March 18, 1930. J. RAUS 1,750,859

FIRE EXTINGUISHER

Filed March 24, 1921

Fig. 1

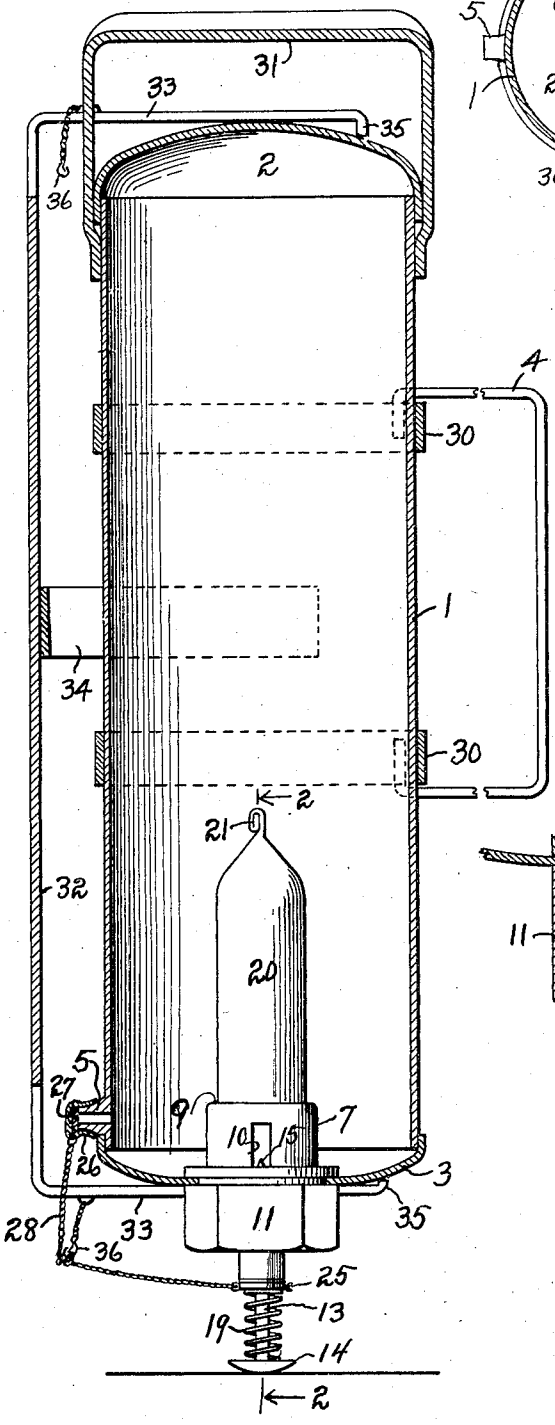


Fig. 3

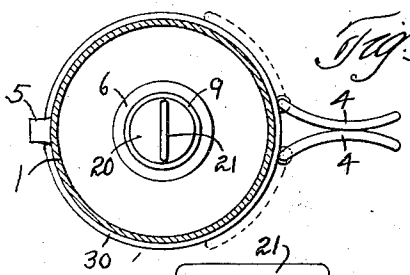
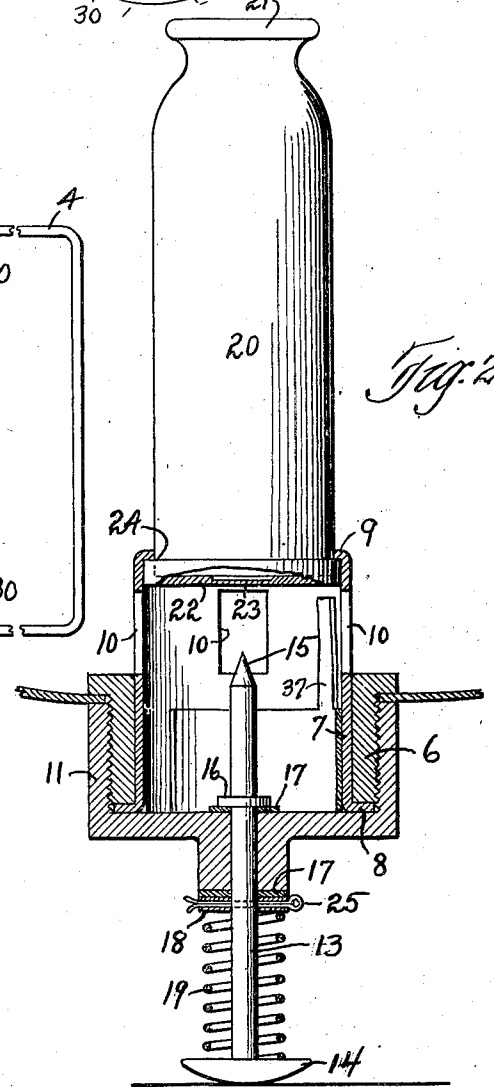


Fig. 2



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UNITED STATES PATENT OFFICE

JOHN RAUS, OF CLEVELAND, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NATIONAL FORMETAL COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO

FIRE EXTINGUISHER

Application filed March 24, 1921. Serial No. 455,240.

