

(No Model.)

D. SMULLEN.
CYLINDER COCK.

No. 284,504.

Patented Sept. 4, 1883.

Fig. 1.

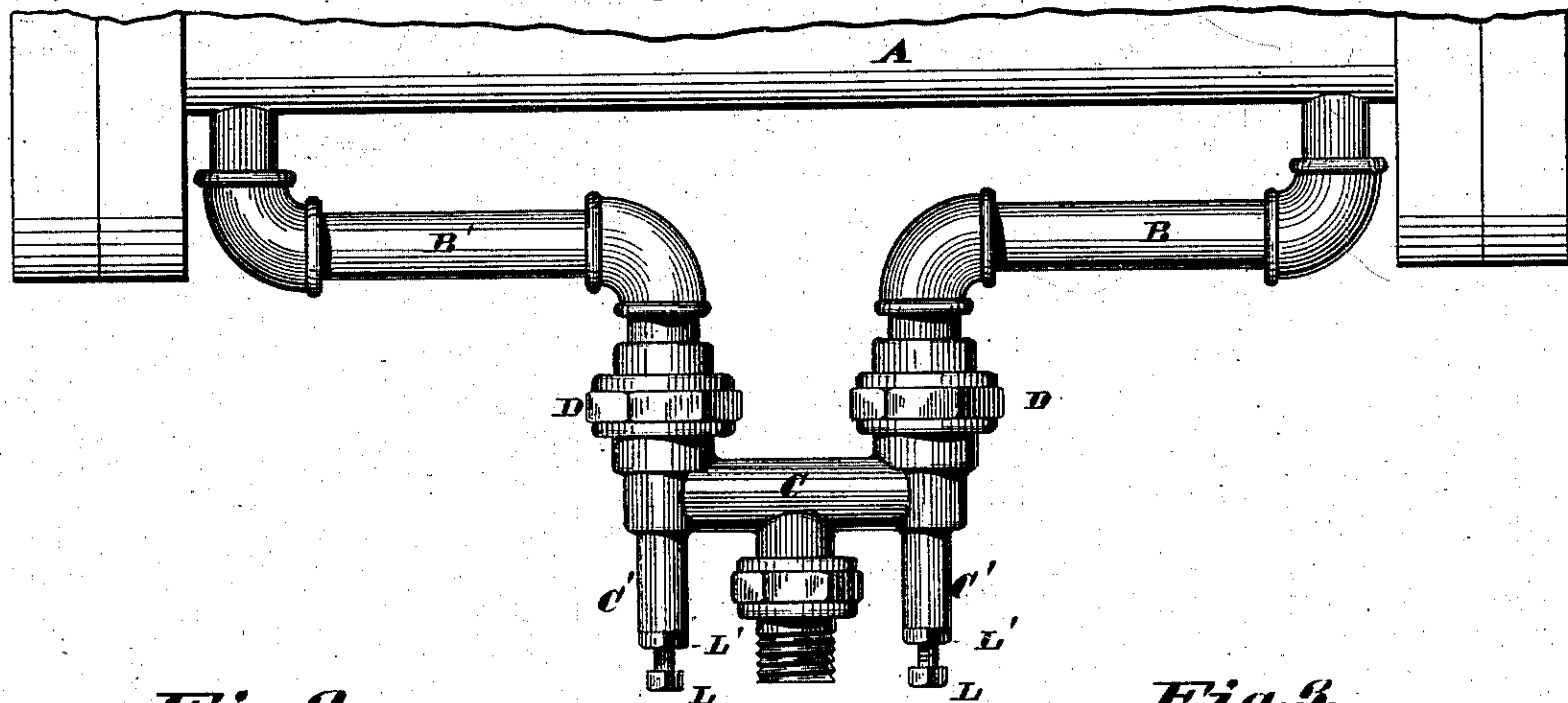


Fig. 2.

