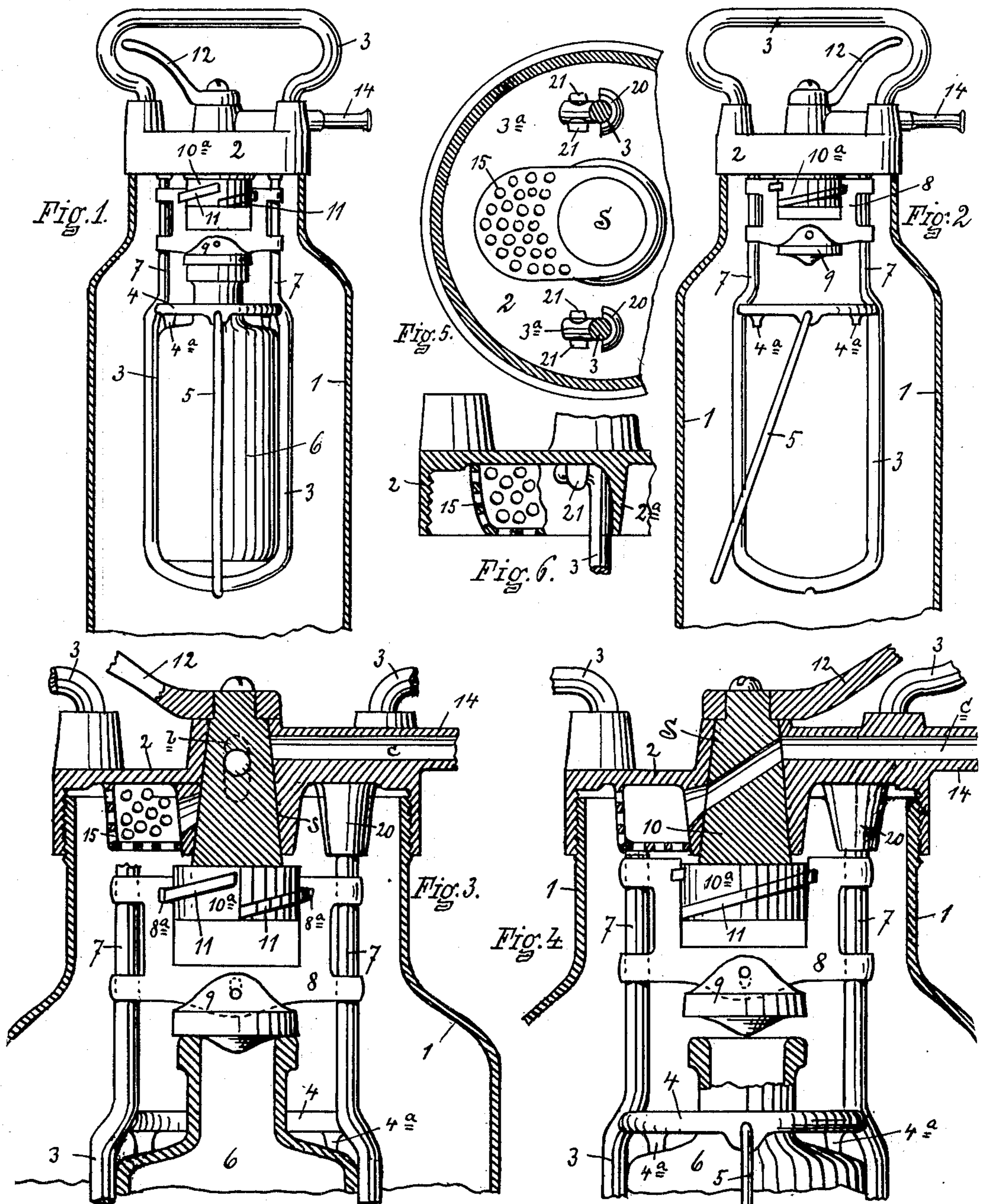


No. 860,525.

PATENTED JULY 16, 1907.

O. J. CHILDS & J. H. CORBETT.  
HAND CHEMICAL FIRE EXTINGUISHER.

APPLICATION FILED OCT. 2, 1905.



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# UNITED STATES PATENT OFFICE.

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## HAND CHEMICAL FIRE-EXTINGUISHER.

No. 860,525.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed October 2, 1905. Serial No. 280,949.

