April 16, 1963 H. P. NELSON 3,085,718

DISPENSER FOR SMALL PARTS

Filed May 5, 1961

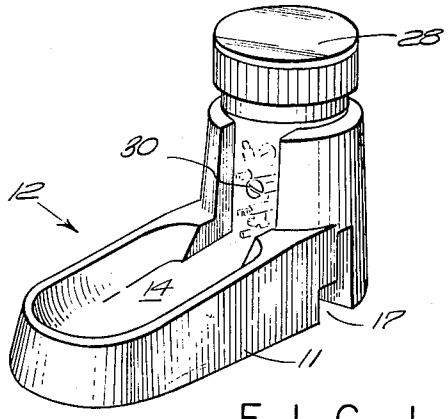

FIG. 1

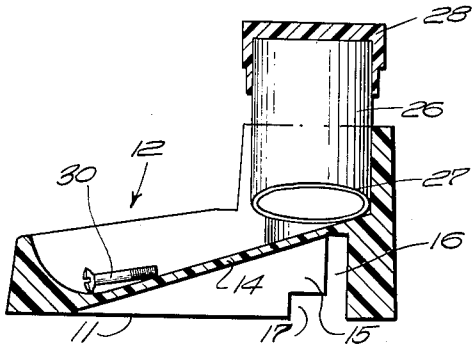

FIG. 2

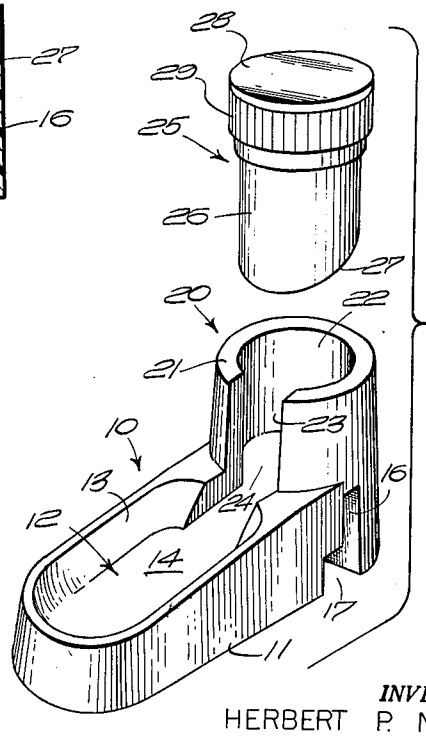

FIG. 3

INVENTOR.
HERBERT P. NELSON

BY

Barlow & Barlow
ATTORNEYS

United States Patent Office 3,085,718 Patented Apr. 16, 1963

3,085,718

DISPENSER FOR SMALL PARTS

Herbert P. Nelson, North Attleboro, Mass., assignor to The Hilsinger Corporation, a corporation of Massachusetts

Filed May 5, 1961, Ser. No. 120,815
6 Claims. (Cl. 222—168)

This invention relates to a dispenser of the type which would be used for dispensing small parts, such as optical parts, screws, nuts or bolts, terminals, and the like.

One of the objects of this invention is to provide a simple and inexpensive device which may be easily actuated by hand.

Another object of this invention is to provide a device which may be easily moved around from one place to another and rest upon a horizontal support such as a table or be mounted upon a rail or the like.

Another object of this invention is to provide a device which may be easily loaded and easily taken apart for cleaning.

Another object of this invention is to provide a device which will be effective and require substantially no mechanically moving parts and thus one which will not get out of order.

With these and other objects in view, the invention consists of certain novel features of construction as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

FIGURE 1 is a perspective view of the device;

FIGURE 2 is a central sectional view of the device with the gate rotated to an open position; and

FIGURE 3 is an exploded view of the two members which go to form the device.

In proceeding with this invention, I provided a base or body member which may be molded or cast in most any material and which comprises a tray-like portion opening upwardly so that the dispensed articles may be easily lifted therefrom and a hopper part at a raised elevation therefrom so that the parts in the hopper may slide down into the tray, and I provide a gate telescoping into the hopper with a handle so that this gate may be easily manipulated such as by turning a fraction of a revolution so that one or more of the articles in the hopper may be discharged through a convenient opening leading down an inclined passage to the tray.

With reference to the drawings, **10** designates generally the body or base member of the device which is shown as a casting or molded article having a flat undersurface **11** with a tray-like portion **12** opening upwardly from its upper surface. This tray-like portion has inclined inner sides **13** and also a bottom **14** which inclines upwardly as may best be seen in FIGURE 2. The portion beneath this bottom inclined wall **14** as at **15** is hollow to lighten the structure. Recesses **16** and **17** are provided extending laterally across the body member and opening downwardly so that the body member may be mounted upon a rail or some similar support if it is not desired to use the flat bottom **11** to rest the body member on a horizontal table or the like.

