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ACTUATING DEVICE FOR AEROSOL BOMBS

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Fig 1

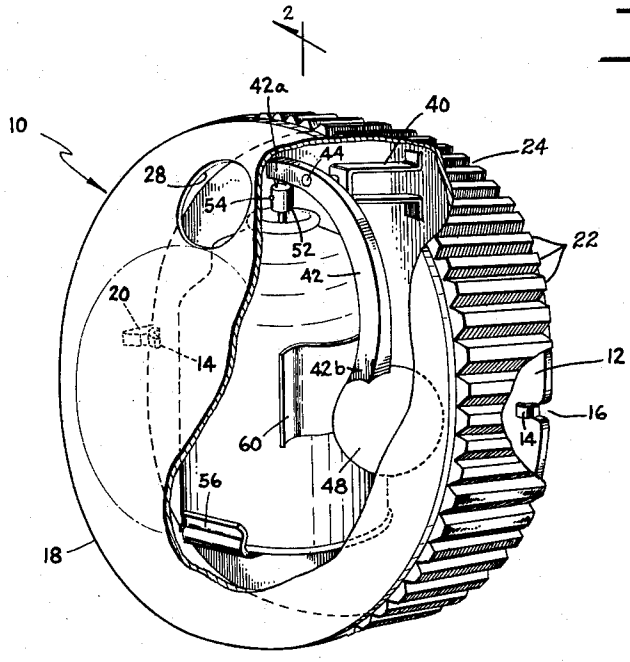


Fig 3

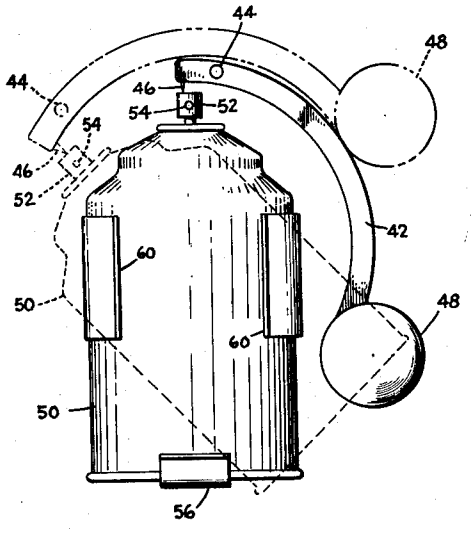
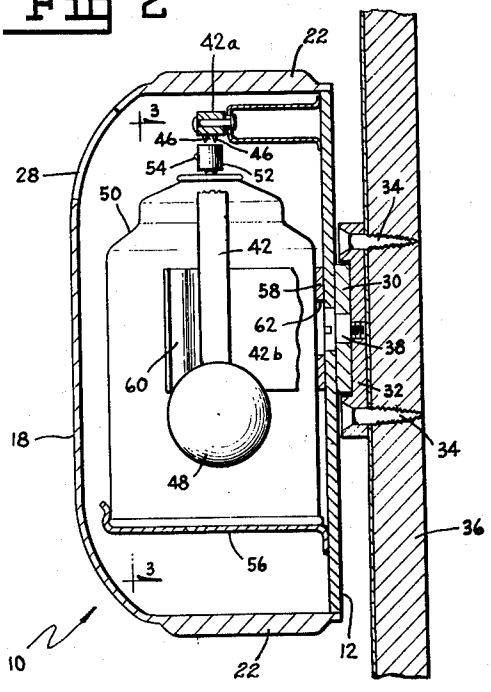


Fig 2



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ACTUATING DEVICE FOR AEROSOL BOMBS

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This invention relates generally to pressurized aerosol bombs for deodorizing purposes, and pertains more particularly to a wall-mounted actuating device therefor.

Pressurized aerosol bombs for deodorizing kitchens and bathrooms have come into widespread use. However, it is customary to store the bomb in a cupboard or chest when it is not needed. Getting the bomb out and returning it, especially if done frequently, can be a nuisance, and invariably results in the bomb not being used on a number of occasions when it would be of advantage to do so.

Accordingly, a need exists for making the deodorizing task as easy as possible, and it is an object of this invention to provide an accessory device for readily actuating a bomb of the envisaged type. More specifically, it is an aim of the invention to provide a wall-mounted device that can be actuated by a simple spinning operation.

Another object is to provide a device of the foregoing character that will be attractive in appearance, yet relatively inconspicuous when attached to a wall, and which will conceal the deodorizing bomb within its confines.

Also, the invention has for an object the facile replacement of a bomb after its contents have been expended.

Yet another object of the invention is to provide an actuating device for aerosol bombs that can be fabricated at a comparatively low cost, thereby encouraging its extensive adoption. As a matter of interest, it is believed that the device can be manufactured at a sufficiently low figure such that it will be purchased for every room of the house that is likely to require frequent deodorizing, such as the kitchen and each bathroom.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application which will be indicated in the appended claims.

