J. B. WELCH.

RECEPTACLE FOR INFLAMMABLE MATERIALS.

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1,325,769. Patented Dec. 23, 1919.

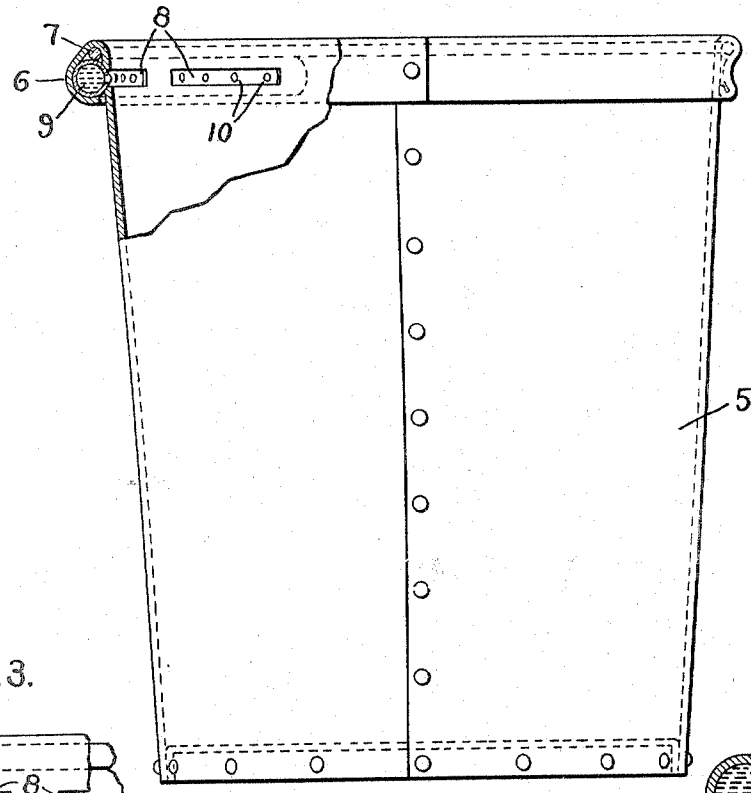


Fig. 1.

Fig. 3.

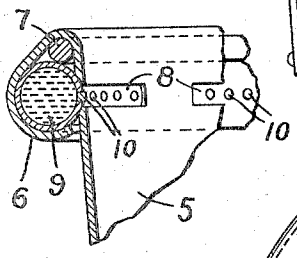
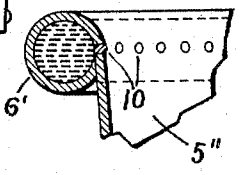


Fig. 5.



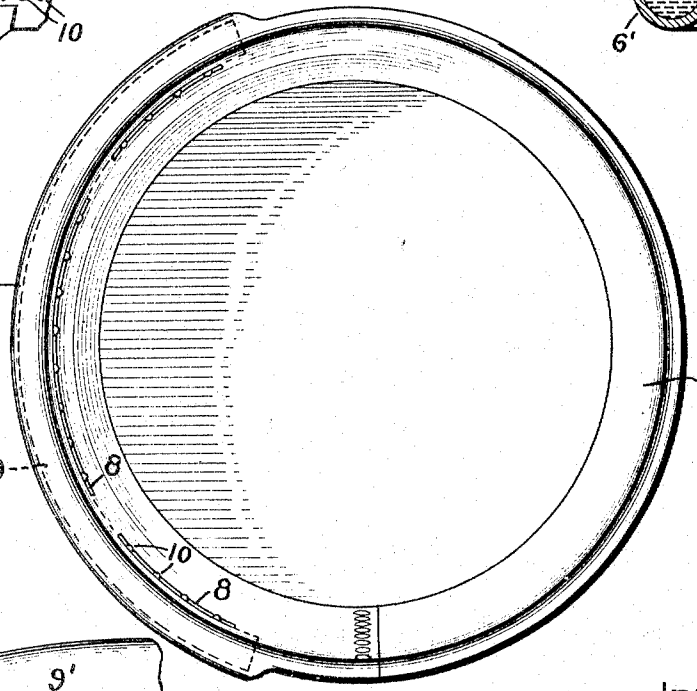
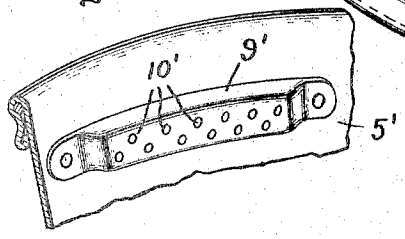


Fig. 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

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RECEPTACLE FOR INFLAMMABLE MATERIALS.

1,325,769. Specification of Letters Patent. **Patented Dec. 23, 1919.**

Application filed March 6, 1916. Serial No. 82,350.

