C. T. SMALL.

DUST RETAINING DEVICE FOR CAN FILLING MACHINES.

APPLICATION FILED FEB. 19, 1919.

1,433,663. Patented Oct. 31, 1922.

Fig. 1.

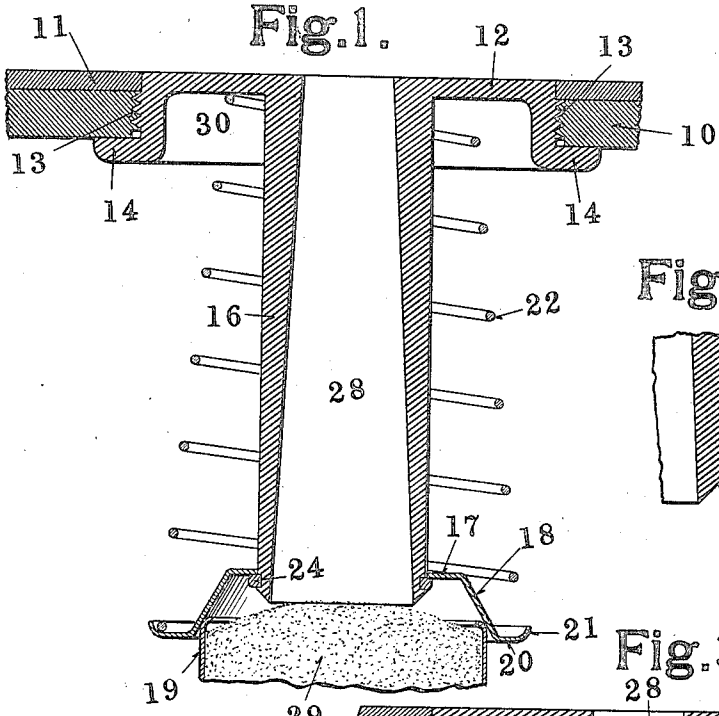


Fig. 2.

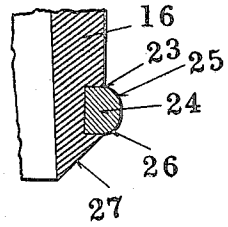


Fig. 3.

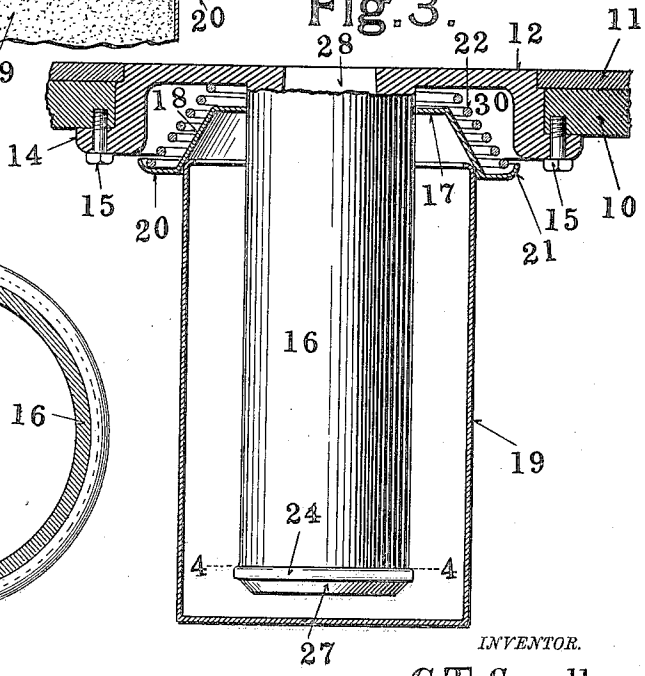
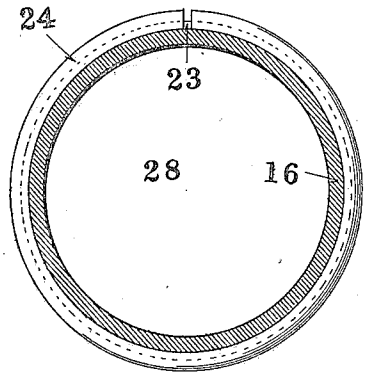


Fig. 4.



WITNESS

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Patented Oct. 31, 1922. 1,433,663

UNITED STATES PATENT OFFICE.

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DUST-RETAINING DEVICE FOR CAN-FILLING MACHINES.

Application filed February 19, 1919. Serial No. 278,052.

To all whom it may concern:

Be it known that I, CHESLEY T. SMALL, a citizen of the United States of America, residing at the city of St. Louis, State of Missouri, United States of America, have invented a certain new and useful Dust-Retaining Device for Can-Filling Machines, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a dust retaining device for can filling machines and is more particularly intended for use with the can filling machine shown and described in my prior application Serial No. 184,990 filed August 8, 1917. It may, however, be used with various forms of can filling machines.

