

(No Model.)

2 Sheets—Sheet 1.

J. H. BLESSING.  
WATER FILTERING APPARATUS.

No. 550,939.

Patented Dec. 10, 1895.

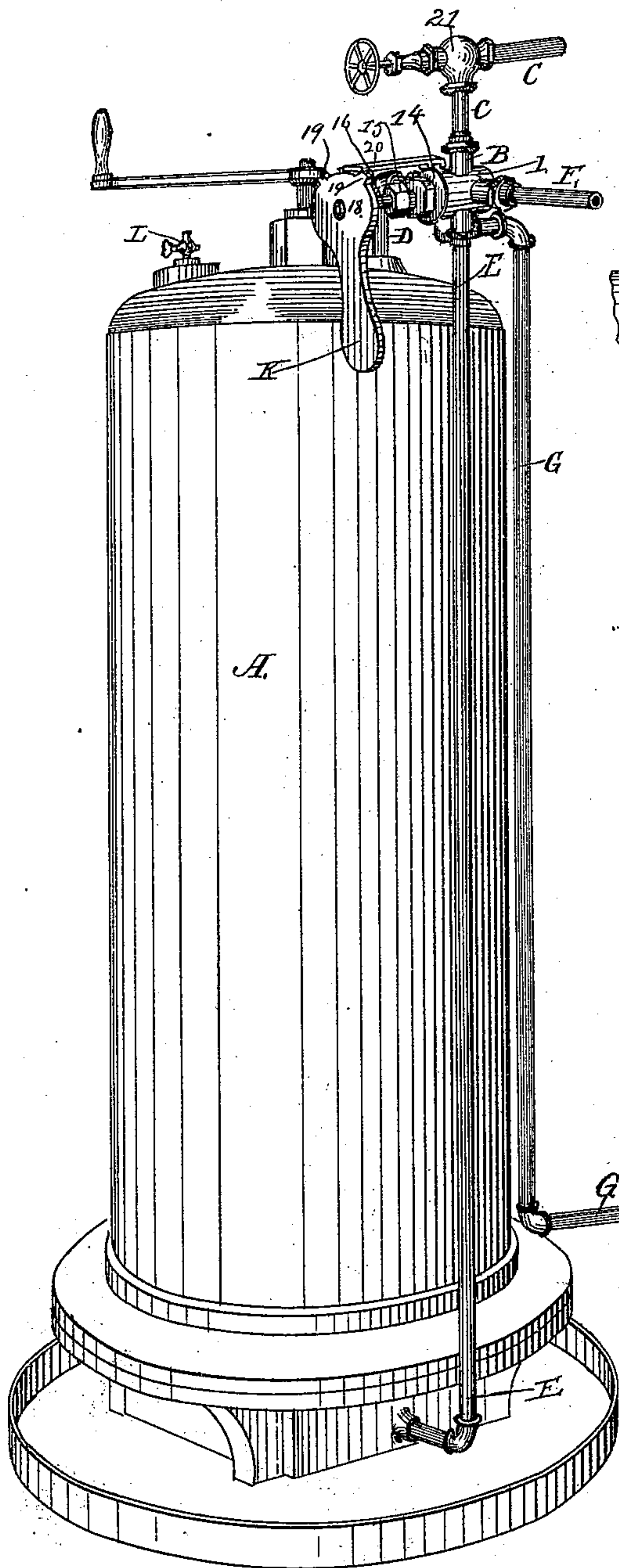


Fig. 1

Witnesses:

