

No. 705,544.

Patented July 22, 1902.

C. B. SHAW.

AUTOMATIC ALARM VALVE FOR FIRE EXTINGUISHING APPARATUS.

(Application filed May 24, 1901.)

(No Model.)

FIG. I.

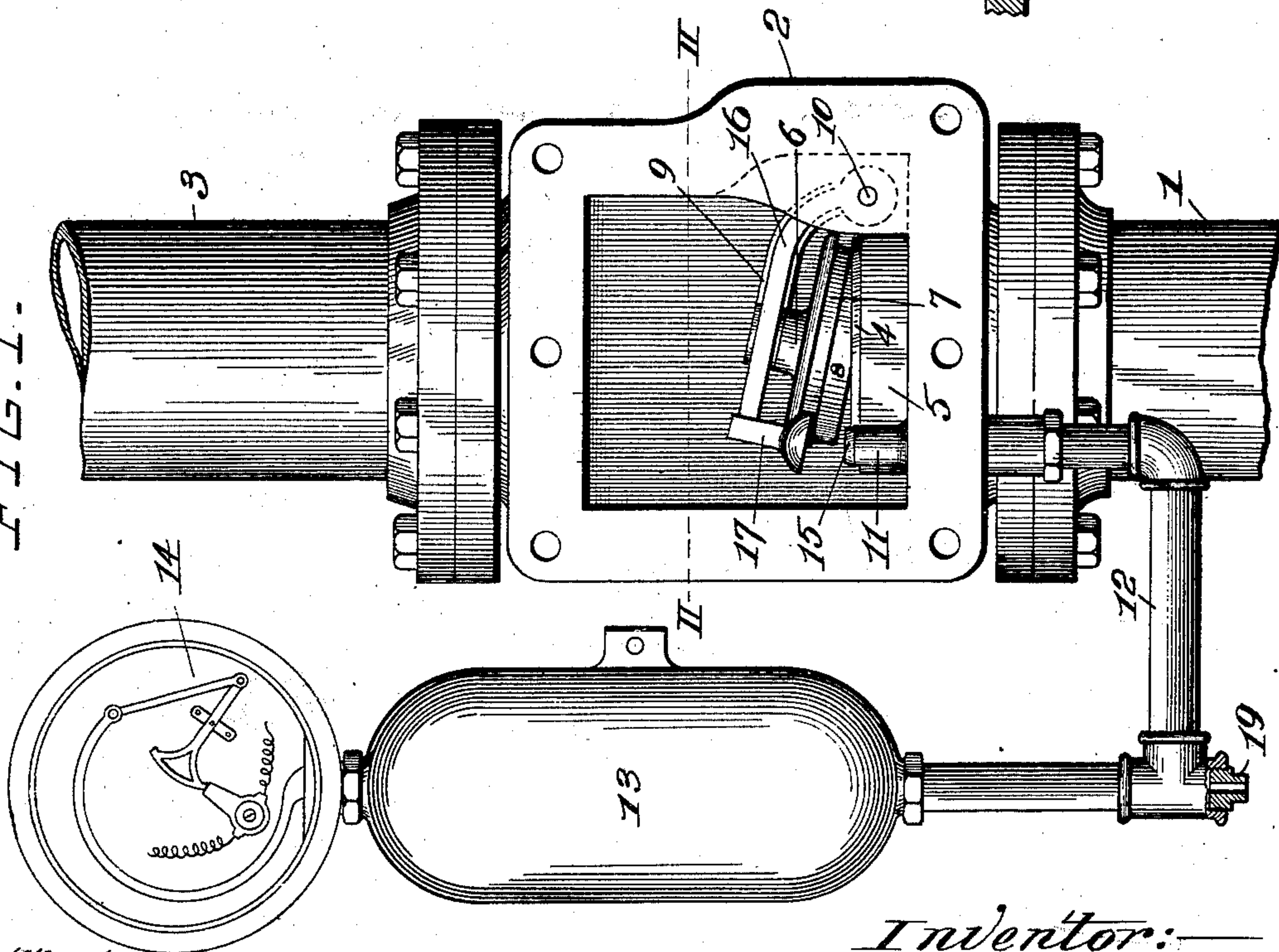


FIG. II.

