June 3, 1930. H. BURMEISTER 1,761,179

APPARATUS FOR PRODUCING FOAM FOR FIRE EXTINGUISHING PURPOSES

Filed Oct. 12, 1927

FIG. 1.

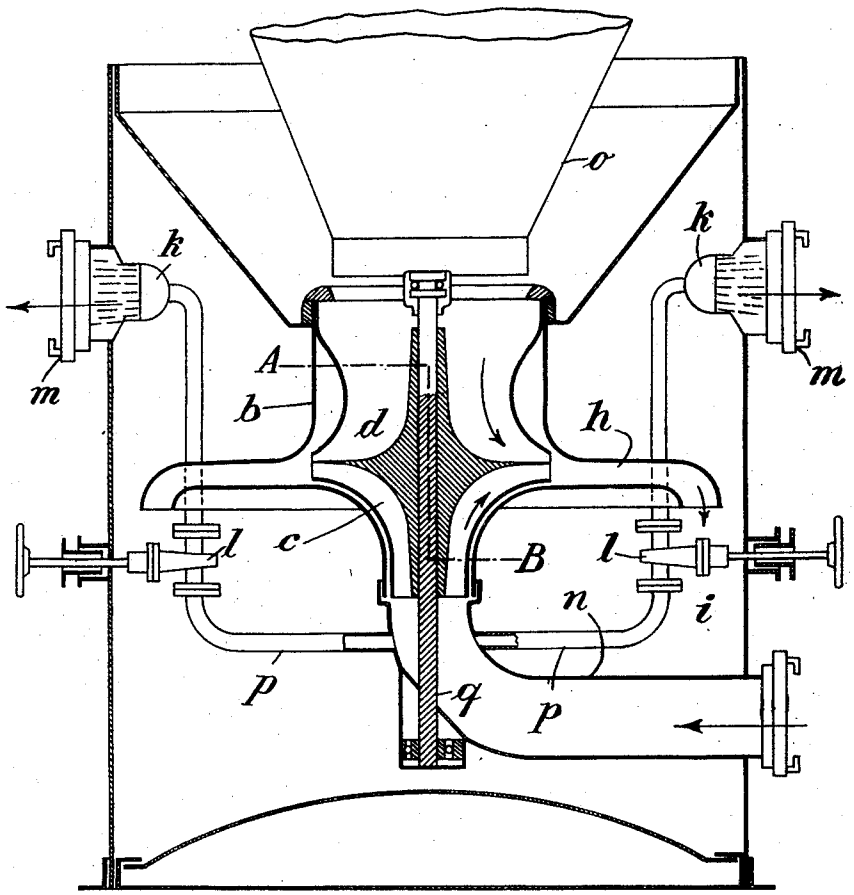
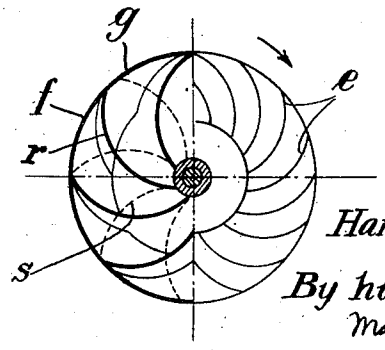


FIG. 2.



Hans Burmeister

By his Attorney

Maxwell Barns.

Patented June 3, 1930 1,761,179

UNITED STATES PATENT OFFICE

HANS BURMEISTER, OF BERLIN, GERMANY, ASSIGNOR TO PYRENE-MINIMAX CORPORATION, A CORPORATION OF DELAWARE

APPARATUS FOR PRODUCING FOAM FOR FIRE-EXTINGUISHING PURPOSES

Application filed October 12, 1927, Serial No. 225,707, and in Germany October 27, 1926.

The present invention relates to fire fighting apparatus and has for an object to provide an effective means for producing foam for fire extinguishing purposes.

The invention has been developed in connection with the design of an apparatus in which the water is supplied under pressure and affords the motive power for feeding the foam forming chemicals to said water. For convenience of disclosure such an embodiment will be described to illustrate the principles of the invention.

