

(No Model.)

2 Sheets—Sheet 1.

J. KANE.
FIRE EXTINGUISHER.

No. 395,906.

Patented Jan. 8, 1889.

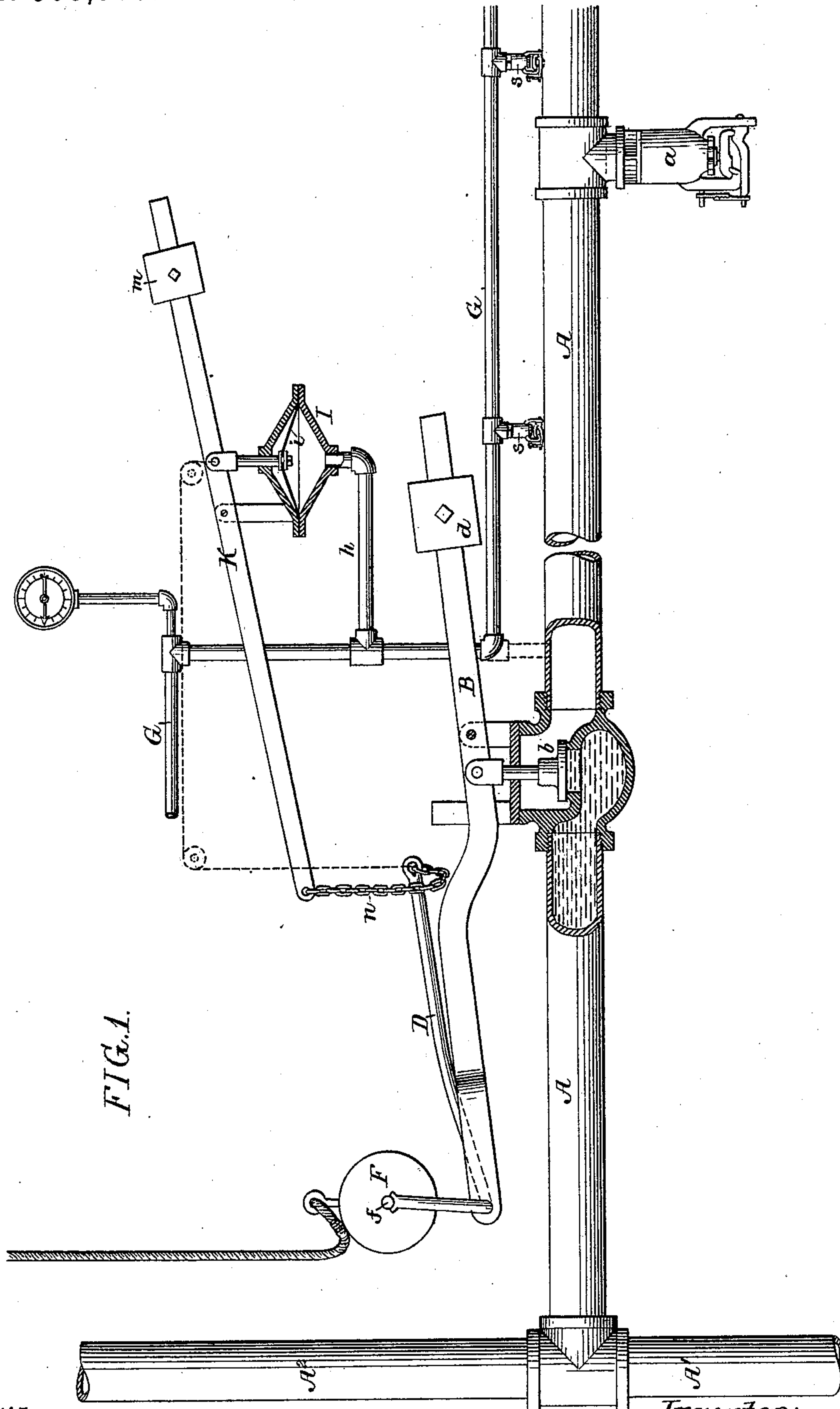


FIG. 1.

