Sept. 26, 1961 J. F. McDONNELL, JR., ET AL 3,001,404

SELF-LEVELING MEASURING SPOON

Filed Jan. 29, 1959

FIG. 1.

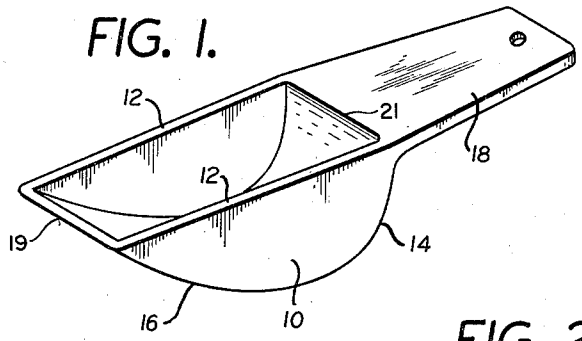


FIG. 2.

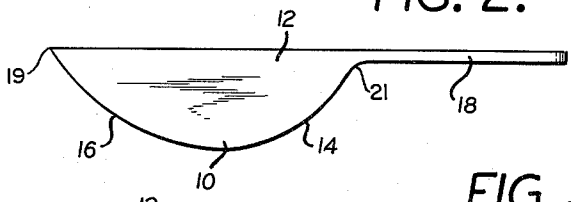


FIG. 3.

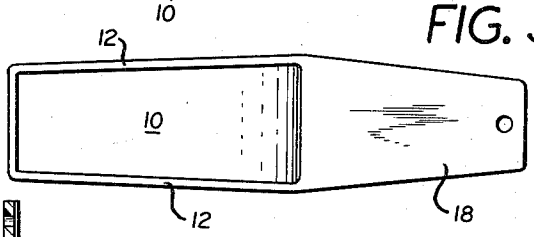


FIG. 4.

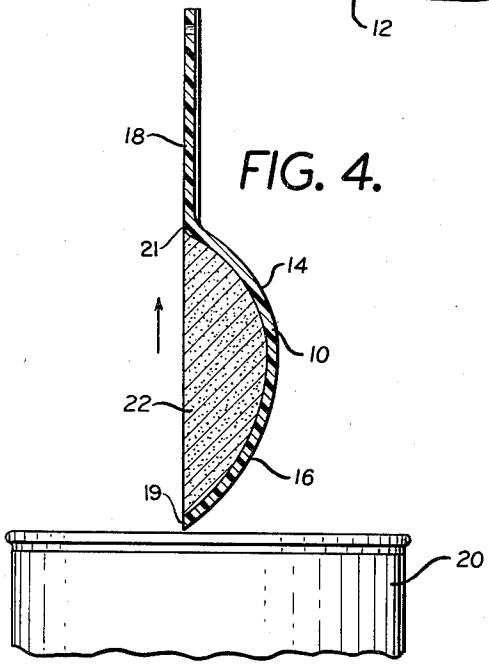
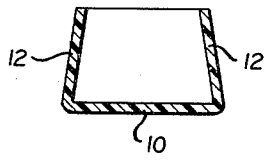


FIG. 5.



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SELF-LEVELING MEASURING SPOON

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This invention relates to a self-leveling measuring spoon.

It provides a spoon adapted to be submerged in a flowable powder or granular material and to be removed therefrom approximately level full, when the spoon is withdrawn in steeply inclinde or vertical position.

The invention comprises a spoon, the bowl of which is deep, the forward end extends at approximately a right angle to the longitudinal axis of the spoon, and the width of the top of the bowl is tapered, becoming more narrow towards the end that is forward, i.e., remote from the handle. As a result of this construction, there is a tendency to crowding or packing with attendant stoppage of flow of the powder or material being measured as this material, under the influence of gravity, moves against the narrowed bowl during withdrawal of the filled spoon. In a modification, the bowl is also narrowed upwardly, so that the bowl is less wide at the top edge thereof than at a position below the top.

The invention will be illustrated by description in connection with the attached drawings in which:

FIG. 1 is a perspective view of the spoon.

FIG. 2 is a side elevational view.

FIG. 3 is a plan view.

FIG. 4 is a view of the spoon in use, the smoothness of the self-leveling surface of powder in the spoon being slightly exaggerated.

