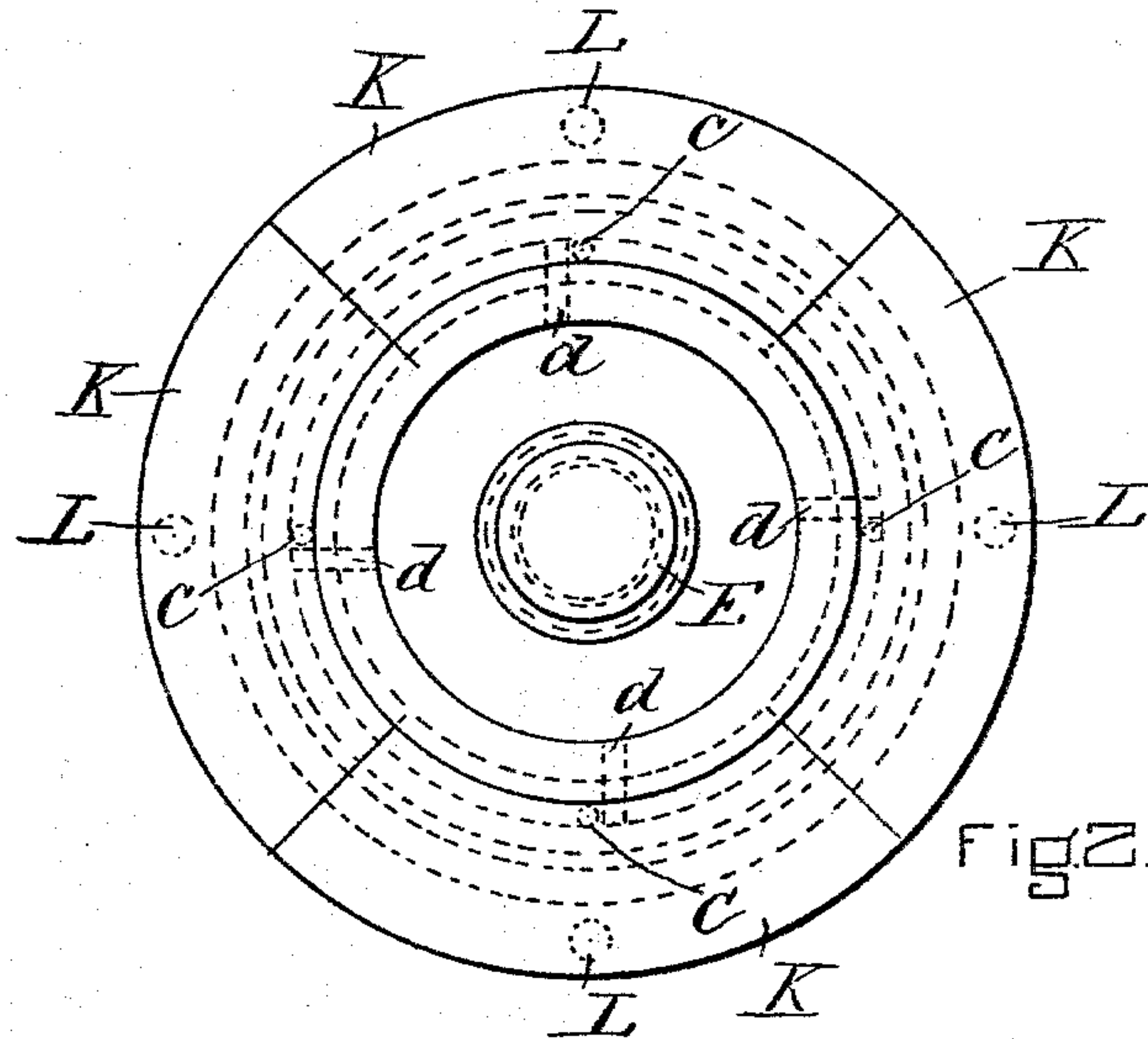
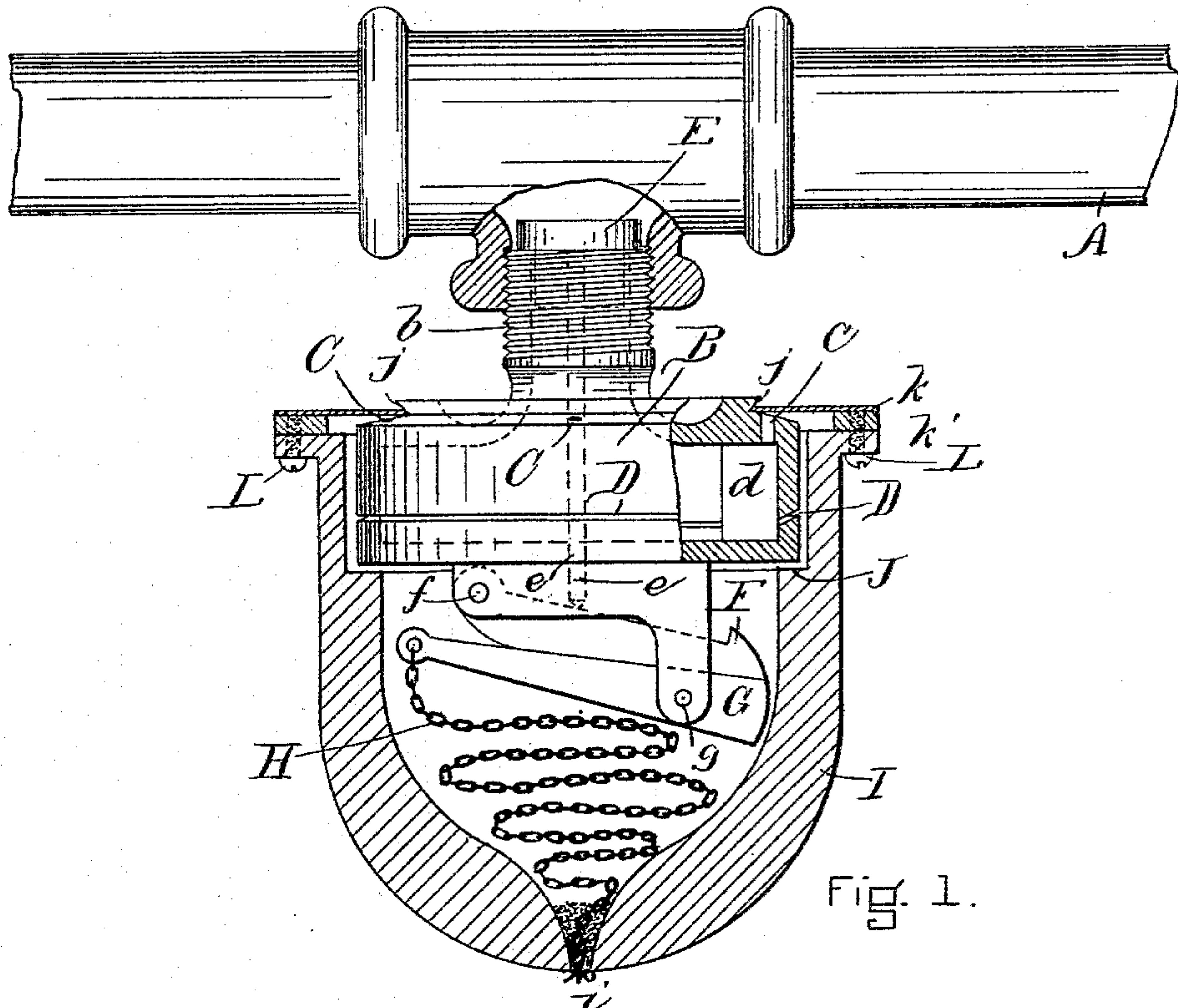


