

(No Model.)

J. F. LARKIN.
SELF CLOSING STOP COCK.

No. 408,418.

Patented Aug. 6, 1889.

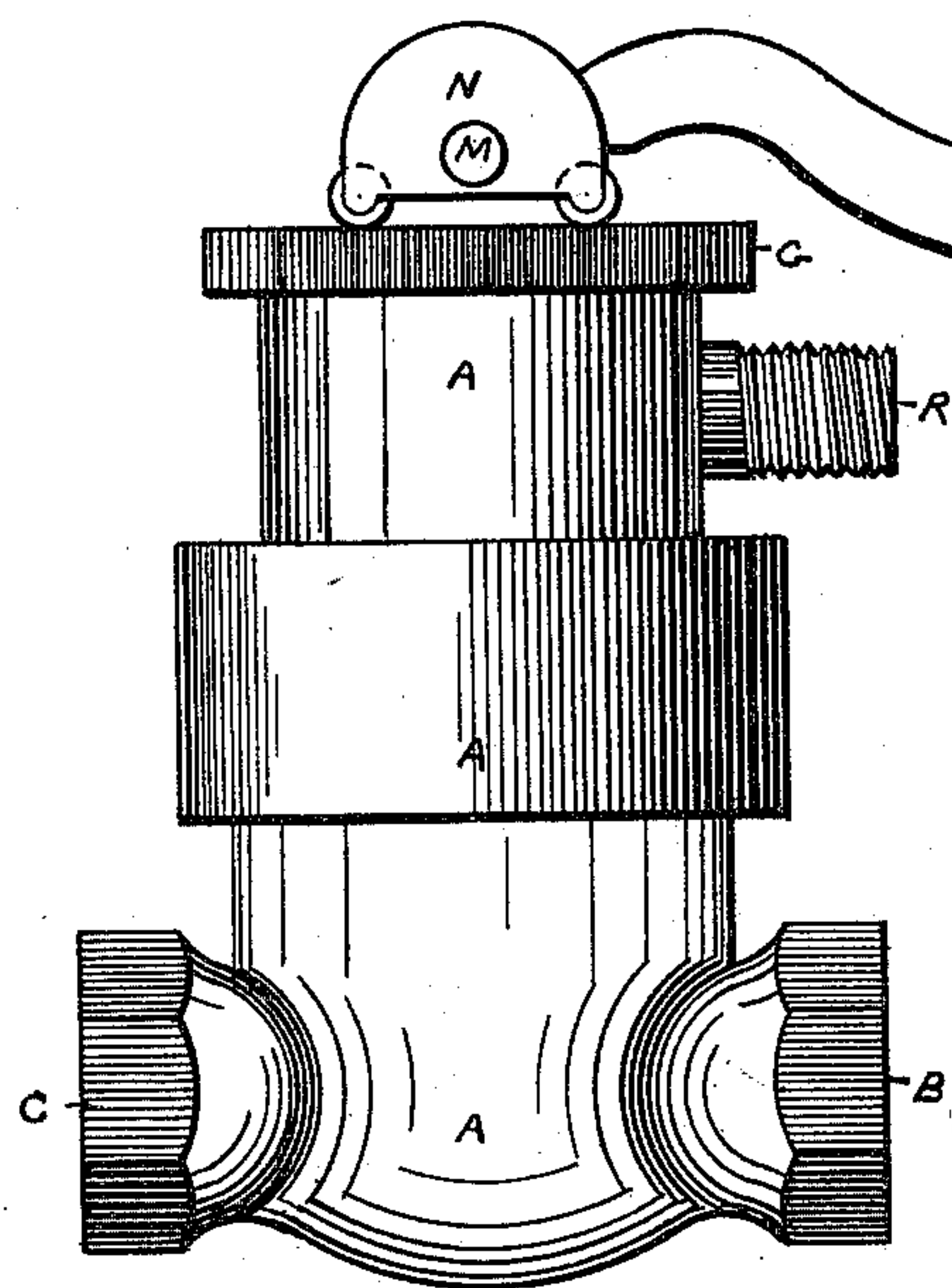


Fig. 1.

