

(No Model.)

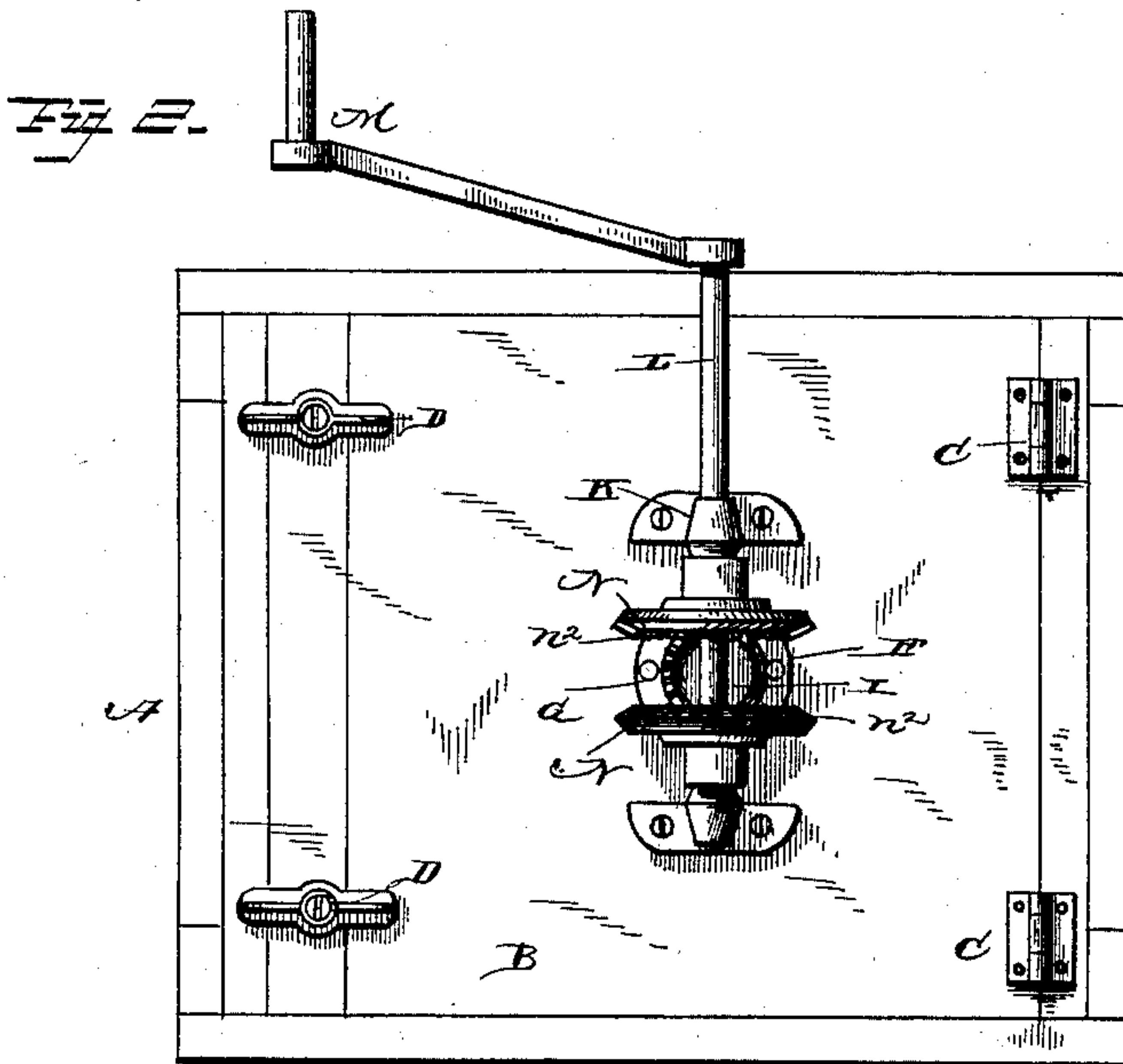
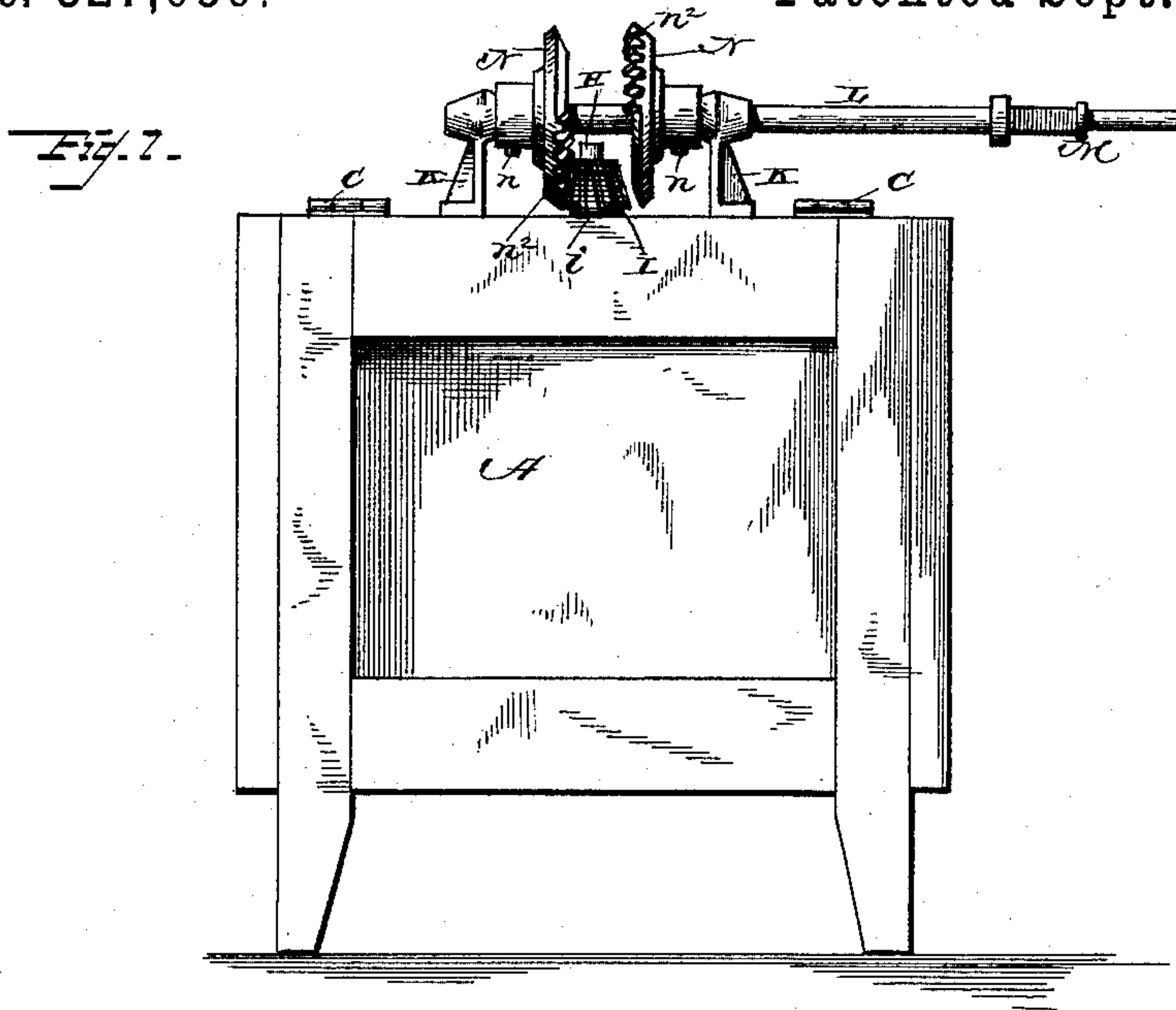
2 Sheets—Sheet 1.

