(No Model.) 2 Sheets—Sheet 1.

W. H. CUMMINGS.

CHEMICAL FIRE EXTINGUISHER.

No. 385,661. Patented July 3, 1888.

Fig. 2.

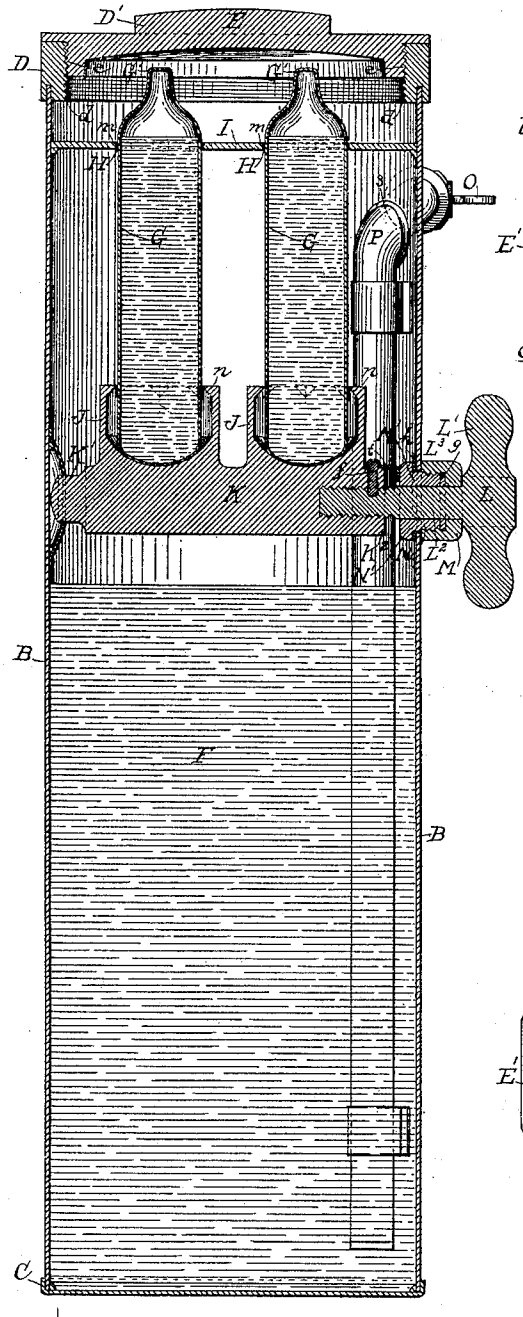
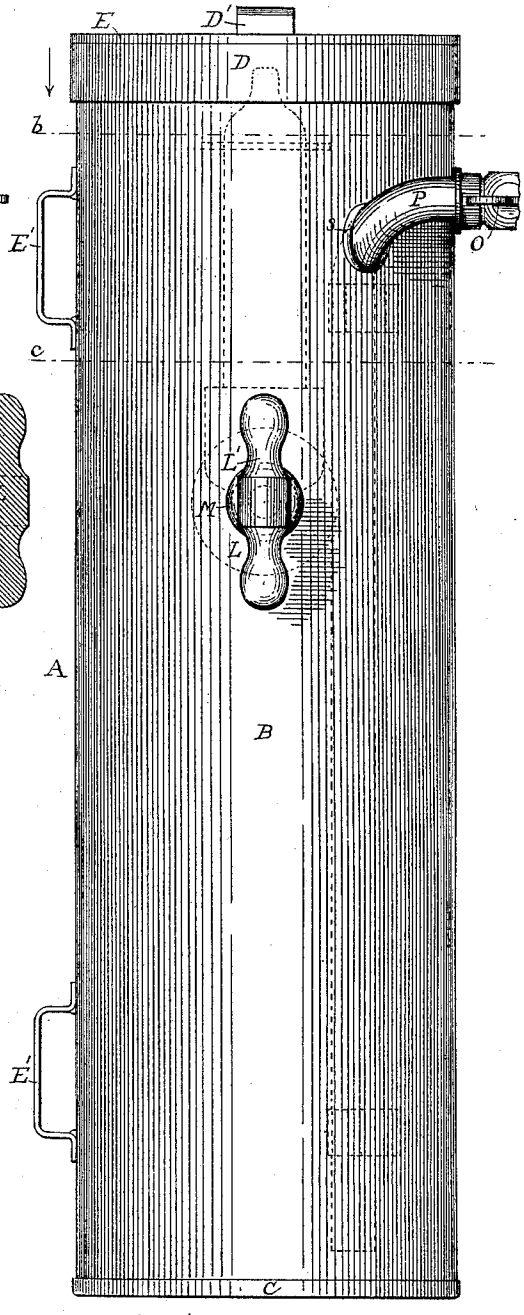


Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

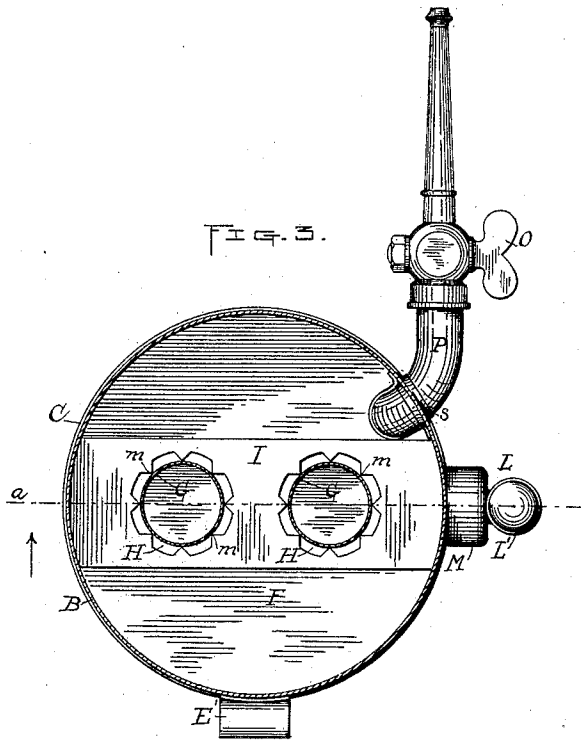
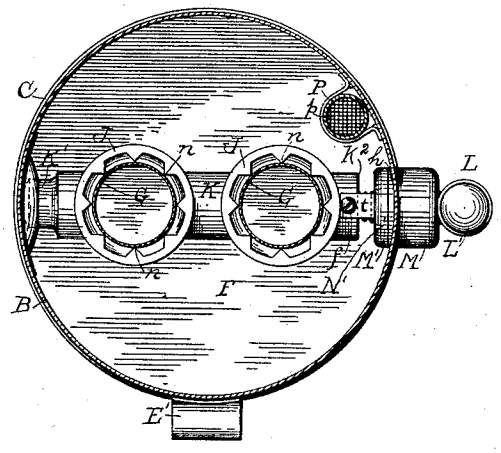


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. CUMMINGS, OF CHARLTON DEPOT, MASSACHUSETTS.

CHEMICAL FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 385,661, dated July 3, 1888.

Application filed February 17, 1888. Serial No. 264,414. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CUMMINGS, of Charlton Depot, in the county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Chemical Fire-Extinguishers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and the letters of reference marked thereon, forming a part of this specification, and in which—

Figure 1 represents a side view of a chemical fire-extinguisher with my improvements applied thereto. Fig. 2 represents a vertical central section of the device shown in Fig. 1 on line *a*, Fig. 3. Fig. 3 represents a cross section on line *b*, Fig. 1; and Fig. 4 represents a cross-section on line *c*, Fig. 1. Arrows, Figs. 1 and 3, indicate the line of view in the respective sections.

To enable those skilled in the art to which my invention belongs to make and use the same, I will now describe the invention more in detail.

In the drawings the complete device is marked A, and which is made up of a strong brass case or cylinder, B, having a brass bottom, C, securely brazed or fastened air-tight to the bottom of the case B. A strong brass rim, D, is also securely brazed or fastened to the upper edge of the case B, said rim having a screw-thread, *d*, cut on its inner surface, to receive the screw-thread *e* on the cap E, which, after the extinguisher has been charged, is screwed on to make an air-tight fit, as fully indicated in Figs. 1 and 2 of the drawings, projection D′ on cap E serving as a suitable means for turning cap E on or off by means of a wrench or other suitable device. E′ E′ are handles for receiving suitable straps for hanging the device up, or carrying it from place to place, or for using it at fires.

