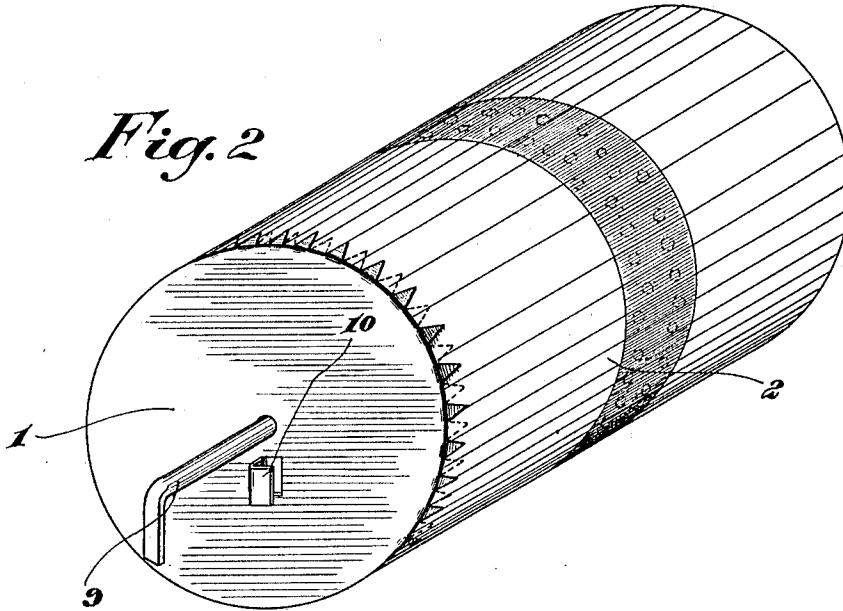
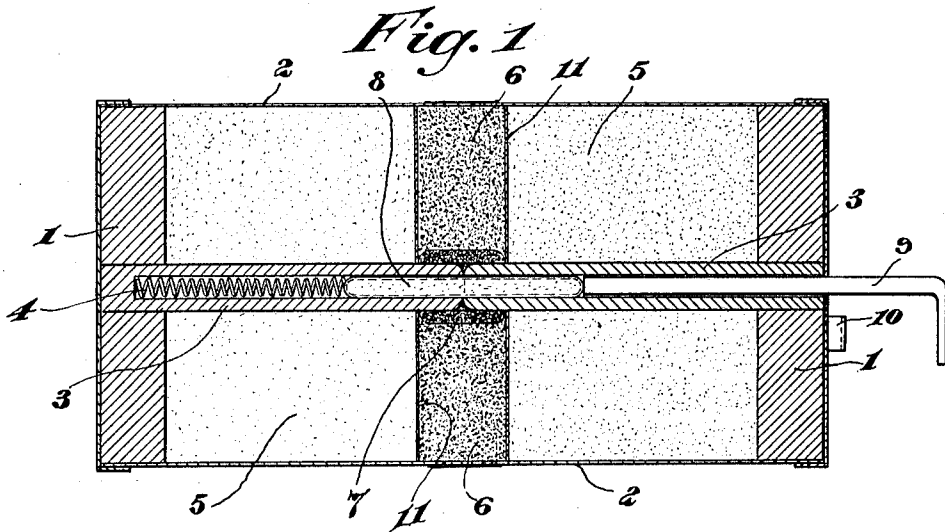


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 PORTABLE FIRE EXTINGUISHER.
 APPLICATION FILED DEC. 4, 1911.

1,041,024.

Patented Oct. 15, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

ARTHUR ALBERT CHARBONNEAU AND LÉO ALBERT CHARBONNEAU, OF MONTREAL,
QUEBEC, CANADA.

PORTABLE FIRE-EXTINGUISHER.

1,041,024.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Application filed December 4, 1911. Serial No. 663,936.

To all whom it may concern:

Be it known that we, ARTHUR ALBERT CHARBONNEAU and LÉO ALBERT CHARBONNEAU, both subjects of the King of Great Britain, and residing at Montreal, in the Province of Quebec, Canada, have invented certain new and useful Improvements in Portable Fire-Extinguishers; and we do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention to be hereinafter described relates to fire extinguishers.

In order to more clearly disclose the construction, operation, and use of the invention, reference should be had to the accompanying drawings forming part of the present application.

Throughout the several figures of the drawings like reference characters designate the same parts.

In the drawings: Figure 1 is a central, vertical, longitudinal, cross section; and Fig. 2 is a perspective view.

Referring to the drawings in detail, 1 indicates a rigid head, or end block of any desired shape, and 2 an inclosing wall of easily collapsible material such as thin sheet metal or the like. The heads, of course, are exact duplicates. Also, each head is provided with a bore to receive a small tube 3. Two tubes are used, leading inwardly from the ends toward the center, where their adjacent ends just touch. One of these tubes has a closed outer end and receives a spiral spring 4, whereas the other is open at both ends.

