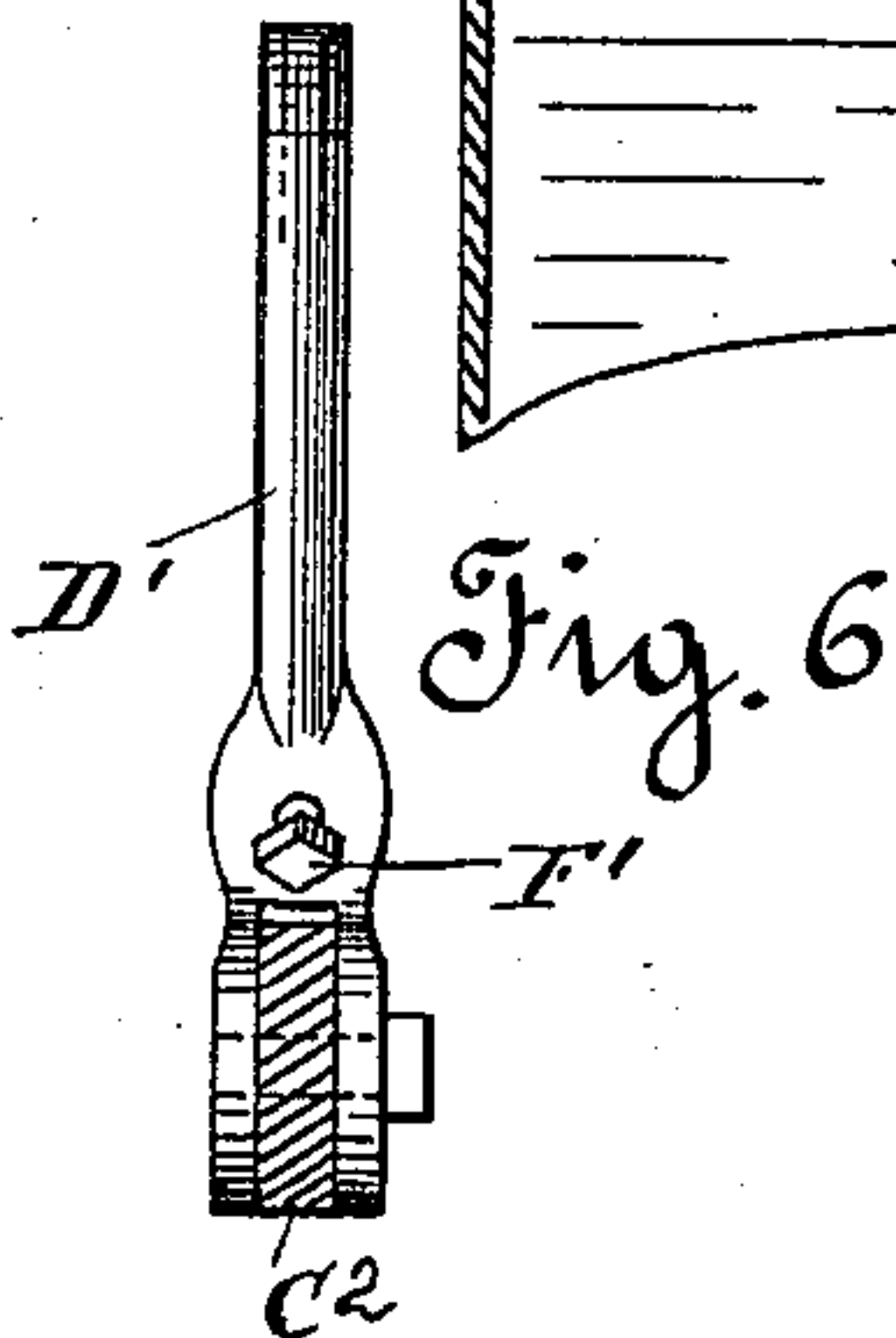
