April 27, 1965 H. GOLDSCHMIDT 3,180,516

SPILL-PROOF CONTAINER

Filed July 12, 1962

Fig. 1

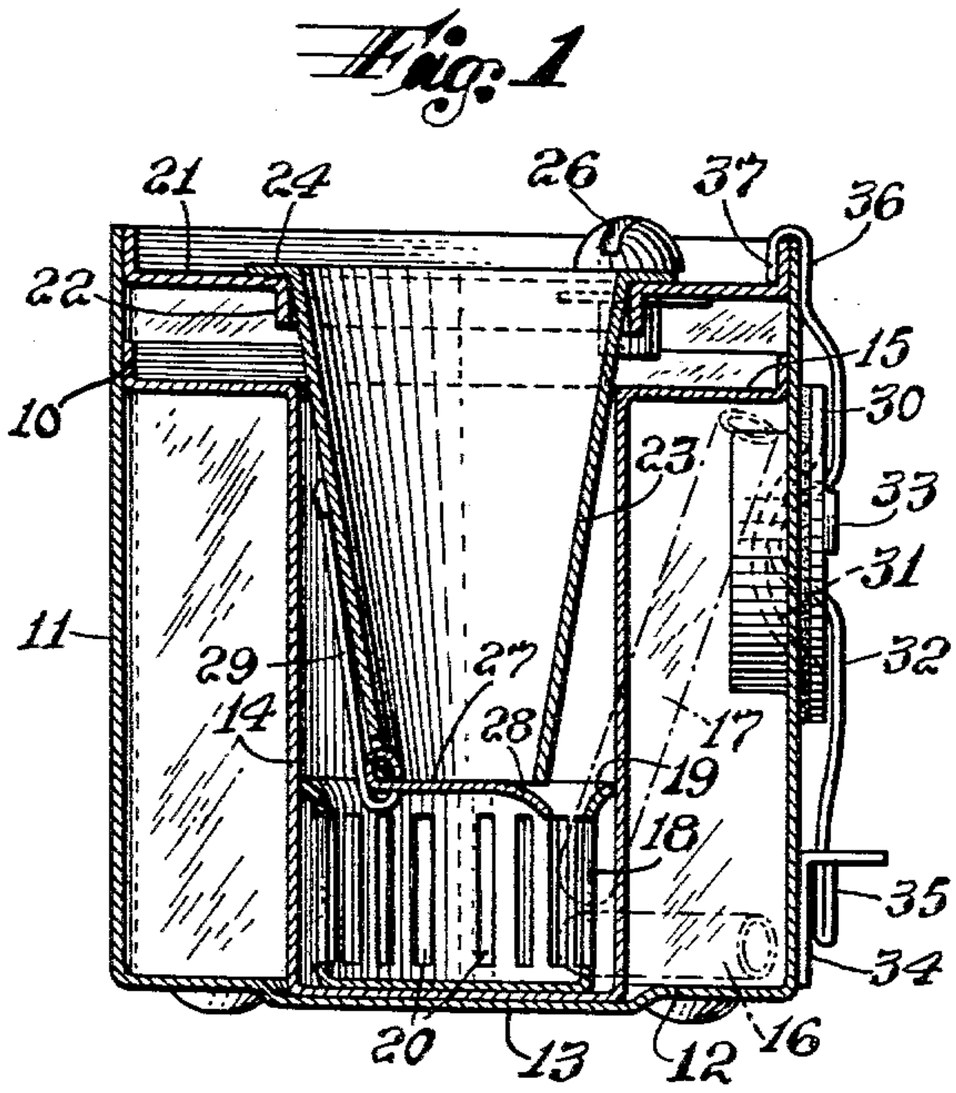


Fig. 2

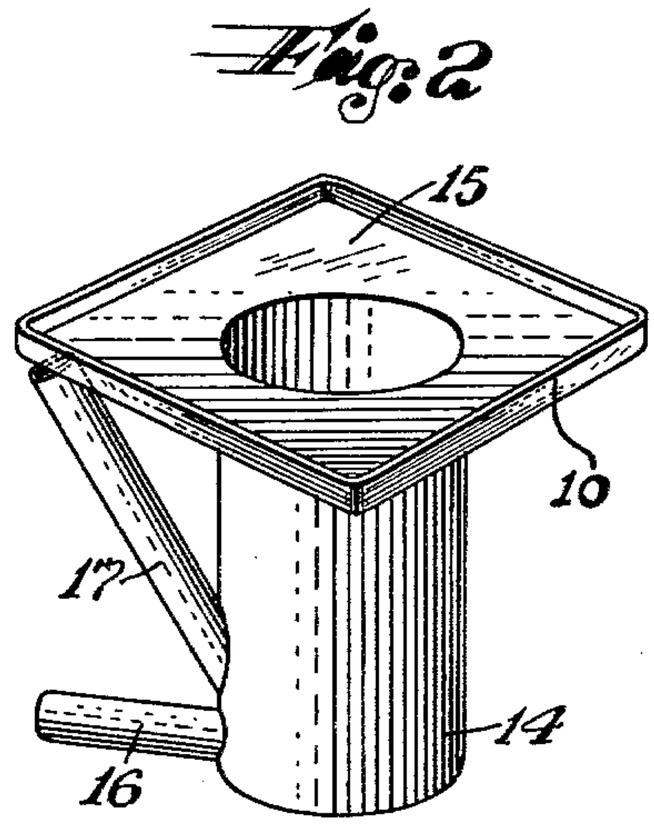


