Oct. 31, 1950

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2,527,876

DISPENSER HAVING A SCREW FEED WITH TERMINAL OUTLET AND CLOSURE

Filed June 2, 1947

2 Sheets-Sheet 1

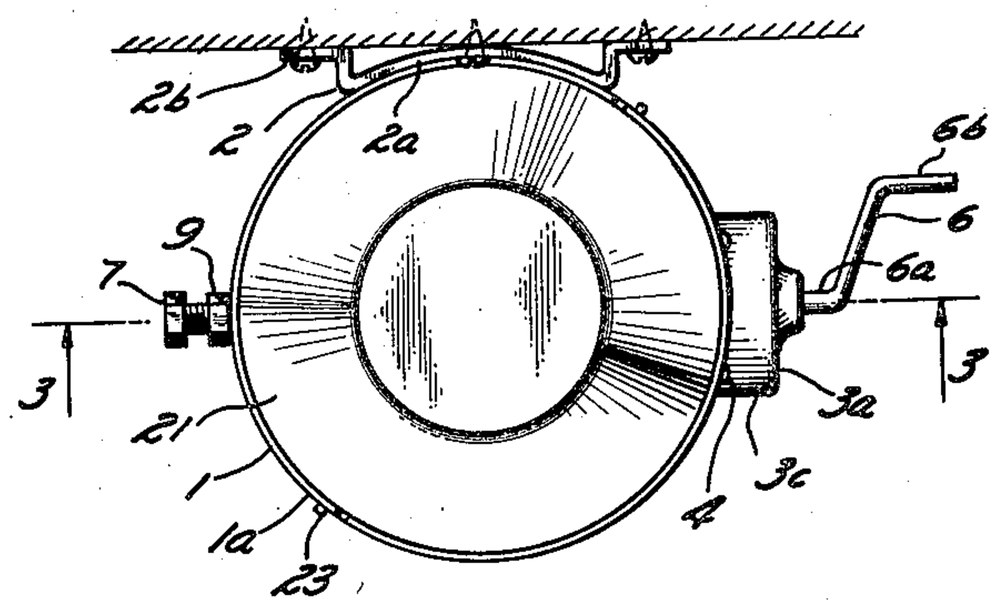

Fig. 2

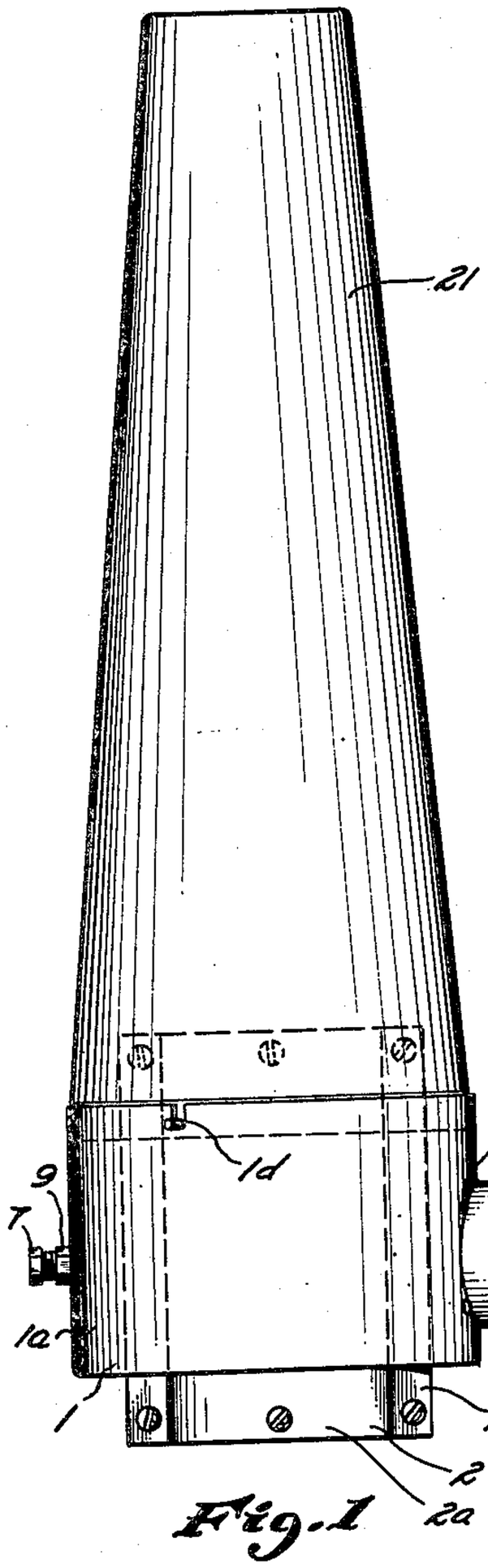

Fig. 1

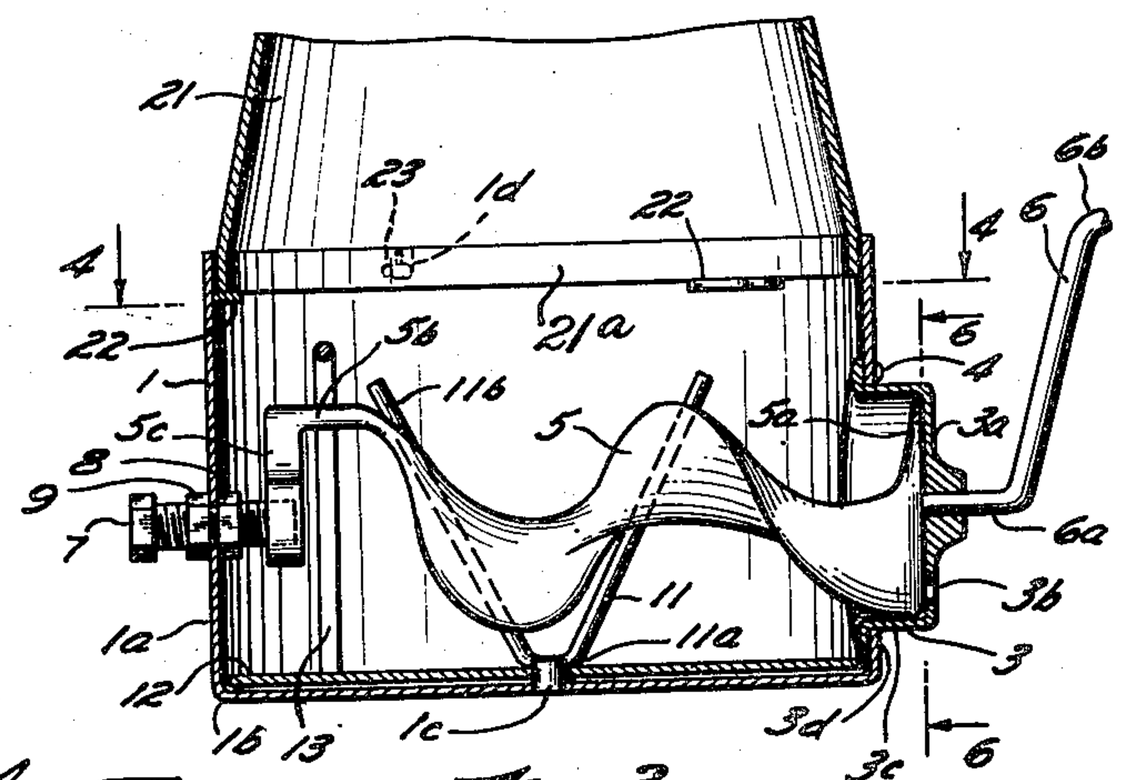

Fig. 3

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2 Sheets-Sheet 2

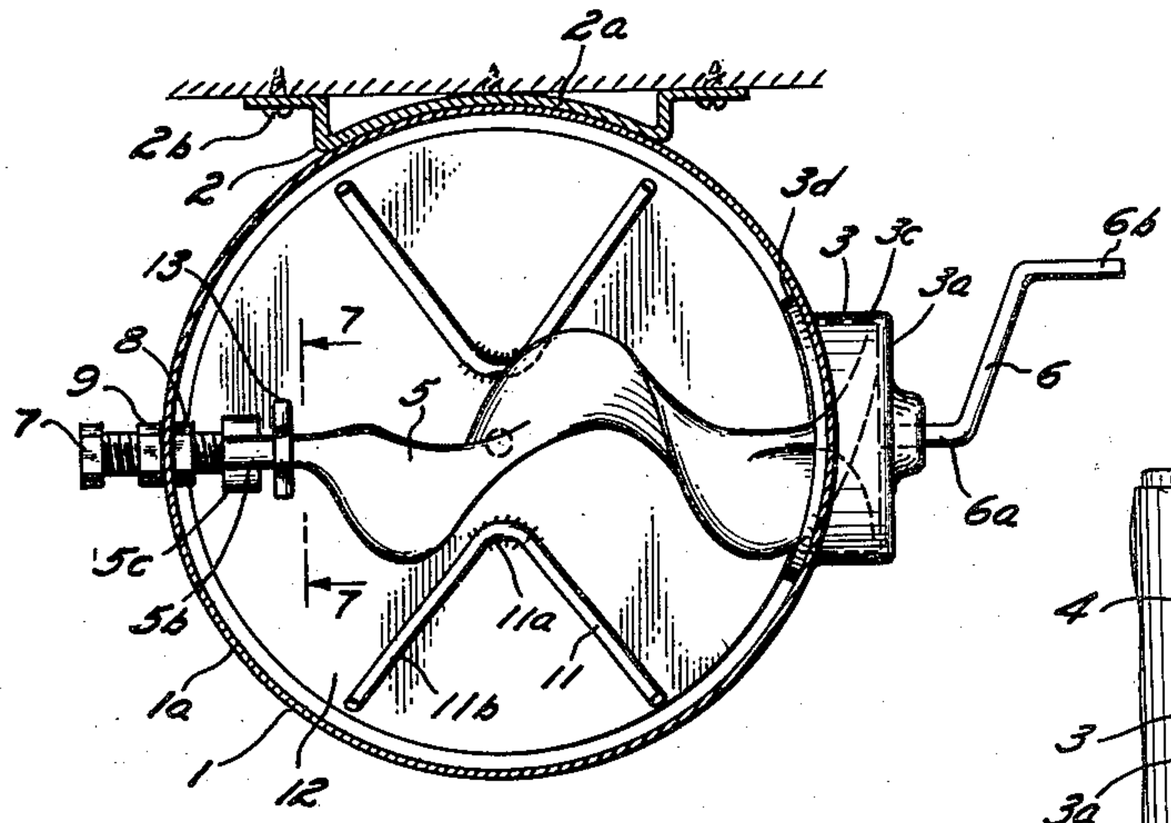

Fig. 4

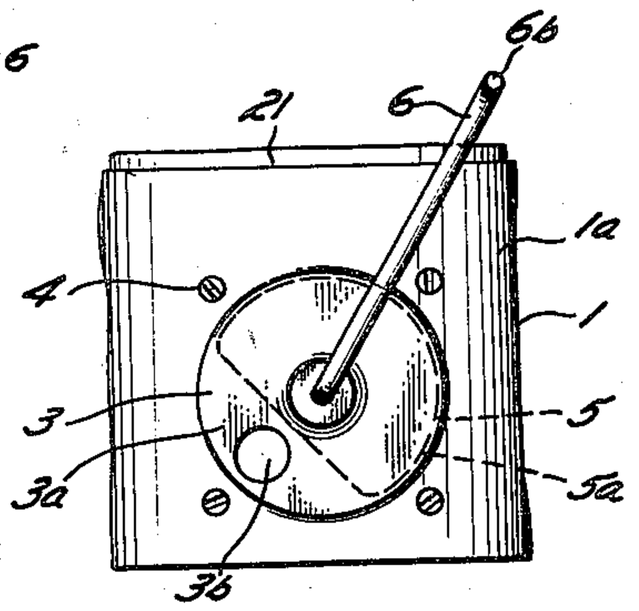

Fig. 5

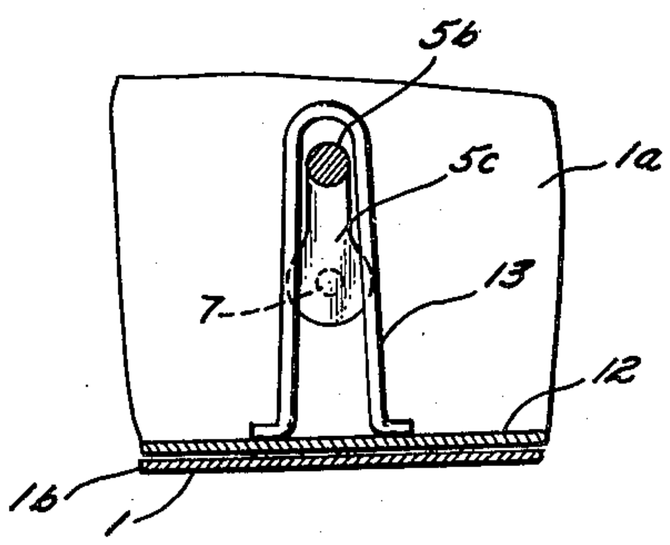

Fig. 7

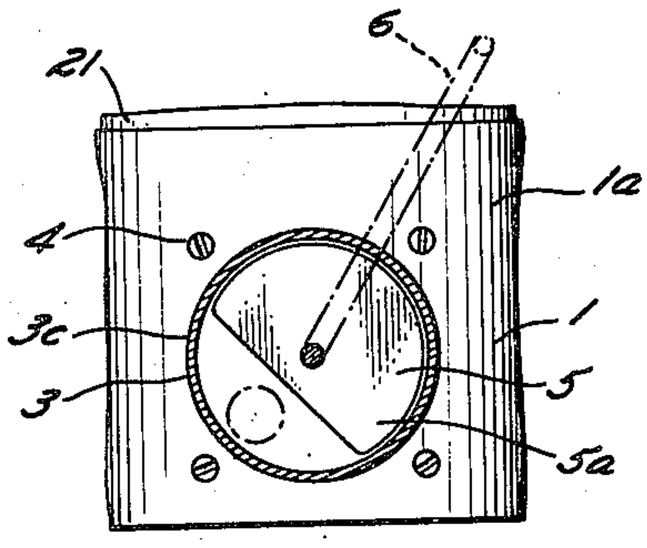

Fig. 6