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Ben. Burton

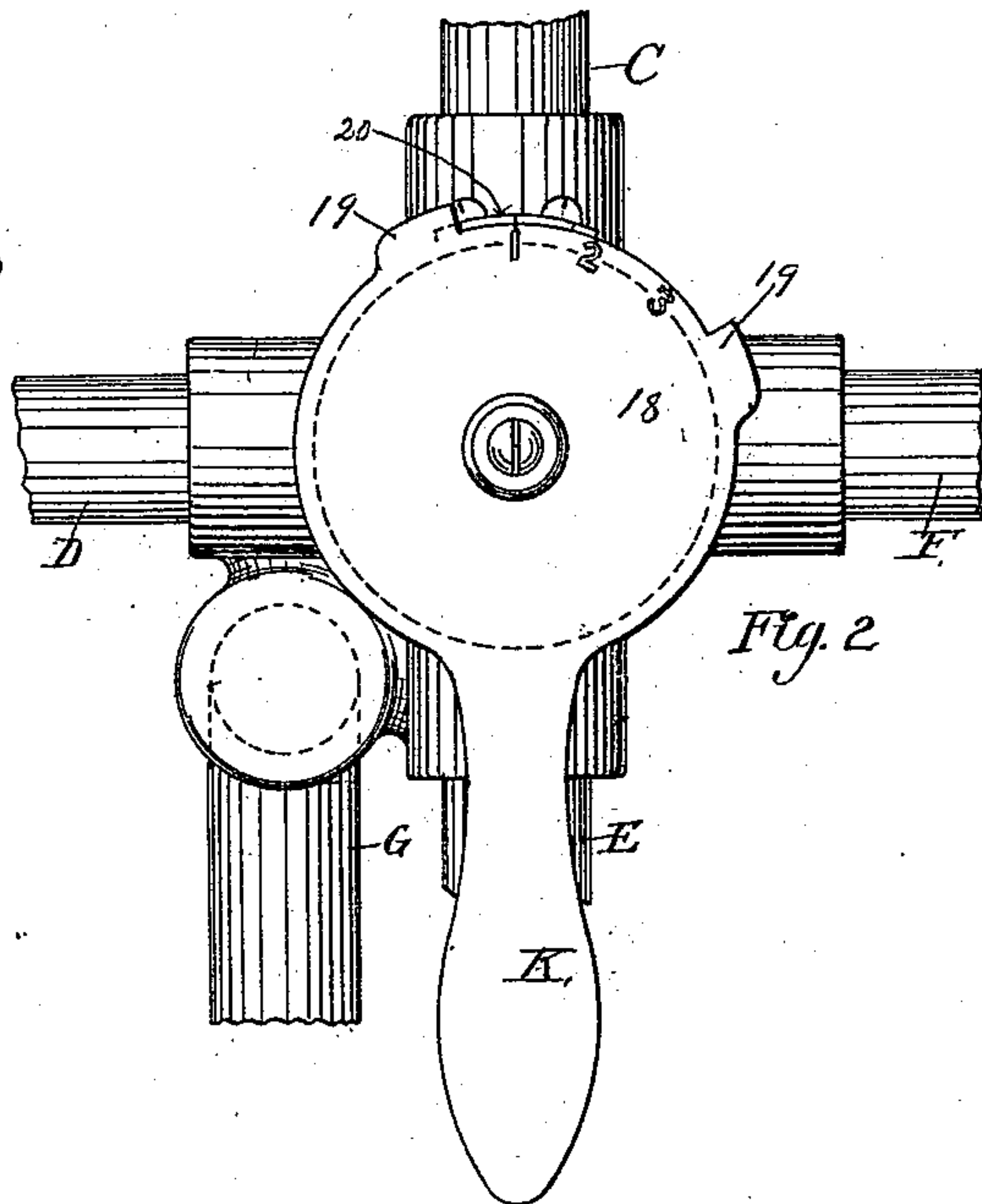


Fig. 2

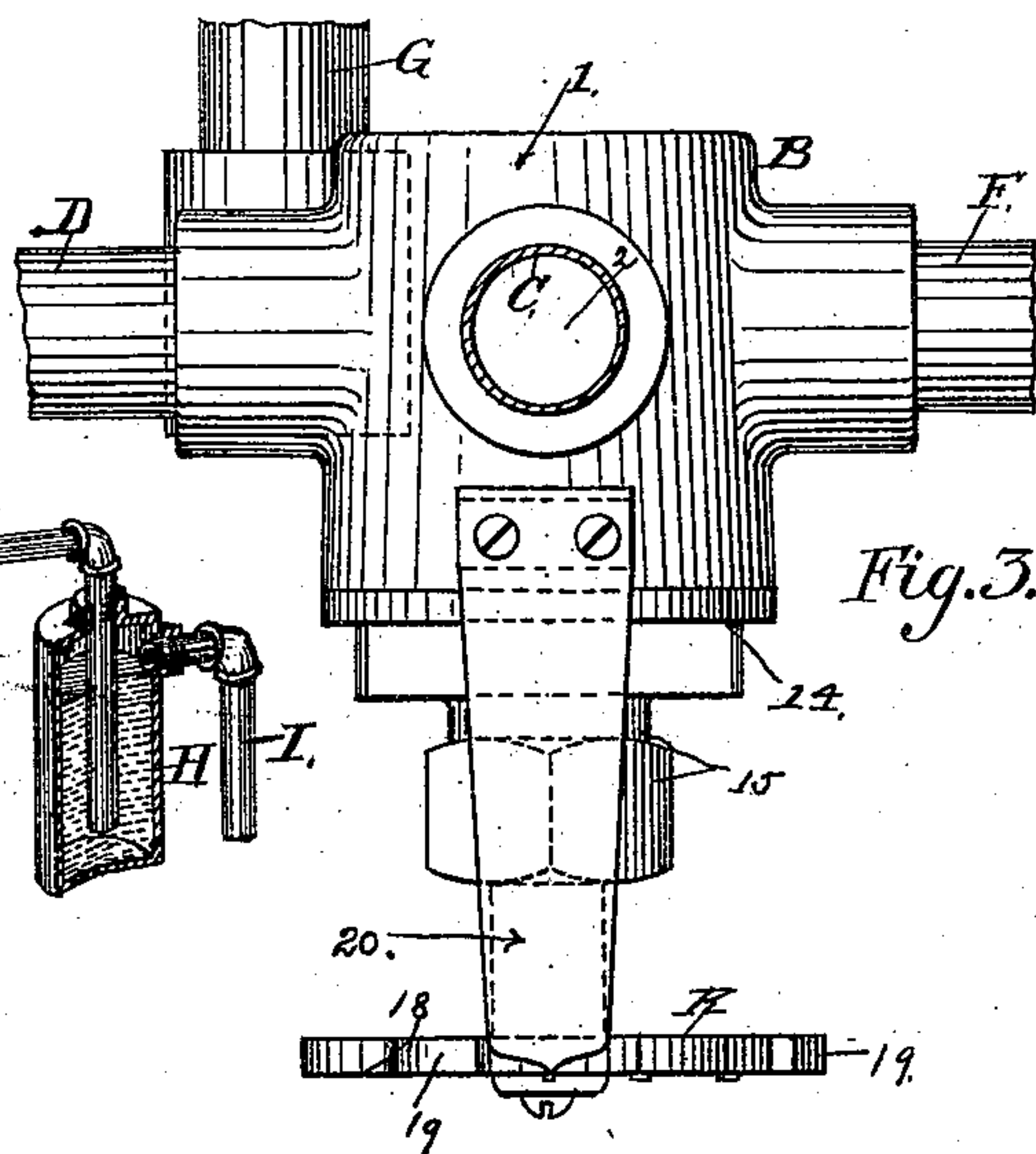


Fig. 3.

