

No. 607,113.

Patented July 12, 1898.

G. H. DOWNING.
PORTABLE FIRE EXTINGUISHER.

(Application filed Aug. 21, 1897.)

(No Model.)

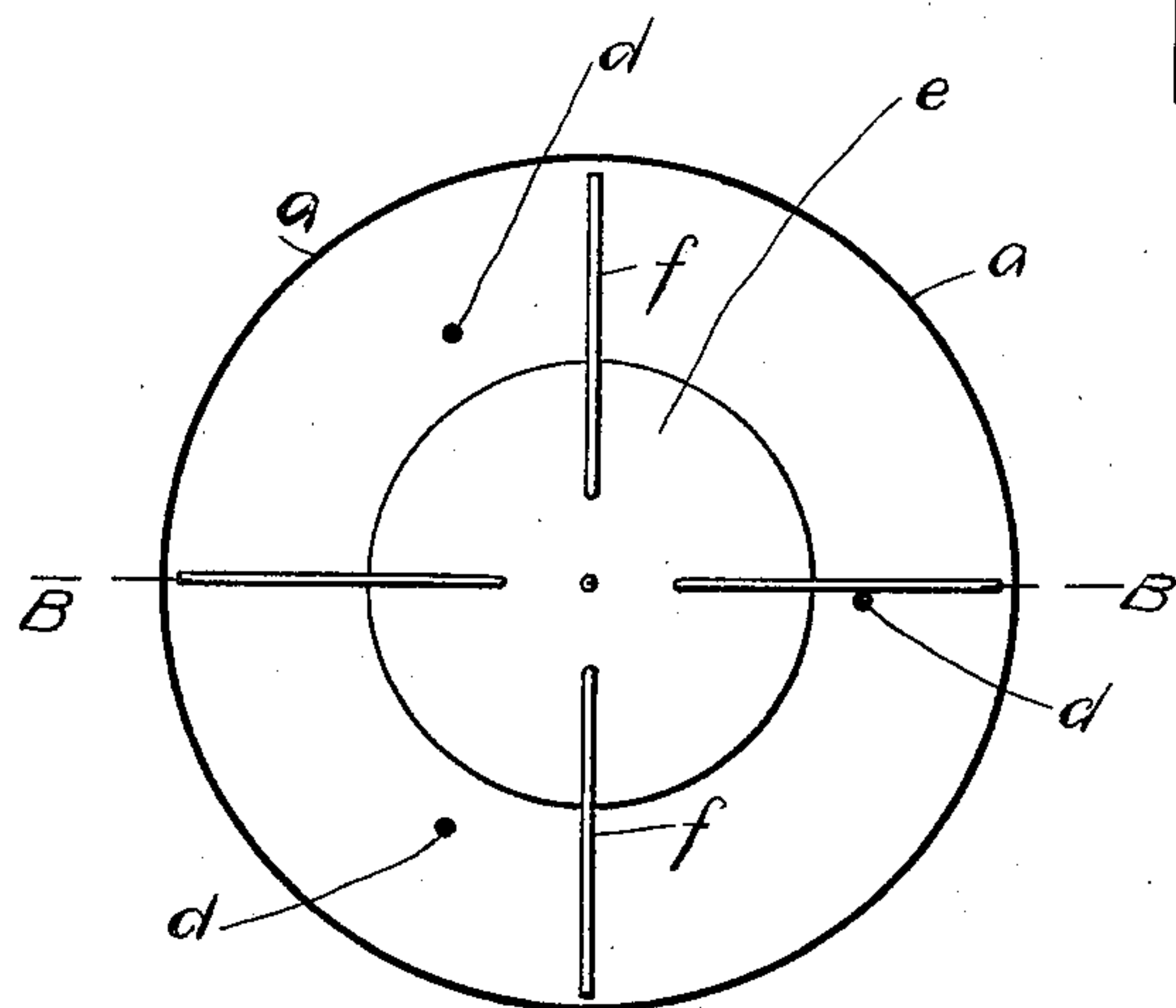


FIG. 2.