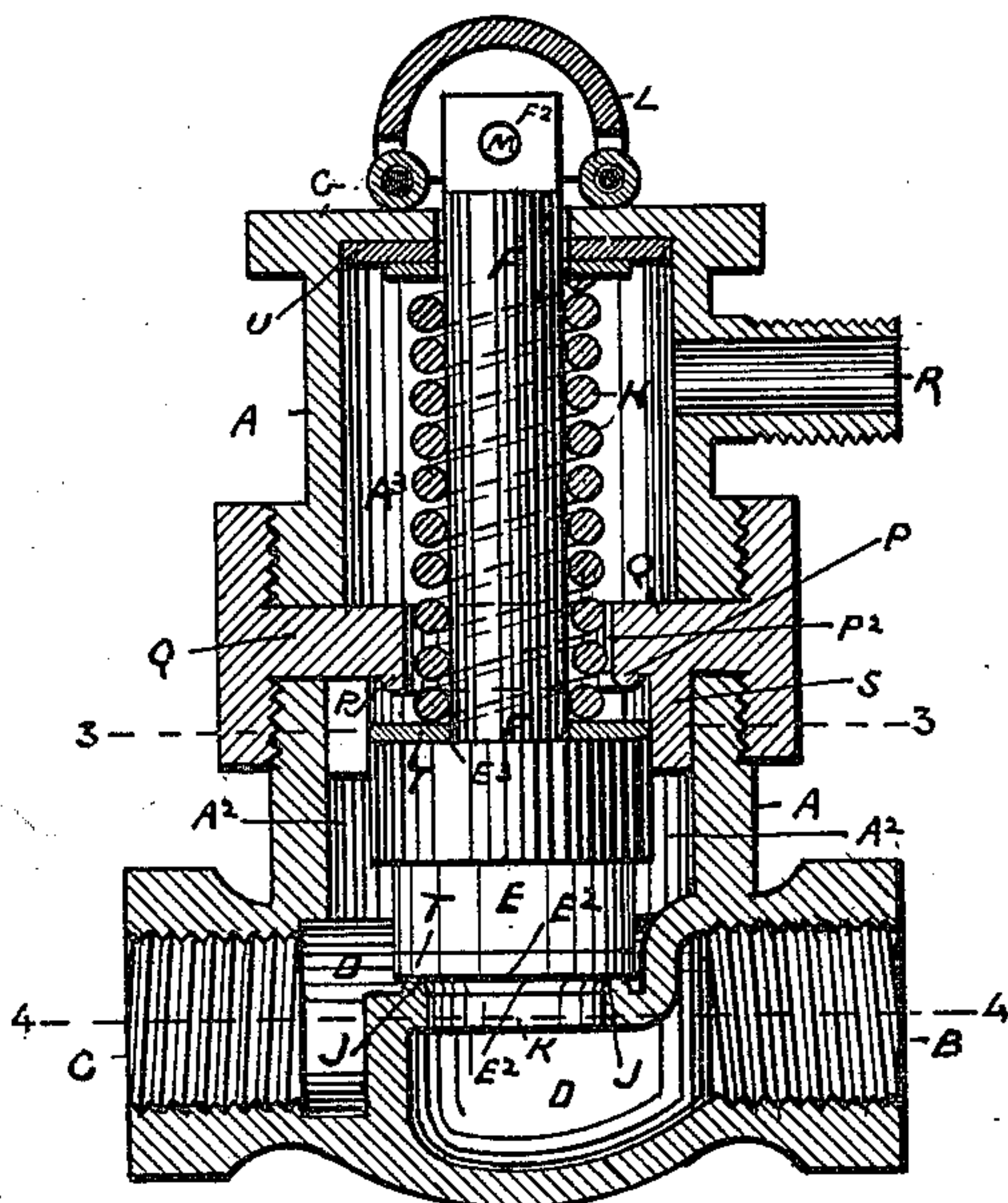


Fig. 2.