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DISPENSER HAVING A SCREW FEED WITH TERMINAL OUTLET AND CLOSURE

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Application June 2, 1947, Serial No. 751,706

7 Claims. (Cl. 222—413)

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My invention relates to a device for dispensing pasty soap, or other product of similar pasty consistency.

One of the principal objects of this invention is to provide a dispenser of this class having a screw conveyor in the bottom portion of the container thereof, and in which one end of the screw conveyor is so constructed as to serve as a valve or gate when the same is rotated to a determined position, for measuring the product dispensed and also for closing the discharge opening of the dispenser.

A novel feature of this invention is to provide simple and efficient means for axially adjusting the screw conveyor for effectively locating the shut-off valve or gate at one end thereof with respect to its seat, and also for taking up wear therebetween.

Another important object of this invention is to provide a simple agitating means in the bottom of the dispenser, one which is simultaneously operated with the dispensing conveyor therefor, and which is so located that it may not be readily damaged.

An important object also of this invention is to provide a novelly constructed supply container in which the pasty soap, or other product supplied to the dispenser, is packed and transported, which may be readily attached in an inverted position to the base of the dispenser, and which, by reason of its position, will automatically or readily feed the pasty soap, or other contents of the supply container, into the base of the dispenser where it is to be dispensed.

A further important object of this invention is to provide an economical supply container of this class which may be conveniently transported and sold in destructible cartons so that the supply container may be conveniently disposed of when empty.