*To all whom it may concern:*

Be it known that ORLANDO J. CHILDS and JAMES H. CORBETT, of Utica, in the county of Oneida and State of New York, have invented certain new and useful  
5 Improvements in Hand Chemical Fire-Extinguishers; and they do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the  
10 accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The object of our invention is to provide an improved hand chemical fire extinguisher, wherein provision is made for simultaneously closing the acid receptacle  
15 and the main tank or receptacle, so that in case the extinguisher is upset or subjected to much movement or agitation, as in moving cars or vehicles, the contents of the receptacles will not be wasted or commingled; and the extinguisher will be so simple as to  
20 be readily operated by those unfamiliar with it.

A further object is to provide in such a fire extinguisher a construction that has a number of features which add to its utility, facilitate its construction and increase its efficiency.

25 Figure 1 of the drawings shows a sectional view of the tank or body portion of the extinguisher, together with a side elevation of the cap for the same, the acid receptacle and its cooperating parts. Fig. 2 shows the same as Fig. 1, with the movable parts operated to a  
30 different position and the acid bottle or receptacle removed. Fig. 3 shows on an enlarged scale details of the construction mostly in section, with the movable parts adjusted to the positions which close the discharge passage from the main receptacle, and close  
35 the inner or acid receptacle. Fig. 4 shows the same, with the parts adjusted to open the discharge passage from the main receptacle, and also open the inner or acid receptacle. Fig. 5 shows a partial inner face view of the cap or cover of the main receptacle,  
40 together with certain details of the construction. Fig. 6 shows in vertical section certain other details of construction.

Referring to the reference letters and figures in a more particular description of the construction, 1 indicates the main tank or receptacle which ordinarily  
45 will be nearly full of a solution of soda in water. The upper end of this receptacle will be closed by a screw-threaded cap 2, which cap will preferably be provided with a handle 3 by means of which the extinguisher can  
50 be carried or handled, and which also serves to turn on or turn off the cap from the receptacle, the same requiring to be removed for the purpose of filling the receptacle or changing the solution.

Secured to the inner face of the cap 2 is a bottle or

inner receptacle hanger 3, consisting of a U-shaped 55 rod extending downwardly from the cap a sufficient distance, and provided with a ring 4 secured therein, to which is hinged at points at right angles with the plane of the hanger 3 a U-shaped retainer 5, the hanger 3 preferably being made of small rods or large wire, while 60 the retainer 5 will be made of smaller wire or rods, and at the lower end of the hanger 3 the same is provided with a notch or indentation *a*, which receives the lower end of the retainer 5 and holds it in normal closed position, except when forcibly moved. There is enough 65 spring or elasticity in the retainer 5 to allow it to engage in or become disengaged from the notch *a*. When the retainer 5 is swung to one side, as shown in Fig. 2, or further, the acid bottle or receptacle 6 can be placed in position by inserting the neck end through the ring 70 4 and swinging the bottom into axial line with the hanger. The retainer 5 will then be moved into its normal holding position when the acid receptacle will be held firmly in place. On the ring 4 there are preferably provided projections 4—*a* which engage 75 on the shoulder of the acid receptacle or bottle and prevent it moving toward the cap 2 when the extinguisher is inverted.

The upper portions of the hanger 3 are preferably brought closer together than the portions at the lower 80 end, so as to form slides or ways 7, in which, or on which, is mounted to slide in a vertical direction the stopper carrier 8. This stopper carrier 8 has attached to its lower end the stopper 9 adapted to close the mouth of the acid bottle or receptacle 6. The stop- 85 per is preferably jointed or hinged to the carrier 8, so that it is free to find a perfect seat on the mouth of the bottle when in closed position.

For the purpose of operating the stopper carrier 8, there is provided on the lower end of the stop cock core 90 10, which is suitably extended to provide a cylinder head 10—*a* therefor, a pair of spiral projecting ribs 11 in the nature of screw-threads, which engage in notches 8—*a* in the upper portion of the stopper carrier 8. When the core 10 is turned in one direction the spiral ribs 11 95 serve to force the carrier 8 together, with the stopper 9 down until the stopper seats firmly on the mouth of the receptacle 6, thereby closing it against the escape of its contents when the extinguisher is inverted or otherwise.

