

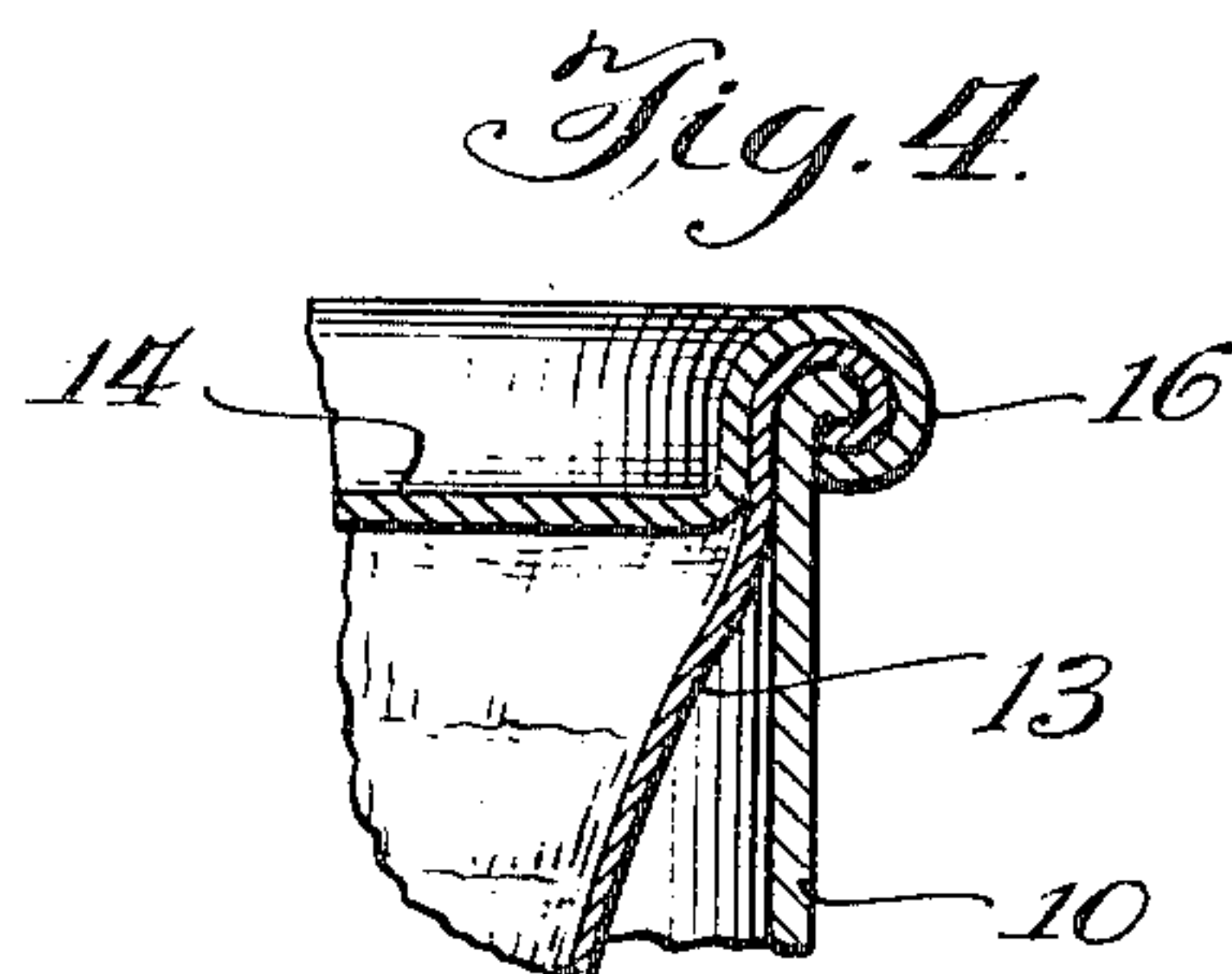
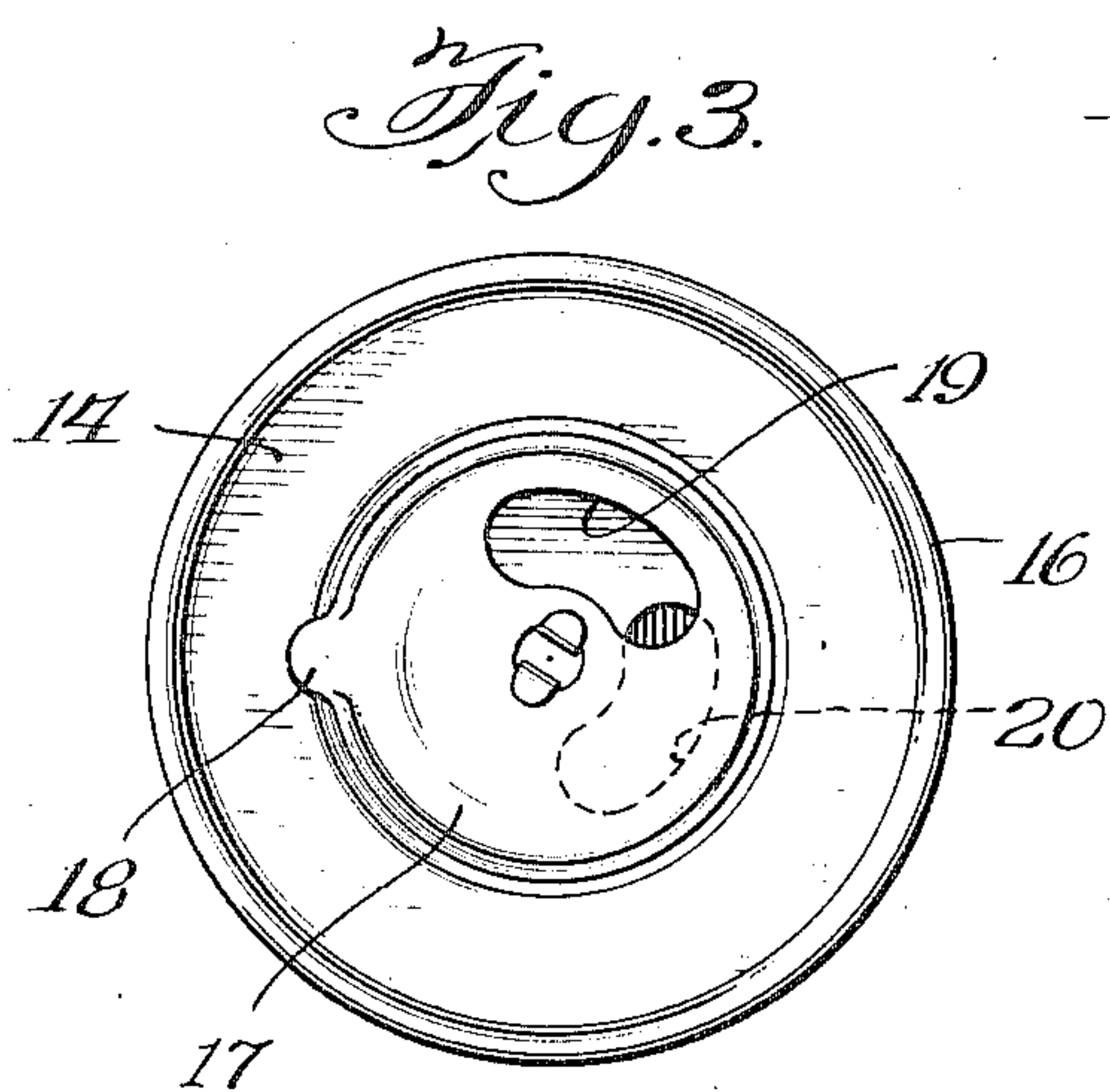