In the accompanying drawings which illustrate one form of dust retaining device made in accordance with my invention, Figure 1 is a vertical section, Figure 2 is an enlarged sectional view showing a detail of construction, Figure 3 is a view partly in elevation and partly in vertical section showing a slight modification, and Figure 4 is a section taken on the line 4—4 of Figure 3.

10 indicates a nozzle carrying member which may be the nozzle carrying disc shown in my prior patent above referred to. Resting upon the disc 10 is a wear plate 11. 12 is a nozzle base which extends through the plates 10 and 11 terminating flush with the upper face of the plate 11. As shown in Figure 1, the base 12 is provided with threads 13 engaging with corresponding threads in the plate 10 to hold the base in position. The base 12 is also provided with a horizontal flange 14 adapted to engage with the lower face of the plate 10.

In the modification shown in Figure 3 of the drawings the threads 13 are omitted and the base is held in position by means of cap screws 15 extending through the flange 14 into the plate 10.

Extending downwardly from the center of the base 12 is a nozzle 16 the upper end of which is surrounded by a recess 30 forming a spring pocket for a purpose hereinafter to be set forth. Slidingly mounted on the nozzle 16 is a canopy comprising a central disc shaped portion 17 provided with an opening corresponding in size with the nozzle 16, an outwardly inclined portion 18 adapted to contact with the can 19 or other receptacle to be filled, and a horizontal flange 20 provided with an upturned edge 21. 22 is a coil spring the lower end of which rests upon the flange 20 and the upper end of which contacts with the lower face of the nozzle base 12. The coil spring 22 may be helical in form, but I prefer to make it a conical spiral, the larger end of the cone being placed at the bottom as I find that this form of spring gives better results in holding the canopy snugly against the top of the can throughout the range of movement of the can. In order to hold the canopy in position, I provide the nozzle 16 adjacent to its lower end with an annular groove 23 adapted to contain a split ring 24 of resilient material. This ring 24 is provided with a rounded upper edge 25 and a rounded lower edge 26 as best shown in Figure 2 to prevent the ring from catching on the inturned edge of the can 19 when entering and leaving the can. The nozzle is preferably provided with a beveled edge 27 below the groove 23.

The operation of my device is as follows, the parts normally stand in the position shown in Figure 1 of the drawings the can 19 or other receptacle to be filled is raised by suitable mechanism so that its upper edge will contact with the inclined portion 18 of the canopy after which the parts are raised into the position shown in Figure 3, the spring 22 being compressed and housed within the spring pocket 30. The material to be filled is now allowed to enter through the central opening 28 of the nozzle after which the material is cut off and the can allowed to recede to its normal position. The material contained within the nozzle 28 will be discharged into the can and as the canopy projects below the end of the nozzle the material 29 may be allowed to heap up above the edge of the can as shown in Figure 1 so that after being allowed to settle in position it will completely fill the can. It will be understood that the amount of material fed into the can will depend upon the diameter and length of the nozzle 16 relative to the diameter and length of the can 19. In case the nozzle 16 is con-

siderably smaller than the can and extends substantially to the bottom of the same as shown in Figure 3 a less amount of material will be fed into the can than the full capacity of the can. As the split ring 24 is readily removable from the annular groove 23 the canopy may be readily removed from the nozzle and replaced with a canopy of different size when cans of a different size are to be filled.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. The combination with a nozzle carrying member of a nozzle carried thereby and projecting below the same and adapted to enter the receptacle to be filled, a dust retaining member slidingly mounted on said nozzle and adapted to engage with the receptacle to be filled, said nozzle being provided with an annular groove, and a split ring removably engaging with said groove to hold said dust retaining member in position.

2. The combination with a nozzle carrying member of a nozzle carried thereby and projecting below the same and adapted to enter the receptacle to be filled, a dust retaining member slidingly mounted on said nozzle and adapted to engage with the receptacle to be filled, said nozzle being provided with an annular groove, and a split ring engaging with said groove to hold the dust retaining member in position, said ring being provided with rounded corners.

3. The combination with a nozzle carrying member, with a filling nozzle carried thereby and projecting below the same and adapted to enter the receptacle to be filled a substantial distance to displace the contents thereof, a canopy slidingly mounted on said nozzle, said canopy comprising an outwardly inclined part normally projecting below the end of the nozzle and adapted to engage with the outside of the upper edge of the receptacle to be filled, said canopy also being provided with an outwardly projecting flange, and a spring engaging with said flange to normally hold said canopy in its lowest position.

In testimony whereof, I have hereunto set my hand and affixed my seal.

CHESLEY T. SMALL. [L. S.]