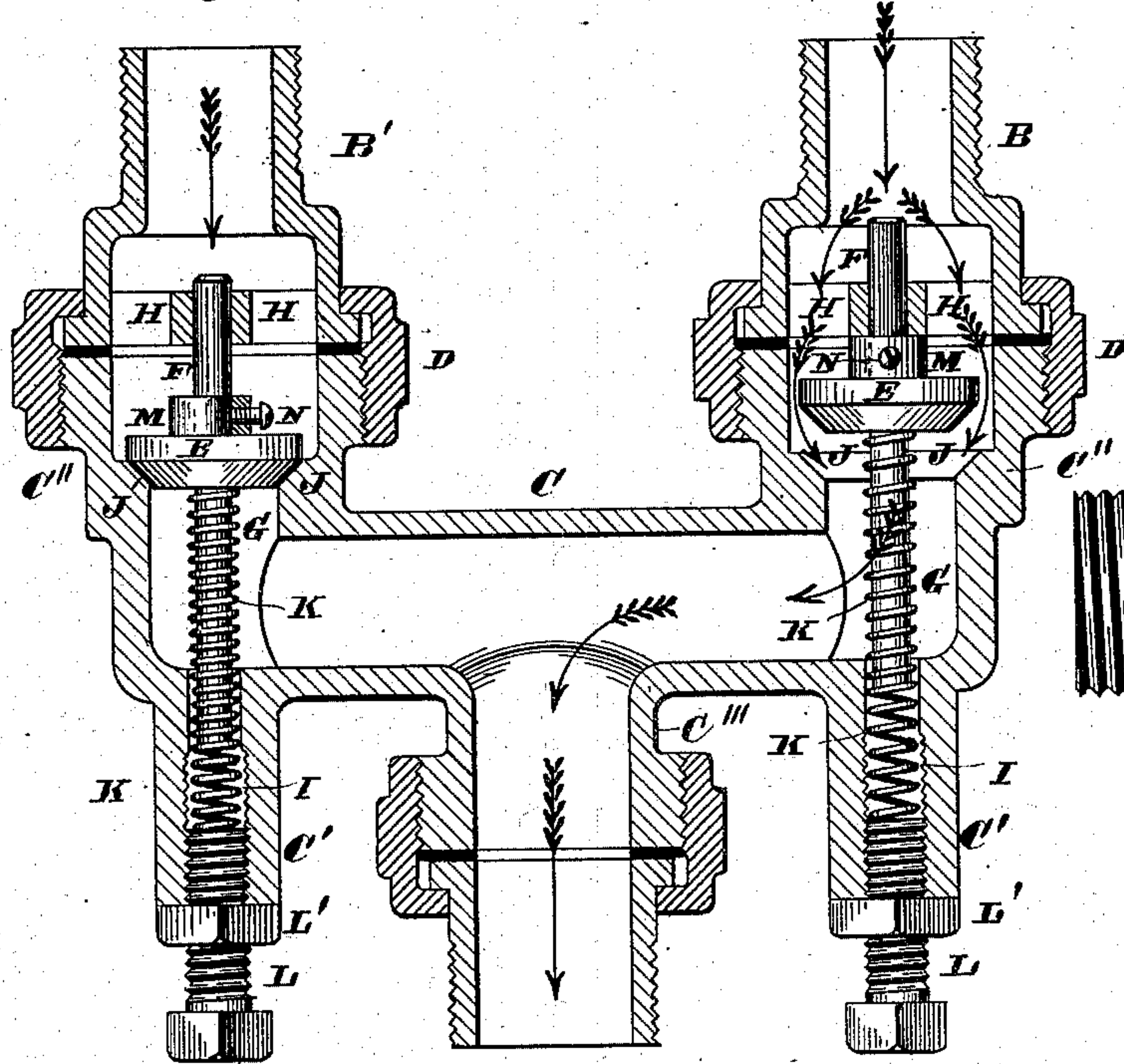
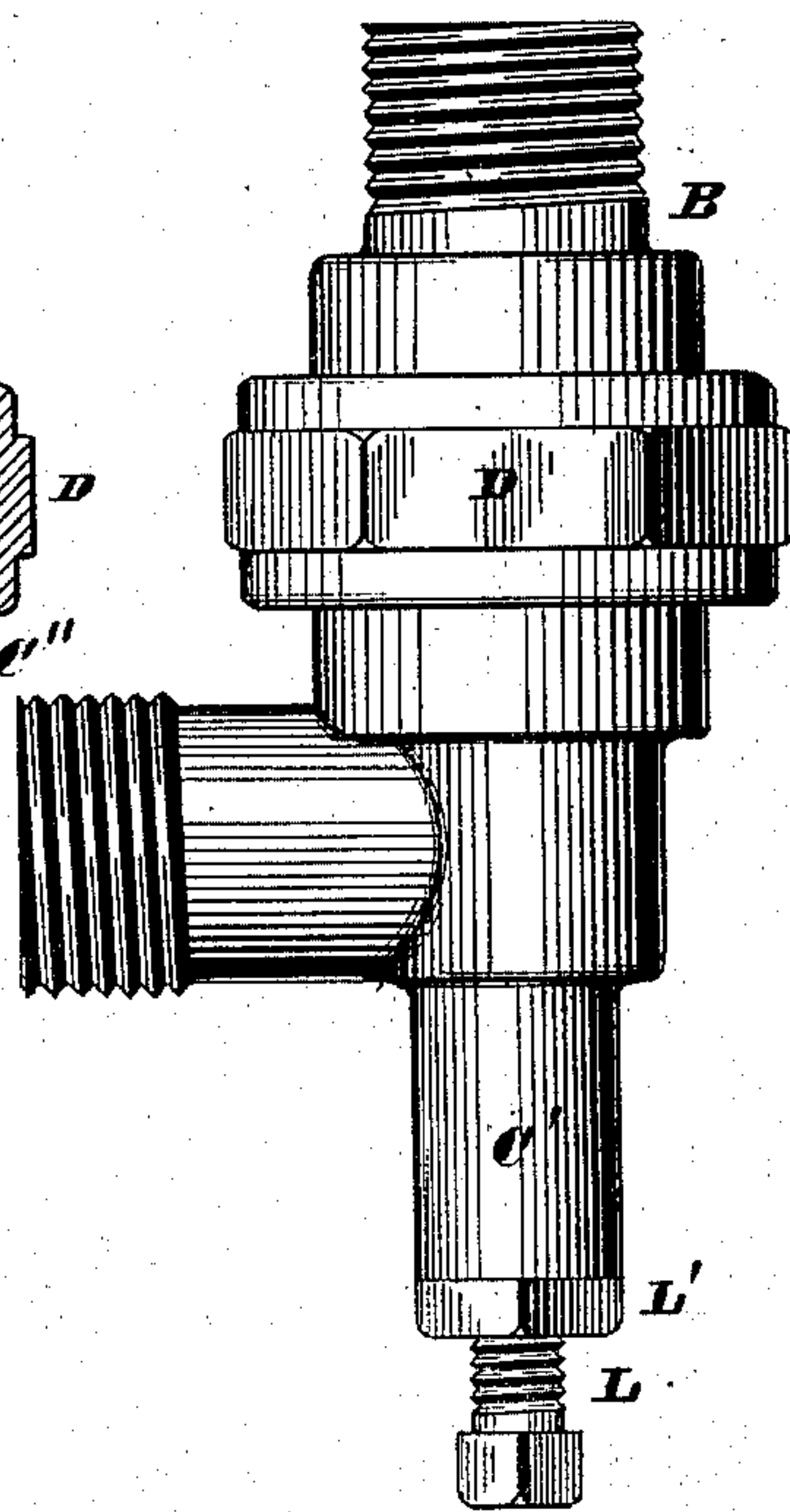