The selected embodiment is shown in the drawing forming a part hereof and in which—

Figure 1 is a vertical central section showing diagrammatically an apparatus embodying the invention, and

Figure 2 is a sectional view taken on the line A—B of Fig. 1.

Referring to the drawing, a water turbine *c* carried on vertical shaft *q* is actuated by water under pressure entering through the inlet pipe *n*, which may be connected to a hose or to any suitable water supply. The turbine blades are shown diagrammatically at *e* in Fig. 2. To the turbine is directly connected a centrifugal pump *d* for feeding the foam forming chemicals from the charging hopper *o* to the mixing chamber *i*. The chemicals may be in the form of a dry mixture containing all the materials necessary for the production of foam, for example, bicarbonate of soda, aluminium sulphate, saponin and supplementary substances improving the quality of the foam. The water issuing from the turbine flows into an annular channel *h* of a casing *b* which surrounds the turbine and pump and hence into a mixing or expansion chamber *i*. When the turbine and the centrifugal pump rotate the dry chemicals dropping into the centrifugal pump from the charging hopper *o* are subjected to centrifugal force and are fed into the annular channel *h* in which they are mixed with the pressure water.

The expansion chamber *i* may be provided with a plurality of outlets *m* from which the foam is conducted to the place of use. In order that the consistency of the foam may be controlled at the various outlets, a supplementary water supply pipe *p* is provided, preferably one for each outlet, into which water under pressure enters as from the supply pipe *n* and upon the end of which in front of the outlet *m* a spraying rose of ejector *k* is provided. The quantity of the water flowing through the pipe *p* is controlled by the valve *l*. By means of this arrangement foam of different consistency may be withdrawn from different places of the apparatus. This is of particular importance, as already mentioned, if particularly tough foam is required for squirting purposes and a particularly thin foam for pouring purposes.

In Fig. 2 of the drawing one construction of the blades of the turbine and the centrifugal pump is indicated diagrammatically, as well as the manner of catching and discharging the chemicals. The blades of the turbine are curved longitudinally.

The foregoing description of a particular embodiment is illustrative merely and is not intended as defining the limits of the invention.

I claim:

1. Apparatus for producing foam for fire extinguishing purposes comprising in combination a mixing chamber, a supply chamber for foam forming chemicals, a centrifugal feeding device for feeding chemicals from said supply chamber to said mixing chamber, a turbine connected directly to said centrifugal feeding device, and discharging to said mixing chamber, and an inlet for conducting water to said turbine for actuating the same, substantially as described.

2. Apparatus as defined in the preceding claim wherein the mixing chamber is provided with an outlet, and means for feeding clear water adjacent said outlet, substantially as described.

3. Apparatus for producing foam for fire extinguishing purposes comprising in combination a mixing chamber, a supply chamber for foam forming chemicals, a centrifugal feeding device for feeding chemicals from said supply chamber to said mixing

chamber, a turbine connected directly to said centrifugal feeding device, and an inlet for conducting water to said turbine for actuating the same, said feeding device and turbine having outlets adjacent one another whereby the chemicals and water emerge from the feeding device and turbine together, substantially as described.

4. Apparatus for producing foam for fire extinguishing purposes comprising in combination a mixing chamber, a supply chamber for foam forming chemicals, a rotary device for feeding chemicals from said supply chamber to said mixing chamber, a casing surrounding said rotary device having an annular discharge passage leading into the mixing chamber and into which said rotary device is arranged to discharge, a turbine associated with said rotary device to rotate the same arranged to discharge into said annular passage, and means for supplying water to said turbine to actuate the same, substantially as described.

5. Apparatus as defined in the preceding claim wherein the mixing chamber is provided with an outlet, means for feeding clear water adjacent said outlet, and means for controlling the flow of water in said conduit to vary the mixture, substantially as described.

6. Apparatus for producing foam for fire extinguishing purposes, comprising a vertical shaft, an annular mixing chamber surrounding said shaft, a hopper, a centrifugal device on said shaft for feeding foam forming powder from said hopper to said mixing chamber, a turbine on said shaft, an inlet for conducting water to said turbine for actuating the same, said turbine being arranged to discharge to said mixing chamber, substantially as described.

HANS BURMEISTER.