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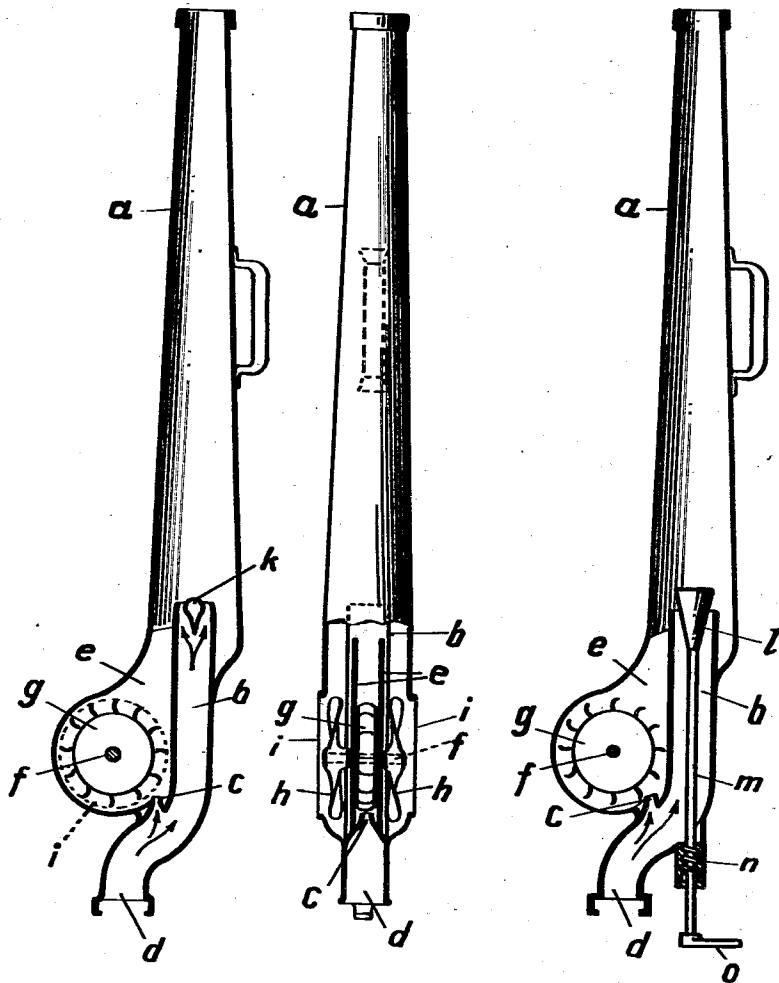
FOAM-PRODUCING DEVICE FOR FIRE EXTINGUISHING PURPOSES

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Fig. 1.

Fig. 2.

Fig. 3.



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FOAM-PRODUCING DEVICE FOR FIRE
EXTINGUISHING PURPOSES

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4 Claims. (Cl. 261—25)

In the known devices for producing fire-extinguishing foam the foam is formed by conveying to the mixture as it emerges from nozzles air through the injector action of the nozzles. The air supplied in this way can however not open up and permeate the jet of liquid in an entirely uniform manner. The range of the jet of foam produced with the hitherto known devices is also far from satisfactory.

In contradistinction to such devices the invention proposes to supply to the mixture emerging through outflow openings into the jet tube air from the outside under pressure. By this means in the first place a completely uniform and effective intermixture is brought about and through the pressure action of the supplied air a jet of foam, having a long range, is produced.

According to the invention the outflow openings may produce inwardly or outwardly diverging jets and the stream of air under pressure can impinge on the jet of mixture produced in this way and thereby assist the formation of foam in a particularly effective manner.

According to the invention, for producing outwardly diverging jets of mixture, which therefore on leaving the outlet openings impinge against the inside of the wall of a jet tube, an adjustable cone may be used, which lies in the outflow opening of the jet of mixture. This cone will then have a double duty to perform. In the first place it divides up the flow of mixture uniformly and conveys it, as already stated, against the inside walls of the jet tube, where it already produces foaming by friction, and in the second place through its axial displacement the size of the annular opening is changed with respect to the outlet end of the supplying tube which conveys the jet of mixture into the jet tube, whereby the quantity of foam delivered is regulable.

