

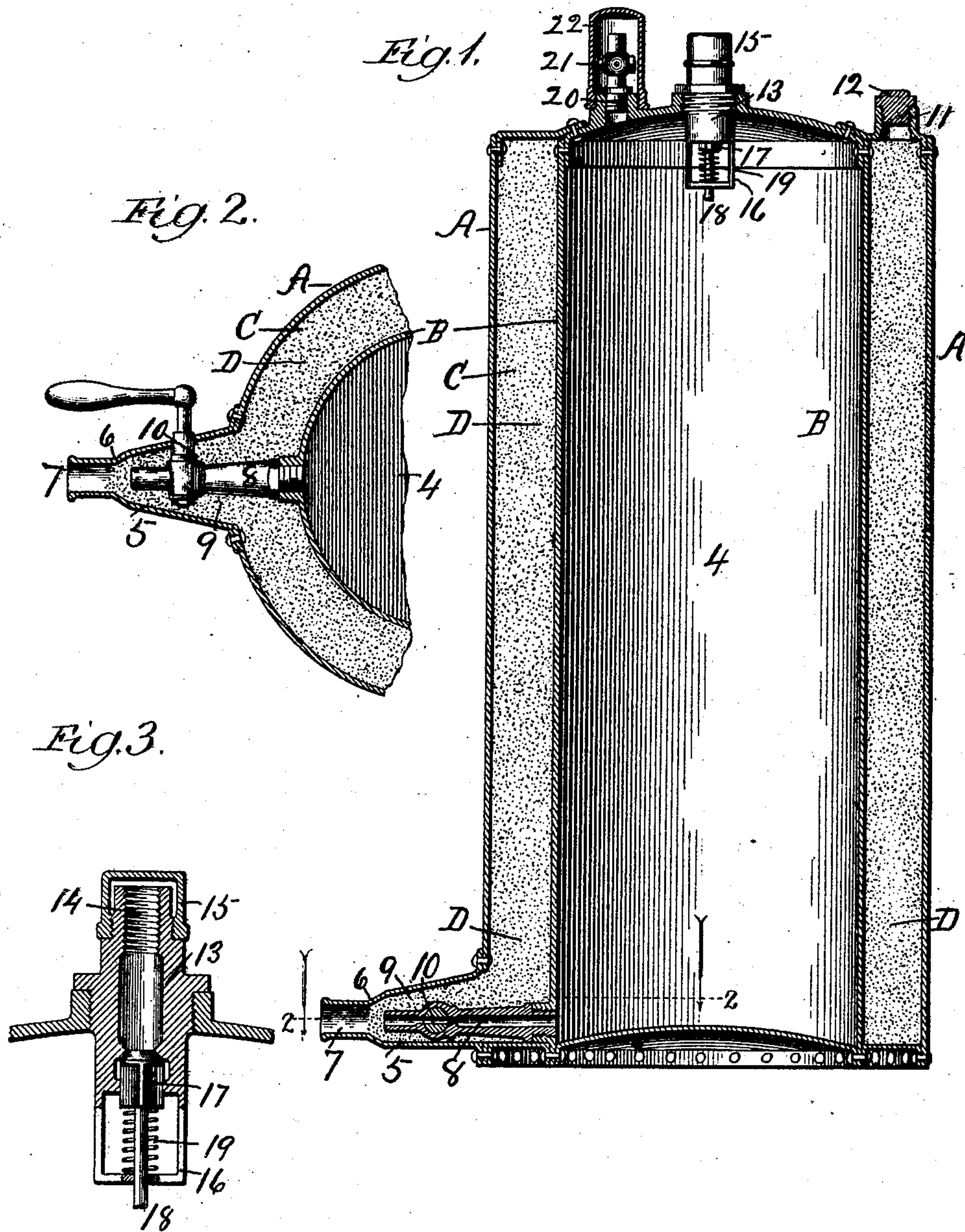
No. 690,633.

Patented Jan. 7, 1902.

C. F. BRIGHAM.
FIRE EXTINGUISHER.

(Application filed Jan. 26, 1901.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES FRANCIS BRIGHAM, OF CHICAGO, ILLINOIS.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 690,633, dated January 7, 1902.

Application filed January 26, 1901. Serial No. 44,829. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FRANCIS BRIGHAM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fire-Extinguishers; and I do hereby declare the following to be 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.

This invention relates to the class of fire-extinguishers using a dry-powder composition instead of a liquid, and has for its object to provide an apparatus of this character which may be used as a hand device or portably mounted.

The invention comprises a double receptacle having separate compartments, one of which is filled with the extinguishing composition and the second compartment charged with a volume of air under pressure which is employed in discharging the powder composition in the operation of extinguishing a fire.

In the drawings, Figure 1 is a vertical sectional elevation. Fig. 2 is a broken-away horizontal section on line 2, Fig. 1, looking in the direction indicated by the arrow; and Fig. 3 is a sectional detail of the air-valve feature.