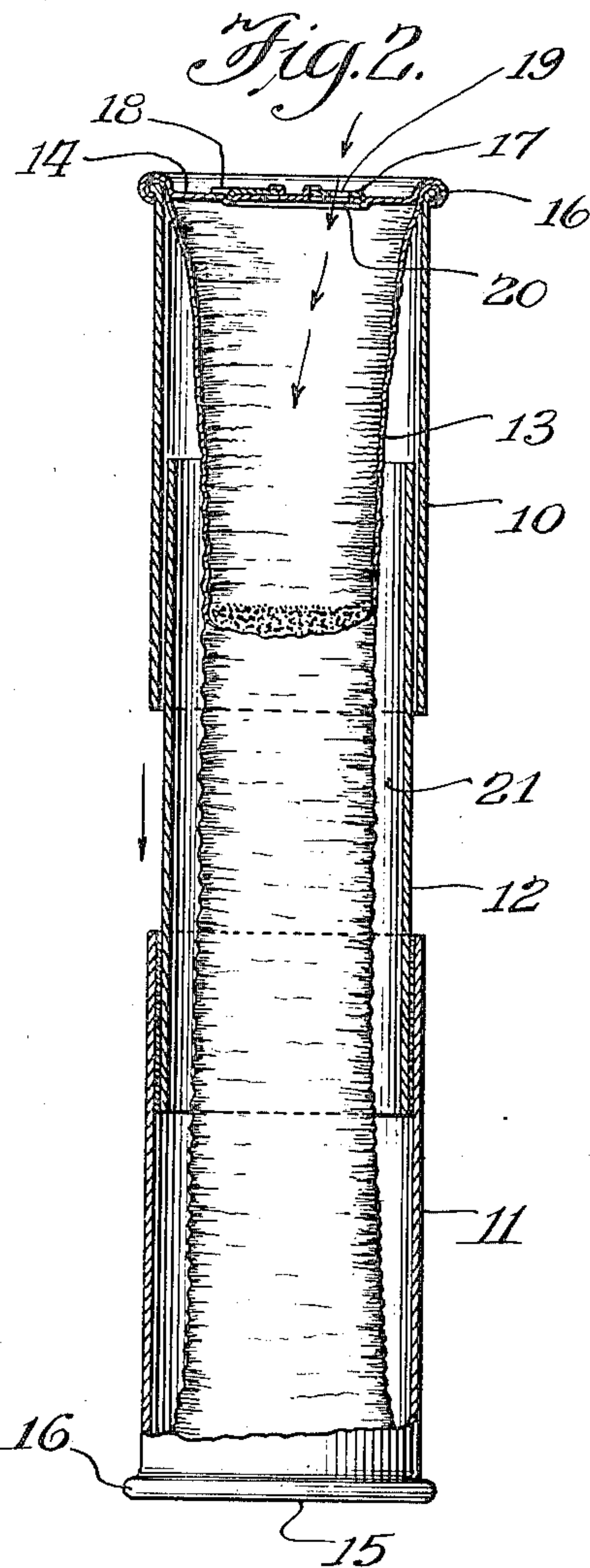
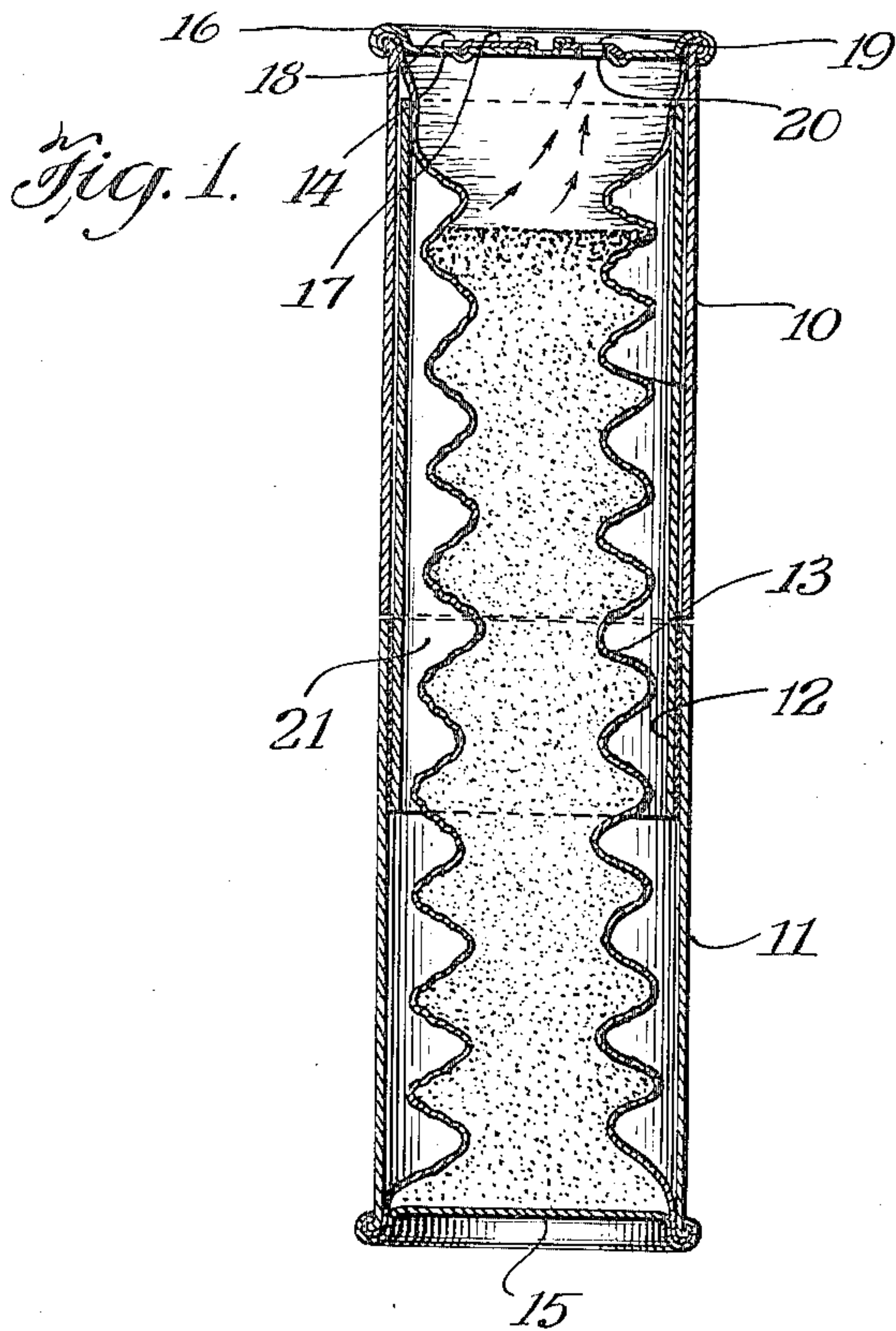
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2,184,191