H. C. BARNARD.

WASHING MACHINE.

No. 327,059.

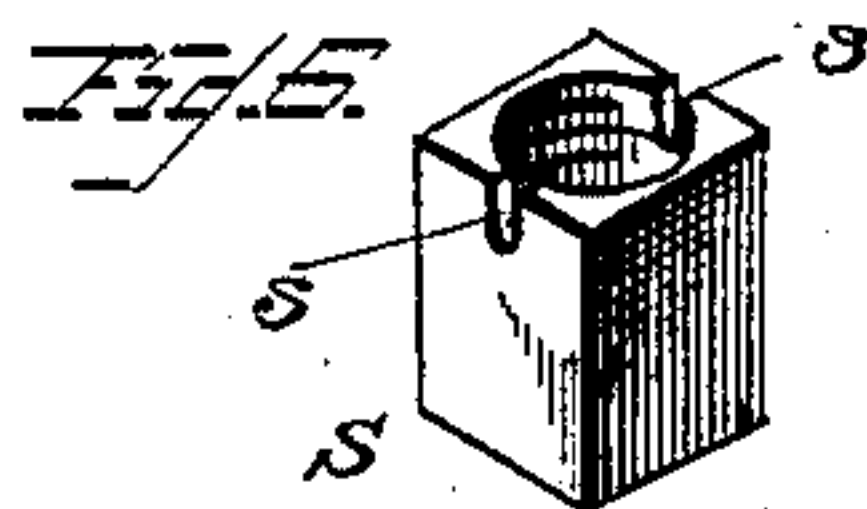
Patented Sept. 29, 1885.