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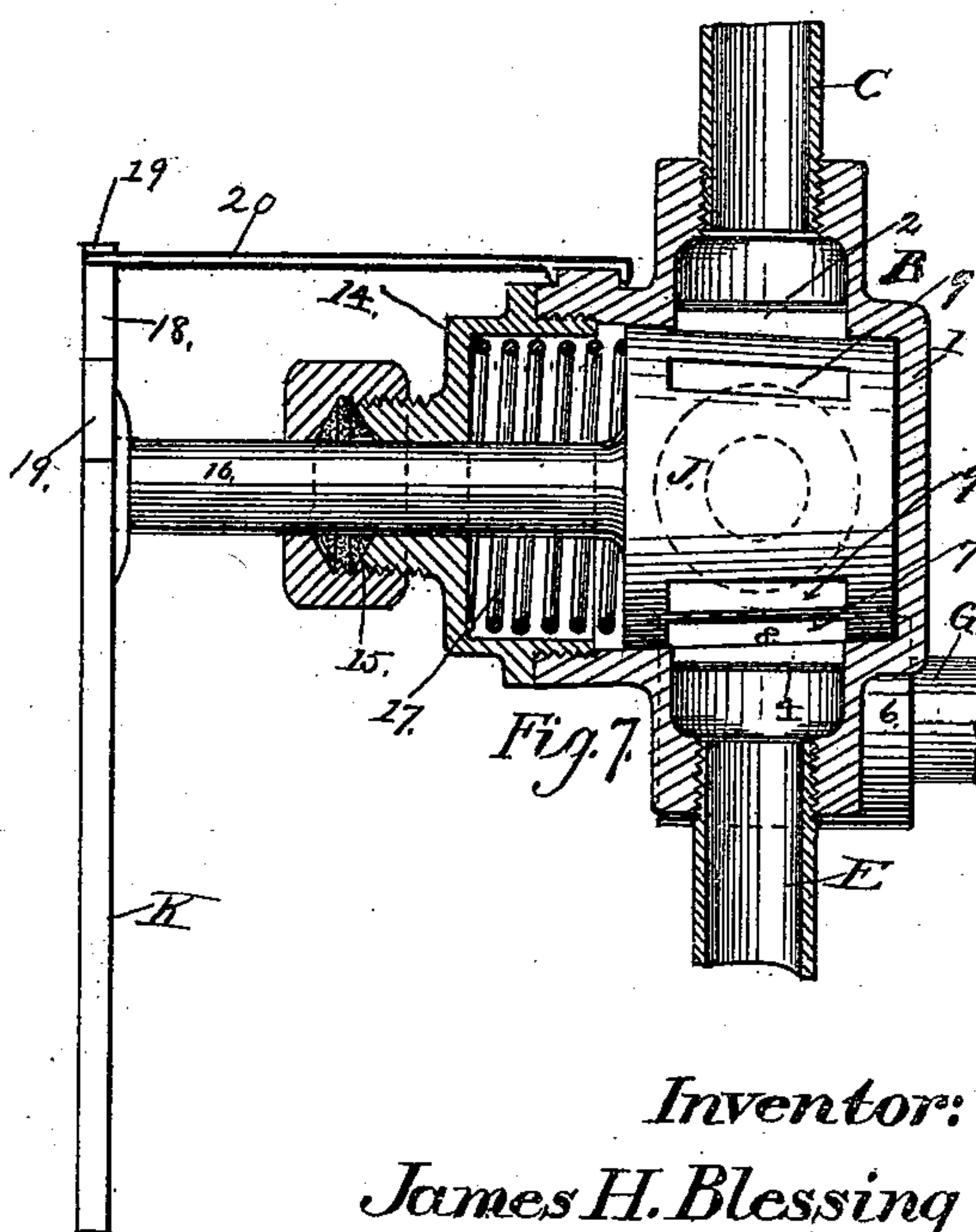
