W. BÖCKEM.

FIRE EXTINGUISHING APPARATUS WITH SIPHON ARRANGEMENT.

APPLICATION FILED APR. 17, 1906.

928,897. Patented July 20, 1909.

Fig. 1.

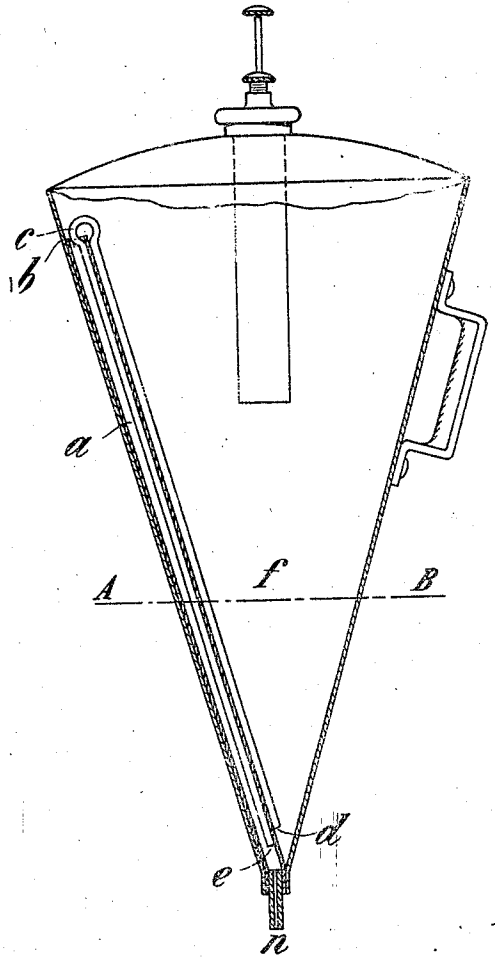


Fig. 3.

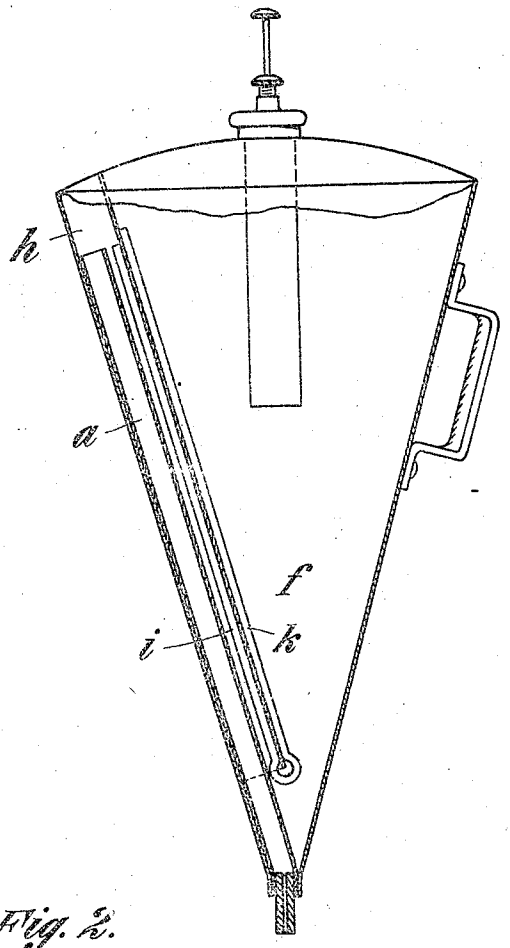
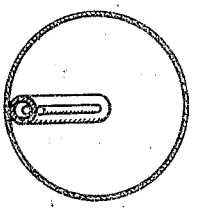


Fig. 2.
A-B.



Witnesses:
Walter Bockem.
Ernst Hinrichs

Inventor:
Walter Böckem.

UNITED STATES PATENT OFFICE.

WALTER BÖCKEM, OF RATH, NEAR DÜSSELDORF, GERMANY, ASSIGNOR TO THE FIRM OF W. GRAAFF & COMPAGNIE, GES. MIT BESCHR. HAFTUNG, OF BERLIN, GERMANY.

FIRE-EXTINGUISHING APPARATUS WITH SIPHON ARRANGEMENT.

No. 928,897. Specification of Letters Patent. Patented July 20, 1909.

Application filed April 17, 1906. Serial No. 312,084.