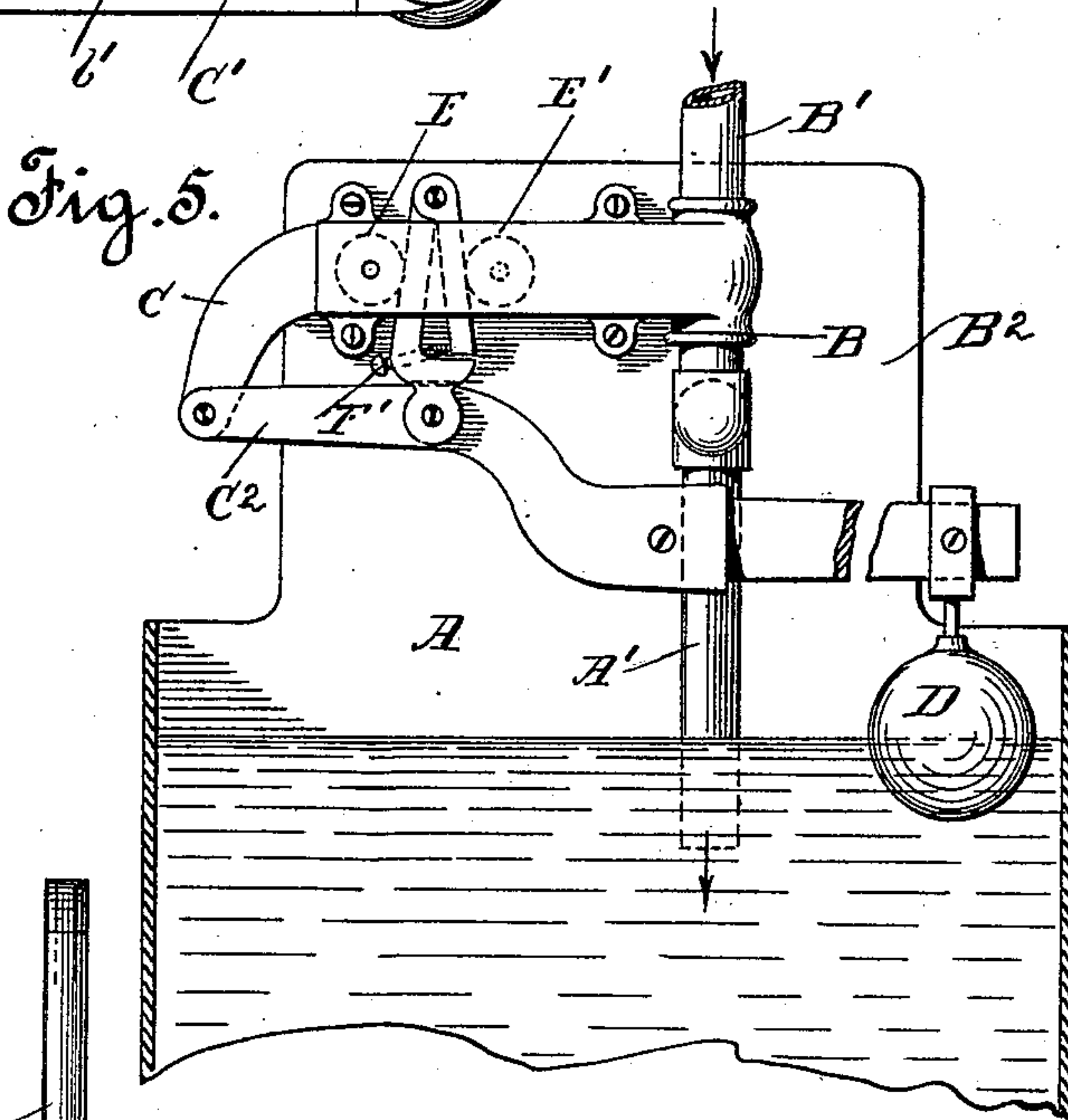