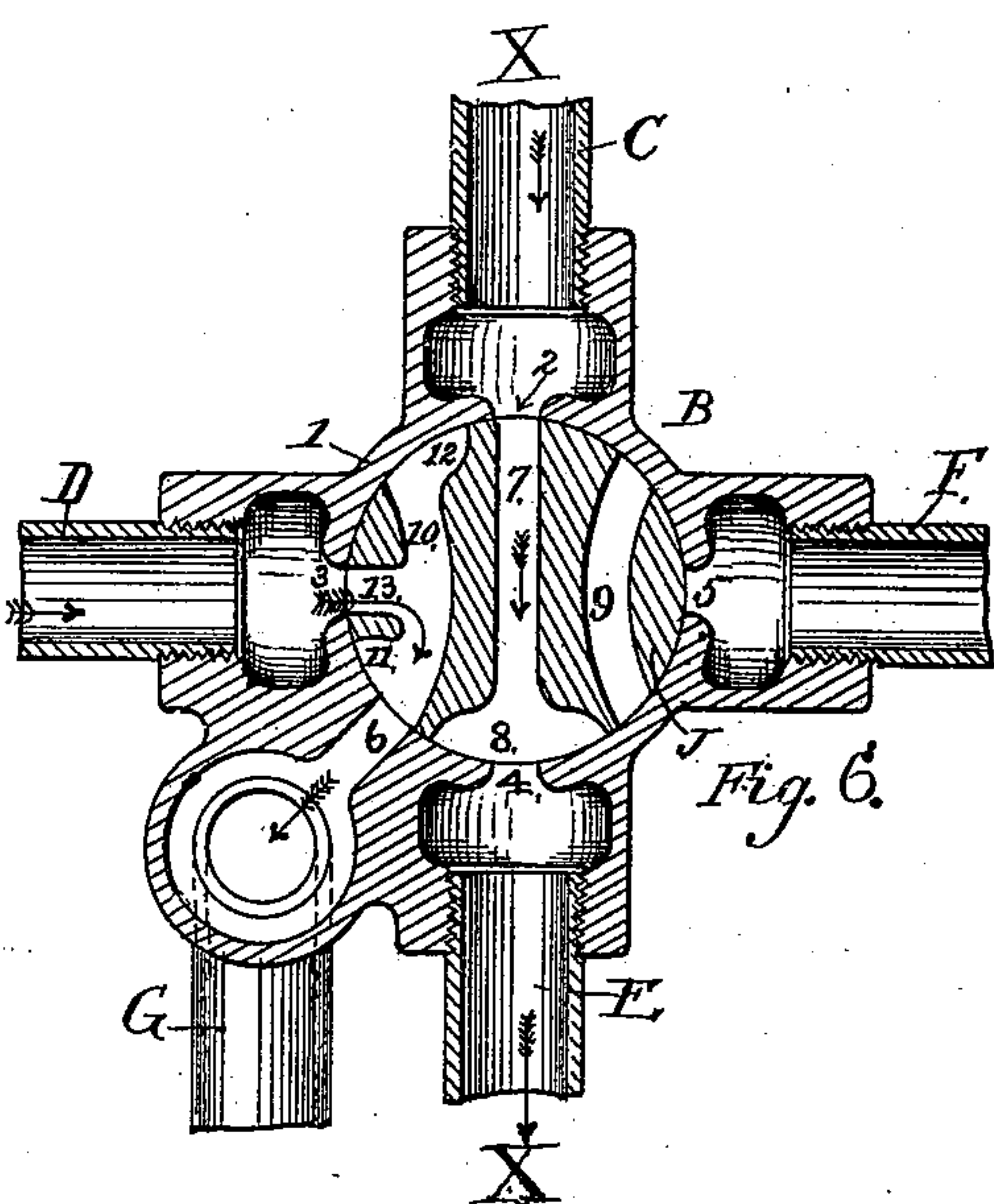
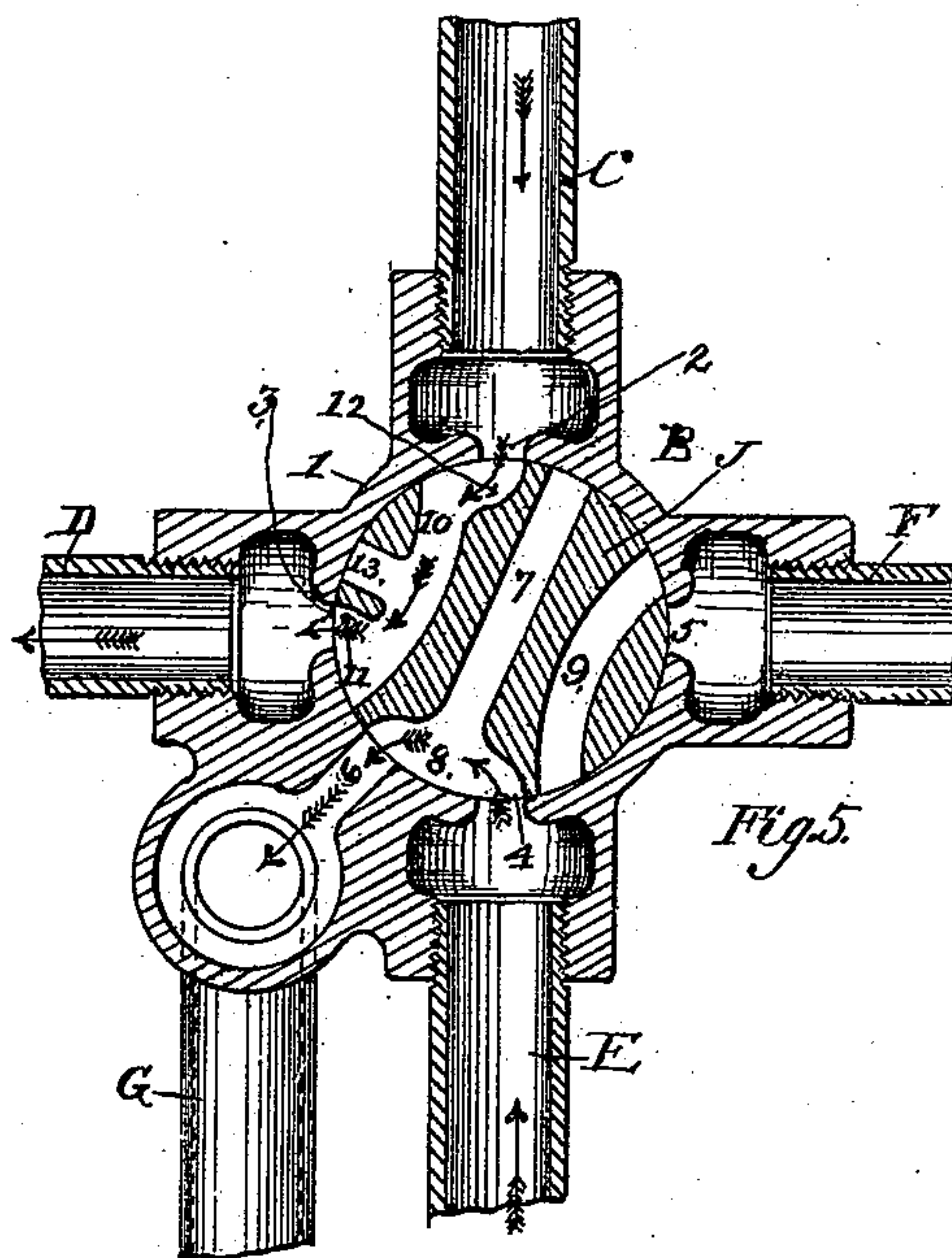