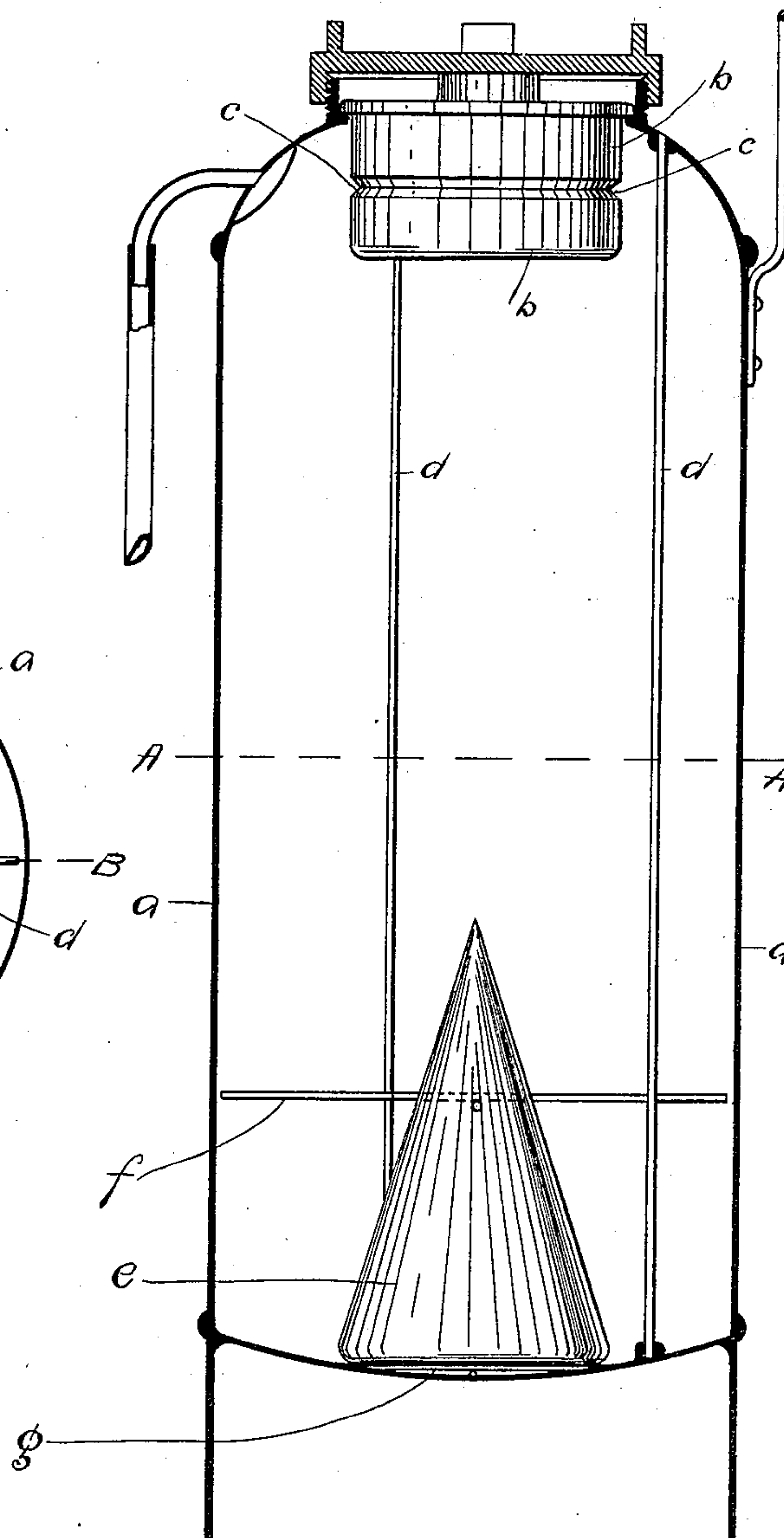


FIG. 1.

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PORTABLE FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 607,113, dated July 12, 1898.

Application filed August 21, 1897. Serial No. 649,088. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HENRY DOWNING, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Improvement in Portable Fire-Extinguishers, of which the following is a full and complete specification.

The object of my improvement is to provide a portable fire-extinguisher with a metal or wooden case, at the top of which is a finely-blown glass bottle blown with a concave ring in the glass, so as to enable the bottle to be readily broken, the said bottle containing acid, which when liberated by the bottle being broken by a metal weight will allow the fumes thereof to be directed on the fire for the purpose of extinguishing the same. At the end of the case opposite from the glass bottle is a sharp-pointed metal weight with horizontal metal rods passing through it, as indicated on the diagram, so arranged with three or more guide-rods running from the bottom to the top of the case that when the case is entirely inverted, and not until it is entirely inverted, will the metal weight fall with its point upon the glass bottle containing the acid aforesaid. The bottom of the external case upon which the metal weight rests is reinforced by two or more metal bars, upon which, when the extinguisher is turned back to its original position after use, the weight will fall instead of upon the bottom itself, thereby protecting the bottom from injury and permitting the frequent recharging of the extinguisher.