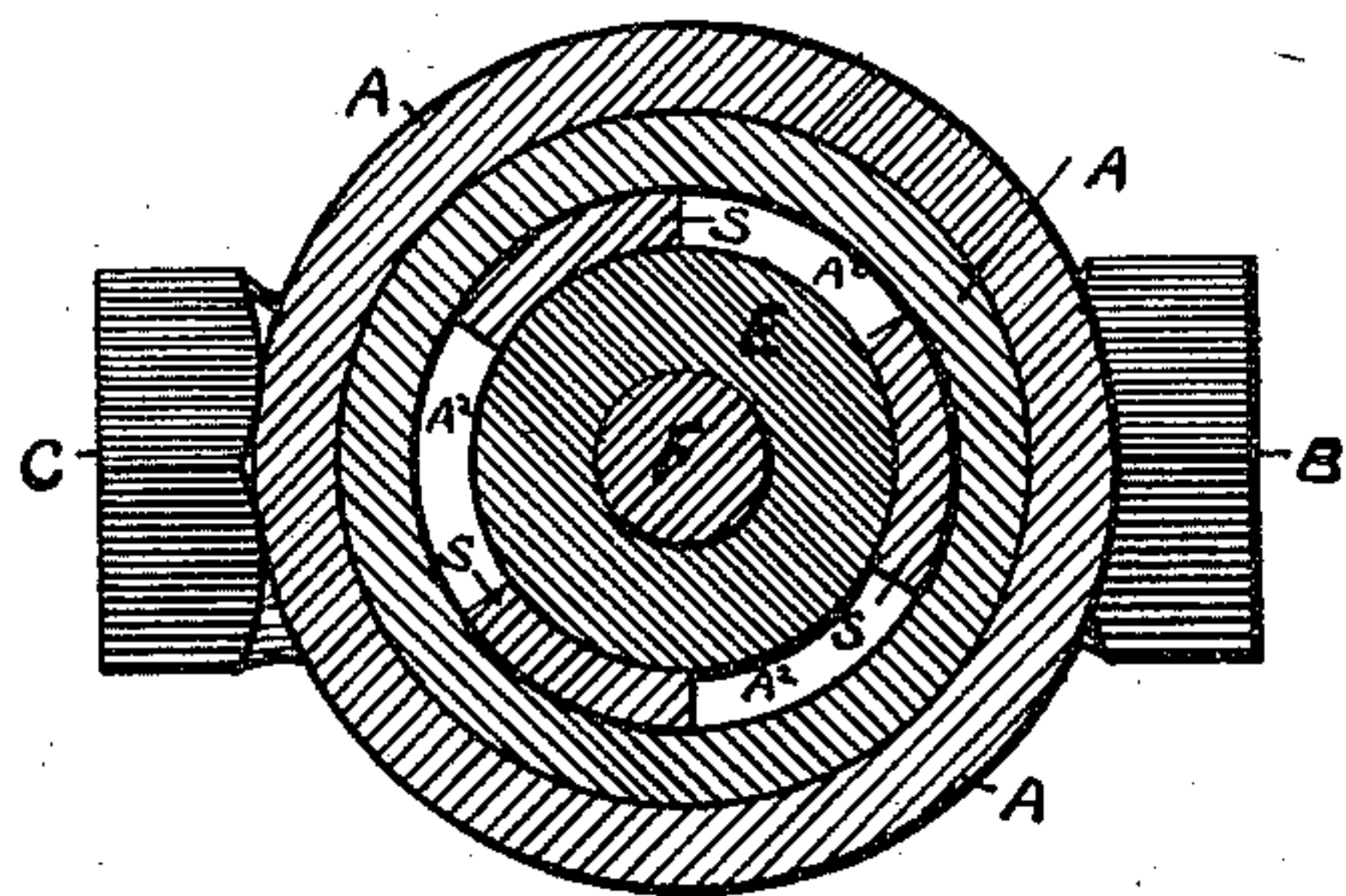


Fig. 3.

