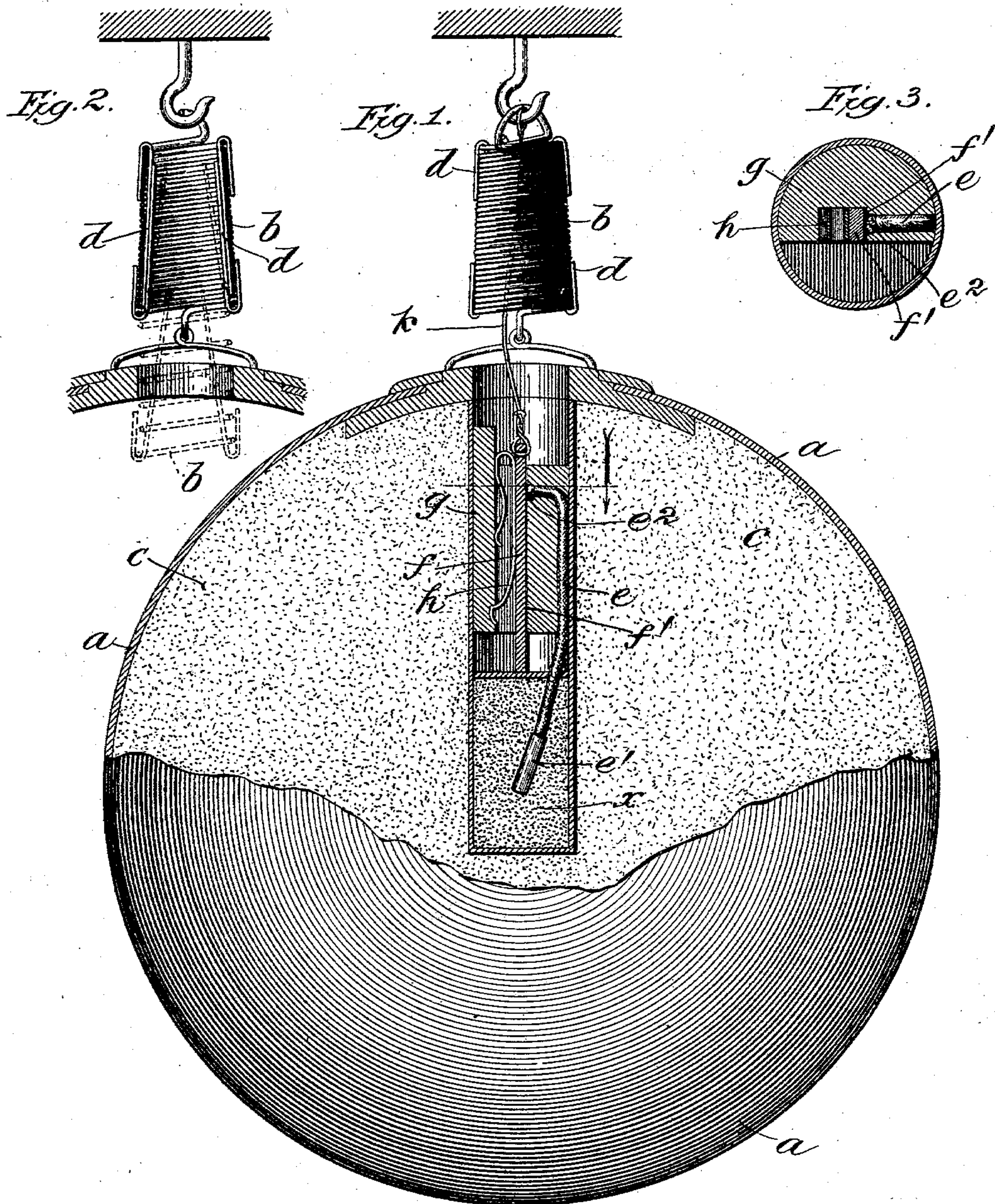


W. J. FRY.
FIRE EXTINGUISHER.
APPLICATION FILED APR. 14, 1902.

NO MODEL.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM J. FRY, OF CHICAGO, ILLINOIS.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 744,061, dated November 17, 1903.

Application filed April 14, 1902. Serial No. 102,723. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. FRY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Fire-Extinguishers, of which the following is a full, clear, concise, and exact description.

My invention relates to a fire-extinguisher, and has for its object to provide an improved device which will act automatically under the influence of heat to distribute a fire-extinguishing compound at the base of the flames and throughout a comparatively extensive surrounding space. The compound which I prefer to employ is in the form of a powder and is well known in the art, the present invention relating simply to the apparatus for automatically scattering or distributing it when a fire occurs.

I provide a globe or container, preferably of paper or papier-mâché, in which a suitable quantity of the powder or compound is packed, with an explosive, such as a small piece of dynamite, in the center. The extinguisher is normally supported near the ceiling of the room, to be protected by a device which when subjected to heat will operate to release said extinguisher and permit the same to drop, and means are provided for automatically firing the explosive after the extinguisher has fallen. The reason for delaying the explosion until the extinguisher has fallen is that, as I have discovered, the efficiency of the compound is very greatly increased when the compound is applied to the base of the flame. The active agent in extinguishing fire is the gas which is liberated or produced from the powder, and the draft produced by a fire is usually so great that the liberation of this gas at the top of the flame would have but little effect, the gas being carried off before the fire is extinguished. My idea is to release the globe or container so that it may fall nearly or quite to the floor or as low as may be desired before the explosion is produced to scatter the powder. To prevent the globe from being broken in the fall and the application of the powder being thereby too greatly localized, I preferably provide a device—such, for example, as a spring—which is arranged to check the fall

of the extinguisher and sustain the weight thereof when released. An additional feature of my invention is a device for firing the explosive at the proper time. The preferred form is a fuse and a percussion igniter arranged to be automatically lighted in the fall of the extinguisher.