To all whom it may concern:

Be it known that I, JOHN B. WELCH, a citizen of the United States, residing at New Haven, county of New Haven, State of Connecticut, have invented certain new and useful Improvements in Receptacles for Inflammable Materials, of which the following is a specification.

My invention relates to receptacles for inflammable materials, and the object of the same is to provide a fire-extinguishing receptacle for inflammable materials. In carrying out the invention I provide in combination with a receptacle for inflammable materials a heat-responsive fire-extinguishing device which in the normal use of the receptacle is inseparable therefrom. In its complete form my invention comprises a receptacle provided with a normally inseparable fire-extinguishing device having associated therewith means responsive to a predetermined thermal condition for initiating its operation.

A great many fires start in receptacles for waste, such as the ordinary waste paper basket of the office or home and the rubbish barrels in and around buildings. There is at present a general tendency toward fire-proofing and especially a tendency to minimize the fire hazard by preventing the rapid spread of fire from inconsequential beginnings, such as a blaze in a waste receptacle. To this end certain types of so-called fire-proof receptacles have been placed on the market, but as far as I am aware none of these are generally satisfactory. The so-called fire-proof metallic basket is not in any sense a basket which will prevent the spread of fire from burning materials therein, because the flame from such burning materials will set fire to a desk, beneath which the basket is frequently placed, or to other combustible articles near the basket. A covered receptacle, while perhaps fire-proof, is not practical for general use, both on account of the inconvenience in its use, and on account of the ease with which the cover is broken or distorted by the continuous rough usage to which it is inherently subjected. The purpose of my present invention is to provide a receptacle which can be used with the same convenience as the ordinary waste paper basket, and which at the same time is provided with means for positively extinguishing any fire therein. In carrying out the invention I associate with the receptacle in any convenient manner a fire-extinguishing device which in the normal use of the receptacle is inseparable therefrom and which is normally inactive, but which operates to immediately extinguish any fire in the receptacle. The fire-extinguishing device may, for example, be a container for a suitable fire-extinguishing fluid having openings for directing the fluid therein toward the interior of the receptacle and provided with heat-responsive means, such as fusible material, normally closing the openings.

The novel features which I believe to be patentably characteristic of the invention are definitely pointed out in the appended claims. The construction and operation of receptacles embodying the invention will be better understood from the following description taken in connection with the accompanying drawing, in which:

Figure 1 is an elevation partly in section of a receptacle embodying the invention; Fig. 2 is a top view of the receptacle of Fig. 1; Fig. 3 is a detail sectional view; and Figs. 4 and 5 illustrate modified forms of the invention.

In Figs. 1, 2 and 3 I have illustrated a fiber basket or receptacle 5. Such baskets frequently have a roll-rim 6 which serves as a handle. In making the basket the fiber is moistened and rolled over an iron ring 7 which acts as a sort of forming ring. The roll-rim 6 forms a chamber which is admirably adapted to contain a fire-extinguishing device in accordance with my present invention. The basket is provided near its top with slots 8 which communicate with the chamber formed by the roll-rim 6. A fluid-container 9 is located in the chamber. The container may be of metal or any other suitable material and is adapted to contain a fire-extinguishing fluid. Numerous fluids for this purpose are known in the art, and, merely by way of example, I mention carbon tetrachlorid (CCl_4), carbon dioxid, (CO_2), or a mixture of these two materials, or a mixture of water and carbon dioxid, etc. The container 9 is provided with a plurality of apertures or openings which are normally closed with fusible material 10 which will melt and release the fluid within the container upon the occurrence of a predetermined thermal condition, occasioned, for example, by a fire in the basket. The openings of the receptacle 9 register with

the slots 8 in the basket, and it will be understood that when the fusible material in the openings melts, the fluid in the container is squirted out into the interior of the basket. The fire-extinguishing fluid is normally confined under pressure within the container 9, and is released for its fire-extinguishing operation by the melting of the heat-responsive means 10 normally closing the openings in the container. The fire-extinguishing fluid is preferably heavier than air, and thus as it is squirted from the container 9 sinks toward the bottom of the basket, thereby forcing out the air and combustion-supporting oxygen thereof, thus extinguishing whatever fire there is in the basket. While I have particularly described a fire-extinguishing means having a fire-extinguishing fluid confined under pressure, it will be evident that other types of fire-extinguishing means may if desired be used in my improved non-inflammable basket.

The fluid container may be filled with the fire-extinguishing fluid in various ways, as will be evident to those skilled in the art, and I do not wish to limit my invention to any particular mode of filling these containers. Where the fire-extinguishing fluid consists of a mixture of carbon tetrachlorid and carbon dioxid, a suitable quantity of the liquid carbon tetrachlorid may be poured into the container through one of the openings therein, which is left open and unplugged with fusible material for this purpose. Carbon dioxid under pressure may then be forced into the container through this same unplugged opening, and when the desired pressure within the container has been attained, the opening is sealed or plugged with fusible material.