The accompanying drawing illustrates the arrangement according to the invention by two constructional examples, Figs. 1 and 2 showing the first constructional example and Fig. 3 an example with the cone referred to. Figs. 1 and 3 show central longitudinal sections and Fig. 2 the upper part of the appliance in elevation and the lower part in section.

In the example according to Figs. 1 and 2 the mixture consisting of water and a foam-forming agent is fed to the jet tube *a* under pressure from the connecting branch *d* through the tube *b*. At the inner end of the latter tube a distributing body *k* is mounted in such a manner that the jet of mixture is separated into part streams which

impinge on one another and are forced to the walls of the jet tube *a*.

At some distance from the connecting branch *d* the tube *b* has a branched part *c* which, formed as a nozzle, delivers a portion of the stream of mixture to a turbine wheel *g* which is disposed between two walls *e* and is mounted on a shaft *f*.

Outside the walls propeller wheels *h* are mounted on the ends of the shaft *f* immediately under the openings *i* in the casing, so that, when the turbine wheel is rotating, air is sucked in from both sides and is delivered under pressure to the jet tube *a*. In this way the air under pressure passes through the finely divided mixture, causing it to foam in an extremely efficient manner. Through the increase in pressure thus produced the jet of foam is projected to a great distance.

In the constructional example shown in Fig. 3 the jet of mixture is thrown by a cone built into the inner end of the tube *b* directly against the inside of the wall of the jet tube *a*. The said cone *l* is mounted on a rod *m* which is provided with a few convolutions of a screw thread, for which a female thread is provided at *n*. The outer end of the rod *m* is provided with a handle *o*. By turning the handle *o* in one direction or the other the annular gap surrounding the cone is reduced or enlarged, whereby the quantity of foam to be produced can be regulated. In place of air some other gas may be supplied under pressure.

What I claim is:

1. A foam-producing device comprising a conical tube having the small end open and the large end closed, a cylindrical tube passing through the closed end of the conical tube, an enlargement on the conical tube, spaced walls arranged in said enlargement, a shaft rotatably mounted in said walls, a turbine wheel mounted on said shaft between said walls, a nozzle formed in the wall of said cylindrical tube and arranged to direct a part of the medium passing through the cylindrical tube against said turbine wheel, a propeller wheel on said shaft at the outer side of each wall, air inlets in the enlargement to admit air into the interior of the conical tube.

2. A foam-producing device comprising a conical tube having the small end open and the large end closed, a cylindrical tube passing through the closed end of the conical tube, an enlargement on the conical tube, spaced walls arranged in said enlargement, a shaft rotatably mounted in said walls, a turbine wheel mounted on said shaft between said walls, a nozzle formed in the wall

of said cylindrical tube and arranged to direct a part of the medium passing through the cylindrical tube against said turbine wheel, a propeller wheel on said shaft at the outer side of each wall, air inlets in the enlargement to admit air into the interior of the conical tube, at the inner end of the cylindrical tube.

3. A foam-producing device comprising a conical tube having the small end open and the large end closed, a cylindrical tube passing through the closed end of the conical tube, an enlargement on the conical tube, spaced walls arranged in said enlargement, a shaft rotatably mounted in said walls, a turbine wheel mounted on said shaft between said walls, a nozzle formed in the wall of said cylindrical tube and arranged to direct a part of the medium passing through the cylindrical tube against said turbine wheel, a propeller wheel on said shaft at the outer side of each wall, air inlets in the enlargement to admit air into the interior of the conical tube, and a conical member for directing the medium passing

through the inner end of the cylindrical tube across the air delivered by said propellers.

4. A foam-producing device comprising a conical tube having the small end open and the large end closed, a cylindrical tube passing through the closed end of the conical tube, an enlargement on the conical tube, spaced walls arranged in said enlargement, a shaft rotatably mounted in said walls, a turbine wheel mounted on said shaft between said walls, a nozzle formed in the wall of said cylindrical tube and arranged to direct a part of the medium passing through the cylindrical tube against said turbine wheel, a propeller wheel on said shaft at the outer side of each wall, air inlets in the enlargement to admit air into the interior of the conical tube, a conical member for directing the medium passing through the inner end of the cylindrical tube across the air delivered by said propellers, and means for adjusting said conical member axially of the cylindrical tube.

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