The stop cock core 10 is provided with a passage *b*, which, when the operating handle 12 thereof is placed in one position, is adapted to open the passage from the main receptacle 1 to the discharge passage *c*, through the nozzle 14. The arrangement of the spiral ribs 11 105 and the stopper carrier 8 with reference to the passage *b* is such that the carrier and stopper will be in their upper position when the passage *b* registers with the

passage c, etc., so that the mouth of the receptacle 6 will at that time be left open. It is also obvious that the stop cock core 10 may be turned by means of the handle 12, so as to force the stopper and stopper carrier 5 down until the stopper closes the mouth of the receptacle 6. In so doing, the passage b is moved out of registering position with the other passages, so that the escape of the contents of the main receptacle 1 through the nozzle 14 is shut off. This passage is 10 shut off even by a partial turn of the stop cock, and before the stopper has closed the acid receptacle 6. Over the inner end of the passage to the nozzle 14 there is provided a strainer 15 with holes small enough to prevent any particles entering the passage through the 15 nozzle 14, which will not readily pass therethrough and would otherwise be liable to obstruct the passage.

It is evident that when the stop cock core 10 is turned into the position shown in Figs. 1 and 3, that both the acid receptacle 6 and the passage through the nozzle 20 14 from the main receptacle are securely closed, and in case the extinguisher should become overturned or be otherwise violently agitated, the contents of neither receptacle can escape or be wasted.

To put the extinguisher into operation, the stop cock 25 core 10 is turned into the position shown in Fig. 4, which, at the same time, opens the passage through the nozzle 14 and the mouth of the acid receptacle 6, and the extinguisher is then inverted which allows the acid and contents of the main receptacle to produce a 30 chemical action, creating a pressure of gas which forces the liquid contents of the main receptacle out from the nozzle 14. The discharge through the nozzle 14, when the extinguisher is in inverted position, can be temporarily stopped by partially turning the stop cock 35 core 10, the chemical action ceasing when a sufficient pressure is attained in the main receptacle. It may also be noted that after checking the discharge from the nozzle 14 in this way, if there is no further use for the extinguisher it can be placed in its normal upright 40 position and the stop cock again opened, relieving the pressure from the receptacle through the nozzle 14, the acid not discharging at such time, on account of the upright position of the acid receptacle.

In order to facilitate the attachment of the upper 45 ends of the hanger 3 to the inside of the cap 2, there is preferably formed on the inner face of the cap half-sleeves 20 and malleable ears or projections 21-21. On the upper end of the hanger 3 there are provided right-angle bends 3-a. When these are inserted in the 50 half-sleeve 20 and between the ears 21, as shown, the malleable ears 21 are clenched over the projections

3-a, readily securing it in position. In addition to this, solder can be applied if desired.

It will be noted that the stop cock core 10 is of a conical form, with the smaller end outward, and the 55 socket S in the cap 2 is arranged to receive the same; and that the pressure on the stopper 9, which serves to close the mouth of the receptacle 6, also serves to force the stop cock more firmly into its socket, and also close that more firmly against any tendency to leak. When 60 the stop cock is moved towards its opening position, the pressure which forces the same into its socket is relieved to some extent and it may operate more freely. The pressure created in the main receptacle also serves to force the stop cock core 10 into its seat and obviate 65 any tendency to leak, and the whole arrangement facilitates the construction and assembling of the parts.

Numerous modifications and changes in and from the construction herein described may be made without departing from the spirit of our invention. 70

What we claim as new and desire to secure by Letters Patent is:

1. The combination in a hand chemical fire extinguisher of a main receptacle, a removable cap adapted to close the opening into the main receptacle, a removable inner receptacle, a hanger supporting the inner receptacle from the cap, a discharge passage through the cap from the main receptacle, a stop cock controlling said discharge passage, means for manually operating the stop cock, a stopper for closing the inner receptacle and means operating 75 in connection with the stop cock for opening and closing the stopper, substantially as set forth. 80

2. The combination in a hand chemical fire extinguisher of the main receptacle, a removable cap for closing the opening into the main receptacle, an inner receptacle, a hanger supporting the inner receptacle from the cap, a discharge passage from the main receptacle through the cap, a conical stop cock for said passage arranged in a suitable socket in the cap with the larger end inward, a stopper for the inner receptacle connected with the inner 85 end of the stop cock, and means operating from the stop cock to open and close the stopper as the stop cock is rotated, substantially as set forth. 90

3. The combination in a hand chemical fire extinguisher of the main receptacle, a removable cap for closing the opening into the main receptacle, a discharge passage through the cap, an inner receptacle and means for supporting the same from the cap, a stopper for closing the inner receptacle, a stop cock in the cap controlling the discharge passage and means including a screw attached to the stop cock for operating the stopper, substantially as 95 set forth. 100

In witness whereof, they have affixed their signatures, in presence of two witnesses, this 25th day of Sept 1905.

ORLANDO J. CHILDS,  
JAMES H. CORBETT.

Witnesses:

E. S. HESSE,  
S. I. DEVINE.