FIG. 5 is a transverse sectional view of a modification of the bowl of the spoon.

There are shown bowl **10** that is convex downwardly, straight sides **12** thereof, with straight upper edges, a curved portion **14** of the part of the bowl bottom adjacent to the handle **18**, and another part **16** of the bottom away from the handle with lesser curvature, that is curved on a longer radius. The forward end **19** of the bowl extends transversely across the bowl, that is, with respect to the length of the bowl. The bowl at the rear end **21** is attached to the handle.

In FIG. 4 there is shown a container such as a can **20** holding a powder **22**, the spoon having been withdrawn with the open face of the bowl vertical and coming out substantially level full with the powder.

In the modification of FIG. 5, the bowl of the spoon is wider at a position below the top than at the top, so as to increase further the firmness of the powder or granular material in the spoon during its removal from the material being measured by the spoon. In most uses, this modification is unnecessary.

The spoon is particularly useful in measuring food components as, for instance, measuring the quantity of an infant food powder that is to be mixed with milk or water before use. To discharge the powder, the spoon is inverted and may be tapped.

The materials of construction are those that are useful in measuring spoons. We obtain particularly satisfactory results when the spoon is made of molded plastic of any usual type that is shape retaining after molding. Styrene is economical and effective and the one that we ordinarily use. Other materials that may be used are urea-formaldehyde and phenol-formaldehyde resins, aluminum, stainless steel, hard rubber, or the like.

The taper of the walls of the bowl from the wider

end **21** to the forward end **19** is about 5%–25% of the width of **21** and ordinarily 10%–20%. The arcuate bottom of the bowl extends between the said sides **12** and necessarily narrows in width as the sides converge towards the forward end **19** of the bowl. The curving of the bottom is continuous from the rear to the forward end of the bowl.

Typical curvatures correspond to a curvature of the forward part **16** of the bowl on a radius of about 1.2–2.5 inches and of the rear part **14** on a shorter radius such as 20%–50% less than the radius for part **16**.

When the bowl is also narrowed in width towards the top, the narrowing here is varied from about 5%–50% of the maximum width of the bowl, the top being narrower than the bowl at a position below the top.

Example 1

An example of a spoon that meets the requirements stated and that we have found to be particularly satisfactory is one in which the dimensions are approximately as follows:

	Inches
Length of bowl	2.3
Width of bowl end **19**	0.78
Width of bowl end **21**	0.9
Maximum depth of bowl	0.7
Length of handle	1.5

The bowl dimensions are inside measurements.

The width of the handle at the position of joining the bowl is the same as the bowl at this position.

Example 2

The spoon of Example 1 is modified by making the width of the bowl at the lowest position thereof about 1.15 inches, this width decreasing towards each end of the bowl and tapering so that, at the positions of meeting of the top edges of the bowl and the said bottom, at the two ends thereof, the bottom is of the same width as the top of bowl.

The spoon is economical to manufacture and effective in measuring powders and granular material without the need of a special leveling step and without the powder of granules flowing from the bowl when the spoon is inserted into the material to be measured and then withdrawn in practically vertical manner. The longer radius of curvature of the bottom of the forward part **16**, as compared with the rear part **14** and the straight upper edge **12** facilitate the thrusting of the spoon into a powder to be scooped up by the spoon.

It is to be understood that it is intended to cover all changes and modifications of the examples of the invention herein chosen for the purpose of illustration which do not constitute departures from the spirit and scope of the invention.

What is claimed is:

1. A spoon with bowl and handle comprising substantially straight sides of the bowl that extend at approximately a right angle to and downwardly from the plane of the open face of the bowl, a straight forward end of the bowl extending transversely thereacross, and an arcuate bottom of the bowl extending between the said sides, the width between the said sides and also the width of the arcuate bottom being less at the forward end than at the rear end of the bowl, the handle being joined to the said rear end, and the spoon being substantially self-leveling when the bowl is inserted into and filled with a powder and then withdrawn with the plane of the face of the bowl in vertical position.

2. The spoon of claim 1, the said width between the sides of the bowl being at least 5% less at the forward end of the bowl than at the rear end thereof.

3. The spoon of claim 1, the bottom of the bowl being curved on a longer radius at the forward part of the spoon than at the rear part thereof.

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