(No Model.)

G. T. McLAUTHLIN & J. NAYLOR, Jr
AUTOMATIC FIRE EXTINGUISHER.

No. 515,938.

Patented Mar. 6, 1894.



WITNESSES.

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AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 515,938, dated March 6, 1894.

Application filed December 9, 1892. Serial No. 454,651. (No model.)

To all whom it may concern:

Be it known that we, GEORGE THOMAS McLAUTHLIN and JAMES NAYLOR, Jr., citizens of the United States, and residents of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Automatic Fire-Extinguishers, of which the following, taken in connection with the accompanying drawings, is a specification.

Our improvements relate to what is generally known as the "automatic sprinkler system" as used for the extinguishing of fires.

The object of our invention is to produce a fire extinguisher having the following features: First. The valve is held closed by the pressure in the supply system. Second. No water is contained in any part thereof. Third. The distributor is entirely incased. Fourth. The valve is opened by a force independent of the pressure in the system. Fifth. The valve when opened is automatically locked open. Sixth. Provision is made for discharge directly upward. Seventh. Systematic general distribution is obtained through a permanent annular discharge opening. Eighth. The easy stopping of the flow. Ninth. The automatic exposure of an incased distributor.

Our invention consists of the arrangement and construction of parts in such manner as will be herein fully specified, and set forth in the claims.

In the drawings, Figure 1 is a sectional view; Fig. 2 a plan view.

A is the supply pipe of the system shown. B is the distributor, screw threaded at *b*, to fit the fittings of the supply pipes.

C C C C are vertical holes through the upper part of the distributor.