WITNESSES

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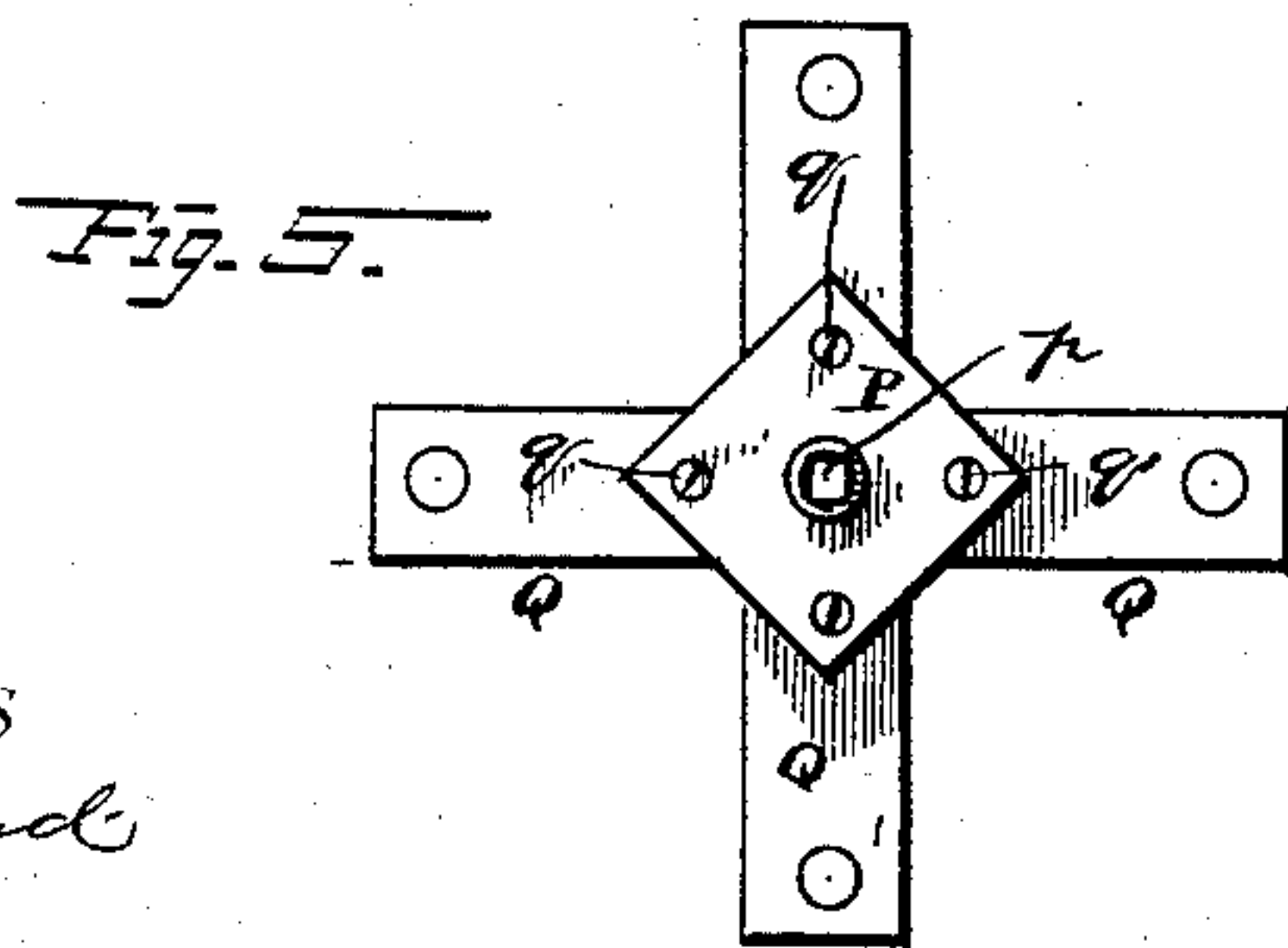