When the extinguisher is to be charged, cap E is removed and the proper amount of water or other liquid, F, is turned in to fill case B to height desired, and it may be full, after which bottles or jars G G, filled with the desired chemicals, in the ordinary way of filling and sealing such glass bottles or jars, are inserted through openings H H in the guide and supporting plate I, fastened to the inner surface of case B a short distance below its top, and the lower ends of said bottles G deposited or allowed to rest in cups J J in the supporting and breaking cross-spindle K, with their upper ends, G′ G′, a short distance below the under side of cap E when the parts are all in position, as shown in Fig. 2. The inner bearing, K′, of spindle K turns and is supported in a cup-bearing secured to the inner side of case B, while the outer end, K^2, has a hole tapped out to receive the screw-thread cut on the inner end of the thumb-spindle L when the latter is screwed into the same, as shown in Fig. 2, said parts being shown, in this instance, as fastened together by means of screw *f*; but any other proper mode of fastening may be adopted. Thumb-spindle L is turned by the thumb-piece L′ on the outer side of case B, its stem L^2 passing through a stuffing-box, L^3, consisting of the outer cup part, M, provided with a screw-thread to receive the screw-thread on the stem of the inner part, M′. A packing, *g*, is placed on stem L^2, which is compressed about said stem and in the cup part M to make a fit when stem L^2 is screwed into place, as indicated in Fig. 2. A tight fit is also made between the inner part, M′, and case B by a packing, *h*, placed on stem N on the part M′, which is compressed and compacted between the head N′ of part M′ and the inner side of case B, when stem N is screwed into the cup part M, as indicated in the drawings.

A stop piece, *t*, is held by screw *f* to prevent endwise movement of spindle K; but any other suitable device may be employed for that purpose.

It will thus be seen that spindle K can be quickly turned when it is desired to use the extinguisher, and by which operation the bottles or jars G G will be broken and their contents dropped into the liquid F, when the operator, by turning the cock or valve O, can discharge the extinguishing liquid and gas upon the fire, the discharge being regulated by the operator.

The success of chemical extinguishers depends largely upon the quick and perfect breaking of the glass bottles, and that, too, in

such a manner that the bottles shall be shattered and broken, so as to preclude any portion, especially the end portions, remaining in condition to retain portions of the chemicals, and thus prevent the complete mixture of the chemicals with the liquid in the bottom of the case; and by my arrangement and construction of parts this is accomplished in a high degree, since the inner edges of the holes H H in guide and supporting plate I are provided with pointed projections *m*, and the cups J J are also provided with inwardly-projecting points *n* at their upper edges. Said points *m* and *n* are of metal, and are cast or formed with the parts to which they belong, and the glass bottles G are supported by said breaking points from lateral motion. Consequently when spindle K is turned the bottles are quickly broken both at top and bottom and discharged from cups J J into the liquid F, with their chemicals in a diffused and separated manner.

It will be understood that a single cup J and bottle G may be used, provided the necessary chemicals can thus be employed in said cup and in the liquid. Then, again, my improved fire-extinguisher can be quickly recharged and ready for a second use. Discharge-pipe P is provided with a wire screen, *p*, at its lower end, and is properly fastened to the case B upon the inside and also where it passes through the case at *s*.

Any suitable slide or catch may be arranged upon the outside of the case for locking or holding the thumb-piece L′ and its spindle L from turning after the extinguisher has been charged, said lock or fastening to be slipped or moved back when the operator wishes to use the extinguisher.

It will be seen that the turning and breaking spindle K is shorter than the internal diameter of case B. Consequently said spindle, with its cups J securely fastened thereto, can be quickly inserted and removed or detached, and which construction furthermore enables me to make case B with only one lateral hole for the connection of said parts, and which hole can be made quite small, since the journal-bearing is inserted through the side of case B and screwed into the end of the turning spindle K, as hereinbefore explained. The strength of case B is therefore preserved, while, if occasion requires, plate I and spindle K, with its cups J attached, can be conveniently removed and the broken glass bottles and other refuse matter removed and case B cleaned out and refitted for use again. The same convenience of detaching and taking out the parts renders repairing less expensive and more expeditious.

Having described my improved chemical fire-extinguisher, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. In a chemical fire-extinguisher, the combination, with case B, for holding the liquid and chemicals, of turning spindle K, of less length than the diameter of case B, cups J, securely fastened to the upper side of spindle K, the latter being arranged in a horizontal position in the upper part of case B and supported at one end by an internal cup-bearing and at the other by a supplemental journal inserted through the side of case B, and plate I, provided with holes or openings H to receive and support the upper ends of the glass bottles of chemicals, while their lower ends rest in and are supported by cups J, said parts being arranged relatively, as shown and described, for supporting, breaking, and discharging the bottles of chemicals by a partial rotation of spindle K at the desired time, substantially as described and set forth.

2. The combination, with case B, provided with a cup-bearing on its inner side, and turning spindle K, of less length than the inner diameter of case B, and provided at its inner end with bearing K′, to fit said cup-bearing, and with a central hole in its outer end, K^2, provided with a screw-thread, as set forth, of thumb spindle L, provided with thumb-piece L′ on its outer end, and a screw-thread on the inner end of its stem L^2, to fit the screw-thread in the hole in end K^2 of spindle K, said parts being constructed and relatively arranged for operation, substantially as and for the purposes set forth.

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