The tray-like portion is located generally at one end of the device, while at the other end of the device there is a hopper designated generally **20** and comprising a wall **21** having a cylindrical inner surface **22** and an opening **23** on its side toward the tray **12**. The bottom wall **24** of this hopper **20** is inclined towards this opening **23** and follows substantially the same inclination as the bottom wall **14** of the tray, thus providing a smooth or single planar surface in which both the bottom wall of the hopper and the bottom wall of the tray are located.

A gate member designated generally **25** is shown in perspective in FIGURE 3 and comprises a wall **26** which is cylindrical on its outer surface and of a size to telescope into the cylindrical surface **22** of the hopper and slidingly fit therein and be guided thereby. The lower edge **27** of this cylindrical wall **26** is cut on a plane at an angle to the axis of the cylindrical surface which angle will be substantially the angle that the bottom wall **24** of the hopper is to the axis of the cylindrical wall **22**. Thus when the wall **26** is telescoped into the hopper with this angular cut parallel to or matching the angle of inclination of the bottom wall **24** of the hopper, the opening **23** of the hopper is covered or closed to prevent the passage of any of the parts which may be in the hopper therethrough.

A cap **28** is provided over the end of the gate **25** which snugly embraces the wall **26** and provides a closure for the upper end of the gate and hopper. The engagement between the cap **28** and the outer surface of the wall **26** is such that upon turning the cap the wall will turn, and this cap is provided with a handle portion **29** such as knurling or the like so as to provide a convenient handle therefor.

Small particles such as screws **30**, one of which is shown in FIGURE 2, and a plurality of which are shown in FIGURE 1, may be loaded into the gate by lifting the gate from the body member and filling the same with the small parts. Then the gate may be inserted into the hopper **20** in a position to close the opening **23** and then as one part or more are needed, it is merely necessary to rotate the gate **25** by grasping the handle and turning the same which will cause the gate to lift until one of the small parts by reason of the pressure of the others will be forced out of the hopper sliding along the inclined surface down into the tray where it is readily accessible.

The cap may be made removable from the cylindrical gate **26** for loading through the top if desired.

I claim:

1. In a dispensing device, a body member comprising a hopper having a side wall with a generally cylindrical inner surface and an opening extending through the side wall, said hopper having a bottom wall inclined toward said opening to intersect the lower edge of said opening, a gate member having a wall with a cylindrical outer surface having a sliding and telescoping fit into the hopper, the end of the gate wall terminating in a plane which has substantially the same inclination to the axis of said cylindrical surfaces as the inclination of the bottom wall of the hopper, the end of the gate wall normally resting in substantially abutting relationship with the bottom wall whereby the wall of the gate normally covers said opening and whereby turning said gate member will cause the end of the wall thereof to act as a cam against the bottom wall and thereby raise the gate member within the hopper uncovering said opening to permit discharge of articles from said hopper.

2. In a dispensing device as in claim 1 wherein said gate member has a closure cap at its upper end.

3. In a dispensing device as in claim 1 wherein said gate member has a closure cap at its upper end, the outer surface of the cap providing a handle by which said gate member may be manually manipulated.

4. In a dispensing device, a unitary body member and hopper comprising a tray having a bottom wall and a hopper located at one side of the tray, said hopper having a side wall with a generally cylindrical inner surface and an opening extending through the side wall toward the tray, said hopper having a bottom wall inclined toward said opening to intersect the lower edge of said opening, the bottom wall of the tray being a continuation of and on a similar incline to the bottom wall of the hopper, a gate

member having a wall with a cylindrical outer surface having a sliding and telescoping fit into the hopper, the end of the gate wall terminating in substantially a plane which has substantially the same inclination to the axis of said cylindrical surfaces as the inclination of the bottom wall of the hopper, the end of the gate wall normally resting in substantially abutting relationship with the bottom wall whereby the wall of the gate normally covers said opening and whereby turning said gate member will cause the end of the wall thereof to act as a cam against the bottom wall and thereby raise the gate member within the hopper uncovering said opening to permit discharge of articles from said hopper.

5. In a dispensing device as in claim 4 wherein said gate member has a closure cap at its upper end.

6. In a dispensing device as in claim 4 wherein said gate member has a closure cap at its upper end the outer surface of the cap providing a handle by which said gate member may be manually manipulated.

References Cited in the file of this patent

UNITED STATES PATENTS

1,041,016	Butts	Oct. 15, 1912
1,156,194	Washburne	Oct. 12 ,1915