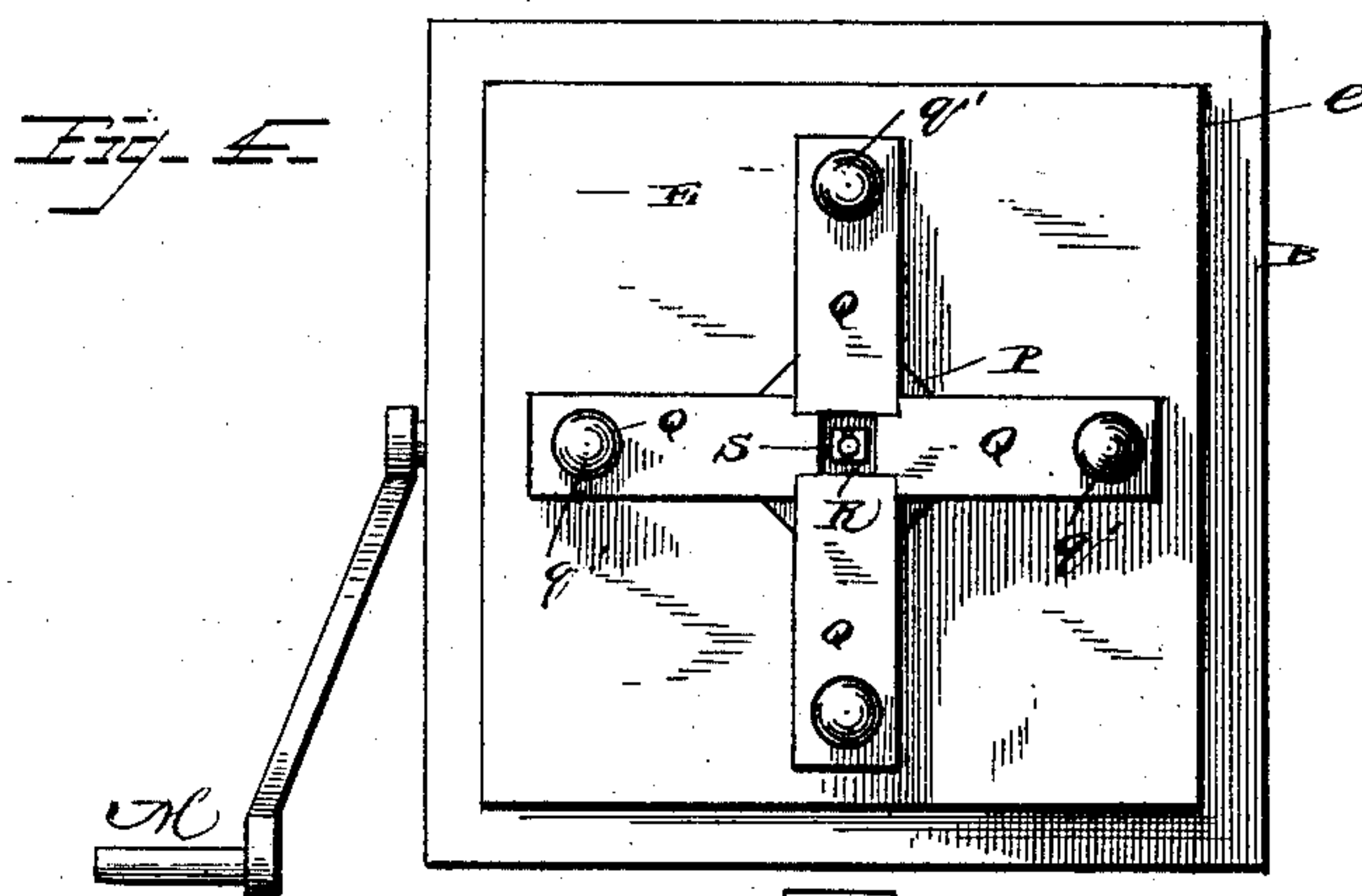
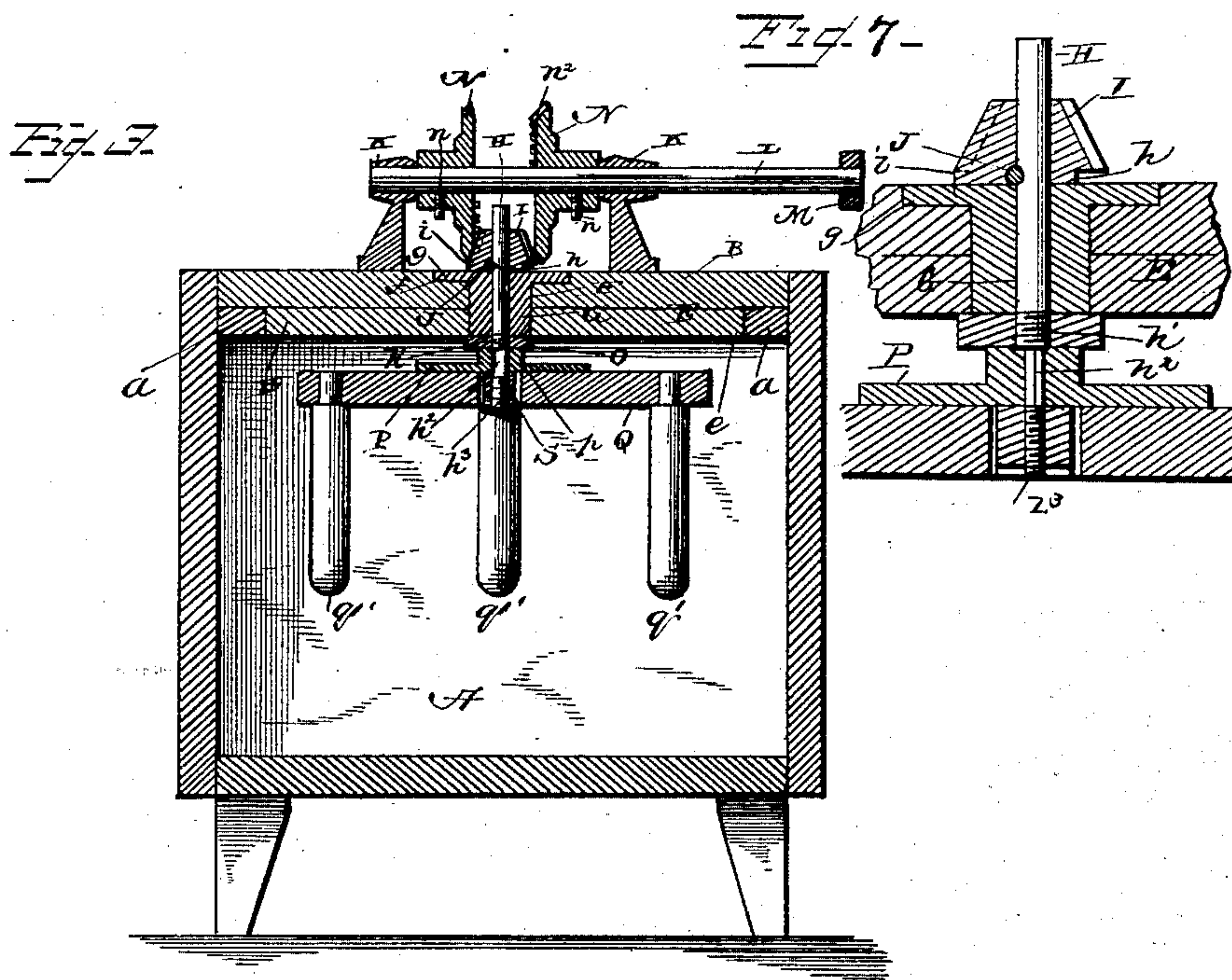
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2 Sheets—Sheet 2.

