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Lisciani et al.

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[54] **FIREPROOF WASTE CONTAINER COVER**

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[52] **U.S. Cl.** ..... **220/88 R**; 220/1 H; 169/49

[51] **Int. Cl.**[2] **B65D 1/24**

[58] **Field of Search** ..... 220/1 H, 88 R, 20.5, 60 R; 131/242; 169/2

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[57] **ABSTRACT**

A removable cover for a waste paper and rag container has a downwardly directed and inwardly convergent top surface with an annular duct radially converging inwardly on a central opening normally used for introducing waste material therein but also, in the case of a fire, for directing the convective circulatory flow of combustion gases back into the container and has a curtain thereacross for sealing off the inflow of fresh air therethrough in the prevention of combustion of waste material therein and the snuffing of flame in the container.

3 Claims, 4 Drawing Figures

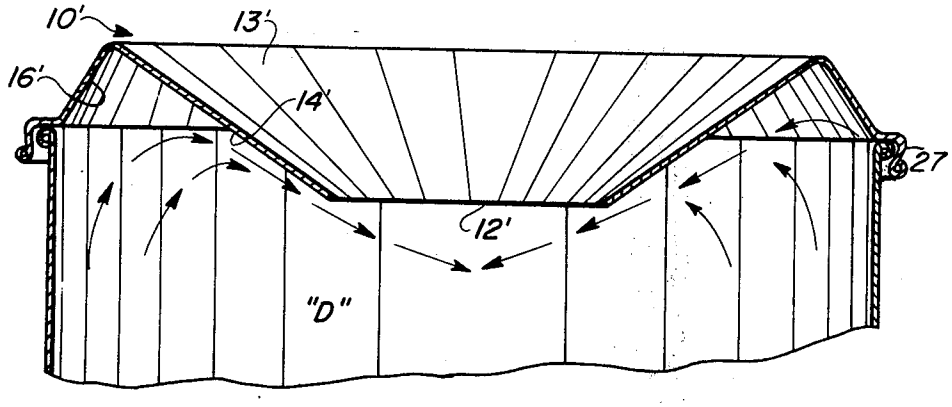


FIG - 1

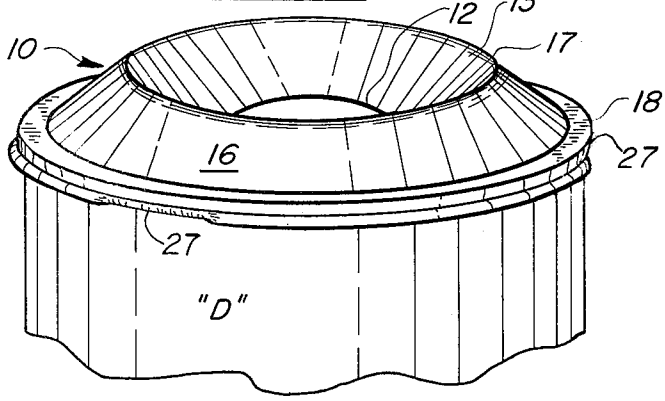
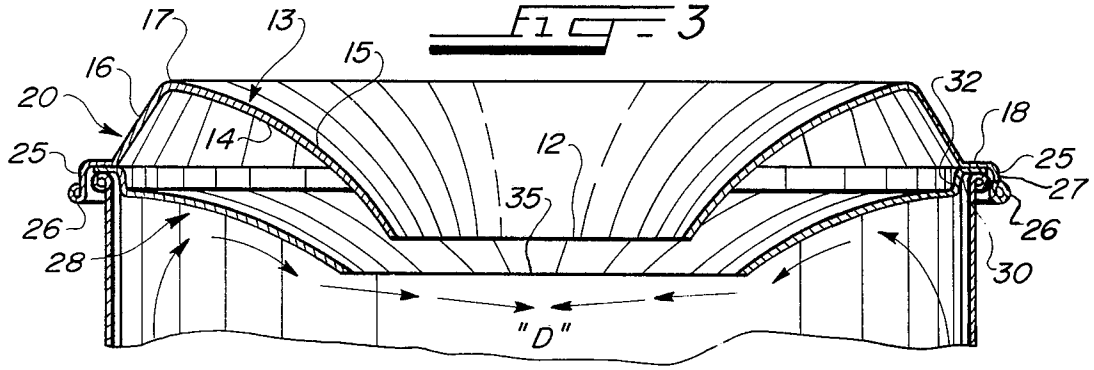