The particular parts of the improvement which it is desired to patent are the arrangement of the sharp-pointed metal weight with the horizontal bars passing through it, running between the guide-rods placed as aforesaid, and the form of the bottle.

In the accompanying drawings, Figure 1 is a vertical section through the center of the extinguisher. Fig. 2 is a horizontal section of the extinguisher at the point indicated by the letters A A on Fig 1.

Similar letters refer to similar parts in both the drawings.

a represents the outer metal case, which is filled with liquid, such as an alkali solution of bicarbonate of soda and water.

b is the glass bottle or vessel containing the

acid (such as sulfuric) which when the bottle is broken combines with the liquid in the extinguisher, forming the extinguishing fluid.

c is the crease or indentation blown in the bottle to enable it to be more readily broken by the weight when the extinguisher is inverted.

d d d are the vertical metal rods, made, preferably, of brass or copper tinned, so as to resist the chemical action of the liquid. Said rods are fastened to the top and bottom of the case *a* by soldering or riveting, and are placed so as to guide the metal weight *e* so that it will fall directly and with full force upon the bottle *b* when, and not before, the extinguisher is entirely inverted, thus breaking the bottle and releasing the acid. In my experiments I have found three rods sufficient, but more may be found expedient. The number is not material.

f f f represent rods or arms of metal passing through the metal weight *e* horizontally at right angles to each other and extending beyond the perpendicular rods *d d d*, so as to accurately guide the weight in its fall.

g represents the reinforcing-bars, which are made of metal similar to that of the rods *d*, fastened to the bottom of the case by soldering or riveting, upon which the weight *e* will fall when the extinguisher is returned to its original position after use. It has been found by experiment in this extinguisher that the metal weight falling upon the bottom of the case when it is restored to its original position after use would bend or break the case, so that it could only be recharged a few times, and with the arrangement of guide-rods mentioned above compelling the weight always to strike in the same place, the damage of such injury is greatly increased. My invention obviates or lessens this danger and permits the case to be recharged an indefinite number of times.

Heretofore portable fire-extinguishers in which glass bottles or vessels have been used at the upper end of the metal or wooden case (which bottle was intended to be broken by a weight carried loose in the lower end of the case when the case should be inverted) have always been more or less defective in practice, because unless the case was very suddenly and quickly inverted the weight in the

lower end of the case would not fall upon the bottle and break it, thus liberating the acid therein contained, but would roll along the sides of the case and would reach the bottle
5 with a force insufficient to break it. I claim for my new improvement that the guide-rods will hold the metal weight in position until such time as the case is entirely inverted, and of course when the case is entirely in-
10 verted the metal weight will fall immediately through the space confined by the guide-rods along the whole length of the case, acquiring by this sheer fall so great a force that it cannot fail to break the glass bottle. This will
15 always be true, because, as will be readily seen by the diagram, this weight cannot roll along the guide-rods in the way that the loose weight in the extinguisher heretofore used used to roll along the sides of the case.

20 Having described my invention, I claim—

1. In a portable fire-extinguisher of the type wherein two liquids when combined form a fluid which will extinguish fire are arranged in separate receptacles, adapted to operate
25 through the breaking of one by a weight falling upon it, the combination of the closed cylindrical receptacle *a* of wood or metal having a concave bottom, the weight-guiding rods *d d d*, the weight *e*, arranged to move

between said rods endwise and provided with 30 rods or prongs *fff* which engage with said vertical rods *d d d*, the horizontal reinforcing-bars *g g* fastened at the ends to the concave bottom of the case *a*, all constructed, arranged
35 and combined to operate substantially as described so as to guide the said weight *e* when the extinguisher is reversed from its normal position upon the bottle fixed in the tube of the barrel in direct line with the thrust of
40 said weight.

2. A portable fire-extinguisher of the type aforesaid, consisting of a metal or wooden case with a concave bottom and containing an alkaline solution, three or more metal guid-
45 ing-rods fastened to the top and bottom of said case, a metal weight having horizontal bars through the same engaging with said vertical guiding-rods, an acid-containing bottle fastened in the top of said extinguisher, hori-
50 zontal metal rods fastened by riveting or soldering to the bottom of the case so as to receive the impact of the metal weight when the vessel is reversed, substantially as described.

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