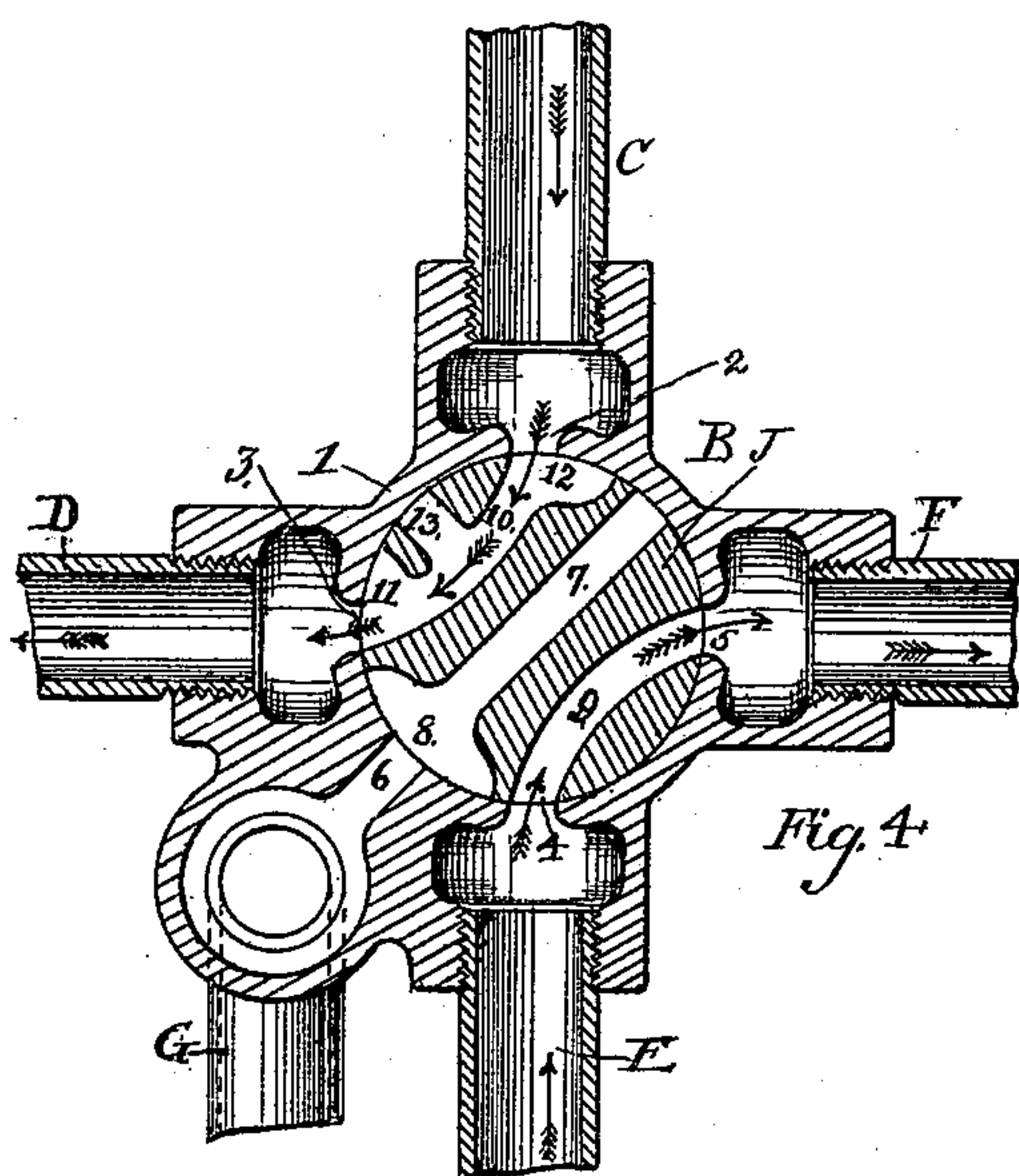
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2 Sheets—Sheet 2.