D is an annular discharge opening, cut around its periphery, the lower part of the distributor being held by the parts *d d*.

The uppermost part of the distributor forms the seat for the valve E, which has a stem *e* reaching through the lower part at *e'*.

F is a lever, fulcrumed at *f*, and at rest near the valve stem *e*. Against the lever F is the lever G which is fulcrumed at *g*.

H is a chain fastened to the long end of the lever G. A small part of the chain is sustained by this lever and the remainder, about

one foot in length, lies loose in the casing I. The other end of this chain is made fast to the casing at *i*. The weight of this casing is preferably about one pound. Its purpose is to protect the distributor B from all obstructing accumulations and blows or other accidents which they are subject to, and to force open the valve E in event of a fire. When thus guarded, a severe blow will not injure the valve nor any of the other parts of the distributor; while in all others, such a blow would surely cause a serious leak with resulting damage and expense. The casing has the shoulder J which serves as a stop in putting the parts together and thus facilitates that part of the work.

The distributor has a dove-tailed rabbet at *j* around it.

K K K K are the fusible supports and are each made of two pieces *k* and *k'*, soldered together by fusible alloy.

L L L L are screws, each of which holds one of the fusible supports to the casing and distributor. The screws pass through the flange of the casing and are tapped into the pieces *k'* of the fusible supports. The piece *k* fits into the dove-tailed rabbet *j* of the distributor so that a practically air-tight closing is effected between the casing and distributor with neither coming in direct contact.

There is a hole through the bottom of casing at *i* through which the chain H is fastened; this hole is packed with fibrous material, so as to secure the distributor against the corroding fumes and dust of mills and factories.

The operation of our extinguisher may be stated as follows:—In event of a fire, the rise of temperature unsolders the joints between the pieces *k* and *k'*, and the casing I, with the pieces K' secured thereto, drops. At the termination of the fall which is limited by the chain H a severe jerk is given to the lever G, which in turn acts on the lever F and the supply valve E which is opened by a force equal to the drop of the casing multiplied by the leverage. This insures the opening of the valve and consequently its reliability. To prevent the closing of the valve, the lever G is held in a vertical position, which sustains the lever L so that no weight from the valve could possibly close it or move the levers from

their position. When the fire is extinguished, the supply valve E may be closed, and further damage stopped, by simply putting the lever G into its original position and hooking the chain on to the lever F. The casing may be replaced, by applying new fusible supports K, thus rendering the extinguisher complete, as before. It may be observed that the valve being rigidly supported by solid metal, the undue strains of water pressure cannot weaken the fusible joint, and that the fusible jointed parts perform no function, directly, to open said valve. In all other so called "sprinkler heads" used for this same purpose there is a space above the valve which in time fills up with sediment and hardens, often preventing said valve from opening and choking the passage in case it should open. The valve is also exposed to external influences, which often render it inoperative.

It often happens that a valve having the pressure to open it will fail to open by reason of sediment and corrosion; to such our improvements may be added which by the drop blow would surely open it.

We are aware that soldered fusible connections are now used in automatic fire extinguishers. Such we do not claim; but

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a fire extinguisher the combination with the segmental fusible supports composed of the parts *k* and *k'* the parts *k'* being screw threaded, of the case I and the distributor as shown and described.

2. In a fire extinguisher the distributor B, having the valve E located at its inlet, and provided with an extending stem through said distributor in combination with the case and connecting mechanism to raise said valve and stem as herein set forth.

3. The combination with the valve and the

extending stem through the distributor, of the lever F provided with a hooked end and pivoted to the distributor, and mechanism connecting it to the case, and said case, for the purpose of stopping the flow of water as herein set forth.

4. The combination with the distributor having the annular groove *j*, the segmental fusible connections K K K K and case I of the valve and connecting mechanism thereto from said case as herein set forth.

5. In an automatic fire extinguisher the combination with the valve, distributor and mechanism to force open said valve; of the case, and the chain connecting said case to said mechanism, as herein set forth.

6. In an automatic fire extinguisher the case and chain held to the distributor by connections which part at an abnormal heat; in combination with the valve operatively connected to said chain as herein set forth.

7. In an automatic fire extinguisher a supported valve held closed independent of the fusible parts, and means to force same open, consisting of a case adapted to fall, the chain and connecting mechanism; in combination with the fusible supports for holding the case to the distributor as herein set forth.

8. In an automatic fire extinguisher the combination with a case adapted to fall, and a chain of limited length; of a supported valve provided with mechanism to open same, and connected to said chain as herein set forth.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, on this 26th day of November, A. D. 1892.

GEORGE THOMAS McLAUTHLIN.
JAMES NAYLOR, JR.

Witnesses:

A. KENNY,
M. W. E. BROMKHORST.