My invention will be particularly described and further features thereof set forth by referring to the accompanying drawings, which illustrate the preferred embodiment.

Figure 1 is a vertical sectional view of my fire-extinguisher. Fig. 2 is a detail sectional view illustrating how the globe is automatically released under the influence of heat. Fig. 3 is a detail cross-sectional view of the igniting device.

The same letters of reference are used to designate the same parts wherever they are shown.

The globe or container *a*, which is preferably of paper or papier-mâché, is suspended by a coiled spring *b* from a suitable hook in the ceiling of the room to be protected and is filled with the powder or compound *c*, which may be any of those now well known, as may be desired. In the center of the globe is packed a suitable quantity of explosive *x*—as, for example, dynamite of low grade—which when exploded will shatter the globe and throw the powder violently in all directions, instantly extinguishing any blaze in the vicinity. The spring *b* is of insufficient strength of itself to hold the globe in an elevated position; but the spring is normally held contracted by bands of metal *d d*, each of which is made in two parts soldered together by an easily-fusible alloy which will melt at a low temperature—say 150° Fahrenheit. As soon as this temperature is reached, as in case of fire, the bands *d d* will separate, due to the melting or softening of the solder, and will no longer act to confine the spring and support the globe, and the latter being released will fall for a considerable distance, dependent upon the length and stiffness of the spring. The spring acts to check the fall and sustain the globe, so that it is not broken, but simply dropped to an effective distance. A fuse *e* is provided equipped with a detonating-cap *e'* at one end, which is disposed in or near the dynamite, and a ful-

minate or igniter e^2 at the other end. A friction firing-pin f is arranged to slide in a frame g , and the end of the fuse which has the fulminate is disposed in position to be rubbed
 5 by a suitably-prepared surface f' on said pin. A spring h may be adjusted to press the pin against the side of the frame in which the fulminate is fixed. The pin f is fastened to
 10 a short wire k , which is suspended from the hook which carries the spring b , so that when the globe is released and falls the firing-pin will be pulled sharply through the frame or guide g , the surface thereof rubbing the fulminate e^2 , and so igniting the fuse. The lat-
 15 ter will burn until finally the detonating-cap explodes and the dynamite with it, the globe, which has fallen to the limit of the spring b , being shattered and the powder c distributed to extinguish any neighboring fire, as before
 20 described. I prefer to make the fulminate e^2 and the striking-surface f' of the firing-pin of special materials, so that the fulminate cannot be ignited by mere friction, but must be rubbed by the special chemically-prepared sur-
 25 face f' of the firing-pin. The material of the fulminate can be the same, for example, as that commonly used for safety-matches, and the surface f' of the firing-pin may be coated with the corresponding substance, such as is
 30 ordinarily put on the sides of match-boxes.

I am aware that it has been proposed heretofore to scatter or distribute fire-extinguishing compound by means of an explosive; but the apparatus heretofore provided for this
 35 purpose has been objectionable in that the vessels containing the compound have been made of glass. With such a structure when an explosion occurs the glass is thrown violently in all directions, cutting and injuring
 40 the surrounding objects. Such a device is extremely dangerous to life and property. I have discovered, however, that by making the container of paper, papier-mâché, or the like and using a fire-extinguishing com-
 45 pound in the form of a dry powder packed around the explosive, which is centrally located therein, the powder will be effectively scattered by an explosion, but without injury to surrounding objects or damage to persons
 50 who may be near.

I therefore claim—

1. The combination with an explosive fire-extinguisher, of a support adapted to hold the said extinguisher normally in an elevated
 55 position, said support being adapted, when

heated, to release the extinguisher and permit the same to fall, a spring arranged to sustain the extinguisher in its fall and means for exploding the extinguisher after its fall.

2. In a fire-extinguisher, the combination 60 with the container a and extinguishing compound c therein, of an explosive arranged to scatter said compound when fired, a fuse for firing the explosive, a support for the container adapted to release the same under the 65 influence of heat, to permit the container to fall, and an igniting device for lighting the fuse, actuated in the fall of the container.

3. The combination with an explosive fire-extinguisher, of a coiled spring suspending 70 the same, the tension of said spring being insufficient to maintain its contracted position under the weight of the extinguisher, a support d normally sustaining the extinguisher, but adapted to separate when subjected to 75 heat, whereby the extinguisher is released and falls, the fall being checked by the spring, and means for exploding the extinguisher after its fall.

4. The combination with the container a 80 and the powder c therein, of the explosive x , the fuse e and an igniting device for said fuse comprising a safety-fulminate e^2 and a rubber therefor having a special coating f' adapted to unite chemically with said ful- 85 minate to ignite the same.

5. The combination with the container a and the powder c therein, of a coiled spring b suspending the container from a suitable support, a band d normally confining the 90 spring to hold the container in an elevated position, said band being adapted to separate when heated, to permit the container to fall, the explosive x , a fuse e for firing said explosive, the igniting device having the firing-pin 95 f slidably mounted in the framework thereof, a fulminate arranged to be rubbed by said firing-pin when the same is withdrawn, to light the fuse, and a wire k carrying the firing-pin and fastened to the support from 100 which the container is suspended, whereby the firing-pin is withdrawn to light the fuse when the container falls.

In witness whereof I hereunto subscribe my name this 11th day of April, A. D. 1902. 105

WILLIAM J. FRY.

Witnesses:

DE WITT C. TANNER,
 MATT S. THORNTON.