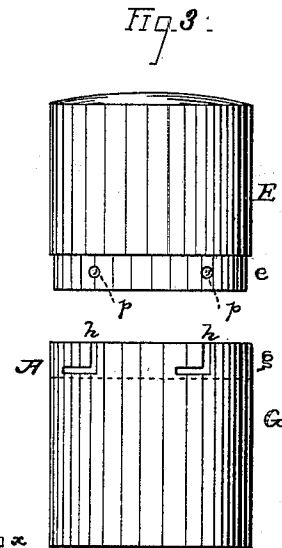
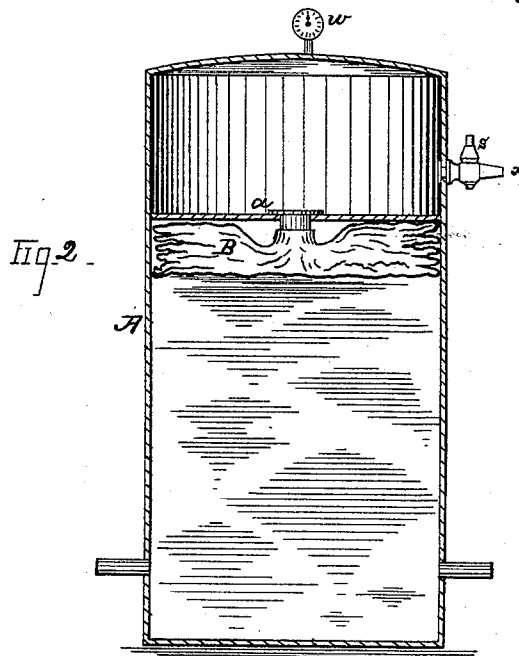
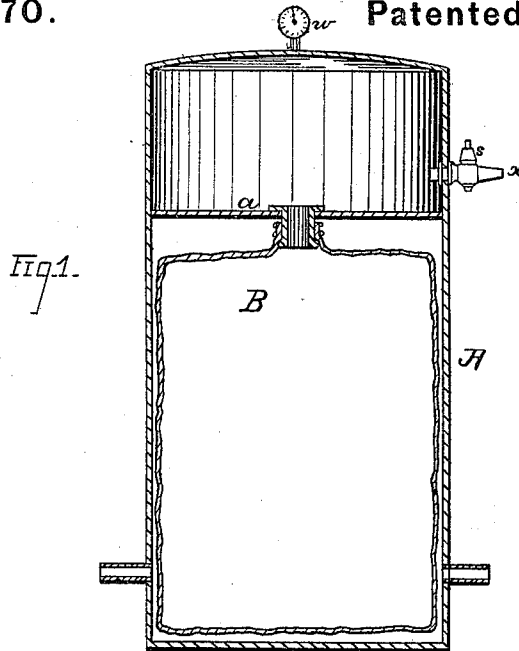


(No Model.)

M. B. STAFFORD.
Fire Extinguisher.

No. 233,570.

Patented Oct. 19, 1880.



WITNESSES =

Chas. O. Gill
H. M. Reilly

INVENTOR =

Marshall B. Stafford

UNITED STATES PATENT OFFICE.

MARSHALL B. STAFFORD, OF NEW YORK, N. Y.

FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 233,570, dated October 19, 1880.

Application filed April 19, 1880. (No model.)

To all whom it may concern:

Be it known that I, MARSHALL B. STAFFORD, of New York, in the county of New York and State of New York, have invented
5 a new and useful Improvement in Fire-Extinguishers, &c., of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to that class of devices
10 in which water or other liquid is ejected from a vessel by means of compressed air. It will be found to be of especial value in connection with what are known as "fire-extinguishers," but may be successfully used for a variety of
15 purposes.

The distinctive novelty of the invention consists in the employment of an air-tight bag or sack, into which the air is blown, that is properly secured in the interior of a vessel of appropriate size and shape. The action of the
20 air in the bag is much the same, probably in every material respect identically the same, as when the bag is not used; but by confining it in the bag many important advantages are secured. Not only is the action of the compressed air rendered more certain, but the necessity of using complicated devices to store and preserve it is in a great degree done away with and a much simpler and not less effective apparatus produced.
30

The nature and objects of the invention more fully appear from the detailed description hereinafter presented.

