Sept. 13, 1932. G. F. WALTER 1,877,153

CONTAINER

Filed April 23, 1928

Fig. 1

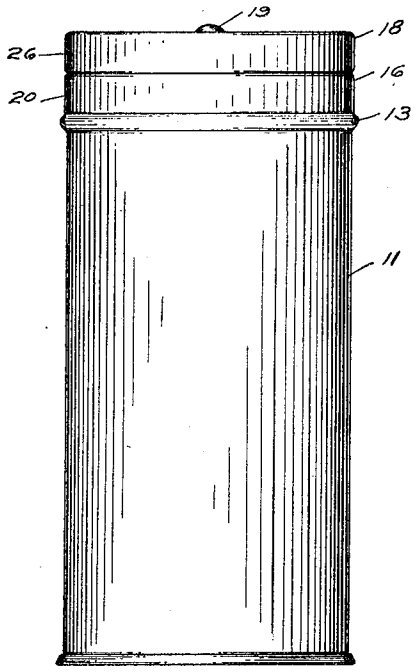


Fig. 3

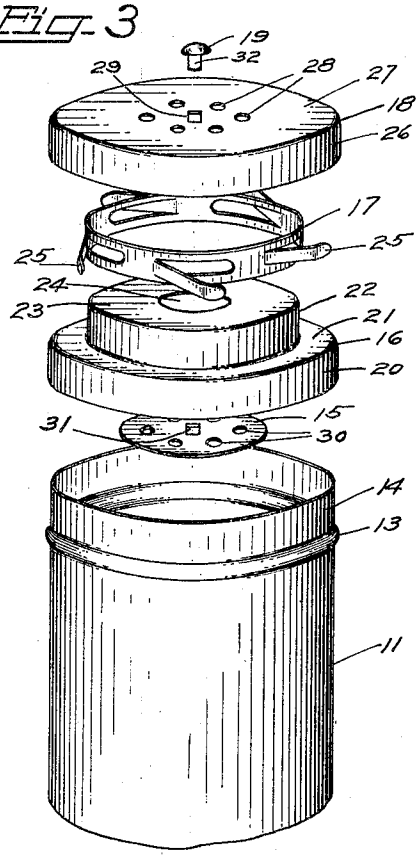


Fig. 2

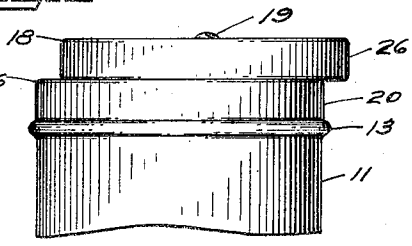


Fig. 4

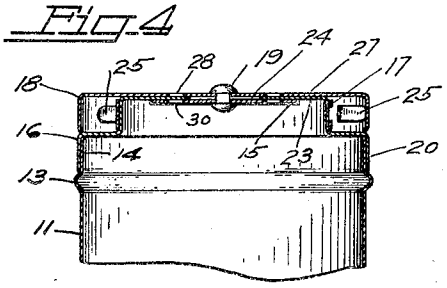
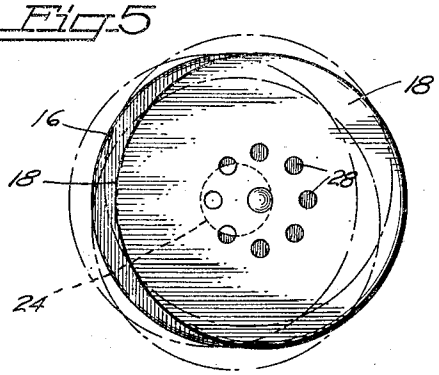


Fig. 5



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UNITED STATES PATENT OFFICE

GEORGE F. WALTER, OF BROOKLYN, NEW YORK, ASSIGNOR TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY

CONTAINER

Application filed April 23, 1928. Serial No. 271,994.

This invention relates in general to sifter top cans and more particularly to self-closing tops for such cans which are used for the packaging of talcum powder, zinc stearate and like substances.

The principal object of my invention is the provision of an improved self-closing sifter top having spring means and cooperating other parts which permit the movement of the sifter elements to sifting position in any direction from any desired point of the periphery of the container. This improved construction results in the obvious advantage and novelty that the container may be grasped by either hand at any point, and the sifting elements may be moved to sifting position in any direction by the mere pressure of the thumb or other finger.

Another object of the invention is the provision of a self-closing sifter top having a spring means which is of simple and inexpensive construction and is adapted to be assembled to its support without any additional fastening means, without any piercing of its support, and without the employment of any special tools.

Still another object of the invention is the provision of a self-closing sifter top comprising parts which are simple and inexpensive and which only require a small number of stamping and punching operations.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawing, discloses a preferred embodiment thereof.