**J. H. BLESSING.**  
**WATER FILTERING APPARATUS.**

No. 550,939.

Patented Dec. 10, 1895.



**Witnesses:**

S. B. Brewer,  
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*Inventor:*

*James H. Blessing*  
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# UNITED STATES PATENT OFFICE.

JAMES H. BLESSING, OF ALBANY, NEW YORK.

## WATER-FILTERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 550,939, dated December 10, 1895.

Application filed July 28, 1893. Serial No. 481,720. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. BLESSING, of the city and county of Albany, in the State of New York, have invented new and useful Improvements in Water-Filtering Apparatus, of which the following is a specification.

This invention relates to improvements in water-filtering apparatus, and it specially relates to the means for changing the direction of the current of water through the apparatus and to providing a water seal for the waste-water pipe of the apparatus; and the objects of my improvements are to provide the means for changing the direction of said water-current by the operation of a single multiported cock, thereby avoiding the confusion and mistakes incident to the use of several cocks or valves for effecting a like purpose, and also to prevent the siphoning of the water from the waste-water pipe by means of a water seal arranged in said pipe. I attain these objects by the means illustrated in the accompanying drawings, which are herein referred to and form part of this specification.

In said drawings, Figure 1 is a perspective view of a water-filtering apparatus in which my improvements are embodied. Fig. 2 is a front elevation of a multiported cock used for the purpose of changing the direction of the water-current through said apparatus. Fig. 3 is a plan view of said cock. Figs. 4, 5, and 6 are vertical sections of said multiported cock, showing the turning plug in the different positions in which it can be turned in respect to the casing of said cock; and Fig. 7 is a vertical section at the line X X of Fig. 6, showing the turning plug, its handle, and the index in side elevation.

As represented in the drawings, A designates the filter, which forms no part of this invention.

B designates my multiported cock, which has connected thereto a water-supply pipe C, which connects said cock with a water-main, a pipe D, which forms a communication between the top of the filter A and said cock, a pipe E, which forms a communication between said cock and the bottom of the filter A, a filtered-water pipe F, which carries the filtered water to any point to which it is required, and a waste-water pipe G, which connects said cock with a water-seal casing H,

and from the latter a draining-pipe I carries the waste water to a drain or sewer, from whence it can be discharged in the ordinary manner.

The multiported cock A consists of a casing 1, provided with a series of ports, of which the port 2 communicates with the pipe C, the port 3 communicates with the pipe D, the port 4 communicates with the pipe E, the port 5 communicates with the pipe F, and the port 6 communicates with the pipe G. Contained in said casing and forming a water-tight joint with the bore of the same there is a turning plug J, provided with a series of passages, of which a passage 7 passes diametrically from side to side of said turning plug and has one of its ends made to conform to the size of the port 2 and the opposite end enlarged, as at 8, to form a communication between the ports 4 and 6 when the turning plug is in the position shown in Fig. 5, a passage 9, which forms a communication between the ports 4 and 5 when the turning plug is arranged in the position shown in Fig. 4, and a passage 10, provided with an enlargement 11 at one end and another enlargement 12 at the opposite end for the purpose of forming communication between the ports 2 and 3 when the turning plug is in either of the positions shown in Figs. 4 and 5. A branch passage 13 leads from the passage 10, and when the turning plug is in the position shown in Fig. 6 said branch passage, in conjunction with the passage 10, will form a communication between the ports 3 and 6 of the casing. By means of the enlargements 11 and 12 open communication between the ports 2 and 3 can be maintained for a longer time during the rotative movement of the turning plug J than could be effected if the passage 10 had a uniform size through its entire length. The casing 1 is provided with a bonnet 14, which has a stuffing-box 15, through which a stem 16 of the turning plug J protrudes. A spring 17 is interposed between the outer end of the turning plug J and bonnet 14 for the purpose of maintaining said turning plug snugly to its place in the bore of the casing. A handle K is secured to the outer end of the stem 16 for the purpose of affording the means for operating the turning plug J. Said handle is provided with a disk-like head 18, having on its periphery