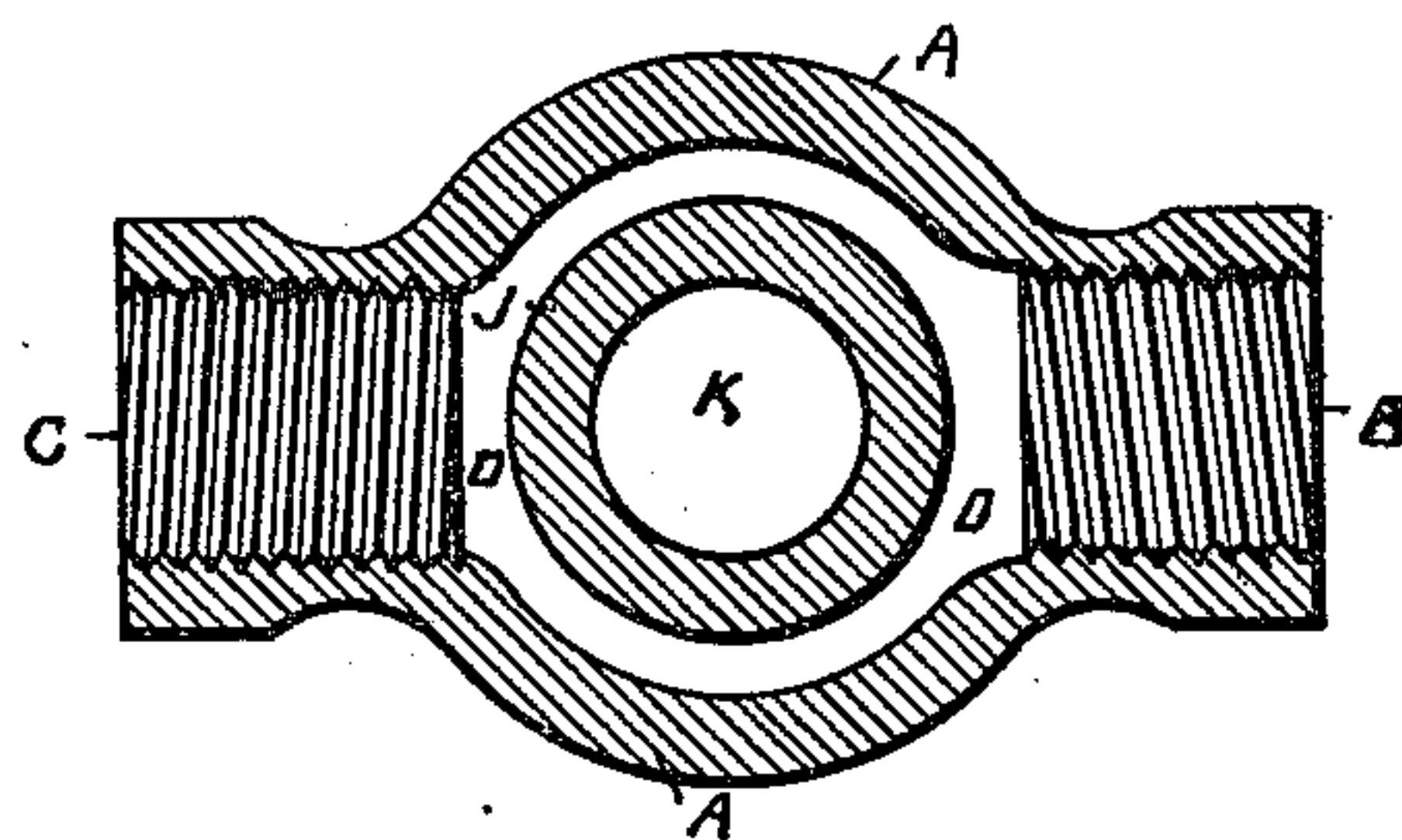


Fig. 4.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN F. LARKIN, OF MANCHESTER, NEW HAMPSHIRE.

SELF-CLOSING STOP-COCK.

SPECIFICATION forming part of Letters Patent No. 408,418, dated August 6, 1889.

Application filed March 5, 1889. Serial No. 302,002. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. LARKIN, a citizen of the United States of America, and a resident of Manchester, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Self-Closing Stop and Waste Cocks, of which the following is a full, clear, and exact description.

10 This invention in self-closing stop and waste cocks consists in details of parts and their combination and arrangement, all as will hereinafter appear.

15 In the drawings forming part of this specification, Figure 1 is a side elevation. Fig. 2 is a central vertical section. Figs. 3 and 4 are horizontal transverse sections, lines 3-3 and 4-4, Fig. 2.

20 In the drawings, A is the case or shell, cylindrical in shape and having a water-inlet passage B and water-outlet passage C in line with each other and on opposite sides of the shell, and both adapted for pipes (not shown) to be connected with them, and the one B with a water-supply pipe and the other C with a water-delivery pipe for the use of the water, as may be desired.

25 D is a water way or passage within and connecting water inlet and outlet passages B and C of the shell, so that when opened, as will hereinafter appear, the water entering at the one B can pass to and out of the other C, and not otherwise.