Witnesses:
Alex. Barkoff
David S. Williams

Inventor:
John Kane
by his Attorneys *Hawson & Dawson*

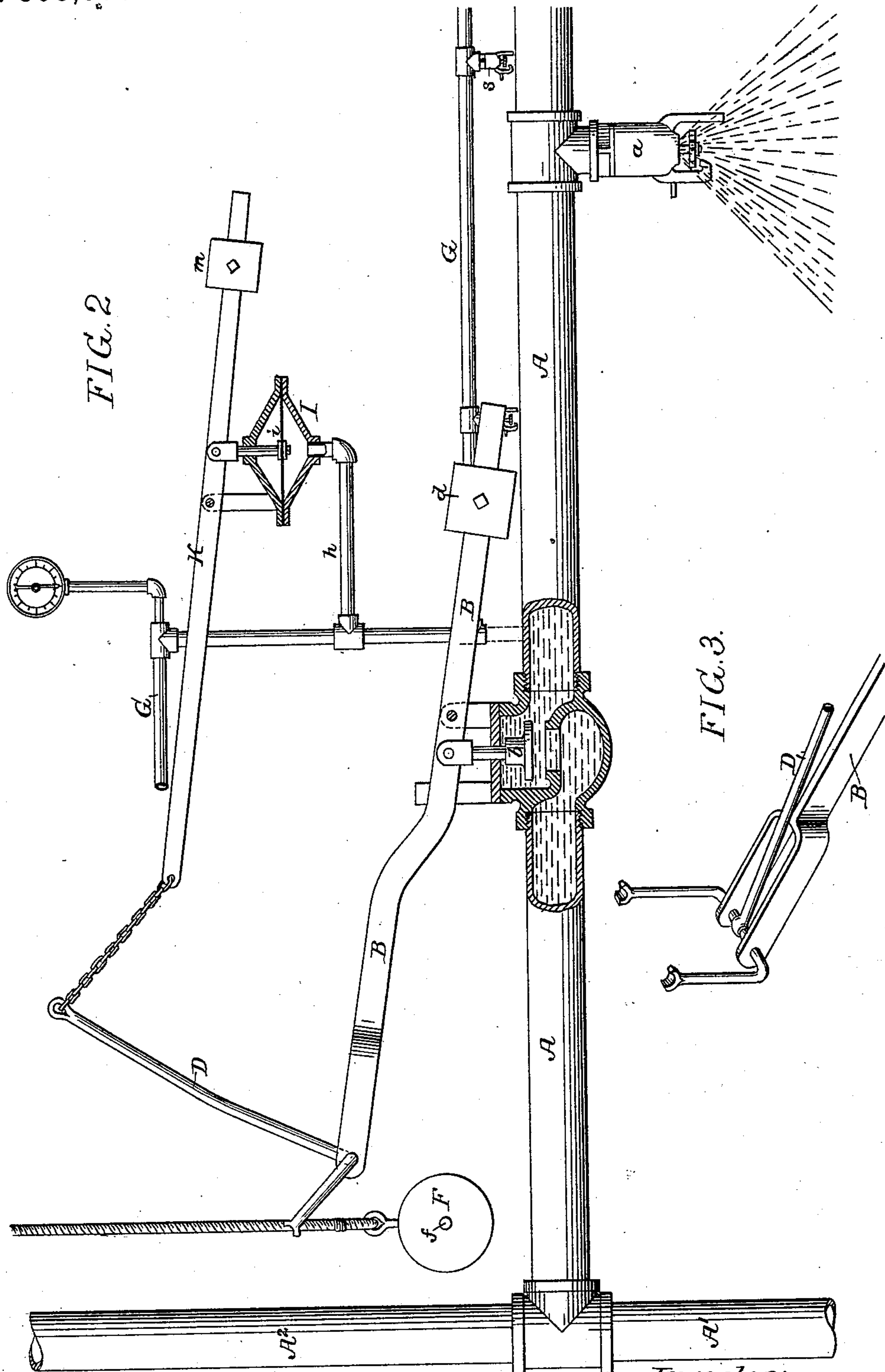
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2 Sheets—Sheet 2.

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Witnesses
Alex. Barkoff.
David S. Williams.

Inventor:
John Kane
by his Attorneys
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UNITED STATES PATENT OFFICE.

JOHN KANE, OF PHILADELPHIA, PENNSYLVANIA.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 395,906, dated January 8, 1889.

Application filed October 9, 1888. Serial No. 287,701. (No model.)

To all whom it may concern:

Be it known that I, JOHN KANE, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain
5 Improvements in Fire-Extinguishers, of which the following is a specification.