The receptacle consists of the outer vessel A and the inner vessel B, the latter being entirely surrounded by the former and providing an annular space C, forming a compartment for the reception of the powder composition D. The inner vessel B incloses an air-chamber 4, in which a volume of air will be retained under pressure and employed as a means in discharging and distributing the powder composition in practical working. Both ends of the double receptacle are tightly closed, the contents being discharged from the side at a point adjacent to the lower end, as best shown in Fig. 1. The outer vessel is provided near the lower end with a nozzle 5, through which the contents of the two vessels are simultaneously discharged. The greatest area of this nozzle is at the junction of the inner end with the casing of the outer vessel and where it opens into the powder-compartments, as shown in both Figs. 1 and 2. From its junction this nozzle gradually contracts

to a point 6 and then terminates with the straight discharge end 7. This form of a nozzle will insure a free discharge and lessens the liability of choking in the discharge end, where the volume of air mingles with the powder in creating a forcible exit.

The air-nozzle 8 is located inside of the outside nozzle 5, an annular space 9 being provided for between the two. The inner end of the air-nozzle is connected to the air-containing vessel, the outer end stopping short of the discharge end of the surrounding nozzle 5. A stop-cock 10 is located in the air-nozzle and provides the necessary means for closing and opening the air-passage there-through and the controlling of the volume of air to be mingled with the powder composition.

The outer vessel is filled with the dry-powder composition through an aperture 11 in the top and which is closed by a screw-plug 12.

A tubular air-nipple 13 is fixed in the top of the air-container and extends into the air-chamber, as shown in Figs. 1 and 3. The outer end of this nipple is threaded interiorly, as at 14, for an attachment of an air-pump in charging the air-chamber. This end of the nipple is closed by a removable cap 15, having a screw-threaded engagement. The inner end of the nipple is provided with a yoke or cage 16, which forms a holder and guide for the back seating-valve 17 and its stem 18. The valve is retained in its normally closed position by a coiled spring 19 encircling the valve-stem. This spring will yield and permit of the valve being forced away from its seat when the air-pressure is applied in charging the apparatus. The pressure of the air in the container when once charged will also assist in holding the valve against its seat.

A tubular nipple 20 is fixed in position in the top of the air-vessel and opens into the air-chamber. The passage through this nipple is controlled by a play-valve 21. This nipple connection provides for the temporary attachment of a pressure-gage in ascertaining the pressure when the charging air-pump is used. A removable cap 22 incloses the gage-nipple when a gage is not being used.

A flexible piece of hose will usually be connected to the discharge end of the outside nozzle, which will greatly facilitate the work of

discharging the contents of the apparatus in different directions and in distributing the powder over a large area of surface when necessary.

5 In practical working simply open the stop-cock in the air-nozzle, when the air under pressure will rush out and forcibly start a continuous stream of the dry powder, the composition of which is such that when brought
10 in contact with the heat an incombustible gas will be generated and combustible gases of the surrounding atmosphere destroyed, thus extinguishing the fire.

The gradual contraction of the powder-noz-
15 zle up to a point approximately in line with the discharge end of the air-nozzle has the effect of creating something of an increased suction in expelling the powder, so that it may be directed with a greater force and thrown
20 to a considerable distance.

The nature of the powder composition is such that its extinguishing properties will be retained indefinitely.

25 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A fire-extinguisher, comprising an outer and an inner closed vessel permanently secured together and providing separate com-
30 partments, the outer surrounding compartment containing a dry-powder extinguishing composition, and the inner compartment charged with air under pressure and used as a means in forcibly expelling the dry powder,
35 substantially as described.

2. A fire-extinguisher, comprising an outer and an inner closed vessel permanently se-

cured together, one of said vessels being filled with a dry-powder composition, and the other vessel charged with a volume of air under
40 pressure, each of said vessels being provided with discharge-nozzles, and means for controlling the volume of air in mingling the same with the dry-powder composition in forcibly expelling the same, substantially as de-
45 scribed.

3. In a fire-extinguisher, the combination with a closed outer and inner vessel permanently secured together and providing an annular space between, of a nozzle connected to
50 the outer vessel, and a second nozzle connected to the inner vessel and located on the inside of the first nozzle whereby the contents of the one vessel may be expelled by the action of the contents of the other vessel, sub-
55 stantially as described.

4. In a fire-extinguisher, the combination with an outer vessel, of a nozzle connected thereto and gradually contracting in the direction of the discharge end, an inner vessel
60 inclosed by the outer vessel and provided with a nozzle surrounded by the nozzle of the outer vessel but stopping short of the end thereof, and means for controlling the flow through the nozzle of the inside vessel whereby the in-
65 active contents of one vessel may be expelled by the active contents of the other vessel, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES FRANCIS BRIGHAM.

Witnesses:

J. R. DONALSON,
L. B. COUPLAND.