

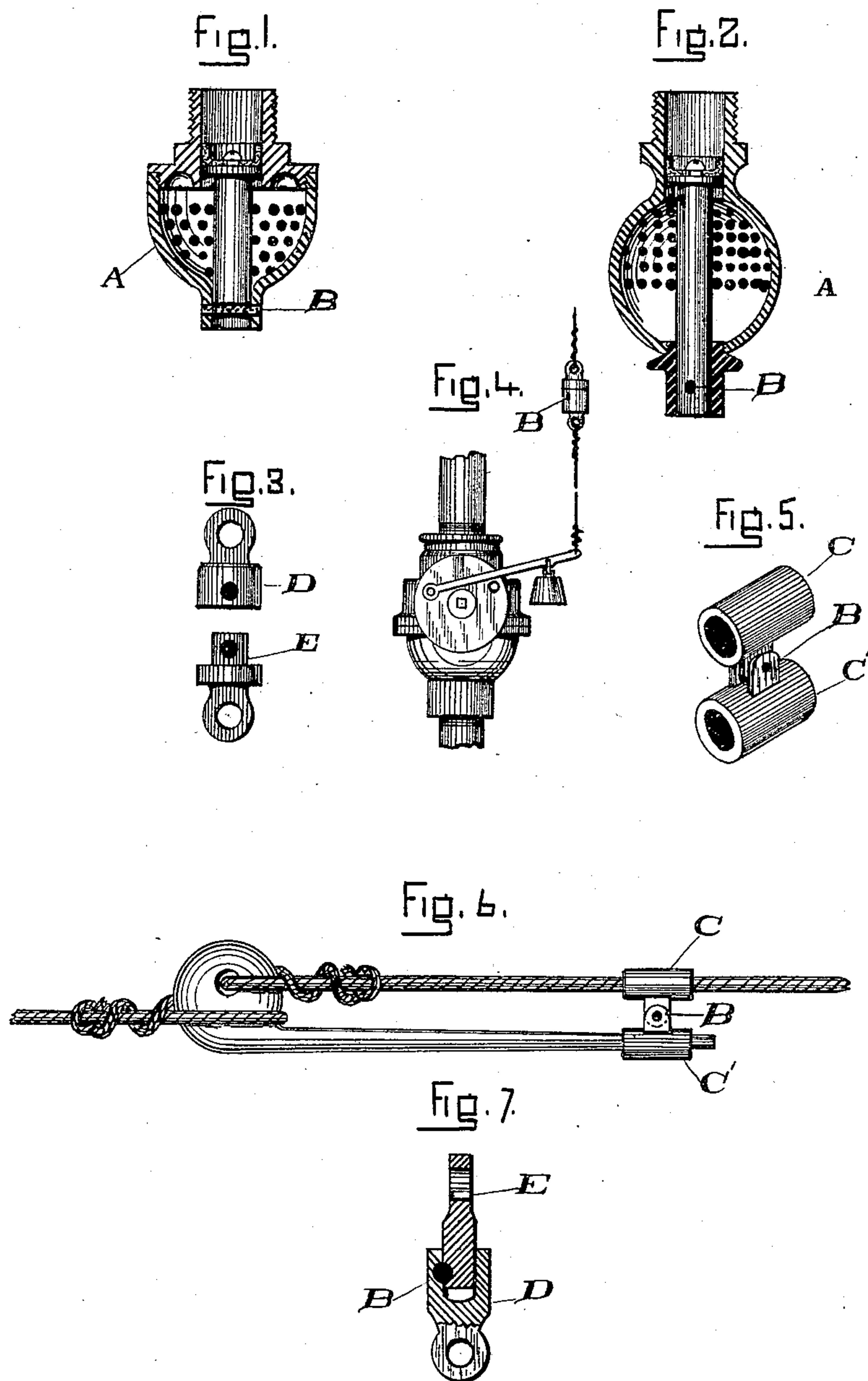
(No Model.)

C. BARNES.

AUTOMATIC FIRE EXTINGUISHING APPARATUS.

No. 316,223.

Patented Apr. 21, 1885.



ATTEST

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AUTOMATIC FIRE-EXTINGUISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 316,223, dated April 21, 1885.

Application filed April 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BARNES, of Dayton, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Automatic Fire-Extinguishers, of which the following is a specification.

This invention relates to that class of automatic fire-extinguishers in which a valve is held to its seat by fusible metal until the metal is fused by heat in case of fire.