FIG - 3



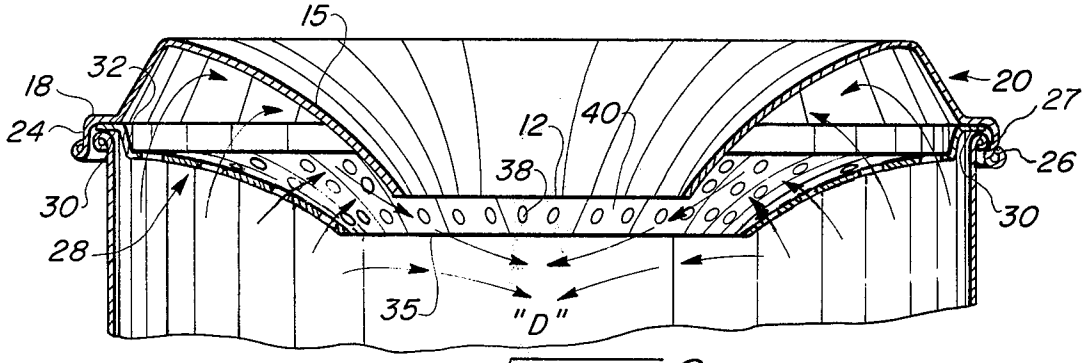


FIG - 2

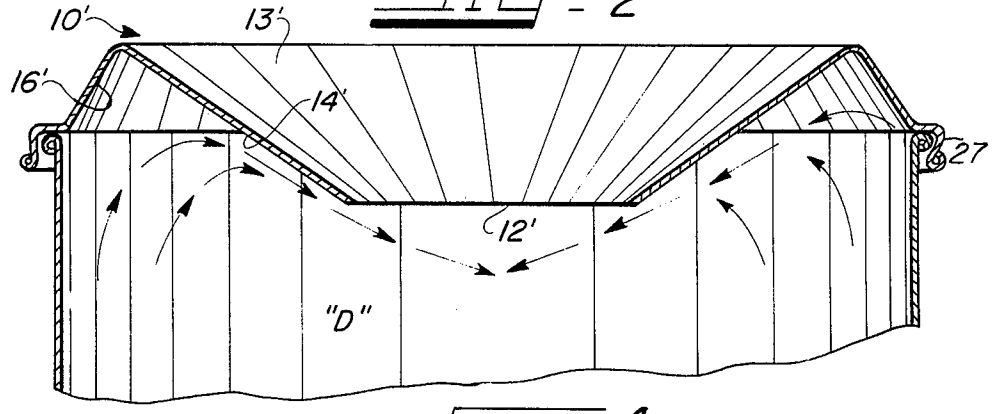


FIG - 4

FIREPROOF WASTE CONTAINER COVER

BACKGROUND OF THE INVENTION

The extinguishing of fires in industrial waste paper and rag containers has been of concern to fire prevention people for many years and numerous ideas have been put forth both for the prevention of fires in such hazardous locations and for the extinguishing of fire once started therein. Under the new Federal O.S.H.A. regulations, all containers in factories must be provided with either a cover or a device which should extinguish a blaze. While the concept of fire prevention may stop fires by preventing them in their inception, a careless drop of a lighted cigarette, match, or smoldering rag or paper into the conventional open-top industrial or waste container used for holding scrap paper and other combustible waste material can do considerable damage to property and run up insurance costs beyond reason. So many fires are induced in this manner throughout the country that it is considered a major object of many fire prevention programs.

The problem has not been wholly solved in the devices developed for this purpose to date. For instance, when paper or rags are ignited within a metal container, the oxygen loss would be readily replenished by the convective flow of the outside air descending into the container under the action of force or gravity. Thus the fire would continue to be furnished new oxygen and would continue to burn, as oxygen is required to support combustion.

There is thus an established need for an adaptable cover to a metal container for industrial waste paper or rags which will deprive the container of the amount of fresh air necessary to support continuous combustion therein and snuff out any flame therein.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of the fire extinguishing cover installed on top of a metal container;

FIG. **2** is a fragmented horizontal cross-sectional view along the diameter of the double-baffle, double-curtain-forming cover of FIG. **1** where the arrows show burnt gas circulation;

FIG. **3** is also a fragmented cross-section of the double-baffle, single-curtain-forming cover of FIG. **1** where the arrows show burnt gas circulation; and

FIG. **4** is a fragmented cross-sectional view of the single-baffle, single-curtain-forming cover of FIG. **1** where the arrows show burnt gas circulation.

SUMMARY OF THE INVENTION

The gist of this invention lies in a substantially sealtight container which has a cover for projecting a single curtain or a double curtain of convective burned combustion gas across the central filling aperture of a portable cover for a metal container which is used for the disposal of waste paper and rags. The curtain of burned gases radially transverses the opening from all directions and effectively blocks the entry of fresh air and the replenishment of oxygen descending therein and effectively extinguishes any fire within the container.

