

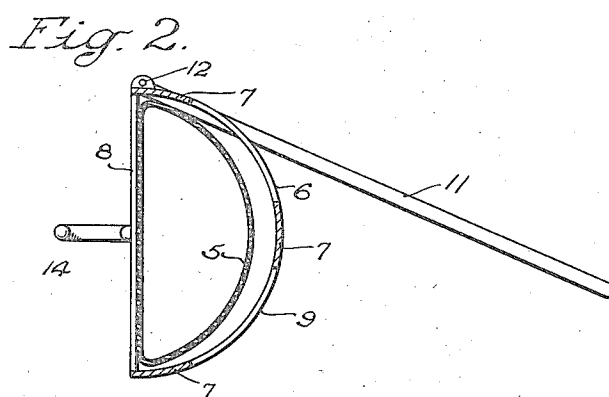
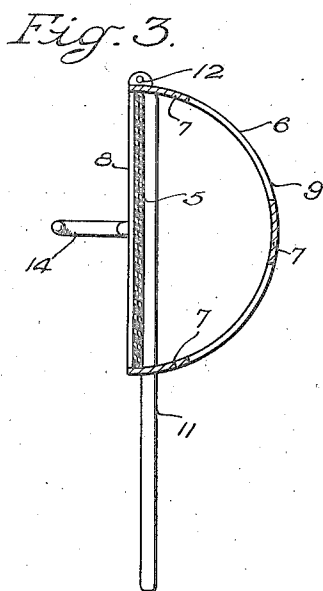
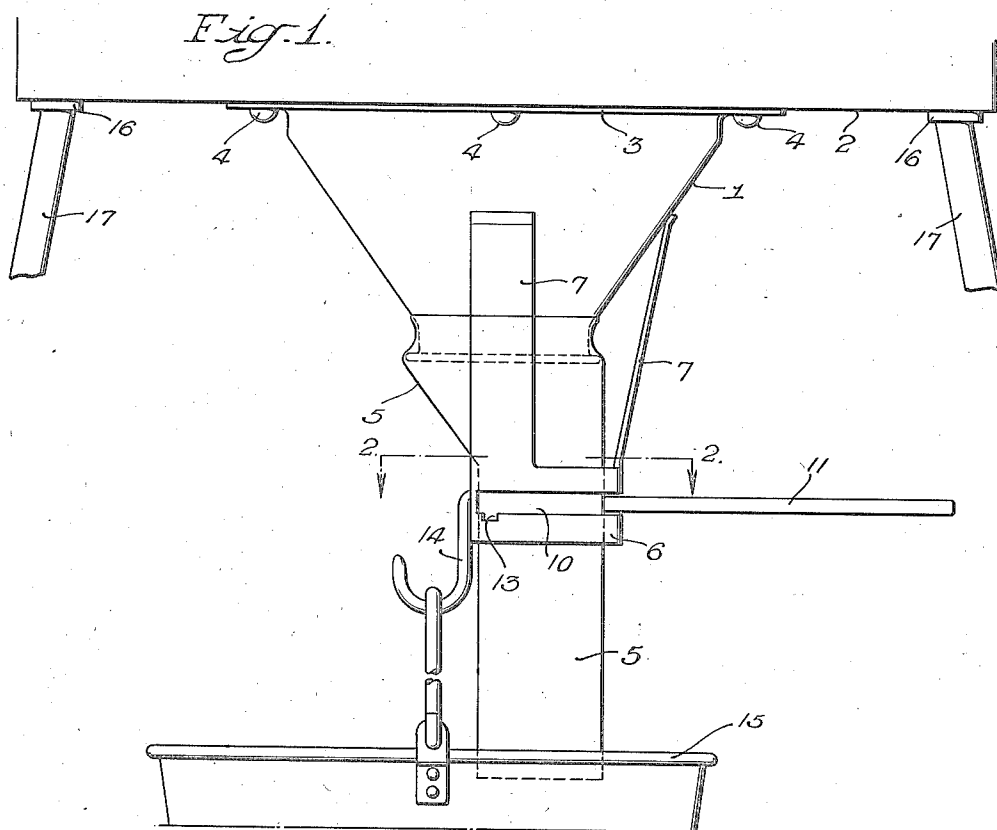
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DISPENSING DEVICE

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2,059,079

DISPENSING DEVICE

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1 Claim. (Cl. 221—146)

This invention relates to a novel dispensing device for dry materials and the like. The principal object of the invention is to provide a device by means of which dry, powdered, granular or flake chemical materials may be dispensed from the steel drums or containers which are commonly employed for shipping or storing such materials.

It has been the practice in the past to scoop the material out of the drums or containers by means of a scoop or shovel. This practice has serious disadvantages or objections, some of which are enumerated. Such practice permits moisture of the air to come into contact with the dry chemical material in the steel drums or containers, causing the material to cake, or, in the case of some unstable chemicals, causing them to decompose. Another objection to the prior practice is that the chemical material frequently attacks the hands and clothing of the operators and causes discomfort to the operators, as well as loss of material by dusting. This is particularly true in cases where the dry chemical materials are used in the open.

A further disadvantage of the prior practice is that the scoop or shovel used in dispensing the chemical material may become corroded by the material, and may introduce impurities into the material. Furthermore, the method employing a scoop or shovel requires considerable time to withdraw the chemical material from the drum or container.

