United States Patent

[11] 3,576,045

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[21] Appl. No. **870,584**
[22] Filed **Oct. 8, 1969**
Division of Ser. No. 677,006, Oct. 2, 1967, Pat. No. 3,536,187, which is a continuation-in-part of Ser. No. 593,083, abandoned.
[45] Patented **Apr. 27, 1971**

[54] **ROLLER LOADING PAINT CONTAINER AND HOLDING MEANS FOR SAID CONTAINER**
8 Claims, 12 Drawing Figs.

[52] **U.S. Cl.** **15/257.06**
[51] **Int. Cl.** **B44d 3/14**
[50] **Field of Search** 15/257.05, 257.06; 206/15.1; 248/210; 220/18

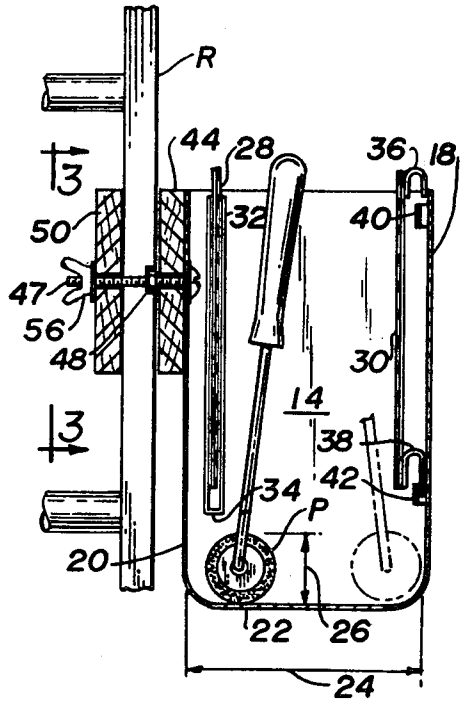
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ABSTRACT: A container for paint that is to be applied by means of a roller which container has sufficient depth to permit total immersion of the roller in the paint. A paint container of sufficient depth to avoid spillage. A clamping device for effecting ready mounting of the container on a ladder. An auxiliary container for a paint brush and a clamp to attach the auxiliary container either to the main paint container or to a paint can.



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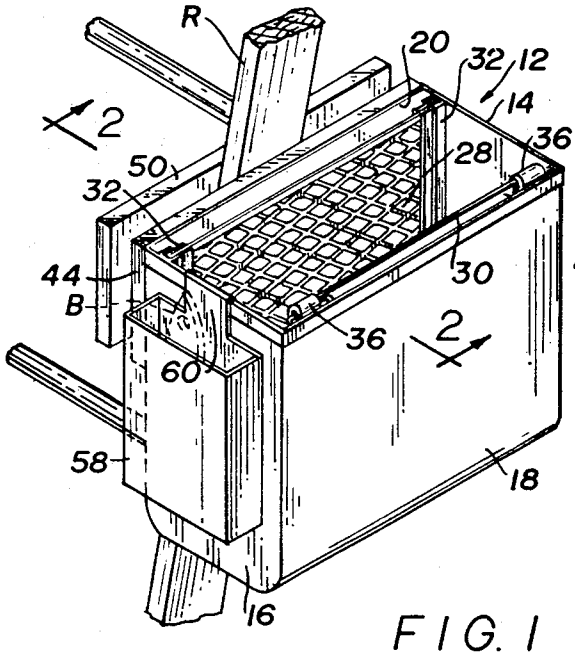