My invention consists of an improvement in that class of fire-extinguishers known as "dry-pipe systems," in which the water or other ex-
10 tinguishing-fluid is normally prevented from entering the sprinkling-pipes of the system, the controlling-valve being kept in the closed position by devices under control of a piston or diaphragm acted on by a pressure of air in
15 the sprinkler-pipes or in a secondary system of pipes, likewise provided with plugs or valves retained in position by fusible solder, so that the lowering of pressure in the air-pipe, due to the escape of air therefrom on the
20 melting of one or more of the fusible retainers, will permit the release of the valve in the water-pipe and the flow of water into said pipe and through such of the sprinklers thereon as may have been released by the heat.

25 The object of my invention is to provide simple and efficient means whereby the movement of the piston or diaphragm in the air system is caused to control the action of the valve in the water-pipe.

30 In the accompanying drawings, Figure 1 is a diagram showing sufficient of a dry-pipe-system fire-extinguisher to illustrate my invention. Fig. 2 is a similar view showing some of the parts in a different position, and
35 Fig. 3 is a detached perspective view of that part of the device to which my invention particularly relates.

A represents the water-pipe, which may have both a supply branch, A', from the street-
40 main and a supply branch, A², from an elevated tank. This pipe is provided with a number of sprinklers, a, of any desired character, kept closed by fusible retainers, a valve, b, being interposed in the pipe A between the
45 supply branch and the first sprinkler of the series, and this valve being normally closed, so as to prevent the passage of water beyond the same or its access to the system of sprinkler-pipes. The stem of the valve is connected to
50 a lever, B, one arm of which is provided with a weight, d, while the other arm is furnished with a bell-crank lever, D, forked at the ful-

crum, so as to present two short arms, which are notched at their upper ends for the reception of pins or trunnions f, projecting from
55 opposite sides of a weight, F, of such a character that the preponderance of weight is on that arm of the lever B carrying the lever D, so that the valve b is kept closed to its seat.

The upper or supporting ends of the short
60 arms of the lever D are, when the latter is in its normal position, as in Fig. 1, slightly inside of a vertical line passing through the fulcrum of the lever, so that the tendency of the weight F is to maintain the lever D in this
65 position. If, however, the inner end of the long arm of the lever D is lifted, so as to throw the upper ends of its short arms to the other or outer side of said vertical line, the tendency of the weight will be to continue the
70 movement until it is finally discharged from the short arms of the lever, and the valve-lever B is thereby relieved of the weight F, so that the weight d on the other arm of the lever acts to lift the valve b and permit the flow
75 of water into the pipe A and to the sprinklers. A dry-pipe system of this character is usually employed in connection with a supplementary air-pipe, G, which has distributed throughout its length valves s with fusible retainers; this
80 pipe communicating with any suitable pump or other air-forcing device, and having in the present instance a branch, h, upon which is mounted a casing, I, containing a flexible diaphragm, i, the stem of which is connected to
85 a lever, K, hung to a suitable bearing on the casing. A cylinder and piston may, as will be evident, be substituted for the casing and diaphragm, if desired.

One arm of the lever K is provided with a
90 weight, m, and its other arm is connected by means of a cord, chain, or other suitable device, n, to the long arm of the lever D, constituting the tilting weight-carrier of the valve B.

95 The normal pressure of air in the pipe G and within the casing I is sufficient to raise the diaphragm i therein, so as to lift the weighted arm of the lever K and relieve the chain n from tension; but upon the melting
100 of the fusible retainer on any one of the valves in the pipe G the air is permitted to escape from said pipe and from the casing I, and the pressure beneath the diaphragm i is thereby

he weight *d*.
e evident that with a device of this
sired pressure of water may be main-
ile only a slight pressure in the air-
ecessary, so that a light and flexible
m, *i*, can be employed, and the risk
in the operation, due to the setting
ng of this diaphragm, is effectually
e.
e. *g* is independent or supplement-
e. *h* is absolutely necessary.

own, for instance, by dotted lines in Fig. 1. The use of the lever K is preferred, however, as it imparts a sudden jerk, which facilitates the up-right-carrier and the dis-

2. The combination of the sprinkler-pipe, its valve-lever, a tilting weight-carrier pivoted to the latter and having a weight loosely mounted upon it, whereby the valve is held closed, the air-pipe with its casing and diaphragm, and a weighted lever acted on by the stem of the diaphragm and connected to the tilting weight-carrier of the valve-lever, all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN KANE.

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