The present invention eliminates the necessity of practicing the prior method and provides a novel dispensing device which is free of the above-mentioned disadvantages or objections and which embodies desirable features and advantages, as will be more clearly understood later. The invention may be fully understood by reference to the accompanying drawing; wherein there is illustrated a specific preferred form of the device for the purpose of disclosure.

In the drawing:

Fig. 1 is an elevational view of the device;

Fig. 2 is a sectional view taken along line 2—2 of Fig. 1; and

Fig. 3 is a similar sectional view showing the dispensing device in closed condition.

Referring particularly to Fig. 1, the dispensing device comprises a funnel 1 which is adapted to be attached to the usual steel drum or container 2 for dry chemical materials, shown in inverted position. The funnel is intended particularly to be attached to the drum or container in place of the usual lid or cover. To this end, the funnel

is provided with a flange 3 which conforms in size to the customary lid or cover and which is adapted to be attached to the drum or container in the same manner that the lid or cover is ordinarily attached, for example, by means of bolts 4. It will be understood that the funnel may be adapted in any case to conform with the lid or cover of the drum and to be secured to the drum in place of the lid and in the same manner that the lid is ordinarily secured.

The funnel is preferably formed of steel, and in order that the chemical material will not corrode the funnel, the interior surface of the funnel is coated with a suitable non-corrosive substance, preferably chlorinated rubber paint, although the said surface may be enameled or covered with hard rubber. It will be understood, of course, that the funnel may be formed of non-corrosive material. The lower end of the funnel is formed as illustrated so that it may receive and frictionally hold a flexible tube 5 formed of rubber or like material. The rubber tube extends downward through a semi-circular metallic ring 6 which is carried by metallic arms 7, which, in turn, are supported by the funnel. These various parts may be secured together by welding or in any other suitable manner.

As shown in Figs. 2 and 3, the ring 6 comprises a flat portion or plate 8 and a circular or arcuate portion 9 having a slot 10 therein. A lever arm 11 is pivotally attached to the ring at 12 so as to be movable transversely through the slot 10. The lever arm 11 is adapted to compress the flexible tube 5 against the flat plate 8, thereby collapsing and closing the tube as shown in Fig. 3. A notch 13 is provided in the ring 6 and is adapted to receive the lever arm 11 when the arm is in its tube compressed position. The arm is capable of slight movement transversely of its plane of principal movement so that it may be forced into the notch 13 and will remain therein until removed. The arm is thus locked in its tube-compressing position, thereby closing the tube against the flow of material and sealing the drum 2 against the admission of air. A hook 14 is preferably carried by plate 8 and is adapted to hold a container or receptacle 15 into which it may be desired to dispense the dry chemical material.

While the control mechanism preferably takes the form illustrated and above described, this mechanism may take any other form, provided it is adapted to compress the flexible tube to attain the desired object.

In using the device, the drum 2 with the dispensing device attached thereto may be inverted, 55

as shown in Fig. 1, and supported in any suitable manner, for example, by a support comprising a ring 16 adapted to receive the drum 2 and carried by legs 17. The operation of the device will be obvious from the illustration and the above description.

It will be seen that the ring 6 and the lever arm 11 do not come in contact with the chemical material, and, therefore, are not subject to corrosion. In fact, the only part of the device, other than the rubber tube, which comes in contact with the chemical material is the inner surface of the funnel 1, and, as above stated, this surface is coated with a non-corrosive substance. It will be noted further that the device serves to seal the drum or container 2 against the admission of air so that the dry chemical material is kept free of the moisture of the air. Furthermore, the chemical material does not come into contact with the hands or clothing of the operator and the above-noted objections incident to this are eliminated. The chemical material may be dispensed quickly and in cases where it is not necessary to measure the material accurately, the material may be dispensed directly into the vessel in which it is to be used. It will be seen that the dispensing device will afford some control of the amount of material being dispensed so that approximate predetermined quantities may be dispensed from the drum.

Another very important advantage of the device is that it is adapted for use in place of the usual lid or cover of the drum, as above described, and the device may be removed from one drum when that drum is empty and attached

to another drum. Furthermore, this requires no more effort or time than would the removal and replacement of the lid of the drum. It will be seen also that when the device is once attached to the drum, it is unnecessary to detach it until the drum is empty. Thus, repeated removal and replacement of the lid or cover is eliminated as is also the time and energy required for this.

It will be apparent that the device is free of disadvantages and objections of the prior practice of scooping material from the drums and, furthermore, that the device embodies desirable features and has very important advantages. It will be understood, of course, that the device may be modified or varied as to its details and that the specific illustration of the drawing is merely for the purpose of disclosure.

I claim:

A device for dispensing dry chemical material of the like, comprising a discharge funnel adapted to be attached to a dry chemical container over the opening thereof, a flexible discharge tube attached to the discharge end of said funnel, and discharge control means carried by said funnel, said means including a ring surrounding said tube and having a flat portion and a slotted arcuate portion, and a lever arm pivotally carried by said ring and arranged for movement in said slotted portion to compress said tube against said flat portion, said slotted portion having a notch therein adapted to receive said arm to lock it in its tube-compressing position, whereby the discharge of said material may be controlled and air is prevented from entering said container.

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