F. L. MILLER.

Paint-Cans and Devices for Removing the Contents.

No. 145,439. Patented Dec. 9, 1873.

Fig 3.

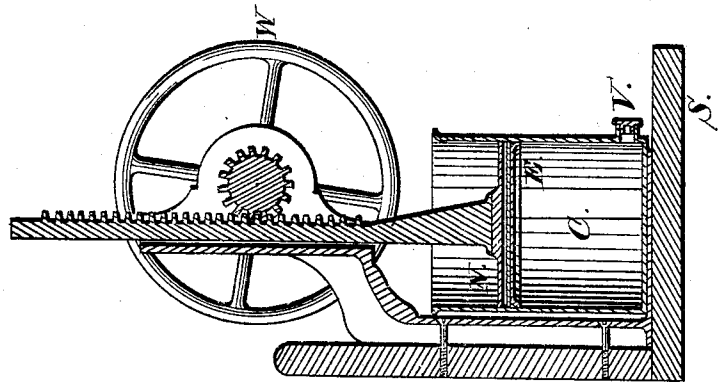
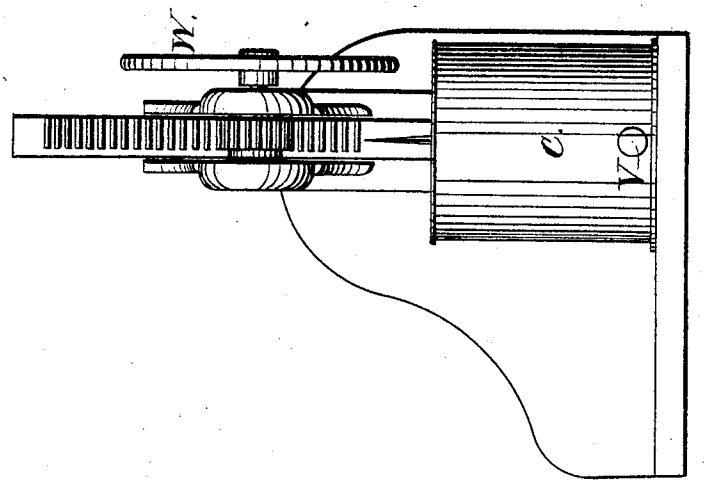


Fig 2.

Fig 1.



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UNITED STATES PATENT OFFICE.

FREDERICK L. MILLER, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN PAINT CANS AND DEVICES FOR REMOVING THE CONTENTS.

Specification forming part of Letters Patent No. **145,439**, dated December 9, 1873; application filed October 24, 1873.

To all whom it may concern:

Be it known that I, FREDERICK L. MILLER, of the city of Brooklyn, county of Kings and State of New York, have invented a new and useful Method of Preserving the Contents of Hermetically-Sealed Cans, and providing for the gradual use thereof without injury from atmospheric causes during the consumption; and I declare that the following specification, taken in connection with the drawings forming a part thereof, constitute a full, clear, and exact description of my invention.

In the drawings, Figure 3 represents my invention ready for use, showing the rack and pinion, the piston, the supporting-shelf, the can, and the flexible packing. Fig. 2 shows the flexible packing. Fig. 1 shows a front view of the mechanism shown in Fig. 3.

Paint, when prepared in oil ready for use, and substances of similar consistency, have heretofore generally been used in small cans, because of the deteriorating effect of the atmosphere on the contents when not immediately used, which rapidly destroyed what was left unused in an open can. This waste was so great that time and ingenuity have been spent to devise means of saving this waste even in small cans, and examples of this are seen in the patents granted to Hiram Tucker, dated January 14, 1873, and to John W. Masury, dated July 22, 1873.

My invention has its chief value in its application to large cans. In the small packages the expense of the tin can will average about four cents for a pound, while the cost of a larger can does not increase in proportion, the expense of a twelve-pound can being only about twelve cents. By being able to put paint up in large packages, and still preserve it as perfectly as in the small cans, a valuable saving in the cost of packages is effected.