DUST GUN

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DUST GUN

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5 Claims. (Cl. 43—147)

This invention relates to a dust gun for dispensing powders such as insecticides. The gun is adapted to be used as a commercial package in which the insecticide or other powder may be sold.

One of the objects of the invention is to provide an improved dust gun.

A further object of the invention is to provide a dust gun having rigid portions in telescopic relation and a flexible bellows member, completely enclosed therein and protected by the rigid portions.

Other objects, advantages and capabilities of the invention will appear from the following description of a preferred embodiment thereof, taken in conjunction with the accompanying drawing, in which

Figure 1 is a sectional view through the improved dust gun;

Fig. 2 is a similar view showing the dust gun with its rigid parts in extended relation;

Fig. 3 is a top plan view, on a larger scale, and

Fig. 4 is a sectional detail, on a still larger scale, taken through a corner and showing the manner of assembly.

Referring to the drawing, the improved gun comprises two outer rigid housing portions 10 and 11, preferably of cylindrical form. The portions 10 and 11 are of similar size and shape and may suitably be cut from a long cylindrical tube of cardboard. Within one of these housing portions, for example within the portion 11, is inserted a connecting housing portion 12. The housing portion 12 has a snug or sliding fit into the housing portions 10 and 11. The housing portion 12 is secured to one of the housing portions 10 and 11, for example to the housing portion 11, by adhesive or any other suitable manner, but has a free sliding relation within the other housing member 10. Thus, as will readily be seen in Figs. 1 and 2, the housing portion 10 may be reciprocated towards and away from the housing portion 11, sliding freely upon the housing portion 12. The fit between the housing portions 10 and 12 is such that it is fairly air-tight, particularly when the relative movement is rapid.

Referring now to Fig. 2, it is to be noted that the movement of the housing member 10 away from the housing member 11 is limited by the interior bellows member 13. This bellows member may be in the form of a tube of stout crepe paper which is connected to the remote ends of the housing portions 10 and 11. The connec-

tion of the bellows member 13 to the ends of the housing portions 10 and 11 may be effected in any suitable way. However, in the preferred embodiment of the invention I prefer to close the ends of the gun by means of sheet metal discs 14 and 15, the edges of which are spun around in known manner so as firmly to engage the walls of the housing portions 10 and 11. I prefer to interpose the edges of the bellows member 13 between the bead 16 of the metal cap, 14 or 15, and the extremities of the housing members 10 and 11, as best seen in Fig. 4.