Fig. 4

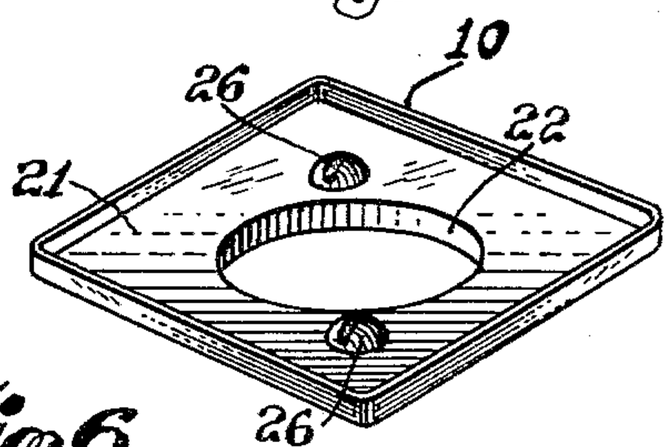


Fig. 3

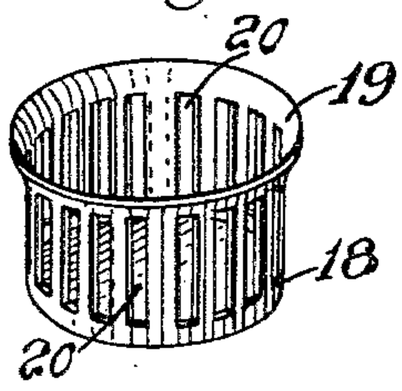


Fig. 6

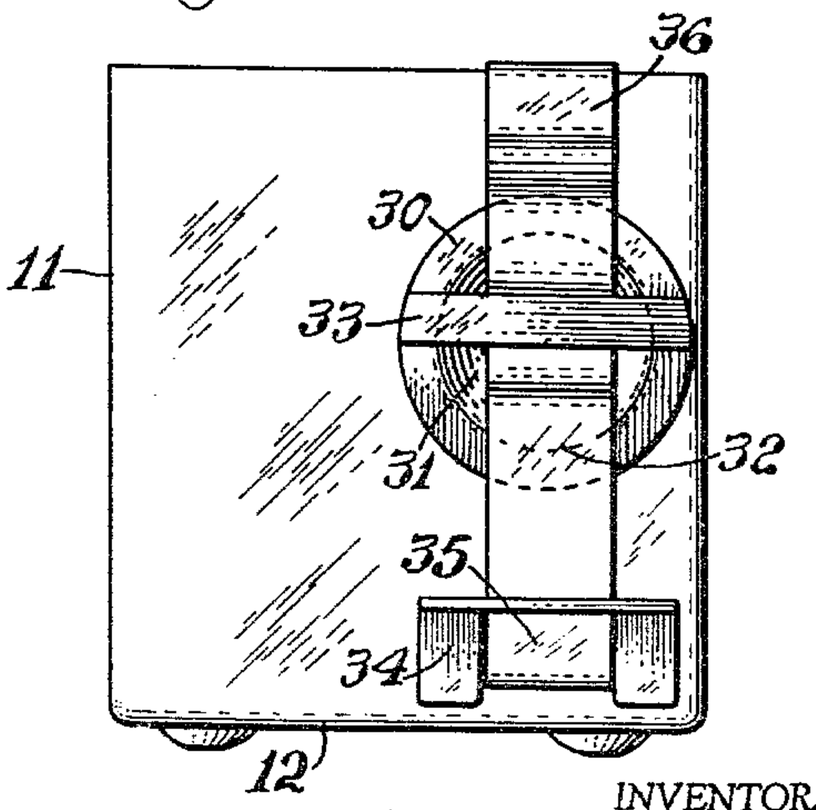
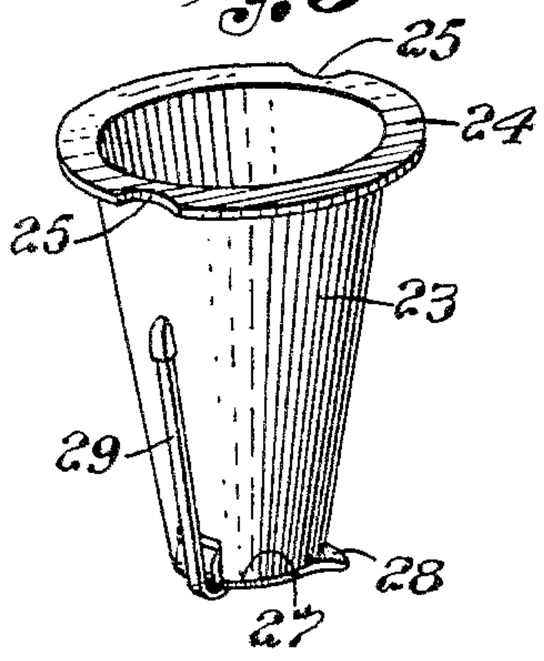