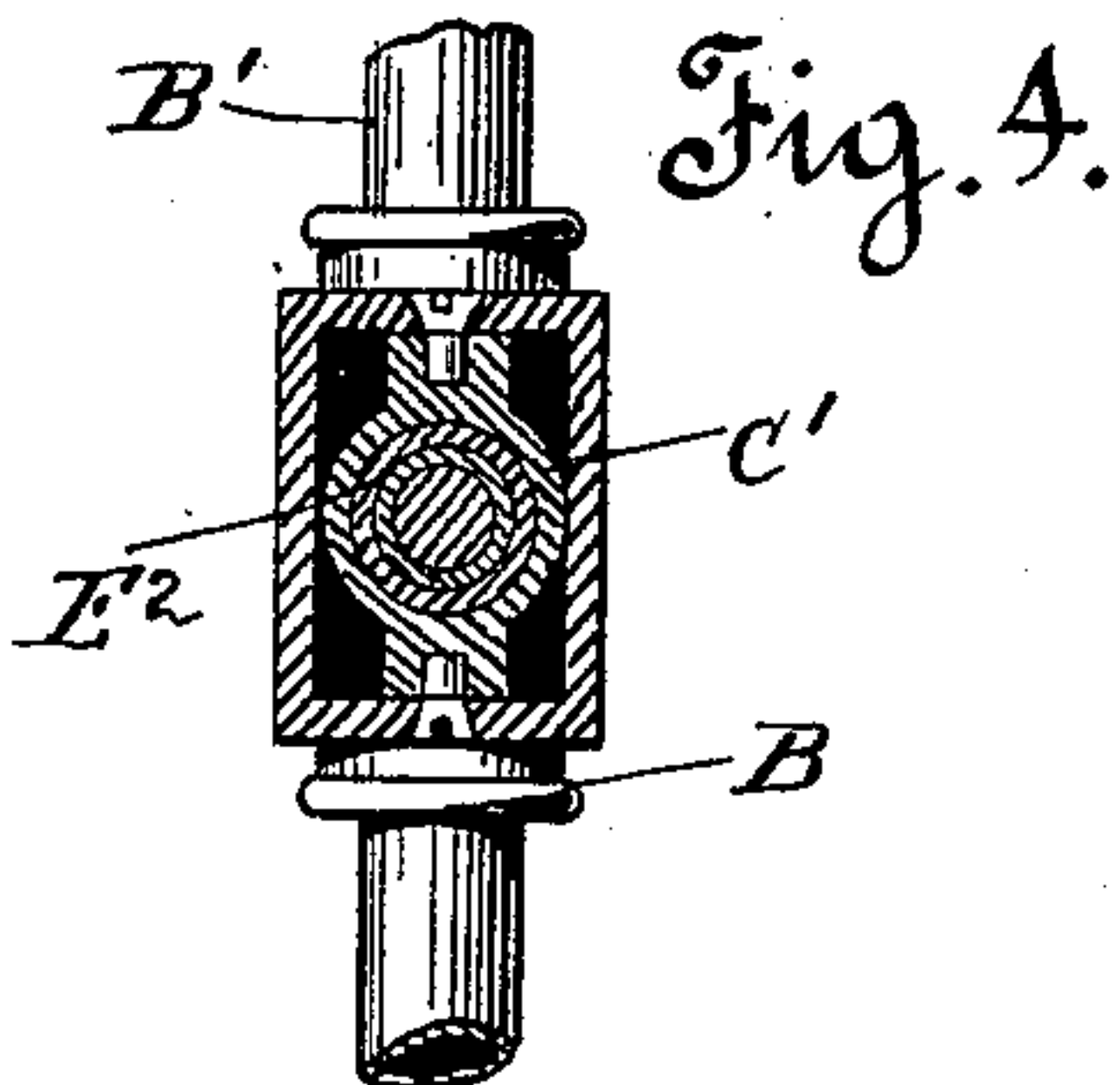
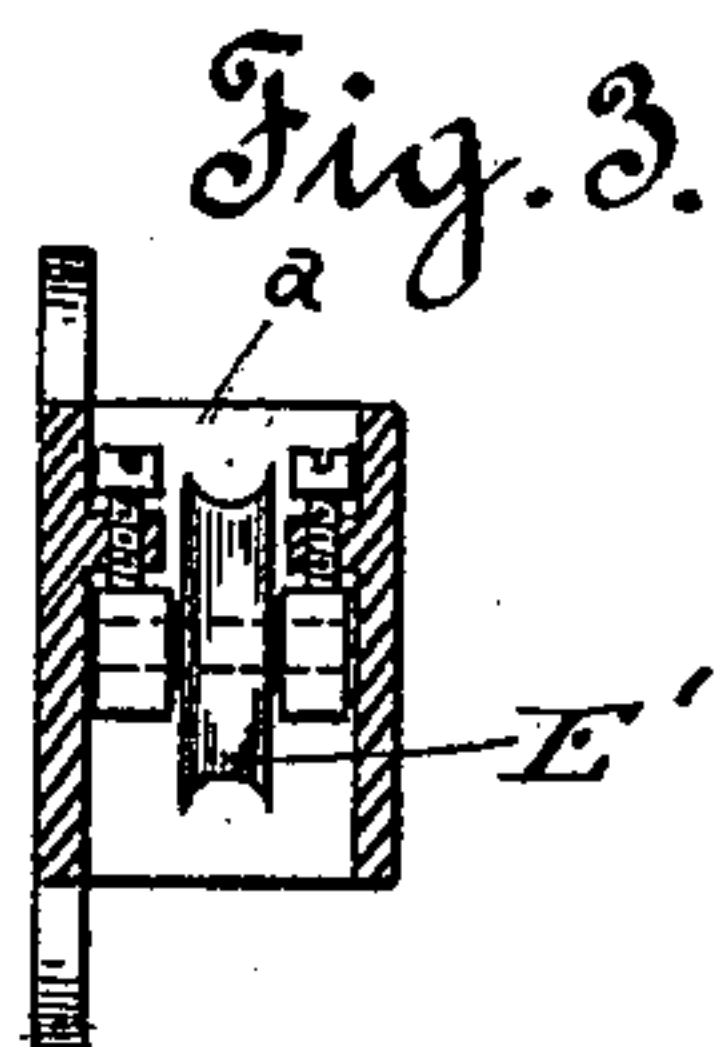