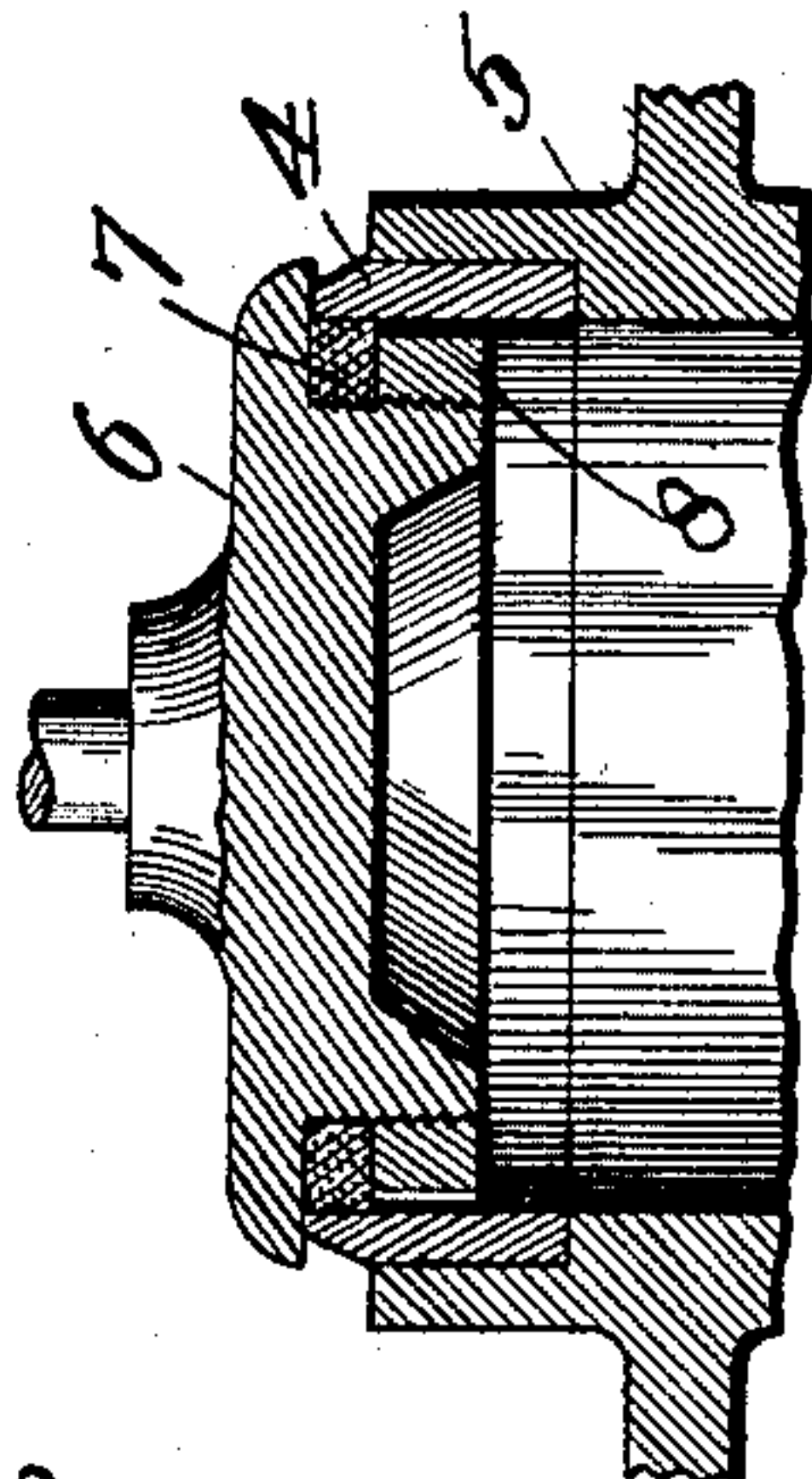


FIG. III.