The interior of the casing 2 is filled with two layers of fire extinguishing powder 5 separated by a centrally arranged layer of gunpowder or other explosive 6—gunpowder preferred. Within the layer of gunpowder and surrounding the adjacent ends of the tubes 3 is a layer of chlorate of potassium 7. Lying within the adjacent ends of the two tubes 3 and extending from one into the other, is a small vial of sulfuric acid 8. When the extinguisher is thrown against a wall, beam or the like, in a burning building, the side wall will bend or collapse at some point and cause the two tubes 3 to twist suddenly apart at their inner ends. In doing so, they will break the vial and let the

acid come in contact with the chlorate of potassium. This will cause a sudden flash which will ignite the gunpowder which, in turn, will explode and scatter the fire extinguishing powder very effectively. At the same time, the fumes of the gunpowder will assist in putting out the fire.

If it is desired to render the device inoperative, a small rod 9 may be used. This rod is simply slid down for its entire length into the tubes 3 and has its bent end swung beneath a hook or offset finger 10 projecting from one head 2, adjacent the outer end of one of the tubes 3, thus holding the rod in place. As the rod moves inward, it engages the end of the vial and forces it ahead of the rod, against the action of spring 4. The length of the rod is such that, when fully inserted, it will force the vial completely into the tube containing the spring 4. In this way, the vial will remain unaffected by any twisting or separation of the tubes 3, and inoperative. Even a very severe shock will not give sufficient jar to break it, in such position.

In order to doubly insure explosion of the gunpowder or the like, a line of small perforations is made through the shell 2 and extending either part way or entirely around that portion of the casing directly surrounding the explosive, and these perforations are covered with a band of phosphorous paint or other very readily combustible material which will close the perforations but flare into flame very readily. The flare, of course, sets fire to the explosive through the perforations, and so operates the extinguisher.

It is thought that the operation and use of the invention will be clear from the preceding detailed description.

It has been found that physical contact between the explosive and the extinguishing powder results in chemical changes which destroy the explosive properties of the explosive, thus rendering the extinguisher useless. In order to avoid this, separating partitions 11 have been provided between the explosive and the extinguishing powder.

As the gunpowder or the like explodes, it tears away the separating partitions and scatters the extinguishing powder in the form of a dense dry cloud of extremely fine dust. At the same time, the gases of the explosive combine and act with the gases of

the extinguishing powder to form an extinguishing gas. The combination of this gas and the finely divided dust makes a dense cloud or smothering atmosphere which drifts about over the burning structure completely putting out the fire wherever it passes.

Changes may be made in the construction, arrangement, and disposition of the several parts of the invention without in any way departing from the field and scope of the same and it is meant to include all such within this application wherein only a preferred form has been disclosed.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In combination, a collapsible casing, heads secured within the ends thereof, tubes leading inwardly from said heads, and toward each other, an extinguishing medium within said casing, an explosive within said casing, a frangible acid container mounted within the adjacent ends of said tubes.

2. In combination, a casing, heads secured within the ends thereof, tubes leading inwardly from said heads and toward each other, an extinguishing medium within said casing, and a frangible acid container mounted within the adjacent ends of said tubes and adapted to be ruptured by movement of either of said tubes relatively to the other.

3. In combination, a casing, heads mounted within the ends thereof, tubes secured within said heads and extending inwardly toward each other, an extinguishing medium within said casing, a frangible acid container mounted within the adjacent ends of said tubes, and a spring mounted within one of said tubes and bearing against said container to maintain it normally in operative position.

4. In combination, a collapsible casing, rigid heads secured within the ends thereof, tubes leading inwardly from said heads and toward each other, two layers of fire extinguishing powder within said casing and surrounding said tubes, a layer of explosive between said layers of powder, a layer of chlorate of potassium surrounding the adjacent ends of said tubes, and a frangible tube mounted in the adjacent ends of said tubes and containing a charge of sulfuric acid.

5. In combination, a collapsible casing, rigid heads secured within the ends thereof, tubes leading inwardly from said heads and toward each other, two layers of fire extinguishing powder within said casing and surrounding said tubes, a layer of explosive between said layers of powder, a layer of chlorate of potassium surrounding the adjacent ends of said tubes, a frangible tube mounted in the adjacent ends of said tubes and containing a charge of sulfuric acid, and means for maintaining said frangible tube in operative position.

6. In combination, a collapsible casing, rigid heads secured within the ends thereof, the tubes leading inwardly from said heads and toward each other, two layers of fire extinguishing powder within said casing and surrounding said tubes, a layer of explosive between said layers of powder, a layer of chlorate of potassium surrounding the adjacent ends of said tubes, a frangible tube mounted in the adjacent ends of said tubes and containing a charge of sulfuric acid, and means for moving said frangible tube to inoperative position.

7. In combination, a collapsible casing, rigid heads secured within the ends thereof, tubes leading inwardly from said heads and toward each other, two layers of fire extinguishing powder within said casing and surrounding said tubes, a layer of explosive between said layers of powder, a layer of chlorate of potassium surrounding the adjacent ends of said tubes, a frangible tube mounted in the adjacent ends of said tubes and containing a charge of sulfuric acid, means for maintaining said frangible tube in operative position, means for moving said frangible tube to inoperative position, and means for maintaining said frangible tube in inoperative position.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

ARTHUR ALBERT CHARBONNEAU.
LÉO ALBERT CHARBONNEAU.

Witnesses:

W. GARRETT,
E. LETOURNEAU.