R. L. ZILLER.

NON-EXPLOSIVE OIL CONTAINER.

APPLICATION FILED SEPT. 13, 1910.

1,011,395. Patented Dec. 12, 1911.

Fig. 1.

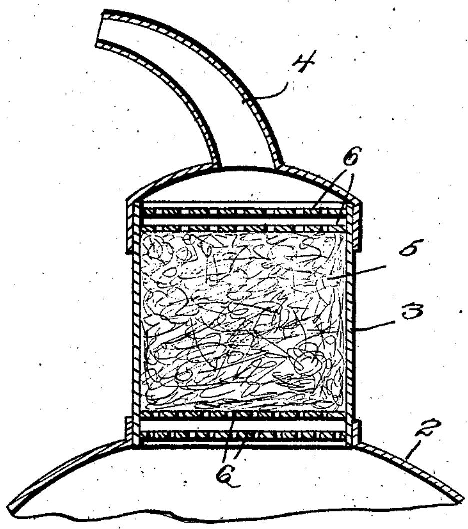
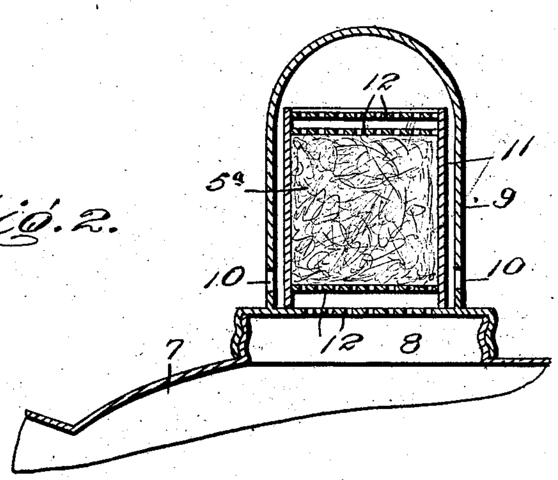


Fig. 2.



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UNITED STATES PATENT OFFICE.

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NON-EXPLOSIVE OIL-CONTAINER.

1,011,395. Specification of Letters Patent. Patented Dec. 12, 1911.

Application filed September 13, 1910. Serial No. 581,905.

To all whom it may concern:

Be it known that I, ROBERT L. ZILLER, citizen of the United States, residing at Austin, in the county of Travis and State of Texas, have invented certain new and useful Improvements in Non-Explosive Oil-Containers, of which the following is a specification.

My invention relates to means for protecting from explosion containers holding inflammable, explosive fluids such as naphtha, benzin, gasolene, etc., and the invention consists in the interposition of a protective screen between the outer air and the contents of the can consisting of an irregularly tangled mass of resilient, refractory filaments, these filaments each having an extremely small cross sectional area and relatively great length.

In order to produce an effective protector, it is necessary that the material should be refractory, as otherwise the filaments would burn out upon the application of heat. It is necessary that the material be in filamentous form as this is the best possible form to secure a rapid absorption of heat with a low emission thereof. The filaments must be resilient as this resiliency, where the filaments are irregularly tangled together in a mass, acts to hold the filaments separated from each other, thereby permitting the easy passage of fluid through the mass and, furtheremore, the resilience of the individual filaments makes the tangled mass of filaments resilient as a whole and hence permits the mass to be compressed into a duct without being pressed so tightly against each other as to impede the passage of oil or other liquids within the container. The filaments must be tangled together so that they run in all directions through the mass as thereby one filament engages and holds another in place and separate filaments cannot drop out into the can. Furthermore, this tangling of the filaments together so that the filaments run in all directions through the mass renders the mass elastic in all directions so that the separate filaments will yield to the passage of oil, or to the pressure of an instrument and will then spring back into their original position and will not be permanently displaced.

I have found after many experiments that the material which best fulfils these conditions is "metallic wool". This material is refractory. The fine, long, intermingled or tangled filaments absorb heat rapidly but have a low degree of conductivity and the individual filaments are permanently resilient and therefore the mass of filaments as a whole is resilient so that the filaments are held separated from each other and when displaced will spring back into their original positions. This material has a very high heat absorbing power, a very low conductive power and a very low emissive power. When heat is applied to a mass of these filaments, the temperature is raised only locally and the heat-absorbing power being so great, the heat is not transmitted to the other end of the mass. In other words, when heat is applied to one end of a tangled mass of metallic wool it is not transmitted back into the body of the mass. This is true even where a very high degree of heat is applied to one end of a bundle or mass of these filaments. That portion of the mass in intimate contact with the flame is highly heated, but the body of the mass is entirely cool.

An embodiment of my invention is shown in the accompanying drawings wherein:

Figure 1 is a diagrammatic section of a portion of a container provided with a duct filled with a mass of refractory filaments. Fig. 2 is a like view to Fig. 1 but showing a container provided with an air inlet duct, the duct being filled with a mass of refractory filaments.

Referring to Fig. 1, 2 designates the upper portion of a container of any suitable character and provided with an outlet duct comprising a chamber 3 and a nozzle 4. The chamber 3 is filled with a tangled mass of refractory, resilient filaments such as a mass of metallic wool, said mass being designated 5. This mass of metallic wool is shown as being held in position by means of the oppositely disposed perforated or reticulated disks or plates 6.

While Fig. 1 shows a pouring or outlet duct, it will be obvious that practically the same construction might be used for an inlet duct whereby air can pass into the container. In Fig. 2, however, I show a form of duct particularly devised for permitting the entrance of air to the container but preventing the entrance of flame. In this construction, 7 designates the upper portion of a liquid container having an air inlet opening 8.

Over this opening is placed a cap 9 having perforations 10 through the walls thereof. Within the cap is located a tubular chamber 11 having therein a filling 5^a of material such as metallic wool consisting of a mass of refractory resilient filaments as before described, this being held in place by the perforated or reticulated plates or disks 12. I have shown a pair of these disks or plates 12 at each end of the chamber 11. It will be seen that this construction is practically the same as that before described. It is simply a duct or passage having therein a filling consisting of a tangled mass of resilient, refractory filaments.

It is to be understood that the devices shown in Figs. 1 and 2 are merely illustrative of my invention and that the principle of the invention may be applied to any form of holder or container for explosive fluids, and that any form of duct or passage may be protected by the use of my improved screen.

Having thus described the invention, what is claimed as new is:

1. A container for explosive and inflammable fluids, said container having a duct, and a filling of metallic wool disposed in the duct, the interstices between the filaments of wool permitting the passage of liquid from the container.

2. A protective screen for containers holding explosive, inflammable fluids, consisting of a resilient mass formed of loose, irregularly contacting, independent, separated filaments of resilient, refractory material, the resiliency of the filaments separating them from each other and maintaining open passages throughout the mass.

In testimony whereof, I affix my signature in presence of two witnesses.

ROBERT L. ZILLER. [L. S.]

Witnesses:
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