Sept. 11, 1945. W. F. BLAKE 2,384,526

FIRE EXTINGUISHER

Filed April 21, 1944

Fig. 1

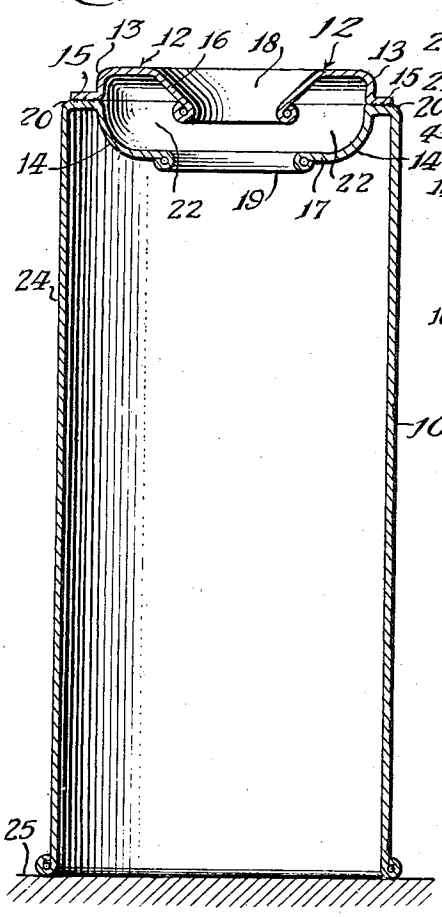


Fig. 2

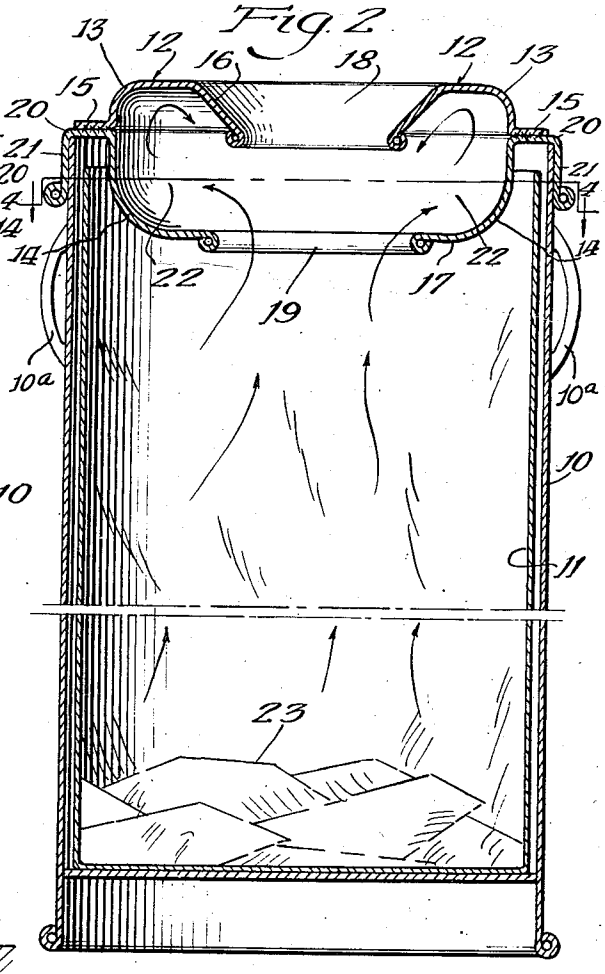


Fig. 3

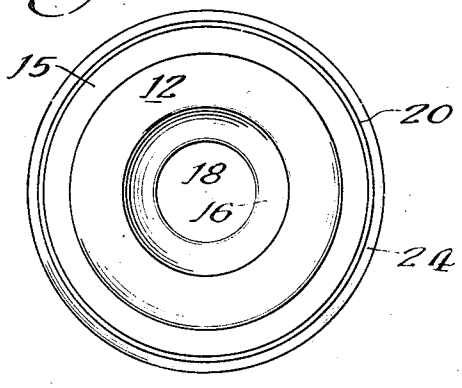
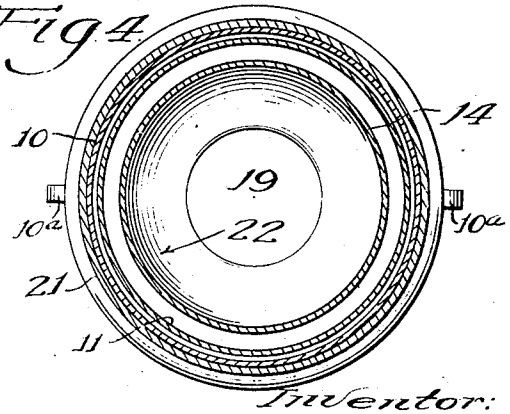


Fig. 4



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2,384,526

FIRE EXTINGUISHER

William F. Blake, Chicago, Ill.