Another aspect of the gist of this invention lies in a snuffing capability of gases of combustion ejected upward and radially downwardly across the opening to snuff out the fire to prevent oxygen in support of the fire by forming a shield to prevent its access to the interior of the container.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, FIGS. **1** and **2** show a portable fire extinguishing cover **10** installed on the top of a conventional cylindrical metal drum or container **D** having a standard circumferential rolled edge around its open top. The upper opening **12** is centrally located in upper baffle **13** to allow for the introduction of waste paper and rags into the metal container and is of a diameter sufficient to allow the easy disposal of waste material therein. An upwardly and outwardly sloping divergent nozzle shape to the inner face **14** of the baffle **13** causes any smoke of any product of combustion to flow across the opening **12** to cut off the oxygen in the air and snuff out any flame. A downwardly and inwardly sloping convergent and concave downward shape of the baffle **13** of the cover **10** makes a good target for the most convenient disposal of waste material therein. The baffle **13** is provided with a circumferentially downward and outwardly sloping portion **16** at the circumferential crown **17.** The circumferential crown **17** prevents the inadvertent laying of tools, materials, etc. on the top of cover **10** by workmen and the preventing of its effective use as a waste disposal and also tends to move the smoke and products of combustion flowing upwardly along the wall of the drum to the inner surface of the baffle **13.** A narrow outer flanged edge is an integral part of and extends radially from the outer edge of portion **16** to form a flat annular ring **18** which rests on the rolled circumferential edge of the drum D in the installation of the cover **10** thereon.

The ring **18** has a diameter only slightly greater than that of the circumferential rolled edge of the container D and has a portion **25** which extends in a downward direction therefrom in overlapping position relative to the rolled edge of the container when installed thereon. Rolled edge **26** terminates the lower end of portion **25.** To moderately hold the cover on the container, the rolled edge is indented at three equispaced points **27.** These points lie on a circle whose diameter is between **98½%** and **99½%** of the outside diameter of the container's rolled top.

The lower baffle **28** is spaced below top cover surface **15** and is provided with an outer horizontal flange **30** and is circumferentially welded to the under side of ring **18.** The inner rim **32** has a diameter only slightly less than that of the inner diameter of the container, circumferentially connects with the lower surface of ring **18,** is integral with the flange **30** and extends in a downward direction therefrom in overlapping position relative to the rolled edge of the container when installed thereon. Lower baffle **28** circumferentially and integrally connects with the lower end of rim **32.** The baffle **28** slopes inwardly in a downwardly concave sense from rim **32** and terminates in an opening **35** concentric to and somewhat below opening **12** but the opening **35** is the larger of the two. As seen in the drawing, the radius of baffle **28** is substantially flatter than that of baffle **13.**

Reference to FIG. **2** shows the lower baffle **28** is provided with a plurality of apertures **38** extending through the baffle surface **28** to permit combustion gases to flow between baffles **13** and **28** and because of the downwardly and inwardly extending concave shape of the baffles, the smoke of the products of combustion is directed to flow across the openings **12** and **35** and

the oxygen supply is cut off. Thus, without oxygen, the fire is extinguished.

The device of FIG. 3 is identical to that of FIG. 2 but there are no apertures 38 in the lower baffle surface so that, in this modification, no combustion gases flow into the annular area 34 but rather the products of combustion will only flow across aperture 35 from the gas circulating within the container to snuff out any flame.

Reference to FIG. 4 shows a single-baffle, single-curtain-forming configuration 13' of cover 10' which is less costly to manufacture than the preceding configurations of FIGS. 2 and 3. This concept is identical to the baffle 13 with all its parts but wholly eliminates the lower baffle 28 and its appurtenances. Here the products of combustion in drum D merely flow upwardly until they strike the surfaces 16' and 14' and because of the sloping configuration, will have a tendency to flow in the direction of the arrows to cut off the oxygen supply.

It will be understood that details of the construction shown may be altered or omitted without departing from the spirit of the invention as defined by the following claims.

We claim:

1. A fireproofed waste drum open for its full area at the top circumferential edge thereof, in combination with a removable cover installable on said circumferential edge comprising:

a. a drum having a circumferential rolled edge around its open top,

b. a cover having a flange disposed on said rolled edge, said flange having an inner rim which is connected to an annular coaxial baffle, said baffle having a downwardly concave curvature and the inner edge of said annular baffle lies in a plane substantially below the plane containing said inner rim of said flange,

c. a ring fastened to said flange, said ring sloping outwardly and downwardly over said circumferential rolled edge of said drum and terminating in a second rolled edge, said second rolled edge being disposed lower than the rolled edge of said drum to provide a snug fit therebetween,

d. said ring connected to an upwardly and inwardly sloped circumferential crown and thereafter sloped downwardly and radially concave inwardly to form a second baffle which converges with, but does not touch said first baffle, said second baffle terminating in a second opening.

2. The sealed fireproofed waste drum in combination with the removable cover as set forth in claim 1 wherein the first baffle contains a plurality of vent apertures in an all over pattern whereby the convective flow of the products of combustion will be directed to flow upwardly through said apertures in the area between the spaced baffles and flow inwardly and downwardly across the openings in said baffles to form a curtain thereacross for sealing off the inflow of outside air.

3. Apparatus as described in claim 1 wherein the second rolled edge is provided with three equispaced indentations to tightly engage said first rolled edge of said drum.

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