H. C. BARNARD.
WASHING MACHINE.

No. 327,059.

Patented Sept. 29, 1885.



WITNESSES
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UNITED STATES PATENT OFFICE.

HENRY C. BARNARD, OF CHARLESTON, ILLINOIS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 327,059, dated September 29, 1885.

Application filed April 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. BARNARD, a citizen of the United States, residing at Charleston, in the county of Coles and State of Illinois, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of washing-machines in which an agitator is alternately reciprocated in a rotary direction by means of gear mechanism acting upon the shaft of the agitator.

In the drawings, Figure 1 is a side elevation of a washing-machine embodying my improvements. Fig. 2 is a top view of the same. Fig. 3 is a vertical transverse sectional view thereof. Fig. 4 is an inverted plan view showing the under side of the top or cover with the agitator in position. Fig. 5 is a top or plan view of the agitator. Fig. 6 is a detail perspective view of the nut which secures the agitator to its shaft. Fig. 7 is a detail sectional view.

Corresponding parts in the figures are denoted by the same letters of reference.

Referring to the drawings, A designates the box or body of my improved washing-machine, which may be of any suitable construction, but is preferably rectangular, and is provided with a flange or shoulder, *a*, formed around its top opening and adapted to support the cover or top piece, B. The cover is hinged to the top of the box at one side, as shown at C C, and is adapted to be retained down in position at the other side by means of plates or buttons D D, pivoted to the top of the box A.

A suitable re-enforcing board or plate, E, is secured to the under face of the cover B, which serves to strengthen the said cover and form a shoulder, *e*, which corresponds to the flange *a*, and forms a neat joint therewith.

F is a perforation, which is centrally provided through the cover, and is formed with a circumferential shoulder, *f*, at its top. This perforation receives a corresponding tubular bearing-piece, G, which extends to the under side of the cover, and is provided with an annular top flange, *g*, which is received by the

shoulder *f*, and serves to secure the bearing-piece in position.

