

(No Model.)

B. H. WELLS.
PUMP PISTON.

No. 410,867.

Patented Sept. 10, 1889.

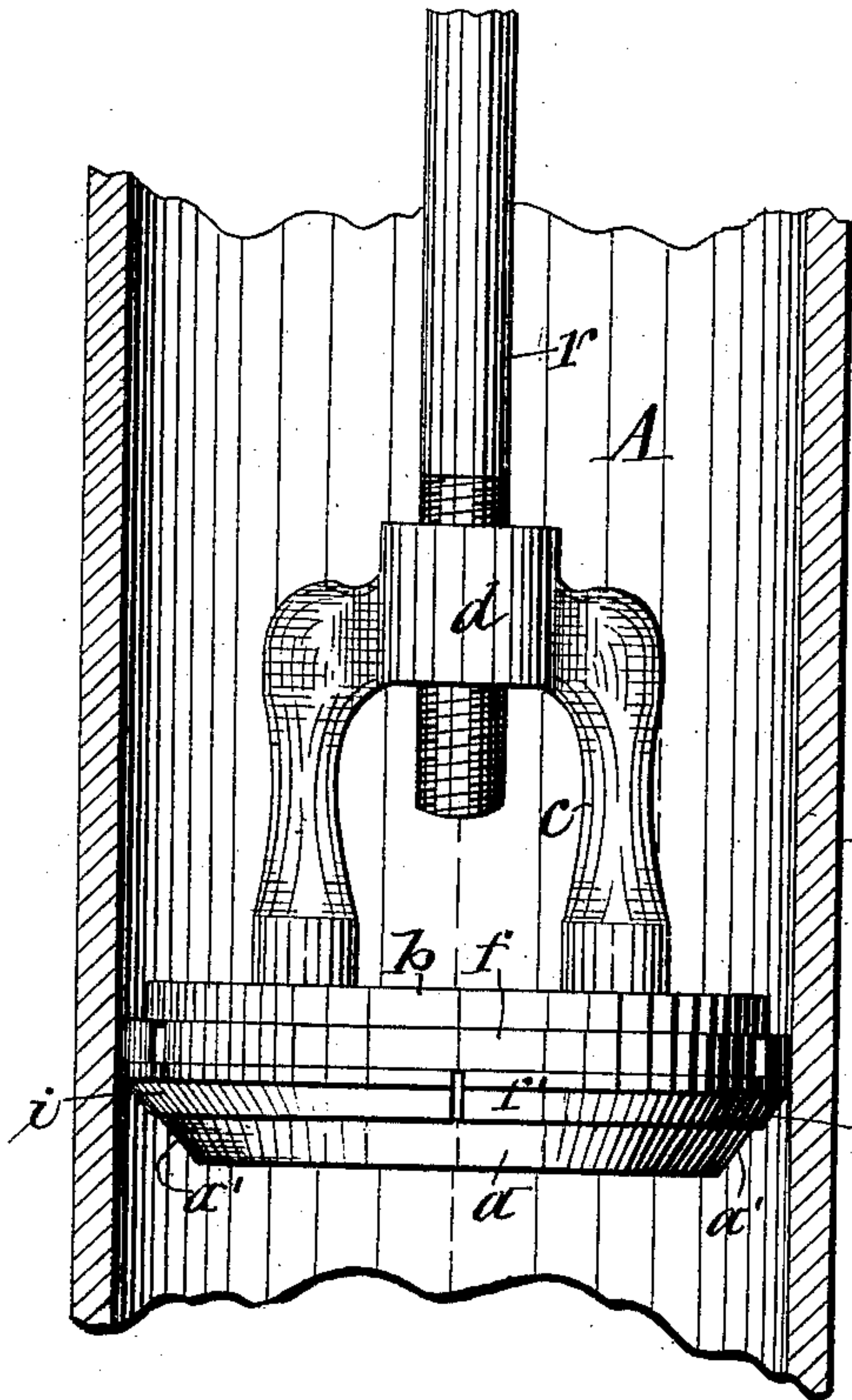


Fig. 1

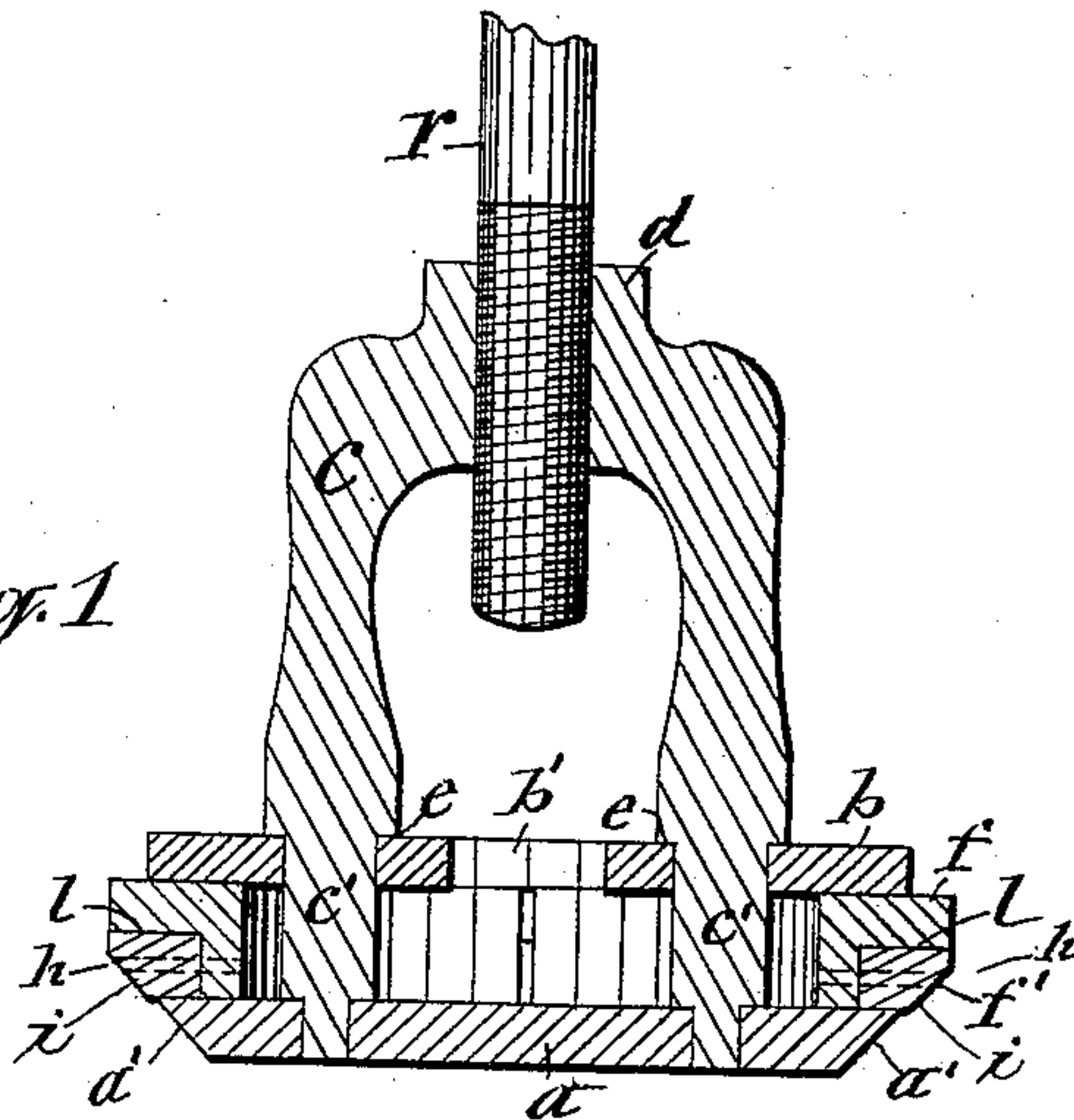


Fig. 3

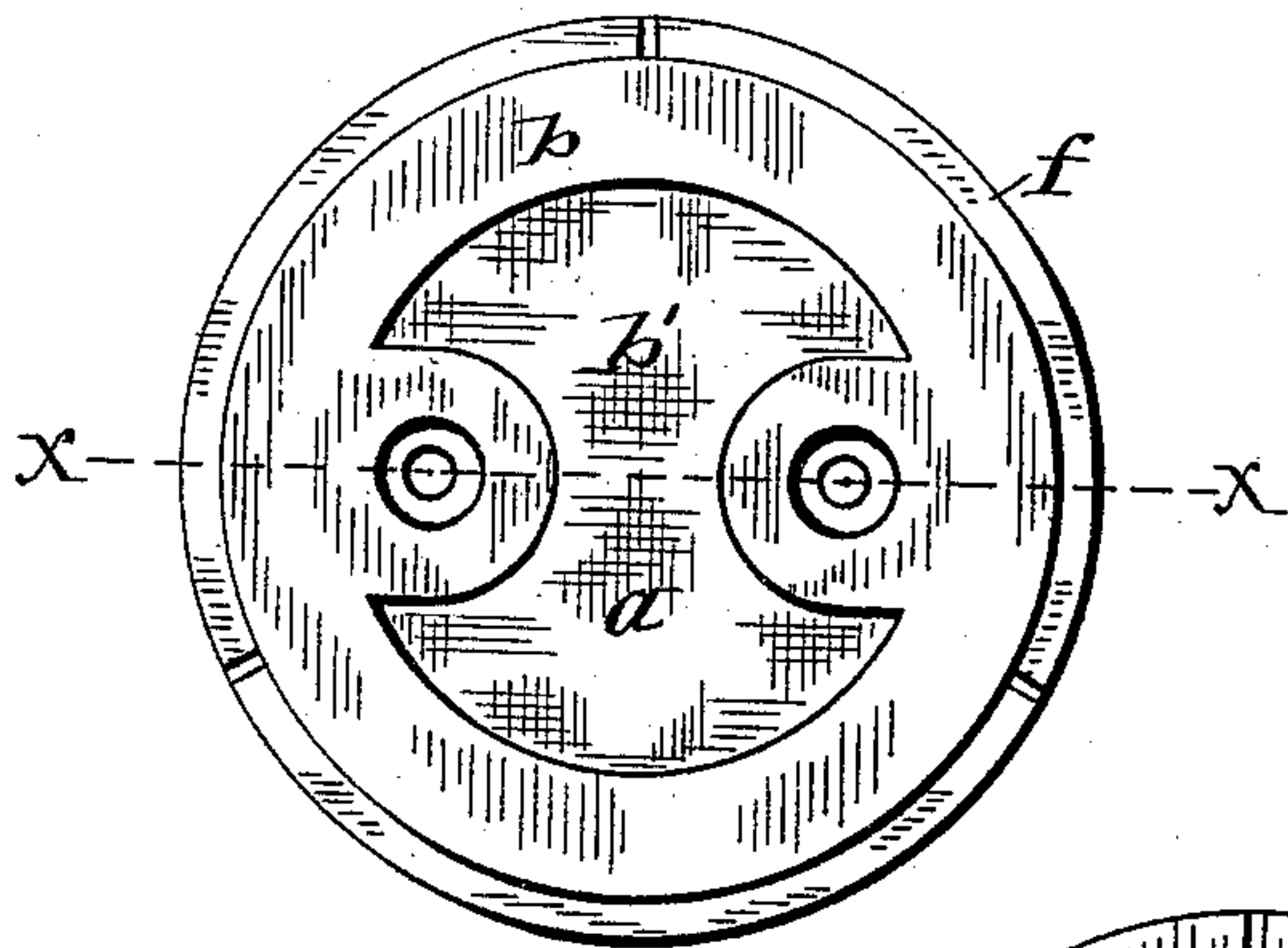