It will of course be understood that the basket 5 may also be made of metal or any other suitable material. When made of metal or equivalent material the roll-rim may be formed as the container for the fire-extinguishing fluid. Thus in Fig. 5, the edge of the roll-rim 6′ of the basket 5″ is soldered or attached in any suitable way to the side of the basket, thereby forming a completely inclosed fluid container in which the fire-extinguishing fluid can be conveniently confined under pressure.

In Fig. 4 I have shown a modified form of the invention in that the fire-extinguishing device instead of being built into the basket is attached to the interior wall thereof. The basket 5′ may be of metal, fiber or any other suitable material, while the fire-extinguishing device is analogous to that hereinbefore described, and comprises a container 9′ for a fire-extinguishing fluid having apertures closed by plugs 10′ of fusible material for normally confining a suitable fire-extinguishing fluid in the container. The container 9′ may be attached to the basket in any suitable way, as for example, by rivets, bolts, screws, etc. It will be obvious that a fire-extinguishing device of the type shown in Fig. 4 may be easily attached to existing receptacles or baskets for converting the latter into fire-proof receptacles of my present invention. While each modification of my invention herein illustrated and described contains a fire-extinguishing device which extends only partly around the basket, it will be understood that the device may extend all the way around if desired, and in certain receptacles this may be found desirable for the purposes of stability.

It will be evident from the foregoing description that I have provided a fire-extinguishing receptacle of such a character that any fire started in the receptacle is positively extinguished before any spread of the fire can take place. The fire-extinguishing device is secured to the receptacle and in the normal use of the receptacle, such as the frequent filling and emptying of a waste receptacle, is inseparable therefrom. However, the fire-extinguishing device does not in any way interfere with the emptying or general use of the receptacle. A portable receptacle embodying my present invention can be used just as freely and conveniently as the ordinary waste paper basket of the present day. Moreover, my improved fire-extinguishing receptacle is of simple construction and can be manufactured at a cost only slightly exceeding that of the present day receptacles of corresponding quality and character. While my present invention is particularly adapted to portable receptacles for waste materials it will be understood that the invention may be equally well embodied in receptacles for inflammable materials of any kind, as for example, in factories where inflammable goods are employed, as in celluloid factories where in certain steps in the manufacture the goods are thrown into receptacles for storage or for transfer to other parts of the factory. I, accordingly, do not wish to be limited to the particular embodiments and specific applications of the invention herein described and illustrated for the purposes of explanation, but aim in the appended claims to cover all modifications and applications within the spirit of the invention.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. The combination with a receptacle for waste paper and the like, of fire-extinguishing means associated therewith so as not to interfere with the normal use of the receptacle, said fire-extinguishing means being in the normal use of the receptacle inseparable therefrom, and heat-responsive means for releasing said fire-extinguishing means.

2. The combination with a receptacle for

inflammable material, of fire-extinguishing means associated therewith, said fire-extinguishing means being secured to said receptacle and in the normal use of the receptacle being inseparable therefrom, and heat-responsive means for releasing said fire-extinguishing means.

3. The combination with a portable receptacle for waste paper and the like, of fire-extinguishing means associated therewith, said fire-extinguishing means being secured to said receptacle and in the normal use of the receptacle being inseparable therefrom, and means responsive to a predetermined thermal condition for initiating the operation of said fire-extinguishing means.

4. The combination with a receptacle for waste paper and the like, of a fluid container associated therewith and in the normal use of the receptacle inseparable therefrom, a fire-extinguishing fluid normally confined under pressure in said container, and heat-responsive means for releasing said fire-extinguishing fluid.

5. The combination with a receptacle for waste paper and the like having its sides shaped to form a chamber, of a fire-extinguishing fluid normally confined under pressure in said chamber, and heat-responsive means for releasing said fire-extinguishing fluid.

6. The combination with a receptacle for inflammable material having an integrally formed chamber, of a fire-extinguishing fluid normally confined under pressure in said chamber, heat-responsive means for releasing said fire-extinguishing fluid, and means for directing said fire-extinguishing fluid when released toward the interior of said receptacle.

7. The combination with a receptacle for inflammable material, said receptacle having near its top an integrally formed chamber communicating with the interior thereof, of a fluid container positioned in said chamber, a fire-extinguishing fluid in said container, said container having openings for directing the fire-extinguishing fluid therein toward the interior of said receptacle, and heat-responsive means normally closing said openings.

8. The combination with a receptacle for inflammable material, said receptacle having a roll top forming a chamber and having a communicating opening between the chamber and the interior of the receptacle, a container positioned in said chamber, fire-extinguishing means confined under pressure in said container, said container having openings for directing the fire-extinguishing means confined therein through said communicating opening and into the interior of said receptacle, and heat-responsive means normally closing said openings.

In witness whereof I have hereunto set my hand this 23rd day of Feb., 1916.

JOHN B. WELCH.

Witness:
JOHN A. CONDON.