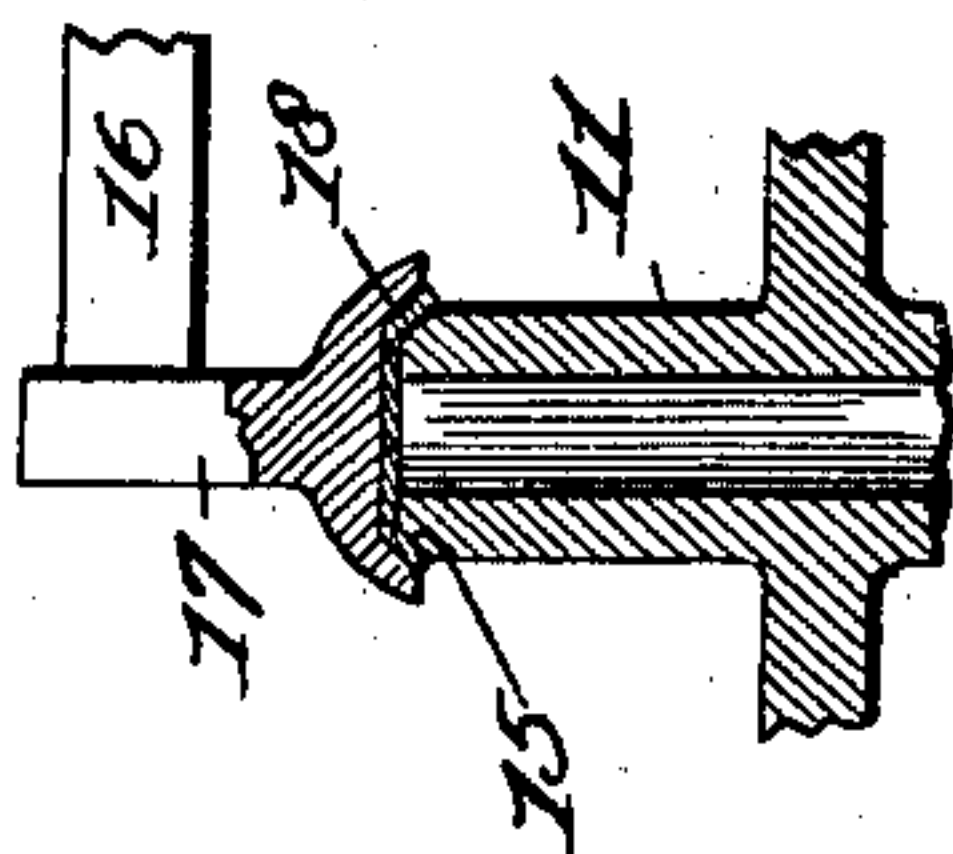