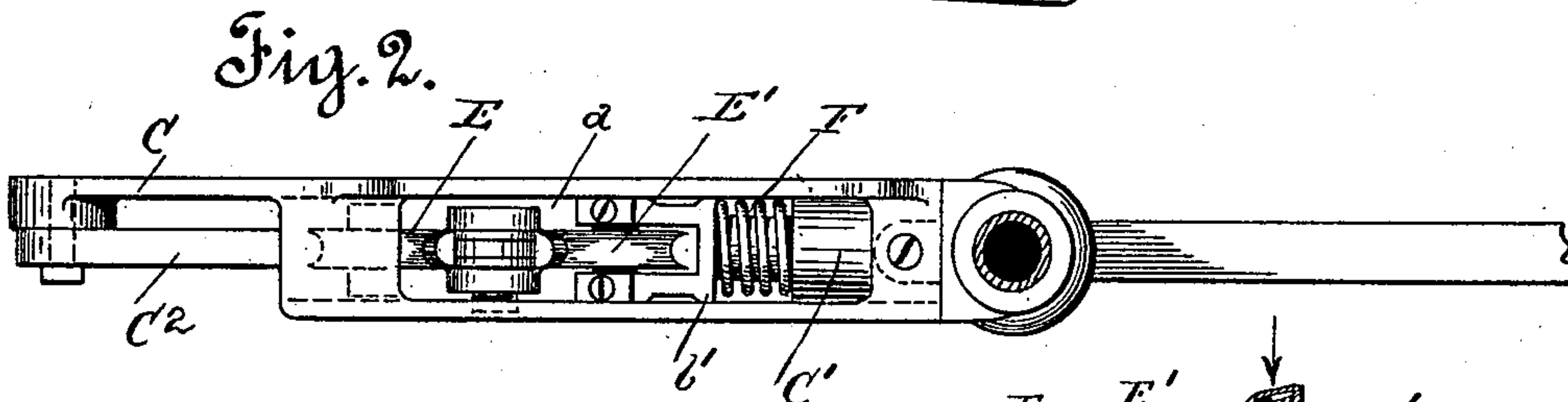