With these and other objects in view, as will appear hereinafter, I have devised a dispenser of this class having certain novel features of construction, combination, and arrangement of parts and portions, as will be hereinafter described in detail, and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon, which form a part of this application, in which:

Fig. 1 is a front elevational view of a soap dispenser incorporating my invention in a preferred form;

Fig. 2 is a top view thereof;

Fig. 3 is a fragmentary elevational view of the lower portion thereof, taken through 3—3 of Fig. 2;

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Fig. 4 is a transverse sectional view thereof, in plane, taken through 4—4 of Fig. 3;

Fig. 5 is a fragmentary side elevational view of the lower portion thereof, showing a dispensing opening in the dispensing housing;

Fig. 6 is a fragmentary sectional view thereof, taken through 6—6 of Fig. 3; and,

Fig. 7 is a fragmentary sectional elevational view thereof, taken through 7—7 of Fig. 4.

The lower or base portion of my dispenser, as shown in the drawings, is enclosed in an open-top cup-shaped or cylindrical container 1. It is secured in a vertical position to an arcuate saddle portion 2^a of a bracket 2. This bracket has laterally extending flanges 2^b whereby it may be attached to a wall by means of screws, as shown in Figs. 1 and 2.

The dispenser shown has a discharge or dispensing opening, which is provided in a flat circular end wall 3^a of a cup-shaped housing 3, the dispensing opening being designated 3^b.

The surrounding cylindrical wall 3^c of the housing 3 extends through a correspondingly shaped opening in the vertical wall 1^a of the container 1, and is provided at its inner end with a flange 3^d which is secured to the inner side of the wall 1^a by screws 4, or other suitable means.

In the bottom portion of the dispenser, and near the bottom of the container 1, is rotatably mounted a screw conveyor 5 having a helical blade for feeding the contents of the container towards the dispensing opening. To one end of the screw conveyor is secured, coaxially therewith, a stub shaft 6^a of an operating crank 6, having at its outer end a handle 6^b. The stub shaft 6^a is rotatably mounted in the flat outer wall 3^a of the housing 3 for supporting one end of the screw conveyor thereon.

The opposite end of the screw conveyor is supported on the vertical wall 1^a of the container 1, at the side opposite the housing 3, on a center screw 7. This center screw is secured in its longitudinally adjusted position by nuts 8 and 9. Thus, the screw conveyor is axially adjustable within the container 1. At the end of the screw conveyor, to which the crank 6 is secured, is provided a flange 5^a which is slightly more than semi-circular in extent. The outer side thereof is positioned in slidable engagement with the inner side of the wall 3^a of the housing. This flange serves as a valve or gate for measuring the soap, or other product dispensed from the container 1,

and is effective for shutting off or closing the dispensing opening.

The agitating means consists of a plurality of agitator arms 11 which are carried on a base 12. This base is a disc supported directly on the bottom 1b of the container 1, and is rotatably mounted coaxially with the bottom of the container. As shown, the bottom plate 1b has an upwardly extending pivot pin 1c which definitely locates the disc 12. The agitator arms 11 are arranged in two pairs and are substantially of V-shape, the portion 11a connecting the agitator arms 11b being secured to the disc 12 at the diametrically opposite sides of the axis, as shown in Figs. 3 and 4.

The disc has an inverted U-shaped yoke 13, as shown best in Fig. 7, near the edge thereof, as shown in Figs. 3 and 4. Through this yoke extends the throw portion 5b of a crank 5c at the end of the screw conveyor opposite the gate 5a. As the screw conveyor is rotated about its axis, the throw portion 5b moves upwardly and downwardly within the yoke and causes the agitator-carrying disc 12 to oscillate about the pivot pin 1c.

The supply container 21 is frustoconical in shape, the length being considerably great relative to its diameter. The truncated-cone container is open at its lower end and, when placed over the container 1, allows the contents of the supply container to flow automatically, or readily, into the dispensing container 1, such automatic or ready flow being brought about by reason of the inclined construction of the side walls of the supply container.

The lower open end of the supply container has a cylindrical flange 21a which fits into the upper end of the container 1, and this portion or flange 21a may rest upon lugs 22 on the inside of the side wall 1a of the container 1, and it may also be more securely fastened to the container 1 by means such as a bayonet lock, shown in Figs. 1 and 3. For this purpose, the flange 21a is provided with outwardly extending pins 23 which may extend into bayonet slots 1d at the upper portion of the container 1.