Application April 21, 1944, Serial No. 532,148

8 Claims. (Cl. 169—2)

My invention relates to fire extinguishing units and more particularly to an open ended drum-like unit having the capacity to automatically control and extinguish any fires that it is practicable to enclose.

It is the principal object of my invention to provide a fire extinguishing unit that can be placed over a fire and which will coact with the combustion products of the fire itself to automatically control and extinguish the fire.

My drum-like unit can be used to extinguish oil, gasoline, or other fires. It is also particularly applicable to waste baskets and can be used as an integral part of a new type waste basket so that the basket is continually and at all times fire proof. In other words, this feature becomes a part of the basket and is always on guard against fires which may start within the basket.

For purposes of description and clarification the fire extinguishing drum as applied to waste baskets is described in detail and its principle of operation is herewith explained. The principle of operation is the same when used over any fire. Minor changes may be made in the construction if necessary for convenience without departing from the broad basic principle.

The ordinary type of coverless, waste basket is generally recognized as constituting a distinct fire hazard. The large, open top of such a receptacle appears to invite the thoughtless dropping of burning matches, cigars, and cigarettes into its interior which may ignite any inflammable material in the basket and cause serious fire losses. Fires thus started are easily sustained by fresh air flowing downwardly into the basket and spreading of the fire to adjoining curtains, rugs, and furniture is not prevented by the fact that the basket may be composed of non-combustible material. Accordingly, since the trash in such baskets is likely to be ignited at intervals, it is important to provide a control that does not require the use of fire fighting equipment.

It is therefore another object of my invention, as applied to waste baskets, to provide an open top waste basket or container which embodies features that coact with the combustion products of a fire in the basket to automatically control and rapidly extinguish the fire.

A further object is to provide a basket of the character indicated which possesses simplicity of construction and may be manufactured of inexpensive materials.

These and further objects of my invention will be set forth in the following specification, reference being had to the accompanying drawing, and the novel means by which said objects are effectuated will be definitely pointed out in the claims.

In the drawing:

Fig. 1 is a sectional elevation showing one form of my improved unit.

Fig. 2 is an enlarged, sectional elevation of the unit showing the same applied to a waste basket.

Fig. 3 is a top plan view of the unit as viewed in Fig. 1.

Fig. 4 is a section of the control drum taken along the line 4—4 in Fig. 2.

Referring to Figs. 2 and 4 of the drawing, the numeral 10 represents the principal container of an open top basket which may be composed of any material, but preferably one having the property of fire resistance in order to withstand any charring action to which the basket may be periodically subjected. If desired, the container may be equipped with handles 10a and may be made of a normally combustible material and, in this case, it will be necessary to cover its interior with a fire resisting paint or otherwise treat the interior to accomplish the same purpose. The container is shown as being cylindrical in shape although other shapes may be employed and also as being formed with a relatively thin wall, but this factor may be varied as desired depending upon the size and strength requirements.

It is also contemplated that a paper bag 11, or otherwise disposable receptacle, may be rested on the bottom of and in approximate fitting relation to the interior of the basket for receiving the trash and paper. The bag provides a convenient means for removing the contents without lifting or moving the basket.

When the fire extinguishing drum is used alone and not in connection with the waste basket the container and paper bag are unnecessary and it will be shown later how the device may be adapted for separate use.

The fire control aspect of my invention is provided by a control or extinguishing drum 12 having air tight walls which consists of a top portion 13 welded to a bottom portion 14 at the point 15. The drum thus formed has inwardly extending flanges 16 and 17 at both the top and bottom providing apertures 18 and 19 in the drum ends of a diameter less than that of the drum, the apertures being of sufficient area to permit waste to be easily deposited therethrough. The top flange 16 may be inclined downward as an aid in forcing toward the bottom carbon dioxide and other gaseous products of combustion. The pocket 22 thus formed is a zone having air tight

walls at all points except the upper and lower apertures.