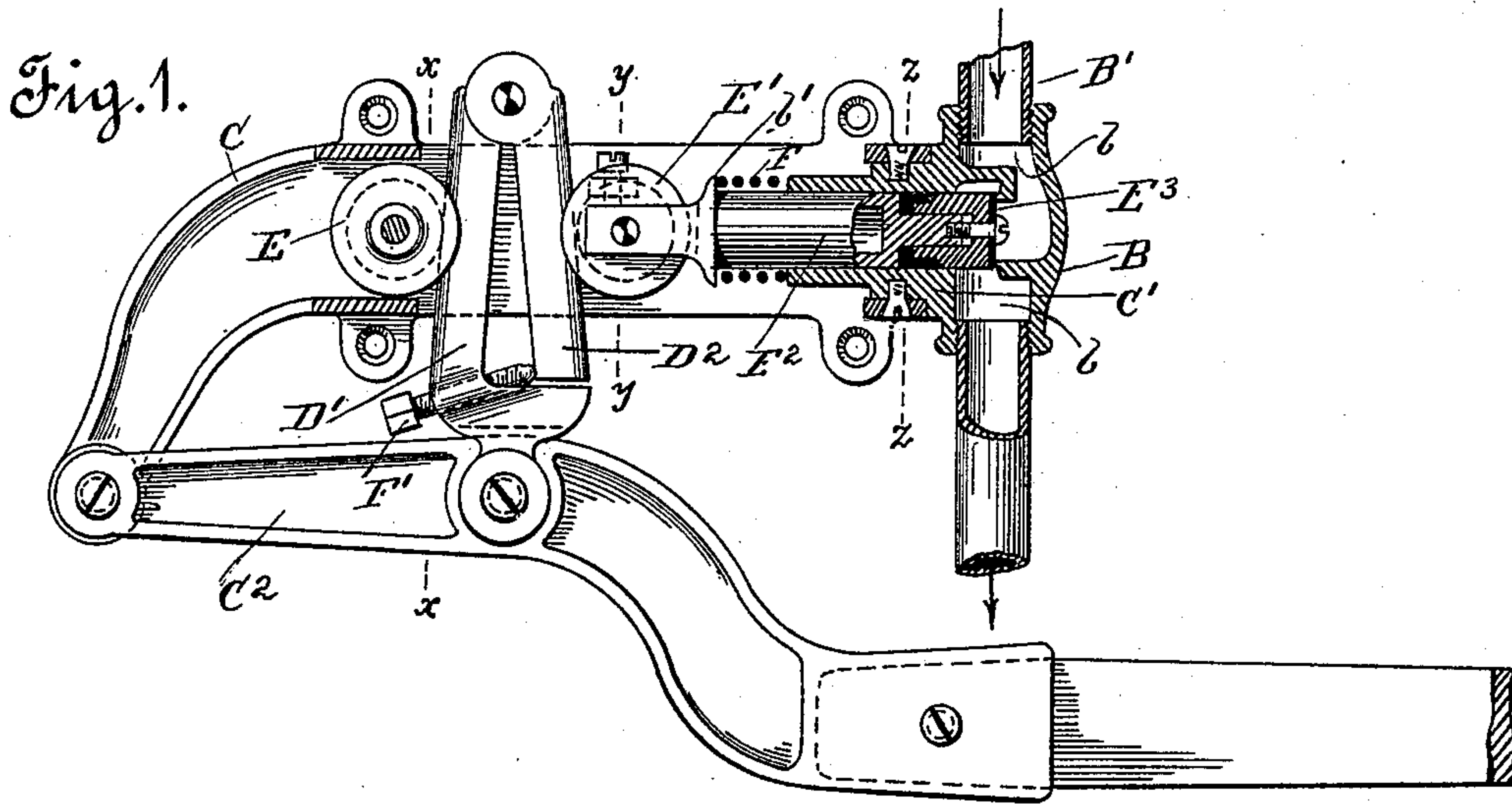