Referring to the drawing:

Figure 1 is an elevation of a container embodying my invention;

Fig. 2 is a partial elevation showing the overcap moved eccentrically of the undercap to a sifting position;

Fig. 3 is a perspective view of the several parts of my sifter top showing these parts in unassembled superposed relationship;

Fig. 4 is a partial vertical section through the assembled sifter top, and

Fig. 5 is a top plan view showing in full lines the position of the overcap as shown in Fig. 2, and showing by broken dotted lines some of the various other positions which the overcap may assume relative to the undercap.

The sifter top container shown in the drawing comprises a cylindrical body 11 which may be of sheet metal or fibre, and a metal bottom end 12 seamed or crimped or otherwise permanently secured thereto. An annular stop and reinforcing bead 13 is provided a distance below the top edge of the container, and above the bead 13 the container is formed into a slip joint seat 14 for connection with the sifter top. The sifter top comprises in general a washer plate 15, an undercap member 16, a spring means or collar spring 17, an overcap member 18 and a rivet 19.

The undercap member 16 comprises a vertical cylindrical wall 20, of such diameter that it will fit snugly over the body wall part 14 and make a frictional slip joint therewith, a horizontal annular ledge 21 and a central raised part comprising a vertical wall 22 and a flat top 23 having a central pouring opening 24.

The spring means or collar spring 17 consists of a circular collar or vertical band having a series of integral spring arms or leaves 25 struck out from the material of the collar. These arms 25 are spaced apart an equal distance from each other, are pressed outwardly at an acute angle to the collar and have their extremities slightly bent inwardly to provide flat contact points for engagement with the inner surface of the vertical wall 26 of the overcap 18.

The overcap 18 comprises a vertical wall or depending skirt portion 26, a flat top 27 having sifter openings 28 arranged in a circle, and a centrally located square rivet hole 29. The diameter of the overcap member 18 is substantially that of the outer diameter of the undercap member 16 and these two members are substantially concentric with their longitudinal axis when the container is in closed or nonsifting position.

The washer plate 15 is merely a means, typical of any suitable connection, for holding the overcap from moving up from the

undercap and leaving the former free for horizontal movement and it consists of a flat disk engaging under the part 23 and having a series of sifter openings 30 arranged in a circle, these sifter openings being arranged in vertical registration with the sifter openings 28 of the overcap member 18. The washer plate 15 also has a square rivet hole 31 corresponding with the rivet hole 29 of the overcap.

Fig. 3 shows all the parts which make up the whole sifter top in unassembled and superposed relationship. When all these parts are assembled, as shown in Fig. 4, that is, when the square shank 32 of the rivet 19 has been passed through the square rivet holes 29 and 31 and its lower end upset against the lower surface of the washer plate 15, the sifter holes 28 of the overcap 18 and the sifter holes 30 of the washer plate 15 are in permanent vertical alignment, but may be closed by the intervening flat top 23 of the central raised part of the undercap 16. They are thus sealed only when the sifter elements, that is the overcap 18 and washer plate 15, are in normal or non-sifting position relative to the undercap 16, and at this time the flat top 23 is the sealing member since the circular pouring opening 24 is of less diameter than the circle formed by the sifter openings 28 and 30.

The diameter of the collar spring 17 is slightly greater than the diameter of the vertical wall 22 of the central raised part of the undercap 16, and the collar 17 is thus adapted to fit over the outer surface of the vertical wall 22 and is supported by the wall 22 and the ledge 21, and no additional fastening means are necessary. The collar spring 17, when all the parts are fully assembled, is thus housed within the space defined by the two vertical walls 22 and 26. The spring arms or leaves 25 all normally extend outwardly from the collar part of the spring 17 an equal distance so as to make contact with the inner surface of the wall 26 of the overcap 18 and make the overcap coaxial with the container body when the device is not being used.

When it is desired to sift out the contents of the container, a slight pressure against the part 26 of the overcap 18 by the thumb or other finger of either hand will shift the overcap 18 together with its washer plate 15 eccentrically of the undercap 16 and two or more of the spring leaves 25 will be contracted between the parts 22 and 26 and some of the permanently alinged sifter openings 28 and 30 will escape the intervening flat top 23 and come within the circular field of the pouring opening 24 and the contents will thus find a passage to the outside. This shifting position is illustrated in full lines in Figs. 2 and 5 of the drawing.

The sifting of the powder may occur when the overcap is moved sufficiently from its normal position in any direction, as shown in Fig. 5. As soon as pressure on the overcap is released, the spring arms or leaves 25, which were contracted during the sifting operation, will expand to their original position and by pressure against the inside of the wall part 26 of the overcap 18 will return the overcap together with the washer plate 15 to concentric or closed position.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A self-closing sifter top for containers comprising an undercap member having an opening, an overcap member having sifter openings registrable with the opening of the undercap when in sifting position, a washer plate on the inside of said undercap and having sifter openings corresponding with those in the overcap, a collar spring having integral spring leaves between said overcap member and said undercap member and adapted to resist yieldingly the shifting in any direction of said overcap member to sifting position and to return the same to closed position, and a rivet connecting said members and said plate.