In the drawing:

FIGURE 1 is a perspective view of one form of my actuating device, portions of the housing being broken away in order to bring out the enclosed construction more clearly;

FIGURE 2 is a sectional view of the device taken generally in the direction of line **2—2** of FIGURE 1, and

FIGURE 3 is a front elevational view taken in the direction of line **3—3** in FIGURE 2, the solid line position representing a stationary of non-use position of the aerosol bomb, and the phantom line position a rotating or actual use relation thereof.

Referring now in detail to the drawing, the device there exemplifying the invention includes a housing indicated generally by the reference numeral **10**. The back of the housing is in the form of a rotatable disk **12** having a pair of diametrically disposed resilient ears **14**. These integral ears **14** can be easily formed by a simple stamping and bending operation, thereby leaving notches **16**.

The housing **10** also includes a bowl-shaped casing **18** equipped with a pair of inwardly projecting lugs **20**. Inasmuch as a portion of the casing **18** has been removed to show the right-hand ear **14** on the disk **12** in FIGURE 1, only the left hand lug **20** has been denoted, it being in dotted outline owing to its concealment by the casing. It will be readily apparent that the ears **14** are flexed somewhat when engaged by the lugs **20**, thereby frictionally retaining the casing **18** to the disk **12** via the resulting pressural engagement that is developed. However, the casing **16** can be quickly detached when desired by only a slight manual pull. The cylindrical portion of the casing **18** has been fabricated in the illustrated situation with a series of axially directed ribs **22** and intervening grooves **24**. Although a ribbed construction has been shown, the alluded to portion of the casing might well be knurled or corrugated. To permit discharge of the airborne deodorant from within the housing **10** the forward portion of the casing is provided with an opening at **28**. It might be well to explain at this time that the lugs **20** are of such a length so that they will project into the notches **16**, whereby the opening **28** will always assume the same relative location for a reason soon to be made manifest.

The disk **12** is rendered rotatable through an annular bearing plate **30** affixed to the rear face thereof, as by welding. FIGURE 2 shows this arrangement. The bearing plate **30** fits closely within a mounting plate **32** and has a pair of apertures for the reception of a pair of screws **34**. The screws **34**, of course, enable the plate **32** to be fixedly attached to a wall **36**. The wall **36** may be the wall of a room or cabinet, or it may be a window frame, door, etc. A shoulder bolt **38** in turn holds the disk **12** and its fixedly attached bearing plate **30** to the mounting plate **32** by reason of the threaded engagement of this bolt **38** with said plate **32**. Consequently, the plate **30** is free to rotate relative to the plate **32**. Since the disk **12** is fixed to the plate **30**, the disk is in turn mounted for rotation.

Next to be referred to is a U-shaped bracket **40** which has its legs attached to the disk **12** as by spot welding. Pivotally carried on the bridging section of this bracket **40** is a curved arm **42**, there being a pin **44** passing loosely through an intermediate portion of said arm. It will be observed that the pivot pin **44** is considerably nearer the upper end **42***a* of the arm than the lower end **42***b*. For a purpose hereinafter described, the underside of the upper end of the arm **42** is equipped with a pair of downwardly projecting teeth or pointed prongs **46**. Also, it will be noted that a weight member in the form of a ball **48** is integral with the lower end of the arm.

The pressurized aerosol bomb which contains the deodorant to be dispensed has been indicated by the numeral **50**. Bombs of this type are quite conventional at the moment and need not be described in detail other than to say that a bomb of the referenced type comes with a factory installed valve mechanism **52** which when depressed releases the pressurized contents of the bomb via a forwardly or horizontally directed outlet nozzle **54**.

For holding the bomb **50** in place, there is a base platform **56** having one end welded to the lower half of the disk **12**, the platform extending in cantilever fashion from said disk. Approximately at the center of the disk **12** is a resilient clip having its central portion fixedly anchored to said disk at **58** and having a pair of arcuate arms **60** between which the bomb **50** may be inserted, the arms providing sufficient gripping action to prevent inadvertent dislodgement of the bomb from its position on the platform **56**. An access aperture **62** allows the shoulder bolt **38** to be tightened or loosened. As can be discerned from the various views that have been presented, the valve mechanism **52** belonging to the bomb **50** is directly under the upper or pronged end of the arm **42** and its nozzle **54** points toward the opening **28** in the casing **18**. This orientation takes place automatically when the bomb **50** is properly placed within the housing **10**.

It might be well at this time to describe the procedure for mounting the device to the wall **36**. To carry out the mounting operation, the recessed plate **32** is attached

first by means of the screws **34**. With the casing **18** removed, the shoulder bolt **38** may be easily threaded into the now anchored plate **32**, access being had for a screwdriver through the aperture **62** which is located in the central portion of the clip denoted by the numeral **58**, i.e. the portion between the gripping arms **60**. This completes the mounting operation.

To use the device one has only to place the bomb **50** on the platform **56**, the arms **60** then embracing the opposite sides of the bomb to such a degree that it is held firmly with the valve mechanism **52** directly under the prongs **46** located at the upper end **42***a* of the arm **42**. The casing **18** is then easily attached by guiding the lugs **20** into the notches **16**, the ears being pressed slightly toward each other and thereafter frictionally retaining the casing **18** to the disk **12**. As already indicated the notches **16** assure that the casing **18** will be properly oriented so that its opening **28** will be in general registry with the valve mechanism **52** and more precisely with its nozzle **54**.