(No Model.)

H. H. TRACY.
VALVE OPERATING MECHANISM.

No. 539,204.

Patented May 14, 1895.



Witnesses.

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UNITED STATES PATENT OFFICE.

HAYDN H. TRACY, OF HOLLISTER, CALIFORNIA.

VALVE-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 539,204, dated May 14, 1895.

Application filed October 4, 1894. Serial No. 524,912. (No model.)

To all whom it may concern:

Be it known that I, HAYDN H. TRACY, a citizen of the United States, residing at Hollister, in the county of San Benito and State of California, have invented certain new and useful Improvements in Valve-Operating Mechanism for Water-Heaters; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

This invention relates to a certain new and useful valve operating mechanism, which consists in the arrangement of parts and details of construction as will be hereinafter more fully set forth in the drawings, described and pointed out in the specification.

The invention is designed more especially for use in connection with water heaters, although it is equally as well adapted for regulating or controlling the flow of liquids generally.

The object of my invention is to automatically control the flow of water, gas, or other liquids.

The main feature of the invention relates to the device for controlling the movement of the valve stem, whereby a longer or shorter stroke may be given thereto, in order to compensate for wear of the valve or control the flow of liquid under varying pressure, without necessitating the stroke of the operating lever to be disturbed, hence permitting the stroke of the valve stem to be quickly and easily adjusted.

In the present instance I have shown my device as used in connection with a water tank; but this is merely for the purpose of more clearly setting forth its application.

Referring to the drawings forming a part of this application, Figure 1 is a side view in elevation, showing the entire mechanism. Fig. 2 is a top plan view of the mechanism illustrated by Fig. 1. Fig. 3 is an end view in elevation, taken on line *y y*, Fig. 1. Fig. 4 is a similar view taken on line *z z*, Fig. 1. Fig. 5 is a side view in elevation, showing the device connected to a water-tank; and Fig. 6 is an end view in elevation, taken on line *x x*, Fig. 1.

In the drawings, the letter A is used to in-

dicate an ordinary water-tank, within which leads the supply pipe A', the upper end of which connects with the valve coupling B, to which is also connected the inlet pipe B'. To a plate or bracket B², upwardly projecting from the tank A, is bolted or otherwise secured the slotted arm C, the forward end of which arm is secured to the hollow boss C', laterally projecting from the valve coupling B; while the outer or rear end of said arm is downwardly curved and has fulcrumed thereto the lever C², which lever projects forward above or within the tank A; and from the inner end thereof is suspended a float D, which is lifted up and down as the water rises and falls within the tank A. To the lever C² is bolted the member D' of an inclined frame, the opposite member D² being fulcrumed to the upper end of member D'. These two members constitute an inclined frame which projects above the operating lever C², and through the elongated opening *a* of the arm C.

Between the inner walls of the arm C is secured the roll E, against the periphery of which bears the outer edge of the member D'. The outer edge of the opposite member bears against the periphery of the roll E', secured to the outer end of valve stem E². This stem works within the slotted portion of the arm C, and carries the valve E³ at its inner end, which fits within the hollow boss C' and serves to open or close the passageway *b*, as the valve stem is moved in or out. Between the outer end of the hollow boss C' and head *b'* of the valve stem is located the spring F, which maintains a constant outward pressure upon the valve stem.

The rolls E and E' serve as guide rolls for the inclined frame as moved up and down, the roll E being held in a fixed position, although free to rotate; while the roll E' has longitudinal movement.

The inclination of the member D² may be increased or decreased by means of the set screw F', which works through the member D', as shown. As this set screw is moved in or out the member D² will be likewise moved, which increases or decreases its inclination.

As the lever C² is raised and lowered by the rise or fall of the water within the tank, the inclined frame will be given vertical movement. As the frame is raised, the guide rolls

are spread apart, which forces the valve stem inward and causes the valve to gradually close the port *b*. As the inclined frame descends, the guide rolls are brought together, 5 which causes the valve stem to move outward and the valve to gradually open the port *b*.

As wear takes place upon the valve, the same is easily compensated for by adjusting the set screw *F'* so as to give a greater inclination to the member *D*², which will give a 10 longer stroke to the valve stem.

I do not wish to be confined to the construction herein shown and described, for I am aware that by making slight changes in 15 the operating mechanism the device may be employed for various purposes. Instead of a float for raising and lowering the operating lever, a diaphragm may be utilized.

Having thus described my invention, what 20 I claim as new, and desire to secure protection in by Letters Patent, is—

1. The combination with the valve stem, the inclined frame for controlling the movement of the valve stem, said frame consisting 25 of a rigid and a movable member, a device for regulating the inclination of the inclined

frame, and mechanism for automatically raising and lowering said frame.

2. The combination with the slotted arm, the spring actuated valve stem working 30 therein, an operating lever fulcrumed to the slotted arm, the inclined frame secured to said lever, the guide rolls between which the inclined frame works, one of said rolls being 35 secured to the valve stem and the other permanently within the slotted arm, a device for regulating the inclination of the inclined frame, and mechanism for automatically raising and lowering the operating lever.

3. The combination with the valve and 40 valve stem, an adjustable inclined device for controlling the movement of the valve and valve stem, and mechanism for automatically raising and lowering the adjustable inclined device, substantially as described. 45

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

HAYDN H. TRACY.

Witnesses:

N. A. ACKER,
LEE D. CRAIG.