Nov. 25, 1941. C. G. GROSS 2,263,843

CONTAINER CONNECTING MEANS FOR SPRAYING DEVICES

Filed Sept. 3, 1937

Fig. 1

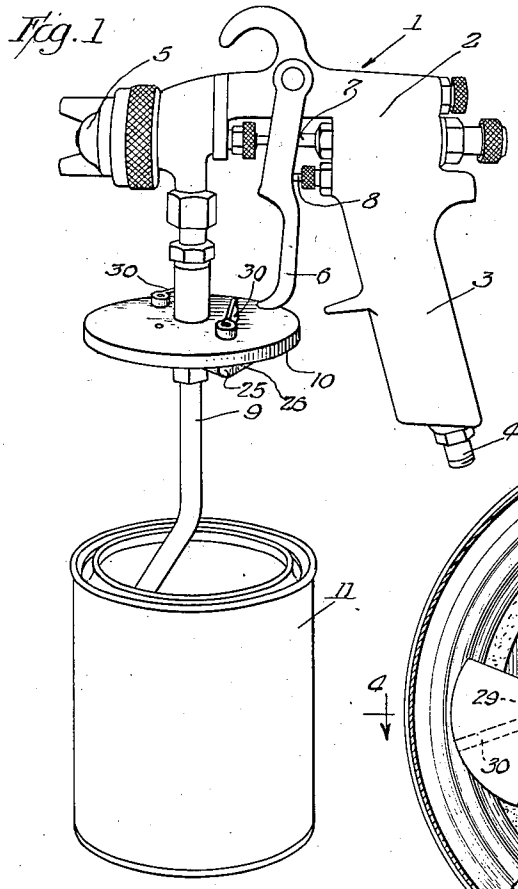


Fig. 3

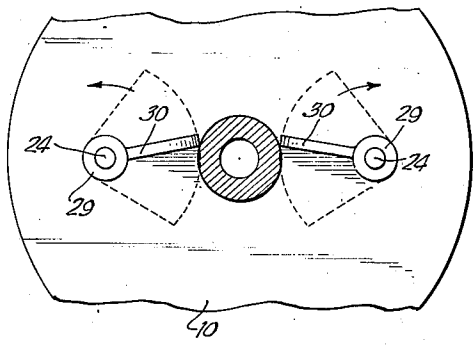


Fig. 2

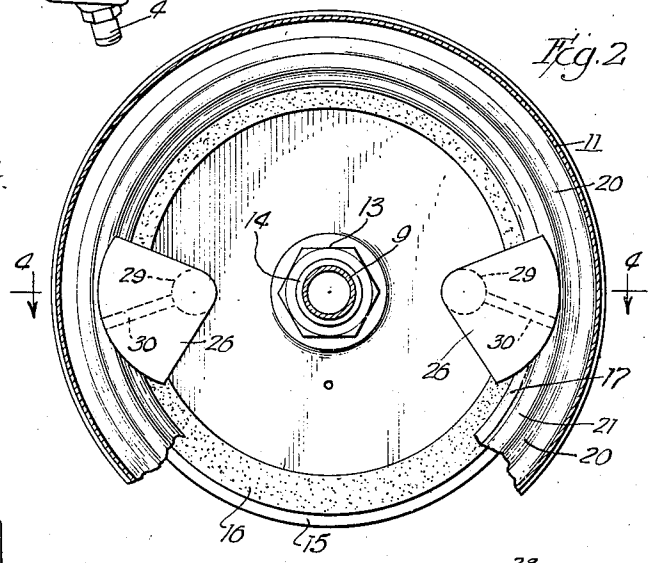


Fig. 4

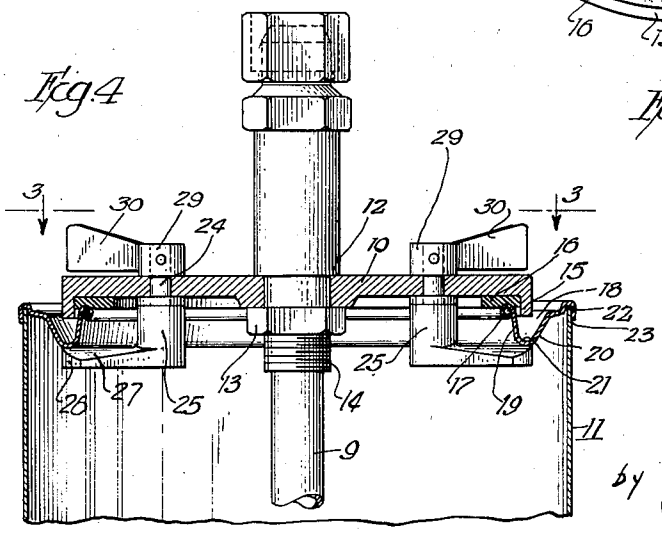
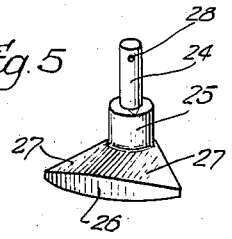