stops 19, which by taking against an index 20, secured to the casing 1, will limit the movement of said handle. Said head is provided with numerals 1, 2, and 3 to indicate the extreme and intermediate positions into which the turning plug J is to be moved, and the periphery of said disk between the stops 19 should have notches cut therein to correspond to the location of said numerals, so that the point of the index 20 can be brought into exact correspondence with either of said notches for the purpose of indicating the position that the turning plug is in at that time.

The water seal for the pipe G consists of a casing H, which is air-tight, and through the top of which the pipe G is inserted. The pipe G extends downward within said casing within a short distance from the bottom of the latter, sufficient space being left between the lower end of said pipe and the bottom of the casing to insure a free flow of waste water at that point. The draining-pipe I leads laterally from near the top of the casing H at a point where it is required to maintain the level of the water in the latter.

L designates an air-cock, which is inserted in the top of the filter A for the purpose of facilitating the process of aerating the filtering material contained in said filter. To effect the above-named process, the turning plug J should be turned into the position shown in Fig. 5, whereby the water will flow from the filter and pass through the waste-water pipe G. After a few minutes the inflow of water into the filter should be stopped by closing a stop-valve 21 in the pipe C, and the air-cock L should be opened simultaneously therewith to establish a siphonage through the pipe G, whereby the water will be drained from the filter, and the space occupied by the water will be filled with air that enters through said air-cock, which air will permeate the filtering material and effect the aeration of the latter.

When the turning plug J is in the position shown in Fig. 4, the passage 10 will form a communication between the pipes C and D, and the passage 9 will form a communication between the pipes E and F, thereby allowing the water, which enters through the pipe C, to flow through the pipe D, whereby it is delivered into the top of the filter A, thence through the body of filtering material to the bottom of said filter, from whence it rises through the pipe E and passes through the passage 9 into the pipe F, through which the filtered water can be conveyed to any required point on the premises where the apparatus is used. The arrangement of the position of the turning plug J is the one indicated by the numeral 1 on the head 18.

When the turning plug J is arranged in the position shown in Fig. 5, which is indicated by the numeral 2 on the head 18 and is the intermediate position of said turning plug, the water entering through the pipe C will pass through the passage 10 into the pipe D and thence into top of the filter A. Passing downward through the filtering material, the water descends through the pipe E, and, passing through the enlargement 8 of the passage 7, it passes into the waste-water pipe G, by which the water is conducted into a sewer. The position last described is the one employed for carrying off the water contaminated by washing the filtering material, and it is also the position of the turning plug during the aeration of the filtering material in the manner previously described herein.

When the turning plug J is moved into the position shown in Fig. 6, which is the position indicated by the numeral 3 and is the one used while washing the filtering material, the water entering through the pipe C will pass downwardly through the passage 7 and pipe E, enter the bottom of the filter A, and pass upwardly through the filtering material in the latter. From the upper end of said filter it passes through the pipe D and passages 13 and 10 into the waste-water pipe G. Through the last-named pipe the waste water is carried off to a sewer to be discharged.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a multi-ported cock for filtering apparatus, the combination with a casing, 1, having a series of ports, 2, 3, 4, 5, and 6, opening into its bore; the ports 2, 3, 4, and 5 being arranged about equidistantly about the bore of said casing, and the port 6 intermediately between the ports 3 and 4, of a turning-plug, J, fitted to receive a partial rotation in said casing; said turning-plug being provided with passages 7, 9 and 10; the passage 7 having an enlargement, 8 at one end, and the passage 10 having a lateral branch, 13, leading therefrom; the passage 10 forming a communication between the ports 2 and 3 when the enlargement 8 is positioned to communicate with the ports 4 and 6; said passage 10 also forming a communication between the ports 2 and 3 when the passage 9 forms a communication between the ports 4 and 5; and the passage 7 forming a communication between the ports 2 and 4 when the passages 10 and 13 are positioned to communicate between the ports 3 and 6, substantially as specified.

JAMES H. BLESSING.

Witnesses:

JOHN W. WHEELOCK,  
WM. H. LOW.