Fig. 2

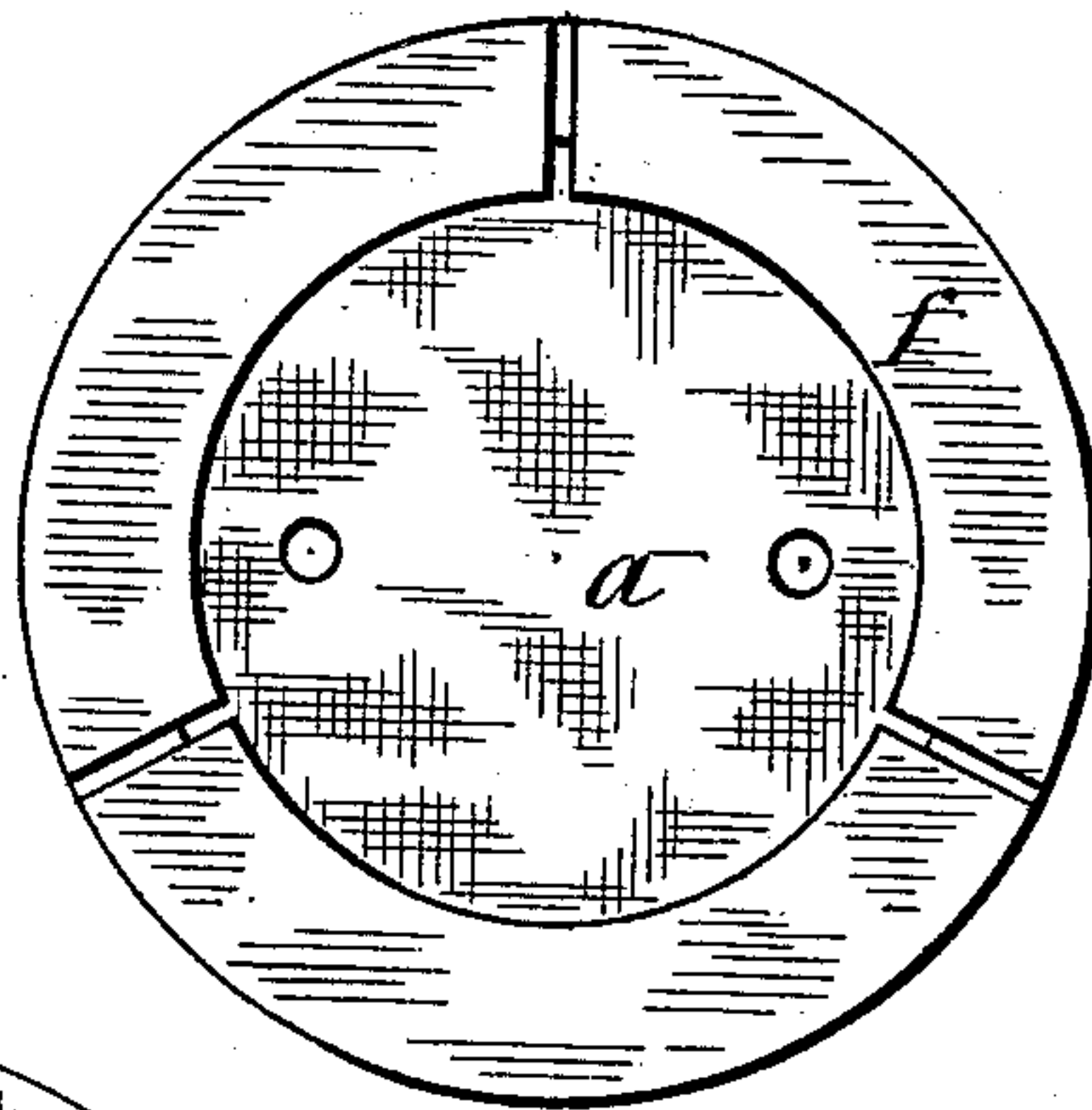


Fig. 4

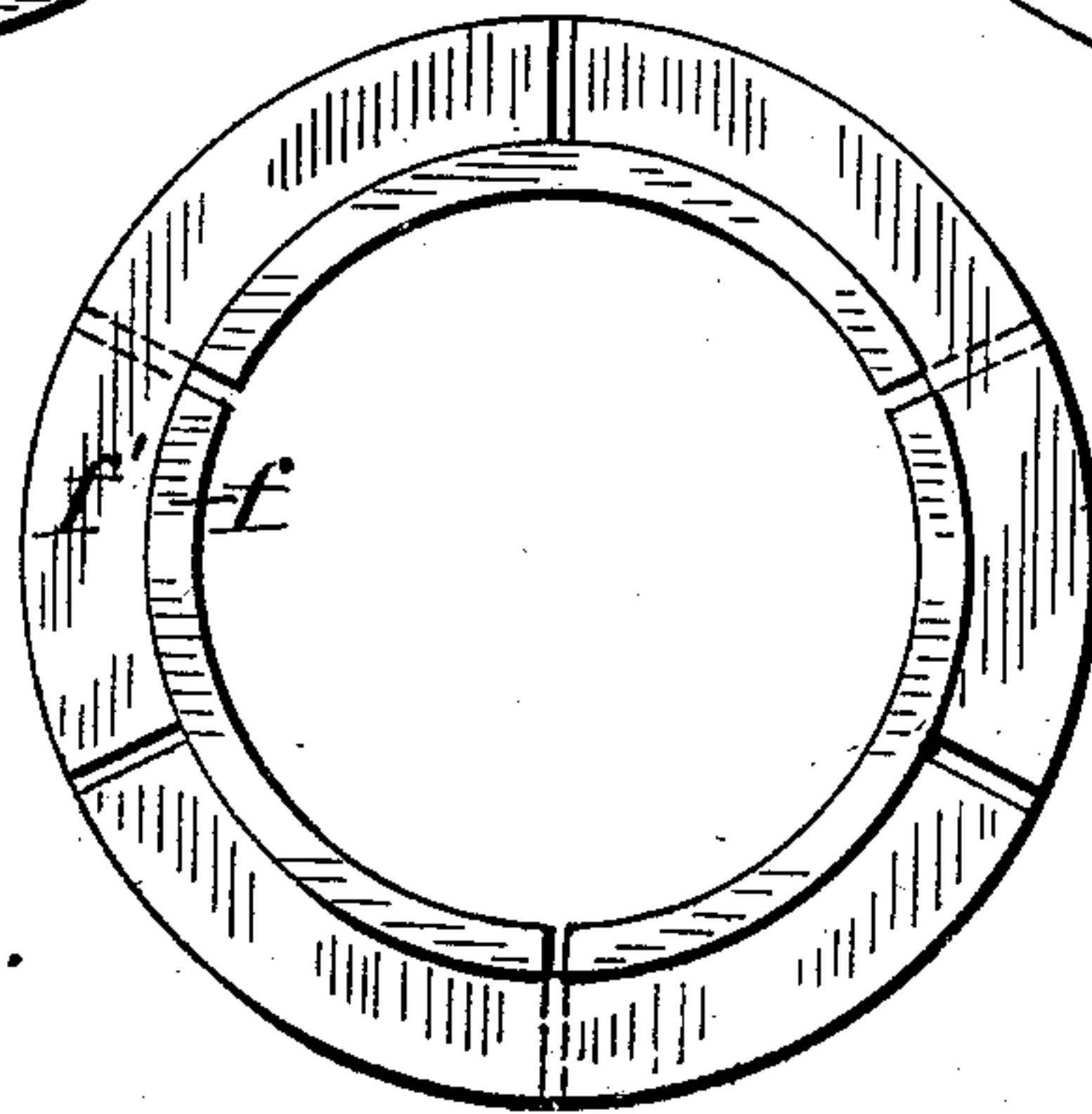


Fig. 5

WITNESSES:

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UNITED STATES PATENT OFFICE.

BURTON H. WELLS, OF ONEIDA, NEW YORK, ASSIGNOR OF ONE-HALF TO
EDWARD B. FRENCH, OF SAME PLACE.

PUMP-PISTON.

SPECIFICATION forming part of Letters Patent No. 410,867, dated September 10, 1889.

Application filed March 20, 1889. Serial No. 304,038. (No model.)

To all whom it may concern:

Be it known that I, BURTON H. WELLS, of Oneida, in the county of Madison, in the State of New York, have invented new and useful
5 Improvements in Pump-Pistons, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to a piston designed
15 to be attached to the plunger-rod of a suction or lift pump, and which dispenses with the valve usually connected to said rod.