Fig. 5



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Patented Nov. 25, 1941

2,263,843

UNITED STATES PATENT OFFICE

2,263,843

CONTAINER CONNECTING MEANS FOR SPRAYING DEVICES

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Application September 3, 1937, Serial No. 162,288

1 Claim. (Cl. 220—57)

The present invention relates to spraying appliances, and more particularly to such types as are commonly used for the "touch-up" spraying of material, such as paint, where only a small quantity is required, and in which the spraying device is mounted upon the cover which is detachably attached to the paint can or the like, whereby the can of paint, or the like, is carried by the spraying device, the resulting assemblage being readily manipulated as a single unit by a hand grasping the usual handle of the spraying device.

It long has been customary to mount the spray device on the cover of a specially designed container, into which container the paint was poured from the can in which the paint was supplied, and to provide means for releasably clamping the cover and spray device assembly to the container. In practice, this has the objection that a separate and complete appliance is required for each different color of paint for which the user may find a frequent need, thereby involving an undesirably high investment as well as a large amount of storage room for an adequate assortment of such appliances.

The present invention overcomes or avoids the objections mentioned by providing a single assemblage of a hand-held spray device with a cover adapted to serve as the closure for a paint can of a certain general type, and with easily manipulated means for clamping such cover to the paint can, so that this single assemblage can be used interchangeably for spraying the paint from any one of many cans of this type in which paints of different colors or other characteristics are supplied by the paint manufacturer.

Among the objects of the invention is to provide a novel means for detachably connecting a spray device having a depending inlet, to a container or can, such as a paint can, in which the material to be sprayed is supplied, the can being of the type having an annular top in which is provided a pouring opening or mouth within the inner edge of such annular top; such novel means comprising a cover which is connected to or fast with the depending inlet pipe, as at a point above the lower end of the pipe so that the lower portion of the pipe may extend into the can, and is adapted to seat with a sealing contact upon the inner edge of the annular top, together with a plurality of latching members which are carried by the cover and extend into the can downwardly through the opening or mouth in the top of the can for latching engagement with and disengagement from the annnular top mentioned.

In the illustrative embodiment each latching member comprises a shaft rotatably carried by the cover and having at its lower end a cam provided with an inclined upper surface, and a finger piece at the upper end of the shaft, as above the cover, whereby when the shaft is rotated or turned about the axis of the shaft by digitally or manually turning the finger piece, the cam is turned about such axis to bring the cam from a position beneath the opening in the can top to a position beneath the annular top where the cam bears upwardly, as with a wedging action, against the underside of the annular top of the can, to clamp the cover down upon the inner edge of the annular top. The top of the cam may have oppositely inclined surfaces whereby either inclined surfaced part may be wedged against the under part of the annular top of the can from either direction of turning of the latching member. The annular top of the can may be provided with an annular grooved or downwardly extending portion, V-shaped or U-shaped in cross-section, and being concentric with the inner-edge of the annular top, the latching cams bearing upward against such grooved, or downwardly extending portion. The finger piece and the cam of each latching member preferably extend laterally from the shaft and are disposed in vertical alinement so that the finger piece, which is above the cover, will serve to indicate the position of the cam relative to the annular top part of the can.

Other objects, advantages, capabilities, features, and the like, are comprehended by the invention as will later appear and as are inherently possessed by the invention.

Referring to the drawing:

Fig. 1 is a perspective view of a spray device, a paint can or like container of general structure, and the novel means of this invention for detachably connecting the spray device to the container;

Fig. 2 is a part bottom plan and part horizontal sectional view of the same;

Fig. 3 is a fragmentary top plan view and part horizontal sectional view taken in a plane represented by line 3—3 in Fig. 4 of the drawing;

Fig. 4 is a sectional view taken in a vertical plane represented by line 4—4 in Fig. 2 of the drawing; and

Fig. 5 is a view in perspective of a detail, that is, of the locking or latching cam and the shaft to which it is connected.

