the same horizontal plane as the large gear *a*. On the outer end of the shaft on which said pinion is fast is a circular plate, *d*, concentric to the pinion-shaft. Near the periphery of this plate, on a stud projecting laterally therefrom, is journaled the lower end of a pitman, D. The upper end of this pitman D is journaled or pivoted to the contiguous end of a walking-beam, E, which is secured at its center of length to a transverse rock-shaft, *e*, journaled in the upper ends of the uprights *e' e'*, which latter are secured to the sides of the trough. On the other end of

this rock-shaft *e* is a beam, E', similar to beam E. The extremities of these beams are connected by the bars *f f*, and from these bars are hung the beaters F F' by means of the rods *g* *g*. These beaters are composed of a flat back, in which are secured and from which extend a series of tongues, *h h*, arranged longitudinally and parallel to each other. The backs of these beaters are also provided with several series of vertical perforations, *h' h'*, through which the air and water gush when the beaters strike the wet clothes.

Arranged transversely at the center of length and at or near the ends of the backs of the beaters, are arranged frames or braces, which are connected on top by a longitudinal frame, G, through which the lower ends of the rods *g g* pass. Nuts *g' g'* are placed on the lower screw-threaded ends of rods *g*, to prevent the beaters from dropping off. These beaters alternately strike the canvas apron C as it slowly travels under them. In order to prevent this apron from sagging and giving way under the blows of the beaters, it is backed up by a platform, H.

In order to prevent a solid blow on the clothes, I arrange on the rods the nuts or collars *i i*, and between them and frame G are placed coil expansion-springs II. Thus when the blow is struck the rods will move vertically downward through the frame G, and then be returned by the expansion of springs I to their normal positions.

In order to prevent the beaters while in rapid operation striking each other, I secure vertical posts *k* midway between them to the inner sides of the trough.

K represents a pump affixed in a vertical position to the outer side of said trough A, parallel to the upright *e'*. The pitman *m*, operating the piston of the pump K, is pivoted near the end of the beam E. This pump draws the suds and water from near the bottom of trough, and discharges the same through the pipe N over the clothes. This pipe N passes laterally through post *e'*, and may either terminate on the inside of the post *e'* and discharge the water in one mass on the clothes, or the pipe may extend clear across the trough and have in it a number of perforations, through which the water is sprinkled over the clothes,

Above the roller B' is a roller, O, preferably of rubber. This roller is journaled in the adjustable bearings o o in the vertical slots p p in the standards P P. Passing vertically into the top of these standards and into the openings or slots p p are the screws R, having a block, r, formed on the lower end. Between these blocks r and the bearings o o within said slots are placed springs s, which bear down on said bearings, and keep the roller O journaled therein always in contact with roller B'. A nut, R', or head is permanently secured to the upper part of said screw, whereby it is operated to increase or decrease the pressure of the spring s on bearings of roller O.

Various alterations may be made in the parts of my machine without departing from the spirit of my invention. For instance, the spring I and rods g may be dispensed with and a C-spring be substituted to support the beaters; or, if desired, the rods g may be used without the springs.

If deemed advisable, instead of depending on friction between rollers B' and O to operate the latter, the two may be connected by gearing, as shown in Fig. 2.

The beating-surface of the beaters may, if desired, be made of corrugated rubber or

other material, and these corrugations be arranged longitudinally, laterally, or obliquely.

What I claim as new is—

1. The combination of an endless apron, C, rollers B B', beaters F, pump K, and means, as described, for actuating said beaters and pump.

2. The combination of the endless apron C, rollers B B', gear a, pinion c, pitman D, beams E and E', pump, and beaters F, said pump and beaters being actuated by said beams, as and for the purpose set forth.

3. In a washing-machine, the combination, with an endless apron, C, of the beams E E', having their extremities connected, the rods g, springs I, and beaters F, having vertical perforations therein.

4. In a washing-machine, a beater having a back provided with vertical perforations, and having a series of longitudinal and parallel elastic tongues projecting downward from its under surface.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

ARCHIBALD MALCOLM.

Witnesses:

JAMES H. COYNE,

FRANK D. THOMASON.