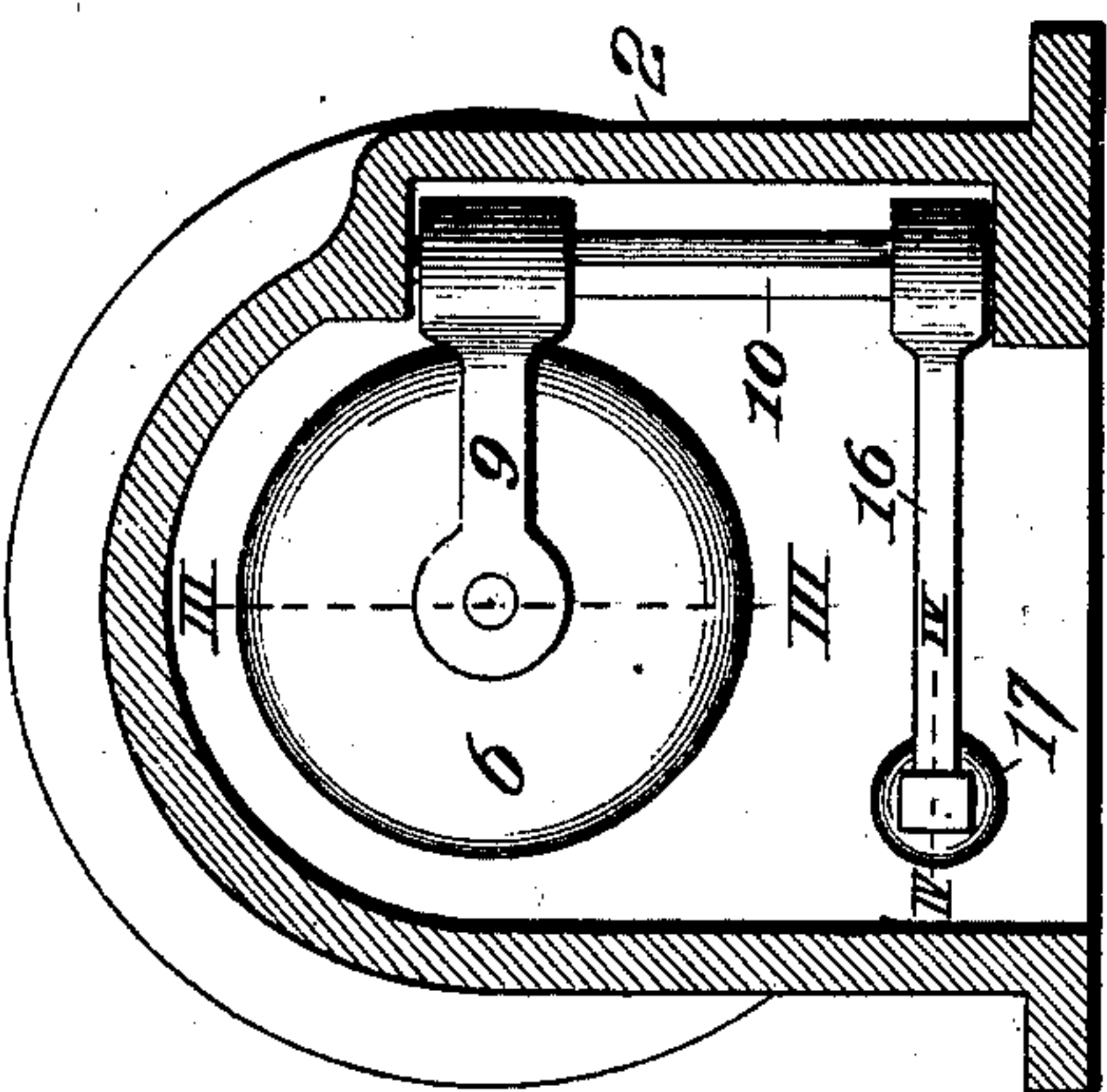