Its object is to provide against the release of the valve under ordinary changes of temperature, and to insure its speedy release in case of fire. I have found that metal surfaces united by fusible solder-joints are not always reliable, especially after considerable exposure to varying temperatures below the fusing-point. Owing to the unequal expansion between the fusible solder and the melted surfaces united by it, the solder becomes weaker, and when the flow of water is turned on sprinklers not in proximity to the fire are liable to be forced open, causing unnecessary damage. By my present invention these difficulties are avoided, as will be seen from the following description of the accompanying drawings, in which—

Figure 1 is a central longitudinal section of a perforated distributor having within it a valve which is held to its seat by a fusible metal pin passing transversely through the neck of the distributor, upon which pin the stem of the valve rests. Fig. 2 is another form of distributor, shown in similar section. In this the valve is held to its seat by a fusible pin passing transversely through the neck of the distributor and the valve-stem. Fig. 3 is a plan view or elevation of a link for connecting a wire which holds a supply-valve closed until released by heat. The parts are shown disconnected in this view, but are to be united by a fusible pin passing through the socket and pin, as shown in Fig. 4, which is an elevation of a supply-valve case. The valve is held closed by the fusible jointed wire until the link parts are fused, when it is opened by the weighted lever-arm. Fig. 5 is an enlarged view of a clevis-slide, the opposite members of which are united by a fusible metal pin, which passes through the lugs projecting from the members. Fig. 6 is a side elevation of the

clevis, its uniting-slide, and so much of the valve-holding wire as illustrates the means of uniting the same. Fig. 7 is a central longitudinal section of a fusibly-jointed wire link or coupling similar to the form shown in Fig. 3, except that the pin and socket are made square or angular, instead of round, and the fusible metal pin which unites the pieces is one-half in each piece.

The perforated distributors A are provided with elastic cup-valves, like that shown in my Patent No. 239,639, dated April 5, 1881. With this form of valve, which I prefer because there can be no leakage and no danger of sticking, as there is with valves in which the valve and seat are both metal, no screw-threaded stem is needed to tighten the valve to its seat; hence when the neck of distributor A is transversely perforated, as in Fig. 1, and the neck and valve-stem, as in Fig. 2, and the fusible pins B, severed to the proper length from a fusible rod or wire of the proper gage, it is only necessary to place the valve in position and insert the fusible pin B, when the distributor is ready for use.

If it is desired to apply my present invention to a metal valve and seat which requires tightening, the fusible pins B may be used, as the pintles in the forms of distributors represented in Figs. 2, 3, and 4 of my Patent No. 233,393; or the latch $\frac{1}{2}$ of that patent could be locked by the pin, instead of being soldered. The supply-valve I have shown here is the same as represented in said Patent No. 233,393, as is also the clevis represented in Fig. 6, except the slide C C'. This consists of two rings or sections of tubes. The upper one, C, has a single lug projecting from it to enter between two lugs projecting from the opposite member, C'. These lugs are perforated to receive the fusible pin B, which unites the two halves.

A very simple, cheap form of coupling for fusibly-jointed wires is represented in Fig. 3. It consists of a female member, D, which receives a male member, E. When the parts are put together, a transverse perforation is made through both to receive the fusible pin B; but I prefer the form shown in Fig. 7, for the reason that the fusible pin is nearer to the outer surface of female member D, and therefore will fuse quicker, and the whole of the pin,

which is within the male member E, serves as a bearing to hold the parts together until the pin is fused by heat.

The supply-valve should be arranged to be released simultaneously with the release of the valve within the perforated distributor, as they are designed for use in the same system, although capable of separate use. I have therefore shown the fusible metal pin as a retaining and releasing device for both valves. The examples of each shown here fully illustrate the principle of my present invention as an improvement upon the former devices patented to me, and render it unnecessary to illustrate a great number of obvious modifications embodying the same principle.

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

1. In an automatic fire-extinguisher, the following parts in combination: a perforated

distributor adapted to be secured to the end of a discharge-pipe and a valve located within the distributor and held to its seat within the discharge part by a fusible pin, B, passing through the neck of the distributor, substantially as specified. 25

2. In an automatic fire-extinguisher, the combination, substantially as before set forth, of the distributor A, adapted to be attached to the end of a discharge-pipe, and a valve located within the discharge part and having a stem extending into the neck of the distributor, with a fusible metal pin, B, passing transversely through the valve-stem and the neck of the distributor to retain the valve in place until released by heat. 30 35

CHAS. BARNES.

Witnesses:

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C. H. MUHRMAN.