This invention relates to fire extinguishing apparatus and its objects are the provision of a small and comparatively inexpensive extinguisher for domestic or automobile use, which shall be so small as easily to be carried and conveniently handled by a woman; in which the charge can be conveniently stored, shipped, and handled; wherein the deterioration of the extinguisher and its contents during idleness shall be at a minimum; the provision of an extinguisher whose use shall serve effectively to extinguish fires, but without injury to paint or varnish; while other objects and advantages of the invention will become apparent as the description proceeds.

In the drawing accompanying and forming a part of this application I have shown one embodiment of my said invention, but without intent to limit myself thereto since many changes can be made without departing from my inventive idea. In these drawings Fig. 1 is a sectional view through my improved extinguisher; Fig. 2 is an enlarged detail sectional view corresponding to the line 2—2 of Fig. 1; and Fig. 3 represents a cross-section of the extinguisher.

Describing the parts by reference characters, 1 represents the body of the can or container, preferably of about one or two quarts capacity, although the size is immaterial, having at one end the closed cap 2, at the opposite end the apertured cap 3, and at one side the handle 4. Located near the cap 3 upon the side opposite the handle is a transverse nozzle 5 which should be positioned as near the end of the container as possible.

Rigidly brazed in the aperture of the cap 3 is the threaded ring 6 in which is removably seated the thimble 7 formed at its outer end with an external flange 8, at its inner end with an internal flange 9 and in its wall with apertures 10. A threaded cap 11 tightly screwed on the ring 6 holds the thimble in place and prevents leakage. Slidably mounted in this cap is an axial plunger 13 having at its outer end a head 14 and at its inner end a piercing point 15, a suitable stop flange 16 being provided between the same. At each face of the cap the plunger is surrounded by a soft packing 17 and between the outer packing and the head is interposed a seating washer 18 and spring 19 which serves the double function of holding the plunger in outward position and exerting a sealing pressure on the packing rings 17—17.

Carried by the thimble 7 is a metal capsule 20 adapted to contain acid. This capsule is preferably made of some metal like lead which is easily perforated, which is not attacked by the acid employed, which can be hermetically sealed and which can be sent through the mails. I have shown one end as closed by folding and soldering as at 21 and the other end by a soldered cap 22 which is formed at its center with a thin perforable portion 23 in line with the plunger and around its periphery with a flange 24 which interfits with the flange 9 to hold the capsule in place. In order to prevent any accidental or premature perforation of the capsule I provide a removable pin 25 traversing the washer 18 since this facilitates its insertion, but it may be located almost anywhere. Also to prevent leakage of the solution I employ a removable stopper for the nozzle, preferably a spring metal cap 26 having a cork pad 27 therein and a chain 28 attached to the pin 25.

Handles of any kind can be employed, those I prefer being of the folding kind shown in Figs. 1 and 3, curved so as to conform to the shape of the extinguisher when folded and secured in place by the metal straps 30. I have also shown one end of the extinguisher as provided with a rigid handle 31.

To secure the extinguisher in position for instant use I provide a bracket, for example that shown in Fig. 1 comprising a base plate 32, end fingers 33, and side fingers 34. The end fingers are made in pairs, spaced so as to receive between them the handle 31 at one end and the cap 11 at the other, their tips being turned inwardly as at 35 so as to cooperate with the spring fingers 34 in holding the device yieldingly in place. The two ends of the bracket are identical so that it may be installed either end up and the extinguisher applied to it either end up, indiscriminately. Each end is preferably provided with a spring hook 36 to which the chain 28 is attached when not in use, thus ensuring that

the extinguisher will be automatically prepared for action by the mere act of removing it from the bracket.

The container is first filled with a solution of sodium bicarbonate or other inexpensive salt containing a large amount of displaceable gas, and the capsule is filled with sulphuric acid, hydrochloric acid, or other inexpensive substance of this nature. When this capsule is perforated the result is a slow steady escape of acid which produces a constant evolution of gas and maintains a steady stream from the nozzle which can be accurately controlled. A spacer 37 keeps the capsule in place.

In order to produce a frothy liquid an aluminum salt can be employed in addition to the gas-producing salt, in which event I prefer to employ hydrochloric acid rather than sulphuric acid because of the decreased tendency towards the production of insoluble compounds which would obstruct the nozzle and clog the apparatus.

The employment of a metal capsule as described enables the acid charge to be transported by mail and to be stored and applied without difficulty; the comparatively slow outflow of acid obtained in this way leads to a more uniform stream pressure which can be better controlled and is not so likely to turn into spray before the fire is reached; the device here shown is much cheaper to make and charge than most extinguishers, but it will be understood that many changes can be made without departing from my invention as defined in the annexed claims.

Having thus described my invention what I claim is:

1. As an article of manufacture an elongated acid capsule of incorrodible ductile metal having at one end an external securing flange and an integral perforable region adjacent thereto.

2. An acid container for fire extinguishers comprising a cylindrical body of soft noncorrodible metal having at one end an external flange and a leak-proof perforable web located in the plane of said flange, the opposite end of said body being flattened and folded.

3. An acid container for fire extinguishers comprising a hollow cylindrical body having one end closed and provided with laterally projecting supporting means, and the other end reduced in diameter and folded to form a hermetically sealed capsule, said closed end having a perforable portion.

In testimony whereof, I hereunto affix my signature.

JOHN RAUS.