The end disc 14 has pivotally mounted thereon a smaller disc 17, this disc being provided with a tab portion 18 whereby the disc 17 may be rotated with reference to the disc 14. The disc 17 and the disc 14 are provided with elongated arcuate openings 19 and 20 which are adapted to be brought into register to a greater or lesser degree, or to be moved completely out of register by suitable rotation of the small disc 17.

The operation of the gun is as follows. The small disc 17 is rotated with reference to the disc 14 so as to bring the openings 19 and 20 into a desired degree of register. The powder which is to be dispensed is contained within the bellows member 13 and when the package is sold this powder may practically fill the bellows member 13, as shown in Fig. 1. Owing, however, to the flexible nature of the bellows member 13, there is an irregular air compartment 21 between the bellows member 13 and the rigid housing portions 10, 11, 12. The housing portions 10 and 11 are moved away from each other into the relation shown in Fig. 2 and it will be noted that the annular chamber 21 around the bellows member 13 persists, and in fact is increased by the leakage of air between the telescope members 10 and 12. The separating movement of the housing portions 10 and 11 causes air to be drawn inwardly through the openings 19 and 20. Assuming that the gun is held at a suitable dispensing angle and the two housing portions 10 and 11 are moved together, the air within the annular chamber 21 is compressed and this compression is applied to the bellows portion 13 so that it contracts in radial direction. The bellows portion 13 is also foreshortened owing to the approach of the housing portions 10 and 11, with the result that a strong blast of air is ejected through the aligned openings 19 and 20. This blast of air carries with it an amount of powder which depends upon the angle at which the gun is held and the

rapidity of approach applied to the housing portions 10 and 11. The amount of powder discharged may also be modified by changing the position of the aligned portions of the openings 19 and 20 with respect to the lowermost side of the gun. That is, the gun is normally used in a more or less horizontal position and the powder will, consequently, extend along one side of the housing, that is, the lower side. If the gun is rotated axially so as to adjust the relation of the aligned portions of the openings 19 and 20 towards the bulk of the powder, the amount of powder discharged will, of course, be increased.

The bellows member 13, being completely enclosed within the rigid housing portions 10, 11 and 12, is protected from accidental rupture. Furthermore, the bellows member 13 is protected from being caught between the telescoping members 10 and 12 by the compression of the air within the annular chamber 21. This compression, as has been noted above, moves the bellows member 13 radially inwardly during the period when the housing portions 10 and 11 are approaching.

Although the invention has been disclosed in connection with the specific details of a preferred embodiment thereof, it must be understood that such details are not intended to be limitative of the invention except insofar as set forth in the accompanying claims.

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

1. A dust gun comprising a chamber constituted by two aligned rigid housing portions in telescoped relation, and a flexible tubular bellows member within said chamber and secured to remote ends of said housing portions, said bellows member being of a length to permit telescoping movements of said housing portions while preventing separation thereof, one of said housing portions being provided with a dispensing opening.

2. A dust gun comprising a chamber constituted by two rigid housing portions in telescoped relation, a flexible tubular bellows of stout crepe paper within said chamber and secured to the remote ends of said housing portions, and closure means at said remote ends, one of which is provided with a dispensing opening.

3. A dust gun comprising a chamber constituted by two rigid housing portions in telescoped relation, a flexible tubular bellows of stout crepe paper within said chamber and secured to the remote ends of said housing portions, and closure means at said remote ends, one of which is provided with a dispensing opening, said bellows member being of a length to permit telescoping movements of said housing portions while preventing separation thereof.

4. A dust gun comprising two rigid tubular portions, another rigid tubular portion secured within one and having a tight sliding fit in the other, a tubular bellows member located within said rigid tubular portions and secured to the remote ends of the first said tubular portions, and closure means at said ends, one of which is provided with a dispensing opening.

5. A dust gun comprising two aligned tubular portions of cardboard, another tubular portion of cardboard secured within one and having a tight sliding fit in the other, a tubular bellows member located within said rigid tubular portions, and metal ends at the remote ends of the two first said rigid tubular portions, the edges of which are beaded into the ends of said tubular portions, the ends of the tubular bellows member being secured within the beads thus formed, one of said metal ends being provided with a dispensing opening and said bellows member being sufficiently long to permit telescopic movement of the first two rigid tubular portions.

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