Fig. 5



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SPILL-PROOF CONTAINER

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4 Claims. (Cl. 220—20.5)

My invention relates to spill-proof containers generally, and specifically to spill-proof containers having partitions arranged as baffles to prevent the contained material from escaping, regardless of the position in which the container is disposed.

It is among the objects of my invention to provide a container that will not accidentally discharge its contents.

Another object of my invention is to provide a container in which the contents are readily accessible to dip brushes.

Still another object of my invention is to provide a container that will keep contaminating material separate.

A further object of my invention is to provide a container whose contents are entrapped in a series of baffles, although it may be disposed in several positions other than normal.

These objects and advantages as well as other objects and advantages may be attained by the device shown by way of illustration in the drawings in which:

FIGURE 1 is a vertical sectional view of a spill-proof container;

FIGURE 2 is a perspective view of a well for the container shown in FIGURE 1;

FIGURE 3 is a perspective view of a basket for the container;

FIGURE 4 is a view of a cover-plate for the top of the container;

FIGURE 5 is a perspective view of a truncated cone for the well; and

FIGURE 6 is a side elevational view showing the closure for the container.

There are numerous spill-proof containers for use in industry. The present device features a more positive ability to prevent accidental discharge of the contents despite accidental tipping. Further, the container is readily filled, flushed, or cleaned. The impurities that may enter the basket of the container are kept from contaminating the remainder of the contents. Baffles, a filter basket holding contaminating materials from impairing the bulk of the contents, and a trap-door accomplish these objects.

Referring now to the drawings in detail, the spill-proof container comprises a housing 11. The housing 11 is generally rectangular in horizontal cross-section, and closed at the bottom 12. The central portion of the bottom has a generally circular depression 13 that is dimensioned to receive the bottom of a well 14. The top of the housing 11 is open so that the well 14 can be inserted. The well 14 is preferably circular, and it rests in the depression 13. The well 14 extends toward the top of the housing 11, but it terminates below it. The well 14 has a radial flange 15 at its top edge that extends to the inside of the wall of the housing, where it serves as a closure, below the level of the top of the housing 11. The flange 15 has an upturned edge 10. The bottom of the well 14 has a bottom feed tube 16 connected to it and extending outwardly and horizontally toward the corner of the housing 11 adjacent to a filler port. Fluid outside the well 14 may enter the well 14 through the feed tube 16. The well 14 also has an air relief tube 17 communicating with its interior immediately above the feed tube 16 and extending toward the corner of the housing adjacent to a filler port. The air relief tube 17 extends in a generally upward and outward direction toward the flange 15 and terminates near the edge thereof and adjacent to the corner of the container 11. The feed tube 16 and the air relief tube 17 preferably lie in the same vertical plane, the one above the other, and extend toward a corner adjacent to a filter post, otherwise air would be trapped when the container is on its side for filling.