2. A self-closing sifter top for containers comprising an undercap member having an opening, an overcap member slidable horizontally in any direction relative to the undercap member and having sifter openings normally out of registry with the opening in said undercap member, and spring means interposed between said members and adapted to yieldingly resist the shifting sidewise in any direction of said overcap member to sifting position and to return the same to closed position.

3. A self-closing sifter top for containers comprising an undercap member having a discharge opening, an overcap member having sifter openings and horizontally slidable on said undercap, and a circular spring member interposed between said undercap and overcap and having arms extending in various directions engaging the overcap member and adapted to resist the shifting in any horizontal direction of said overcap member to sifting position and to return the same to closed position and thereby yieldingly center the overcap member on the undercap member.

4. A self-closing sifter top for containers comprising an undercap member having an opening, an overcap member having sifter

openings and slidable horizontally on said undercap member, a collar spring embracing a portion of said undercap member and having a series of integral spring arms engaging the overcap member and adapted to return the overcap member to closed position after a sifting operation and thereby yieldingly center the overcap member on the undercap member.

5. A sifter top for containers comprising an undercap member having a central raised part and an opening, an overcap member having sifter openings, a collar spring interposed between said undercap and overcap and encircling said raised part and engaging the overcap member and adapted to resist the shifting in any direction sidewise relative to the container of said overcap member to sifting position and to return said overcap member to closed position and thereby yieldingly center the overcap member on the undercap member.

6. A sifter top for containers, comprising a fixed undercap member having a discharge opening a movable overcap member normally concentric with said fixed member and movable sidewise relative thereto and provided with sifter openings normally out of line with said discharge opening, and spring means interposed between said members and engaging the overcap member and adapted to resist the sidewise movement to sifting position of said overcap member in any direction relative to said undercap and causing its automatic return to concentric position and thereby yieldingly center the overcap member on the undercap member.

7. A self-closing sifter top for containers comprising an undercap member having a discharge opening, an overcap member slidable sidewise on the undercap member and having sifter openings, a spring means interposed between said members and engaging the overcap member and adapted to yieldably resist the shifting in any direction of said overcap member to sifting position and to return the same to closed position and thereby yieldingly center the overcap member on the undercap member, and means for holding in assembled relation said members and said spring means.

8. In a sifter top for containers, an undercap engageable with the end of a container to cover the same and having a raised part provided with a discharge opening, an overcap having a flange arranged around said raised part and provided with sifter openings which are arranged around said dispensing opening and normally closed by said raised part, a spring means yieldably holding the overcap in said position, and means movably connecting the overcap with the undercap, whereby the overcap may be pressed sidewise to cause a sifting opening to coincide with the discharge opening, the overcap being returned to normal position by said spring means.

9. In a sifter top for containers, an undercap engageable with the end of a container to cover the same and having a raised part provided with a discharge opening, an overcap having a flange arranged around said raised part and provided with sifter openings which are arranged around said dispensing opening and normally closed by said raised part, spring means yieldably holding the overcap in said position, means movably connecting the overcap with the undercap, whereby the overcap may be pressed sidewise to cause a sifting opening to coincide with the discharge opening, the overcap being returned to normal position by said spring means and being of substantially the same diameter as the container and normally in line therewith.

10. In a sifter top for containers, an undercap engageable with the end of a container to cover the same and having a raised part provided with a discharge opening, an overcap having a flange arranged around said raised part and provided with sifter openings which are arranged around said dispensing opening and normally closed by said raised part, spring means yieldably holding the overcap in said position, and a washer plate larger than said discharge opening and connected with the overcap and having sifter openings communicable with those of the overcap and engaging under a part of the undercap, whereby the overcap may be pressed sidewise to cause a sifting opening to coincide with the discharge opening, the overcap being returned to normal position by said spring means.

11. A self-closing sifter top for containers, comprising an undercap, an overcap movable radially in various angular directions relative to the undercap, said caps having discharge openings which register for the discharge of material from the container when the overcap is moved to a position eccentric relative to the undercap, means for movably holding said caps together, means for closing the discharge openings when said caps are alined, and spring means engaging said caps and which hold the overcap yieldingly in said alined position.

12. A self-closing sifter top for containers, comprising a perforated cap to be attached to a container body, a sifter cap having openings and laterally reciprocable in various directions at various angles relative to the first mentioned cap, spring means for returning the sifter cap to normal non-sifting position, and means for movably connecting said caps, the first cap having means for closing the sifting openings of the sifter cap when the latter is in said normal position.

13. A sifter top having in combination a cap having a top plate provided with a cen-

tral opening, and an overcap radially movable on said top plate in various directions and formed with sifter openings arranged around said central opening and normally closed by said top plate, means for movably securing the caps, and yielding means between the caps, whereby the movement of the overcap in any direction will cause some of said sifter openings to register with said central opening.

GEORGE F. WALTER.