Fig. 3.



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UNITED STATES PATENT OFFICE.

DANIEL SMULLEN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE EXCELSIOR MANUFACTURING COMPANY, OF SAME PLACE.

CYLINDER-COCK.

SPECIFICATION forming part of Letters Patent No. 284,504, dated September 4, 1883.

Application filed April 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, DANIEL SMULLEN, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Cylinder-Cocks; of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a side elevation, showing my improvement attached to a cylinder, the lower part of the cylinder only being shown. Fig. 2 is a vertical section, in which the operation of the cock is illustrated by arrows; and Fig. 3 is a side view, illustrating a modified way of arranging the cocks.

My invention relates to a cylinder-cock for allowing the escape of condensed steam at each stroke of the piston; and my invention consists in points of novelty, hereinafter fully described, and pointed out in the claims.

Referring to the drawings, A represents part of a cylinder of common construction, and B B' escape-pipes connecting to the cylinder, one near each end, as shown in Fig. 1. The lower ends of these pipes are preferably connected by a double T-pipe, C, by means of couplings D, engaging their ends, to upwardly-extending projections C' C', and in each of these pipes B B' is an automatic cock. These cocks are duplicates, so it will only be necessary for me to describe one of them, the same letters of reference referring to the other.

E represents a valve having an upwardly-extending stem, F, and a downwardly-extending stem, G. The stem F fits in a central opening of a bridge or cross piece, H, secured to the interior of the pipe B, as shown, or to the coupling-pipe C, and the stem G fits and works in a socket or opening, I, in an extension, C', of the pipe C.

J represents the valve-seat in the pipe C.

C'' is the central outlet to the pipe or coupling C.

When the piston is moving toward the pipe B, the valve in this pipe is opened by a spiral spring, K, allowing the condensed steam to escape, as shown by the arrows, Fig. 2, and at this time the valve in the pipe B' is closed

by the pressure of the live steam, so that the steam cannot escape, and then when the piston moves in the other direction the valve in the pipe B' is opened and the other valve closed, and so on. The spiral spring K surrounds the stem G of the valve, its ends having bearing, respectively, against the lower side of the valve and the end of a bolt, L, screwed into the neck or projection C', and provided with a jam-nut, L'. More or less tension can be had on the spring K by turning the bolt in or out, so that different amounts of pressure can be had beneath the valve to allow it to be opened and closed against, and by different steam-pressures in the cylinder.

M is an adjustable collar surrounding the stem F beneath the stem-bridge H. This collar can be moved vertically on the stem, and is held to its adjustment by a set-screw, N. By the adjustment of the collar any desired amount of movement of the valve can be had. The collar also acts to prevent the valve opening against the bridge H, and thus in a measure closing the opening around the valve.

Fig. 3 shows a modified form of the pipes B B', wherein they are straight, and have branch connecting-pipes beneath the valves. When the piston is at rest both of the valves will be opened by the springs.

I claim as my invention—

In a cylinder-cock, the combination of main pipe B to connect to one end of the cylinder, main pipe B' to connect to the other end of the cylinder, coupling C, having upwardly-extending projections C' C', connected to the adjoining ends of the main pipes, downwardly-extending hollow projections C' C' in line with the upwardly-extending projections, and central outlet, C'', valves E E, each having an upwardly-extending stem, F, supported by a bridge, H, and downwardly-extending stem G, entering a hollow projection, and surrounded by a spiral valve, elevating-spring, and screw-bolts L for adjusting the tension of the springs, as set forth.

DANIEL SMULLEN.

Witnesses:

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JNO. O. KEEFE.