FIG. IV.



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UNITED STATES PATENT OFFICE.

CAMPBELL B. SHAW, OF KIRKWOOD, MISSOURI, ASSIGNOR TO SHAW MANUFACTURING COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION.

AUTOMATIC ALARM-VALVE FOR FIRE-EXTINGUISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 705,544, dated July 22, 1902.

Application filed May 24, 1901. Serial No. 61,698. (No model.)

To all whom it may concern:

Be it known that I, CAMPBELL B. SHAW, a citizen of the United States, residing at Kirkwood, in the county of St. Louis and State of Missouri, have invented certain new and useful Improvements in Automatic Alarm-Valves for Fire-Extinguishing Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of valves used in connection with "wet system" fire-extinguishing apparatus to control the supply of water in the supply-pipes with relation to its passage into the distributing-pipes; and the invention consists in a novel construction of alarm-controlling valve used in connection with a check-valve adapted to independently control the opening to an alarm-controller.

Figure I is a view in side elevation of portions of the supply and distributing pipes of a fire-extinguishing apparatus with the valve-housing shown open to illustrate the valves on the interior thereof, the alarm-controller also being shown in elevation. Fig. II is a cross-sectional view taken on the line II II, Fig. I, through the valve-housing. Fig. III is a sectional view taken on the line III III, Fig. II. Fig. IV is a sectional view taken on the line IV IV, Fig. II.

1 designates the water-supply pipe on which the valve-housing 2 is mounted. The valve-housing is shown with the side plate thereof removed in order to illustrate the construction interior of the housing.

3 designates the distributing-pipe, which may lead to any number of branches arranged throughout a building and equipped with sprinkler-heads adapted to automatically open in the presence of heat.

4 designates the check-valve seat, mounted in a nipple 5 of the valve-housing 2, the said nipple 5 having communication to the water-supply pipe 1.

6 designates a check-valve adapted to close against the valve-seat 4. This valve is provided with a gasket 7, held in place by a ring 8, having screw-thread connection with the valve, whereby the gasket may be compressed to spread it and cause it to fit snugly against

the valve-seat. The check-valve 6 is carried by an arm 9, that is fixed to a shaft 10, mounted in the walls of the valve-housing 2, so as to journal therein. The check-valve 6 is designed to hold the water in the supply-pipe in check from free flow into the interior of the valve-housing and distributing-pipe 3 when the apparatus is in normal condition. In such instance the valve is held closed by the pressure of water maintained in the distributing-pipe 3, which bears against the main valve, and being in excess of the pressure of water in the supply-pipe holds said valve closed.

11 designates a nipple extending upwardly into the valve-housing 2 and having communication with the pipe 12, leading to a chamber 13, surmounted by an alarm-controller 14 of any desirable construction, such as that shown in Fig. I. The upper end of the nipple 11 is provided with a valve-seat 15. This seat 15 is approximately in a plane with the check-valve seat 5, whereby when the valves are in need of repair the side plate of the housing may be removed and both valves will be before the person making the repairs, thus saving the necessity of disconnecting the valve from the casing.

16 designates an auxiliary arm fixed to the shaft 10 and adapted to partake of the movement of said shaft and the check-valve arm 9 on the movement of said check-valve. The auxiliary arm 16 carries an auxiliary valve 17, that is adapted to be brought into contact with the valve-seat 15 of the nipple 11, and when in such position closes communication from the interior of the valve-housing into the pipe 12 to chamber 13. The auxiliary valve 17 is provided with a seat-contacting disk 18, of tin or other soft metal, located in its cover.

19 designates a drain-outlet through which water may be drained from the pipe 12 and chamber 13.

In the practical use of this device the valves 6 and 7 are held against the valve-seats 4 and 15 (their normal positions) by reason of the water-pressure against them in the distributing-pipe 3 of the apparatus. When, however, a break occurs in the apparatus by reason of a fire opening one of the sprinkler-

heads, the water-pressure in the distributing-pipe is increased and the check-valve 6 is forced open by the pressure of water beneath it. As soon as the flow of water from the supply-pipe has entered the valve-housing it enters the nipple 11, owing to the auxiliary valve being raised in the movement of the check-valve 6. The water then flows into the pipe 12 and thence into the chamber 13 and reaches the alarm-controller 14, operating said controller and affording a signal wherever the alarm may be placed.

I claim as my invention—

1. In a device of the class described, the combination of a housing having inlet, outlet and auxiliary openings, a valve-seat for the inlet-opening, a valve-seat for the auxiliary opening approximately in a plane with

the inlet-valve seat, a rock-shaft mounted within the housing, and valves connected to said rock-shaft for simultaneously controlling the passage of fluid through both openings.

2. In a valve of the class described, the combination of a housing, a removable plate for the housing, a main nipple communicating with an inlet-opening, an auxiliary nipple communicating with alarm mechanism, valve-seats for the nipples, approximately in the same plane, a rock-shaft mounted within the housing, and valves connected to said rock-shaft for simultaneously controlling the passage of fluid through both nipples.

CAMPBELL B. SHAW.

In presence of—

E. S. KNIGHT,
M. P. SMITH.