Referring more in detail to the drawing, the embodiment chosen to illustrate the invention is

shown in connection with a spray gun 1, having a body 2 provided with a depending handle or hand grasping part 3 to the lower end of which is provided a hose connection 4 for attachment to a compressed air hose. At the forward end of the body 1 is provided a spray head or nozzle 5 and intermediately of the body is pivotally mounted a trigger 6 so arranged as to cooperate with valve stems 7 and 8 connected to suitable valves for controlling the passage of the material to be sprayed and the compressed air to the nozzle 5.

To a depending portion of the body 1 is coupled a material delivery or inlet duct or pipe 9 upon which is carried a cover plate 10. The lower end of the duct 9 may be bent, if desired, and is adapted to extend down into the container 11.

The upper portion of the duct or pipe 9 is of a greater diameter than the lower portion so as to provide a shoulder 12 against which the plate 10 is held by means of a nut 13 screwed upon the threaded part 14 of the duct 9. The plate 10 has a depending annular flange 15 at its periphery and within this flange is located an annular gasket or sealing ring 16 so positioned as to seat with a sealing contact upon the inner beaded edge 17 of an annular top or top portion 18 of the container or can 11. This annular top 18 is shown as having an intermediate annular grooved portion, of generally V-shape or U-shape in cross section, comprising downwardly extending inner and outer portions 19 and 20, a bottom or trough portion 21, and an upper spun over portion 22 on the upper end 23 of the can 11.

The plate 10 carries locking or latching means for clamping the cover 10 to the edge 17 in a convenient manner, this locking or latching means constituting a part of the present invention. It comprises vertically disposed shafts 24 rotatably carried in the cover 10 and having secured to the lower end of each shaft a hub portion 25 of a laterally extending projection or cam 26. This cam may be of sector shape as shown and is preferably provided on its upper surface with oppositely inclined surfaces 27 so that when the cam is turned about the vertical axis of the shaft 24, either of the surfaces 7, depending upon the direction of rotation, will engage with and press upwardly against the part 21 of the downwardly extending portions 19 and 12 of the annular top 18. To the upper end of each shaft 24 is secured, as by a cross pin 28, the hub portion 29 of a finger piece 30, this finger piece being more or less in the shape of a wing and extending laterally or radially from the upper end of the shaft 24. The lower surface of the hub 29 may serve as an abutting bearing surface upon the top surface of the cover 10.

As is clearly shown in Figures 2 and 3, the finger piece 30 is located vertically above the cam 26, as in the vertical plane of the medial line of the sector shaped cam and including the axis of the shaft, so that the position of the finger piece above the cover 10 will indicate the exact position of the cam within the container and with respect to the top 18. An air vent 31 may be provided in the cover 10.

In use the cover of a container 11, containing a supply of material to be sprayed, is first removed and the spray device lowered to introduce the duct 10 into the container. The cover 10 is seated upon the bead 17 and the finger pieces 30 are digitally or manually turned so as to turn the shafts 24 and the cams into position beneath the lower part of the top 18 whereby the cam will press upwardly against such top and draw down on the cover 10 so as to clamp it into close sealing contact with the edge 17. The device is readily detached from the container by simply turning the finger pieces 30 and the shafts 24 together with cams 26 which are turned away from the lower portion of the top 18 and thus unlock the device from the container. The device with the plate 10 and the duct 9 are then raised from the container.

While I have herein described and upon the drawing shown an illustrative embodiment of the invention, it is to be understood that the invention is not limited thereto, but comprehends other constructions, arrangements of parts, details, features, and the like, without departing from the spirit of the invention.

Having thus disclosed the invention, I claim:

A container closure clamping device for clamping a cover to the open top of a container of the type having an inwardly extending top of annular form within the inner edge of which is provided the opening for the container; comprising, in combination therewith, locking members each of which has a shaft rotatably mounted in the cover and extends downwardly through said opening in said top, a laterally extending cam rigid with the lower end of said shaft and having an inclined top surface portion so as to effect an upward wedging action against the underside of said annular top when said shaft is turned to move the cam under said annular top, and a finger piece rigid with the upper end of said shaft, said annular top having a downwardly extending portion intermediately of the inner and outer edges of said annular top and disposed concentrically to said edges forming an annular groove on the outer face of said top and an annular rib on the inner face, said cover having a downturned flange and a gasket on its inner face adjacent the flange, the cover when in closed position having its flange and gasket in registry respectively with said groove and inner edge of the top and the cams in clamping contact with the annular rib.

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