In the accompanying drawings, Figure 1 is
35 a central vertical longitudinal section of a device containing an embodiment of the elements of the invention, the bag for containing the air being shown distended. Fig. 2 is a similar view of same, showing the said bag contracted. Fig. 3 is a plan view of a casing constituting part of the invention, the two sections of which are detached, so as to show the method of locking them together.

A is a vessel of any construction, by preference of the construction hereinafter fully described, adapted to hold the water or other liquid. In the present instance it is in the form of a cylinder of the proportions shown in the drawings. It is divided by a horizontal
45 partition, *a*, into two compartments, the upper compartment being the air-chamber and the lower the water-chamber, the former being air-
50

tight and the latter provided with appropriate appliances whereby it may be filled and whereby a ready and effectual discharge may
55 be accomplished. Thus a pump may be made use of to fill the chamber and a flexible pipe provided with a nozzle or other expedient employed to direct the discharge.

Connected by a throat with the air-chamber
60 is the air-tight bag B, which depends in the water-chamber when completely distended, by preference filling the chamber. The bag will be of any material which will prevent the escape of the air, or which becomes air-tight on
65 being wet, but will in all cases be so arranged as to securely hold the air and prevent its escape. It is filled by means of a tube, *x*, or in any other convenient way.

The requisite quantity of air may be easily
70 injected by forcing air through the tube, and may be regulated by consulting the gage *w*, which is so applied as to indicate the pressure in the chamber, thus enabling the operator to fill the bag properly, and at the same time giving
75 notice of any deficiency.

The cock *s* serves to enable the operator to check the escape of the air or reduce the pressure at pleasure.

The vessel A may be constructed in any appropriate manner; but the preferred construction is shown in Fig. 3, in which the vessel is made in two parts or sections and then united.

One of the sections, E, is provided with a flange, *e*, and the other section, G, with a corresponding flange, *g*, adapted to fit in the
85 flange *e*. Notches *h* are cut in the flange *g* and pins *p* secured to the flange *e*, the pins and notches conforming in size and position, as shown in the drawings.
90

The notches will be, by preference, of the shape shown, analogous to an L; but other shapes may be employed with good results, the object being to effectually lock the parts together and to prevent any strain upon the
95 seam formed by the flanges. The two sections having been locked, a small quantity of solder or other appropriate sealing material is applied to render the vessel air-tight.

It is obvious that the details of construction
100 just described may be greatly varied without a substantial departure from the method set forth.

The different parts and incidents of the ap-

paratus will be arranged and adapted according to the particular service or duty which it is intended to perform.

Probably the chief use to which the invention will be applied will be the manufacture of what are known as "fire-extinguishers," in the production of which the expedients now employed will be utilized, especially those whereby the water or liquid chamber is filled and the pressure of the air in the air-chamber determined. Thus it will be expedient to provide a permanently-attached pump and nozzle and hose, by means of which to fill the water-chamber and to facilitate a proper discharge.

In practice the required quantity of air will be forced into the bag and its escape prevented by turning the cock *s*. The liquid will then be introduced, when the apparatus will be charged and ready for service.

I am aware of English patent to Law, No. 1,713 of 1870, in which is shown a water-service pipe or main having arranged within it a rubber ball or bag, the object being to avoid concussions in suddenly stopping the draft of water; and I am also aware of Patent No.

225,293, dated March 9, 1880; but, as the constructions and combinations in these patents are not my invention, they are hereby disclaimed.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with a portable vessel, *A*, provided with a centrally-perforated horizontal partition, *a*, for dividing the vessel into an upper air-chamber and a lower liquid-chamber, and means, substantially as described, for charging the chambers with air and liquid respectively, of a bag, *B*, suspended from the said partition and communicating with the air-chamber through the central perforation in the partition, all essentially as specified, and for the purposes set forth.

In testimony that I claim the foregoing improvement in fire-extinguishers, &c., as above described, I have hereunto set my hand this 15th day of April, 1880.

MARSHALL B. STAFFORD.

Witnesses:

CHAS. C. GILL,

EDWARD E. WELLS.