30 E is a valve, having a valve-stem F extended through the top G and to the outside of the shell.

H is a coiled spring surrounding valve-stem F, and confined end to end between the valve E and the top G of case.

40 J is a seat for the valve E, and K is a water-way through said seat in communication with the water-ways B and C of the shell D, so that when the valve E with its face E² is seated, the water-communication D between the inlet and outlet passages B C of the shell is closed to the passage of water, and when the valve is raised from the seat J said water-communication D is opened. The coiled spring H closes the valve E, as stated, and the valve is 50 opened against the spring by power applied to the projecting end F² of the valve-stem F,

which, for convenience, is to have suitable operating mechanism, to be suitably connected, as desired.

The operating mechanism for the self-closing valve E shown consists of a lever L, to which the valve-stem is pivoted, as at M, and which otherwise is arranged at one end to work on the top of the shell as its fulcrum, and at its other and free end O to have a chain 60 or other connection made with it, as desired. The valve E has at its opposite end to that of its face E² a face E³, to seat upon a seat P of a horizontal partition Q of the shell, and dividing it into upper and lower compartments 65 A² and A³. This seat P has a waste-water way P² through it which is closed when the valve E is opened by the face E³ bearing on the seat P, and is opened when the valve E with its face E² is on the seat J. 70

R is a waste-water-way passage leading from the upper compartment A³ of the shell A, and adapted, preferably, for suitable pipe-connection (not shown) to be made with it. With the self-closing valve opened against its spring 75 and seated on its seat P, a supply of water is then furnished through the water-passage B of the shell, as may be desired; and with the self-closing valve closed and seated on its seat J the supply of water stated is shut off, and 80 the water then contained in the pipe-connections of the water-outlet passage C of the shell passes through and out of the shell A at its waste-water passage R, all, as is obvious, without further explanation. 85

The self-closing valve E has an up-and-down movement, guided by its stem and top of shell, and also by fixed but separated vertical ways S of the shell and surrounding the valve, and at and about the waste-water way P² of the valve-seat P. Both seating-faces E³ E³ of the valve are to have suitable leather or other packing washers T, and again the valve-stem and top of shell A are to be suitably provided with leather or other packing washers U, all 95 as well known.

Under this invention and as appears from the description and drawings, the valve held on the valve-stem has a seating-face at each of its opposite end portions, and both seating-faces are in fixed planes in relation to 100 each other, crossing the axial line of the valve

and its stem, and the valve-shell has two seating-faces, both fixed in relation to each other and situated so that the valve itself seated on either one thereof shall be off of the other face, and the valve, in opening and closing water-communication D, moves directly in the one case off of the valve-seat of said communication and onto the valve-seat of the water-communication P², and in the other case off of the valve of water-communication P² and onto the valve-seat of the water-communication D, and in both movements without rub, wear, or friction on either seating-face of the valve or either valve-seat; and, again, the water-communications D P² are the one opened and the other closed simultaneously, and the opening of water-communication D and closing of water-communication P² is against, and the opposite movements are with the action of the coiled spring H, bearing at one end directly on the valve—all important for a practical and efficient working of the valve for the purposes stated.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a self-closing stop and waste cock, consisting of a shell or case A, having water inlet and outlet passages B C, and interiorly a water-passage D, connecting said passages B C, a valve-seat J, water-passage D, a valve E, having at one end portion a face to seat

on valve-seat J and to open and close water-passage D, and at its opposite end portion a stem passing, suitably packed, to the outside of the valve-case, a spiral spring coiled about valve-stem and confined so as to hold the valve closed and to allow it to be opened, and means outside the valve-case to open the valve against and to allow the valve to close with the action of said spring, the combination of a water-chamber A², surrounding said valve-stem and its spring, an outlet R, for waste-water, leading from said chamber, a fixed cross-partition Q, of and located within the valve-case A, between said waste-water outlet R and said valve E, a water-communication P² through said partition and connecting water-chamber A² with water-passage D and receiving the valve-stem and its spring, a seating-face P of said partition toward the valve E, and a seating-face E³ of the valve to seat on said face P of partition Q, and located at the opposite end portion of the valve to that of its seating-face E² for the seat of water-passage D, substantially as described, for the purposes specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN F. LARKIN.

Witnesses:

DENIS F. O'CONNOR,
JAMES P. TUTTLE.