A perforated basket 18 lies in the bottom of the well 14. The basket 18 is lesser in external diameter than the internal diameter of the well 14. It is provided with a top flange 19, to center it in the well 14. The basket 18 also has many vertical slots 20. When in position in the well 14, it covers the entrance of the feed tube 16, and holds back particles of foreign matter and chips that may be introduced into the well 14. The basket may be removed, and with it, foreign matter is removed and may be deposited to prevent it from contaminating the fluid in the container 11. The well 14 is positioned in the housing 11 by the frictional engagement of the flange 15 and the edge 10 with the inside wall of the housing 11.

The top of the container 11 is closed by a plate or cap 21. This plate 21 is welded to the top of the container 11. The plate 21 has a central aperture 22. An inverted truncated cone 23 is positioned in the aperture 22 and extends down into the well 14. The cone 23 has a top radial flange 24 which rests on the plate 21. A pair of cut outs 25 on the flange 24 are dimensioned to pass by the heads of screws 26, 26 on the plate 21, so that the flange 24 can be rotated to pass under the screws 26, 26. When the screws 26, 26 are tightened, the cone 23 is held in place in the well, where its lower end 27 is about at the level with the top of the basket 18. The bottom 27 of the cone has a hinged trap door 28 which is kept in a normally horizontal position by the spring 29; the spring 29 is attached to the outside of the cone 23.

The side wall of the container 11 has a filler port, adadjacent to the tubes 16, 17. A plug 30 closes the filler port. The plug 30 has a central enlargement 31 which fits the filler port. A resilient strap or spring 32 is attached to a cross-member 33 on the plug 30. A slotted retainer 34 is attached to the outside of the container 11 near the bottom thereof. The end 35 of the spring is fitted into the slotted retainer 34. The top 36 of the spring 32 has a hooked or folded portion 37 which embraces and frictionally engages the top of the housing 11 and presses the plug into sealing engagement with the filler port.

The plate 21 is spaced away from the flange 15. The central aperture 22 is delineated by a downwardly extending flange which engages the cone 23 and prevents the material in the container 11 from leaking out if the container 11 is turned to other than an upright position.

It is noted that the air relief tube 17 permits entrapped air to pass so that the container 11 may be filled when laid on its side. The basket 18 will retain foreign matter for easy removal. The trap door 28 helps to contain the contents against spilling if the container is overturned. It is easily pressed aside to admit a dip brush, by the weight of the brush itself.

The foregoing description is merely intended to illustrate an embodiment of the invention. The component parts have been shown and described. They each may have substitutes which may perform a substantially similar function; such substitutes may be known as proper substitutes for the said components and may have actually been known or invented before the present invention; these substitutes are contemplated as being within the scope of the appended claims, although they are not specifically catalogued herein.

What is claimed is:

1. A spill-proof container comprising

(*a*) a generally rectangular hollow housing with an open top,
(*b*) a generally cylindrical well in the housing extending toward the top thereof,
(*c*) a radial flange on the top of the well extending across, closing the top of, and attached to the housing,
(*d*) a horizontal feed-tube extending from within the well and extending radially toward an edge of the housing along the bottom thereof,
(*e*) an air-relief tube extending from within the well above the feed-tube and extending upwardly toward the same edge of the housing as said feed tube,
(*f*) a perforate basket lying at the bottom in the well, and covering the innermost ends of the feed-tube and air-relief tube,
(*g*) a top-plate with a central aperture connected to the top of the housing above the flange on the well,
(*h*) an inverted, truncated cone in the central aperture to the top plate,
(*i*) a spring-loaded, normally closed door attached to the bottom of the cone,
(*j*) a filler port in the side wall of the housing adjacent to the feed-tube and air-relief tube, and
(*k*) closure means engageable with the filler port.

2. A spill proof container comprising:
(*a*) a hollow housing defining a single chamber, the housing having a side filler port;
(*b*) a well in the chamber spaced radially inwardly from said hollow housing;

(*c*) a feed-tube and an air-relief tube in the chamber communicating between the chamber and the well and extending radially toward the filler port;
(*d*) a top on the housing having an opening;
(*e*) an inverted, truncated cone depending from the opening in the top of the housing into the well;
(*f*) closure means on the bottom of the cone, defining with the cone a closure for the opening in the top.

3. A spill-proof container comprising:
(*a*) the structure in accordance with claim 2, and
(*b*) a spring loaded, normally closed door attached to the bottom of the cone.

4. A spill-proof container comprising:
(*a*) the structure in accordance with claim 2, and
(*b*) a spring loaded, normally closed door attached to the bottom of the cone, and
(*c*) a perforated basket lying at the bottom of the well.

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