Cans have been made heretofore having inside of them a diaphragm of wood or of metal, which, being forced down by an independent rod or plunger, expelled the contents, while keeping it protected from the air. My invention is subordinate to the general principle which underlies those inventions, and is illustrated as follows:

The body of a tin can is made as usual; the top, if of thin tin, is soldered on. If a slip-cover is used it is put in position, and the edge which comes in contact with the body of the can made tight in the ordinary way. A diaphragm or packing, of pasteboard or other flexible material, is cut in the form of a cross-section of a can, with its diameter a little larger than that of the can, so as to afford a flange turned up all around it, as shown in Fig. 2. This tightly-fitting diaphragm is then inserted and pushed up against the top of the can; the can is then reversed, and the bottom, with an opening in the center, is then soldered on, and the material filled in through the aperture in the bottom, which is finally closed, in the usual manner, by soldering on a cap of tin. The bottom of the can, at the end or side, is provided with an aperture, V, covered by a screw-cap or valve, through which the paint is to make its exit when required for use.

The next feature of my invention is the means of expelling the contents of the can; and consists in a rigid piston, with an end of substantially the same diameter as that of the can, actuated vertically by a rod moved either by screw-threads, or by a rack and pinion, or other suitable means of propulsion, the motion being in a substantially vertical direction. This machinery may be fastened to a shelf, and the can to be emptied may be set on a shelf beneath it; or the shelf to hold the can may be combined with the piston-frame in one piece, ready to attach to the wall. The shelf may be made adjustable to slide up and down, being fastened in its place by a set-screw to accommodate cans of different heights.

It is obvious that if the shelf be made to move up and down with the can upon it while the piston remains fixed, it will be the equivalent of my invention, although for several reasons not so convenient an application.

The operation of my invention is as follows: The top of the can which is to be used is removed by lifting it off, or by cutting it smoothly out close to the outer edge. When this cover is removed, the packing E appears lying on the top of the paint, which it protects from the air so long as any paint remains in the can, as it follows the paint down the can as fast as it is forced out. The can thus opened is then placed under the piston N, which is lowered by turning the wheel W until the piston N

rests on the packing E. The valve V at the bottom of the can is then opened, and, the piston N being forced down by turning the wheel W, the paint will flow out of the valve V whenever required as fresh as when prepared for use. After a sufficient quantity for immediate use is obtained from the can, the valve V at the base of the can is closed, the piston N is raised a sufficient height to permit the can to be removed, and a can of another color substituted when required.

It is obvious that the contents of the can will be perfectly protected from the air so long as the packing E remains intact. I prefer for this packing, pasteboard or thick paper, on account of its elasticity, which causes it to hug the sides of the can, and because of its cheapness.

One advantage in this invention is that a single machine may be set up in a shop and be used for all the cans in the shop, while most of the devices heretofore used for the purpose of obtaining the same end required a separate apparatus for each can.

It will be noticed that in my invention it is not necessary for the piston at any time to come in contact with the paint, the packing being at all times interposed between it and the paint, while the piston, being rigid, prevents the canting of the packing to one side or the other, and obviates the necessity of any guides to secure evenness of the packing.

I desire to distinctly disclaim any claim to the features shown in the patents heretofore mentioned; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with the supporting-shelf S, a rigid propelling-piston, N, constructed substantially as described, and for the purpose of expelling the contents of cans.

2. In a can for plastic material, a flexible independent packing, E, constructed substantially as described, for the purpose of combination with a rigid external piston, N.

3. The specific mechanism consisting of rack and pinion, constructed substantially as described, for the purpose of expelling the contents of cans containing plastic material.

4. An external piston, N, constructed substantially as described, for application to an internal independent flexible packing.

5. The combination consisting of the rigid external piston N, the flexible internal packing E, the support S, and the can C.

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Witnesses:
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