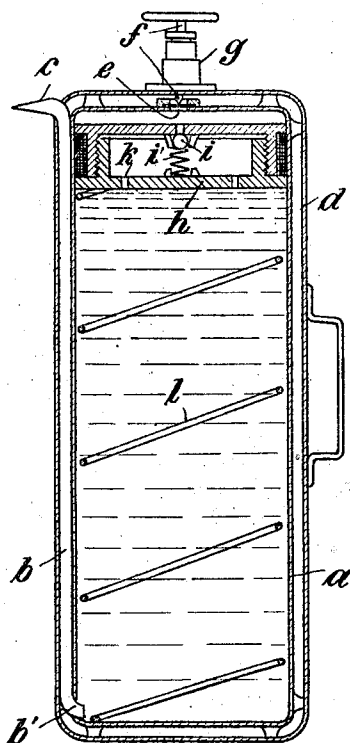


July 8 , 1924.

1,500,946

F. E. KRAUSS
PORTABLE FIRE EXTINGUISHER
Filed May 4, 1923



Inventor:

Friedrich Emil Krauss

By: *Kingsbury*
att'y

UNITED STATES PATENT OFFICE.

FRIEDRICH EMIL KRAUSS, OF SCHWARZENBERG, GERMANY.

PORTABLE FIRE EXTINGUISHER.

Application filed May 4, 1923. Serial No. 636,746.

To all whom it may concern:

Be it known that FRIEDRICH EMIL KRAUSS, a citizen of the German Republic, a manufacturer, residing at Schwarzenberg, in Saxony, Germany, has invented certain new and useful Improvements in Portable Fire Extinguishers, of which the following is a specification.

This invention relates to portable fire extinguishers of the type in which a stream of liquid is expelled by a stored or generated gas under pressure.

According to my invention the action of fire extinguishers employing liquids is rendered entirely independent from the position in which they are held. My invention consists essentially in inserting a piston between the gas under pressure and the extinguishing liquid. The gas therefore does not act directly on the liquid, but forces the liquid out of the extinguisher through the agency of the piston. This piston keeps the liquid covering the mouth of the riser at all times, thus preventing the gas from flowing therethrough even when the extinguisher is reversed or held in an inclined position.

The drawing illustrates one embodiment of my invention in longitudinal section.

Referring to the drawing *a* is the receptacle for the liquid with the riser or ascending pipe *b* opening into it near the bottom and terminating at the upper end into a nozzle *c*. This receptacle *a* is surrounded by a container *d* for the pressure gas. In the example illustrated the gas container *d* is utilized as a protective jacket for the liquid receptacle *a*, which it completely envelops in order to protect it. The top of the receptacle *a* is fitted with a disk *e* adapted to be perforated and above it a striking-pin *f* is guided in a stuffing box *g* of the jacket *d*. In the illustrated example the jacket *d* is charged with gas of a definite pressure.

In the cylindrical receptacle *a* for the liquid a piston *h* rests upon the level of the liquid and is, in the inoperative state of the extinguisher maintained in its raised position by a spring *l*. When the extinguisher is brought into use and the disk *e* is perforated by the striking-pin *f*, the pressure in the jacket *d* acts upon the piston *h* and through it upon the column of liquid in the receptacle *a*, which is forced into the riser or ascending pipe *b* and forced out

through the nozzle *c*, no matter in which position the extinguisher is held. The gas under pressure can therefore not reach the mouth of the riser *b*, but is obliged to propel the liquid through the medium of the piston *h*.

In order to make sure that the extinguisher acts even if for some reason the piston *h* should bind in the receptacle *a* and refuse to advance under the pressure of the gas, the piston *h* is provided with a passage for the gas, which is closed by a check valve *i* as long as conditions are normal. The spring *i'* should be chosen of such tension that it only gives way after a certain excess pressure has been reached. The gas under the excess pressure then forces the ball-valve off its seat and passes through the openings *h* in the piston *h* directly on to the column of liquid in the receptacle *a*.

It will be readily understood, that I do not limit myself to any details of construction of the improved fire extinguisher and that the type illustrated is only shown by way of example.

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

1. In a fire extinguisher operating with a liquid under gas pressure, the combination of a receptacle containing the liquid, a pressure gas container in communication with said receptacle, a piston between the liquid and the inlet for the gas under pressure and a pressure actuated valve in said piston.

2. In a fire extinguisher operating with a liquid under gas pressure, the combination of a receptacle containing the liquid, a pressure gas container in communication with said receptacle, a striking-pin and disk adapted to control the admission of the gas to the liquid, a piston between the liquid and the admission port, for the gas under pressure and a spring adapted to maintain said piston in its raised position and a pressure released valve in said piston.

3. In a fire extinguisher operating with a liquid under gas pressure, the combination of a receptacle containing the liquid, a pressure gas container in communication with said receptacle, a piston between the liquid and the admission port for the gas under pressure, means for controlling the admission port, a spring for maintaining said piston in its raised position and a check

valve closing a passage through said piston and adapted to be opened by excess pressure caused by the binding of the piston.

4. In a fire extinguisher operating with
5 a liquid under gas pressure, the combination of a receptacle containing the liquid, a jacket completely enclosing said receptacle and serving as a gas container, a port for admitting the gas in the top of the recep-
10 tacle, means for controlling said port, a

piston between the liquid and said admis-
sion port, a spring for maintaining said
piston in the raised position and a check
valve closing a passage through said piston
and adapted to be opened by the excess 15
pressure set up when the said piston refuses
to move.

In testimony whereof I affix my signa-
ture.

FRIEDRICH EMIL KRAUSS.