The invention consists, essentially, of diametrically expansible and contractible rings
15 sustained concentrically on the piston-head, as hereinafter fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a longitudinal section of a portion of a pipe or barrel of a pump inclosing my improved piston.
20 Fig. 2 is a top plan view of said piston minus the yoke by which it is attached to the rod.
Fig. 3 is a vertical transverse section on line $x x$, Fig. 2, with the yoke attached to the piston.
25 Fig. 4 is a detached top plan view of the piston minus the follower and yoke, and Fig. 5 is an inverted plan view of the expansible and contractible rings.

Similar letters of reference indicate corresponding parts.

A represents the pipe or barrel of a suction or lift pump in which my improved piston is used. Said piston is composed of a piston-head a , which is of the form of a solid annular
35 metal plate of a sufficiently smaller diameter than the interior of the pump pipe or barrel to leave sufficient space between the peripheries thereof to allow water to pass upward through said space, and in order to facilitate said passage of the water I bevel the bottom edge of
40 said piston-head, as shown at a' .

A follower b of the form of an annular plate, also of considerably smaller diameter than the interior of the pipe, or of about the same diameter as the piston-head and formed with a
45 central opening b' , is connected to the piston-head by a suitable yoke c , which is formed with shanks $c' c'$, passing through perforations in the follower and riveted or otherwise firmly
50 secured to the piston-head. Shoulders $e e$ on

the yoke-bearing on top of the follower serve to retain the latter at a uniform distance from the piston-head. The yoke is formed with an eye d central over the piston, to which eye the pump-rod r is connected in any suitable manner.
55

Between the piston-head and follower are seated, movably radially, two rings f and f' , which are divided into segments, and are seated one upon the other, with the joints of
60 one intermediate of those of the other, or, in other words, so as to break joints. I preferably form the upper ring f with a circumferential rabbet l in the exterior portion of its under side, and in said rabbet I seat the ring
65 f' , which is of a size and shape in cross-section corresponding to that of the rabbet, as shown in Fig. 3 of the drawings, and has its bottom edge beveled, as shown at i , for the
70 purpose of being wedged inward by the pressure of the water during the downward stroke of the piston. In order to prevent the rings from shifting circumferentially one upon the other, I connect to the segments of one of the rings
75 dowel-pins $h h$, which project radially therefrom and fit loosely in holes in the segments of the other ring, said dowel-pins being represented by dotted lines in Fig. 3 of the drawings.

The operation of my improved pump-piston
80 is as follows: In the downward stroke of the piston the water is forced toward the periphery of the piston and up between the latter and side of the pipe or barrel A, and the pressure of the water in the latter passage crowds
85 the segments of the rings $f f'$ inward, or toward the center of the piston, and thereby forms around the piston a space which allows the water to freely pass upward and over the top of the piston. In the upward stroke of
90 the piston the water above the same, entering the opening b' of the follower, expands the rings $f f'$, so as to effectually close the passage between the periphery of the piston and
95 side of the pipe or barrel A, and thus causes the superincumbent water to be lifted with the piston.

A pump equipped with the described piston is more effective and more durable than those which are provided with the usual valve.
100

What I claim as new is--

In combination with a pump barrel or pipe,
a pump-piston composed of a solid piston-
head formed with a water-passage between its
5 periphery and inside of said barrel or pipe
and having the edge of its underside beveled,
a follower secured to said piston-head and
formed with a similar water-passage at its pe-
riphery and with an opening in its center, a
10 ring formed with a circumferential rabbet and
divided into segments seated movably radially
between the piston-head and follower, and a

ring also divided into segments seated mov-
ably radially in the aforesaid rabbet and
breaking joints with the same, the lower of 15
said rings having its bottom edge beveled,
substantially as described and shown.

In testimony whereof I have hereunto
signed my name this 18th day of March, 1889.

BURTON H. WELLS. [L. S.]

Witnesses:

EDW. F. HASKELL,
F. H. BROWNELL.