H designates the agitator-shaft, which projects through the bearing-piece G, and has its bearing therein. At the top end of this shaft is fixed a horizontal pinion, I, that is preferably keyed upon the said shaft by means of a transverse pin, J, passing through the hub of the pinion under its teeth and through a groove, *h*, in the face of the shaft. The teeth of the pinion are preferably extended down over its hub portion, as shown at *i*, at the side through which the pin J passes, to strengthen the pinion and prevent accidental breaking of the same by the jar of its operating-gear.

Two upright standards, K K, are secured upon the cover on the same transverse plane and at opposite sides of the pinion I, in which are provided bearings for a transverse horizontal rotary shaft, L, having an operating crank or handle, M, at its end.

On the shaft L are secured two disks, N N, by means of set-screws *n n*, these disks being arranged to be on opposite sides of the pinion I, and each having a segmental series of teeth, *n*², on their inner faces. The disks N N are adjusted upon their shaft in such a manner that the smooth portion of the face of one disk will be opposite the toothed portion of the face of the other disk, whereby when one of these vertical disks is in engagement with the horizontal pinion the other will be out of engagement. By this arrangement of gears it will be obvious that as the shaft L is rotated and carries the vertical semi-toothed disks the teeth upon the said disks will alternately engage with the pinion and will reciprocate the same in a rotary direction as the shaft and vertical disks move upon their continuous rotary movement.

Preferably about one-half of the inner faces of the disks N N are provided with teeth, and by means of the set-screws *n n* the said disks can, when desired, be adjusted to and from the pinion; or they may be adjusted in a rotary direction to regulate the relative positions of the teeth upon the two disks.

Upon the screw-threaded portion *h'* of the shaft H a nut, O, is adjusted up against the lower end of the bearing-piece to assist in retaining the shaft from vertical displacement.

Below this nut the shaft is provided with a shoulder, as shown in Fig. 7, and rectangular portion h^2 , which receives the correspondingly-rectangular opening in the head p of a plate, 5 P, which carries the agitator-arms. The arms Q are secured to the under face of the said plate by means of screws q or other suitable fastening devices, and they extend radially, and are provided at their outer ends with the 10 fingers q' . The inner ends of the arms Q do not extend entirely to the shaft, so that an open space, R, is formed to accommodate a nut, S, which is adjusted upon the projecting screw-threaded end h^3 of the shaft to retain the 15 agitator upon the latter. This nut is provided with a transverse groove, s , so that it may be engaged with a screw-driver to effect its adjustment in the space R.

The operation and advantages of my invention will be readily understood from the foregoing description, and annexed drawings. It is simple and inexpensive in construction, and may be readily governed and operated with a comparatively small expenditure of power.

25 I claim as my invention—

1. As an improvement in washing-machines, the combination, with the cover having the bearing-piece set therein, of the agitator-shaft passing through said bearing-piece and com- 30 prising the screw-threaded portion h' , the shoul-

der and rectangular portion h^2 , and the projecting screw-threaded end h^3 , the operating-pinion, the main horizontal operating-shaft, vertical disks provided with a segmental series of teeth upon their inner faces, the set-screws 35 for adjusting the disks, and the agitator comprising the head-plate having the head p set upon the portion h^2 , and having the radial arm disposed to form the central space, R, and the grooved nut, substantially as set forth. 40

2. As an improvement in washing-machines, the combination of the bearing-piece, the agitator-shaft passing through the same and comprising the screw-threaded portion h' , the 45 shoulder and rectangular portion h^2 , and the projecting screw-threaded end h^3 , the operating-pinion, the retaining-nut set upon the portion h' , the agitator comprising the head-plate having the head p set upon the portion h^2 , and having the radial arms disposed to form 50 the central space, R, between their adjoining ends, and the grooved nut set within this space upon the end h^3 , substantially as and for the purpose set forth.

In testimony whereof I affix my signature in 55 presence of two witnesses.

HENRY C. BARNARD.

Witnesses:

J. C. ROBERTSON,
J. W. NEAL.