Spaced from the upper peripheral edge of the drum and attached to the side wall of the drum at point 15 and extending outwardly therefrom is an annular portion or rim 20 which rests on the upper peripheral edge of the basket side wall thus forming a substantially air tight connection between the basket and drum rim. Depending from the portion 20 is a flange 21 which frictionally engages the basket side wall and coacts with the rim 20 to form the air tight connection with the basket. To adapt the drum for separate use, the same may be modified as illustrated in Figs. 1 and 3 wherein corresponding parts are numbered as in Fig. 2. The modification differs from the arrangement shown in Fig. 2 only in that the flange 24 corresponding to the flange 21 is extended downwardly to the necessary length forming an open ended body to house the fire, the lower edge of which rests on the ground indicated by the numeral 25 or any surface surrounding the fire forming a substantially air tight connection therewith. This housing or body replaces the container in the waste basket adaptation and performs the same function, namely to support the fire extinguishing drum at a point above the fire.

With my drum device the waste basket can be used at all times without the necessity of removing covers or lids and also at all times day or night it is readily to extinguish any fire that may accidently start within said basket.

The exact manner in which my improved drum controls and extinguishes fires is not completely understood, but it is believed that the following is a reasonable explanation of the theory of operation.

For illustration: when the paper or trash 23 is ignited, the oxygen content of the air within the basket is rapidly consumed. In the usual type of waste basket, this oxygen loss would be replenished by the chimney action of the colder outside air descending into the basket so that the fire would continue to burn. However, with my improved construction, the fire is not sustained, but, on the contrary, is snuffed out within a few seconds depending upon the size of the basket and the amount of the trash. It is believed that carbon dioxide and other gaseous products of combustion, which are incapable of supporting the fire, collect in the zone 22, build up some pressure in this region and stream into the column of cold air which is endeavoring to flow downwardly through the openings 18 and 19. These gases are either projected into the column of cold air with sufficient velocity to choke the cold air flow, or dilute the cold air sufficiently to materially reduce the oxygen content of the mixture relative to that originally obtaining in an equal volume of the cold air. In any case, the fire is automatically extinguished before the trash is consumed which definitely indicates that carbon dioxide and/or other gases are formed in relatively large quantities or that the oxygen loss of the air within the container is not restored with sufficient rapidity to sustain the fire.

It can be readily understood that my fire extinguishing drum will extinguish, in the same manner, any fire that it is practicable to enclose with an open ended body that can be made to form a substantially air tight connection with the ground or other surface surrounding the fire.

I claim:

1. A fire extinguishing unit comprising a drum having inwardly extending flanges at both top and bottom providing an aperture in each of the drum ends, and having an outwardly extending annular portion spaced from the top of the drum said annular portion having a flange extending downwardly therefrom forming an open ended body.

2. A fire extinguishing unit comprising a drum having an aperture in each end of a diameter less than that of the drum and having an outwardly extending annular portion spaced from the top of the drum, said annular portion having a flange depending therefrom and extending to a point below the lower end of the drum.

3. A fire extinguishing unit comprising a drum having an aperture in each end of a diameter less than that of the drum and having an outwardly extending annular portion spaced from the top of the drum, said annular portion having a flange extending downwardly therefrom forming an open ended body, the lower portion of the drum extending into the body.

4. A waste basket comprising an open top container, a fire extinguishing unit comprising a drum, and means for supporting the drum on the open end of the container to provide substantially an air tight connection therewith, each drum end having an aperture of a diameter less than that of the drum.

5. A fire extinguishing unit comprising a drum having end walls each including an aperture and an annular portion extending outwardly from the drum and provided with a flange projecting downwardly therefrom and forming an open ended body.

6. A fire extinguishing unit comprising a drum having upper and lower end walls each including an aperture and an annular portion extending outwardly from the drum and provided with a flange projecting downwardly therefrom and extending below the lower end wall to form an open ended body.

7. A fire extinguishing unit comprising a drum having end walls each including an aperture and an annular portion extending outwardly from the drum and provided with a flange projecting downwardly therefrom and forming an open ended body, the lower portion of the drum extending into the body.

8. In a waste basket, the combination of an open top container and a fire extinguishing unit comprising a drum having end walls each including an aperture and an annular portion extending outwardly from the drum, the portion supporting the drum on the open end of the container and having substantially an air tight connection therewith.

WILLIAM F. BLAKE.