The transportation and storing of containers, of the type designated 21 in the drawings, and the return thereof to the packer or manufacturer may be a considerable problem, and entail considerable expense in the distribution of the product supplied in the supply container. For this reason I have provided for the packing and distribution of the product of the container 1, which in this instance is pasty soap, a carton made of destructible material, such as cardboard, or other readily destructible material, or the like.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

I claim:

1. In a dispenser of the class described, a container having a discharge opening, a screw conveyor rotatably mounted at its ends at the opposite sides of the container, one end having a crank outside of the container for rotating the screw conveyor, the latter end terminating at the wall provided with the discharge opening and forming a gate to close the opening, when the screw conveyor is rotated to a gate-closing position, and means, in the wall of the container opposite the discharge opening, at the axial portion of the screw conveyor, for axially adjusting the latter relative to the portion of the wall having said opening.

2. In a dispenser of the class described, a container having a discharge opening at its lower portion, a conveyor mounted in the lower portion of the container opposite the discharge opening, means for operating the conveyor, a disk rotatably mounted on the bottom of the container, a yoke extending upwardly from the disc and eccentrically therewith, a crank on the conveyor operatively connected with the yoke for rotating the disc with the operation of the conveyor, and agitator arms mounted on and extending upwardly from the disc.

3. In a dispenser of the class described, a cylindrical container having a discharge opening at its lower portion, a conveyor mounted in the lower portion of the container opposite the discharge opening, means for operating the conveyor, a disc rotatably mounted on the bottom of the container and substantially coaxially therewith, a yoke extending upwardly from the disc and eccentrically therewith, a crank on the conveyor operatively connected with the yoke for rotating the disc with the operation of the conveyor, and agitator arms mounted on and extending upwardly from the disc.

4. In a dispenser of the class described, a container having a discharge opening at its lower portion, a conveyor mounted in the lower portion of the container opposite the discharge opening, means for operating the conveyor, a disc rotatably mounted on the bottom of the container, a yoke extending upwardly from the disc and eccentrically therewith, a crank on the conveyor operatively connected with the yoke for rotating the disc with the operation of the conveyor, and agitator arms mounted on and extending upwardly from the disc and radiating from the central portion thereof.

5. In a dispenser of the class described, a container having a discharge opening in the side wall near the bottom thereof, a screw conveyor rotatably mounted in a horizontal position near the bottom of the container, the opposite ends thereof being rotatably mounted in the side walls of the container, said screw conveyor having a valve co-operating with said discharge opening, means for rotating the screw conveyor, a disc rotatably mounted in the bottom of the container, a yoke extending upwardly from the disc and eccentrically with respect to its axis of rotation, a crank on the screw conveyor extending through the yoke for rotating the disc with the rotation of the screw conveyor, and agitator arms mounted on and extending upwardly from the disc at the opposite sides of the screw conveyor.

6. In a dispenser of the class described, a container having a discharge opening in the side wall near the bottom thereof, a screw conveyor rotatably mounted in a horizontal position near the bottom of the container, the opposite ends thereof being rotatably mounted in the side walls of the container, said screw conveyor having a valve co-operating with said discharge opening, means for rotating the screw conveyor, a disc rotatably mounted in the bottom of the container, a yoke extending upwardly from the disc and eccentrically with respect to its axis of rotation, a crank on the screw conveyor extending through the yoke for rotating the disc with the rotation of the screw conveyor, and agitator arms mounted on and extending upwardly from the disc at the opposite sides of the screw conveyor and radiating from the central portion thereof.

7. In a dispenser of the class described, a container having a discharge opening, a screw con-

veyor rotatably mounted at its ends at the opposite sides of the container, one end having a crank outside of the container for rotating the screw conveyor, the latter end terminating at the wall provided with the discharge opening and forming a gate to close the opening, when the screw conveyor is rotated to a gate-closing position, and means, at the wall of the container opposite the discharge opening, at the axial portion of the screw conveyor, for axially urging the latter relative to the portion of the wall having said opening.

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