After this is done, one only has to give the housing **10** a quick spin whenever the area in which the device is situated needs deodorizing. The ribs **22** of course facilitate this action, as they provide convenient means by which the user's fingers can perform this manipulation. With the housing **10** thus spinning or rotating, it will be appreciated that the ball or weight member **48** immediately flies outwardly due to the centrifugal force that is developed. While not much force is needed to depress the valve mechanism **52** on the bomb **50**, nonetheless a rather large mechanical advantage is supplied through the difference in moment arms due to the relative location of the pivot pin **44** with respect to the ends **42***a* and **42***b*, the pin being much nearer the end **42***a*. Consequently, as soon as the end **42***b* of the arm **42** moves outwardly, the other end **42***a* moves forcibly inwardly to open the valve **52** (see the phantom position depicted in FIGURE 3). As can be seen from FIGURE 3, there is a slight rocking action taking place between the end **42***a* and the valve mechanism **52**; however, the pointed prongs **46** enable this to occur very readily. The deodorizing aerosol then discharges via the horizontal nozzle **54** and then exits through the opening **28** into the region to be deodorized.

From the foregoing, it can be appreciated that deodorization is literally at one's finger tips. There is never the bother of having to remove the bomb from a closet or cabinet and thereafter having to return the bomb to its place of storage. Furthermore, a device constructed in accordance with my invention can be made so that it is quite attractive in appearance. Actually, it can be sold in a variety of colors, thereby harmonizing with the color scheme of the particular room in which it is installed. It will also be recognized that the major parts can be molded quite readily from suitable plastic material, or if desired the parts can be fabricated for the most part from relatively thin gauge sheet metal stock, although in this latter situation the weighted arm should be cast.

As many changes could be made in the above construction and many apparently widely different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

What is claimed:

1. An actuating device for pressurized aerosol bombs comprising a support, means for mounting said support for rotation about a preferred axis, means for mounting a bomb on said support for rotation therewith about said axis, said bomb having a valve mechanism communicating with the atmosphere, and centrifugally actuated weight means engageable with the valve mechanism of said bomb for forcing said mechanism into open position as said support is rotated to release some of the pressurized contents of the bomb mounted on said support to the ambient air.

2. An actuating device in accordance with claim 1 in which said mounting means includes a pair of resilient arms for releasably engaging said bomb.

3. An actuating device for pressurized aerosol bombs comprising a disk, means for mounting said disk for rotation about its center, means on one side of said disk for releasably holding a bomb for rotation in unison with said disk, said bomb having a valve mechanism communicating with the atmosphere, and an arm pivotally carried by said disk for movement in a plane generally parallel to said disk and having one end engageable with the valve mechanism of said bomb and its other weighted to such an extent that rotation of said disk will cause the weighted end of the arm to move outwardly by centrifugal force to thereby cause said one end thereof to force said valve mechanism into open position to discharge some of the contents of the bomb releasably held on said disk into the ambient air.

4. An actuating device for pressurized aerosol bombs comprising a disk rotatable about a transverse axis, means for mounting a bomb on said disk for rotation therewith, said bomb having a valve mechanism, centrifugally actuated weight means engageable with the valve mechanism of said bomb for forcing said mechanism into open position as said support is rotated to release some of the pressurized contents of the bomb mounted on said support, and a casing removably attached to said disk having an opening registrable with said valve mechanism.

5. An actuating device in accordance with claim 4 in which said disk is formed with a pair of resilient ears for frictionally engaging said casing to provide said removable attachment.

6. An actuating device in accordance with claim 5 in which said disk is also formed with a notch adjacent each ear, and said casing is equipped with lugs of sufficient length to extend into said notches in addition to engaging said ears, thereby to assure registry of said opening with said valve mechanism.

7. An actuating device for pressurized aerosol bombs comprising a rotatable disk, means on one side of said disk for releasably holding a bomb for rotation in unison with said disk, said bomb having a valve mechanism, and an arm pivotally carried by said disk for movement in a plane generally parallel to said disk and having a pointed prong at one end for effecting contact with said valve mechanism and having its other end weighted to such an extent that rotation of said disk will cause the weighted end of the arm to move outwardly by centrifugal force to thereby cause said one end thereof to force said valve mechanism into open position to discharge some of the contents of the bomb releasably held on said disk.

8. An actuating device in accordance with claim 7 including an annular bearing plate fixedly attached to the other side of said disk, a recessed plate into which said bearing plate extends, a bolt member passing through said disk and bearing plate into threaded engagement with said recessed plate to a fixed surface.

References Cited in the file of this patent

UNITED STATES PATENTS

1,533,582	Bernardi	Apr. 14, 1925
1,654,810	Hillyard	Jan. 3, 1928
1,939,061	Klein	Dec. 12, 1933
2,534,465	Marini	Dec. 19, 1950
2,613,108	Kraus	Oct. 7, 1952
2,728,608	Marini	Dec. 27, 1955