To all whom it may concern:

Be it known that I, WALTER BÖCKEM, a civil engineer and a subject of the German Emperor, and residing in the town of Rath, near Dusseldorf, Kingdom of Prussia, and German Empire, have invented a certain new and useful Fire-Extinguishing Apparatus with Siphon Arrangement, of which the following is a specification.

This invention has reference to an arrangement in connection with fire extinguishing apparatuses, by means of which it becomes possible to sprinkle vertically downward with the apparatus, without any possibility of the escape of the gases under pressure which serve for the operation of the apparatus.

With the well-known fire-extinguishing apparatuses it was only possible to sprinkle downward in an inclined direction, but not vertically downward, in view of the entrance opening of the interior raising pipe for the liquid, emerging from the latter, when the nozzle was directed downward, so that the gases were free to escape.

The new purpose of being able to sprinkle with the hand operated fire extinguishing apparatus both in an upward direction as well as in a downward direction without allowing the gases to escape, and until the apparatus has been completely emptied by the sprinkling, is accomplished by arranging a siphon in the interior of the fire extinguishing apparatus, one branch of the said siphon communicating with the interior of the exit pipe, while the other leg of the siphon communicates with the receptacle for the liquid. The length of this siphon is almost equal to that of the raising pipe and it is arranged opposite the handle of the apparatus in the same manner as the raising pipe, by which means the effect is produced of keeping the siphon always below the level of the water, so that it is prevented from running empty. For the purpose of accomplishing the object referred to, the arrangement of the long siphon is combined with the fact of imparting a narrow sectional area to the issue opening of the nozzle as compared with the sectional area of the exit pipe.

Upon the drawing two forms of construction for carrying out the invention are illustrated.

In the form of construction according to Figures 1 and 2, there is provided upon the laterally arranged exit pipe *a* another U-shaped pipe *c*, in such a manner, that, as above referred to, one end of said pipe opens out into the interior of the liquid container *f*, while the other end *e* terminates in the interior of the pipe *a*.

The mode of operation of the device is as follows:—If it is desired to sprinkle with the apparatus in a downward direction water will flow through the siphon tube and form the liquid container into the pipe *a* upon the descent of the water level in the pipe *a* in consequence of the escape of the extinguishing liquid from the sprinkling opening *n* of the apparatus, until the water levels in *f* and in *a* are at the same height. Thus the contents of water of the apparatus flows through the siphon tube *c* and into the pipe *a*. The water levels in *f* and in *a* are kept at approximately the same level on account of the narrow sectional area of the escape opening of the nozzle. When it is desired to sprinkle with the apparatus afterward in an upward direction, the apparatus is reversed, so that its nozzle is directed upward, and the water will then enter into the pipe *a* through the entrance opening *b*.

In the form of construction according to Fig. 3, the exit pipe *a* is surrounded by another pipe *h*, the opening of which *i* is arranged in the proximity of the sprinkling nozzle. The U-shaped siphon tube *k* has been introduced into the pipe *h*. The mode of operation is the same in this case as in the form of construction in accordance with Fig. 1.

What I claim and desire to secure by Letters Patent of the United States is:—

1. A hand operated fire extinguisher actuated by fluid pressure, comprising a liquid container of any shape, an exit pipe extending almost in full length from the outlet nozzle along the side of the container, a siphon either limb of which is approximately equal to the length of the exit pipe the discharge limb of the siphon being inclosed throughout its length within said exit pipe, and the cross sectional area of the internal diameter of the discharge nozzle, being less than that of the exit pipe, substantially as described.

2. A hand operated fire extinguisher actuated by fluid pressure, comprising a liquid container of any shape, an exit pipe ex-

tending almost in full length from the outlet nozzle along the side of the container, a covering pipe surrounding the exit pipe being closed at the open end of the exit pipe and open at the opposite end near the outlet nozzle, a siphon either limb of which is approximately equal to the length of the covering pipe, the discharge limb of the siphon being inclosed throughout its length within said covering pipe, and the cross sectional area of the internal diameter of the discharge nozzle being less than that of the exit pipe substantially as described.

In witness whereof I have hereunto signed my name this 3rd day of April 1906, in the presence of two subscribing witnesses.

WALTER BÖCKEM.

Witnesses:

HENRY QUADFLIEG,

WILLIAM J. REUTERS.