FIG. 1

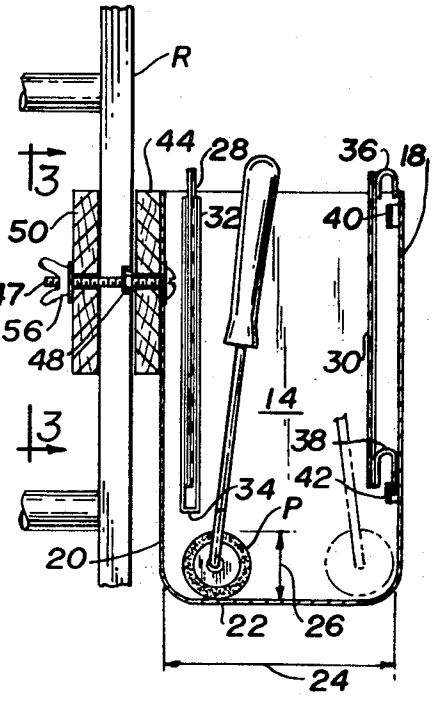


FIG. 2

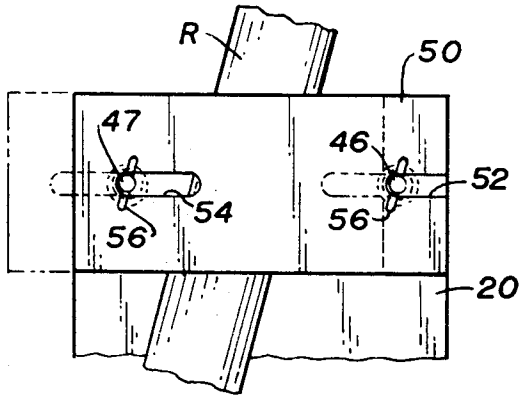


FIG. 3

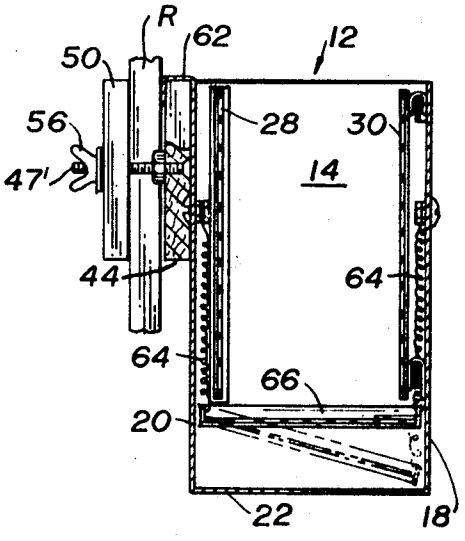


FIG. 4

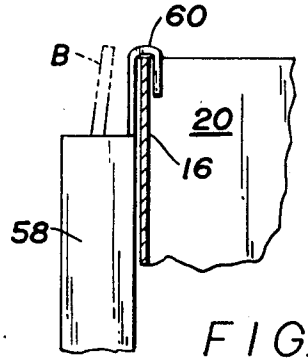


FIG. 5

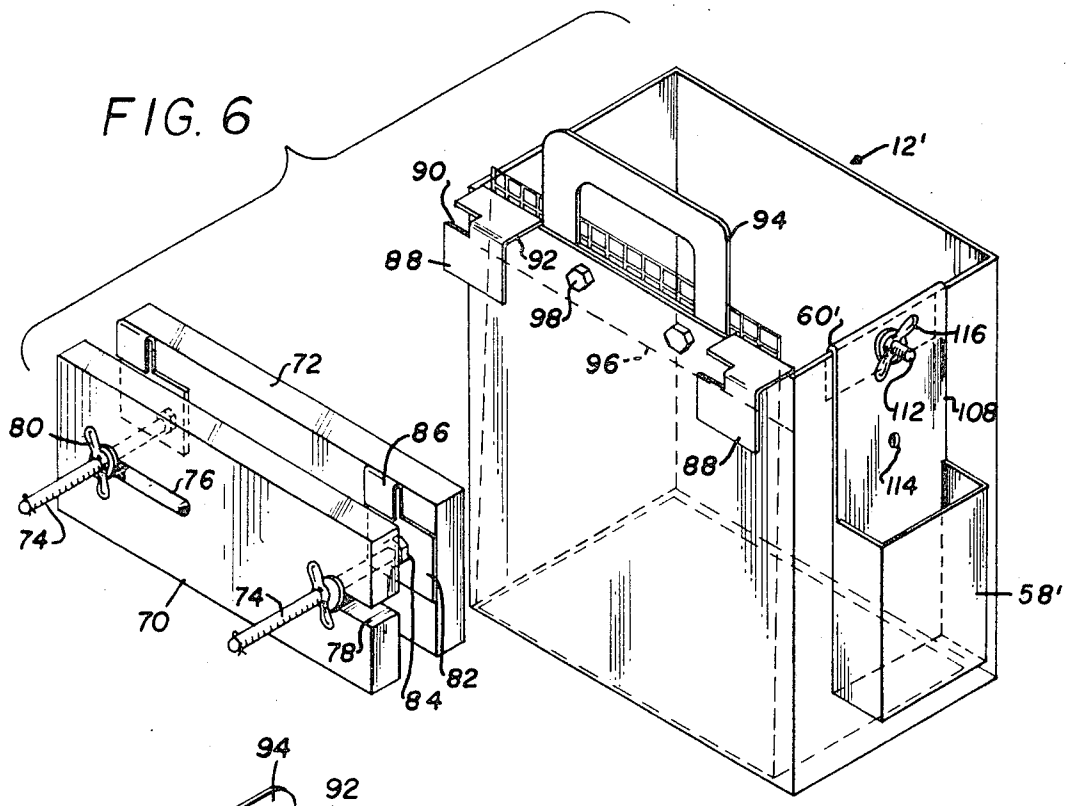
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FIG. 6



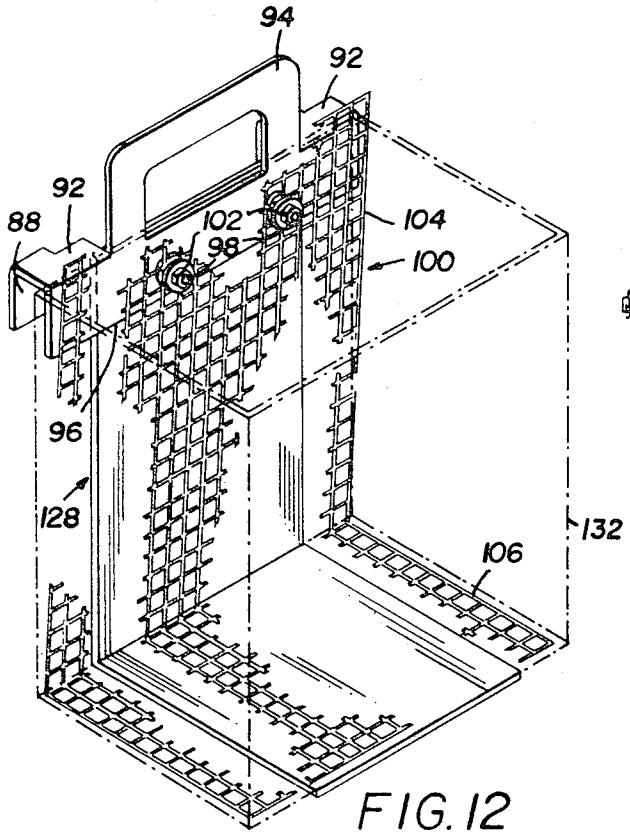


FIG. 12

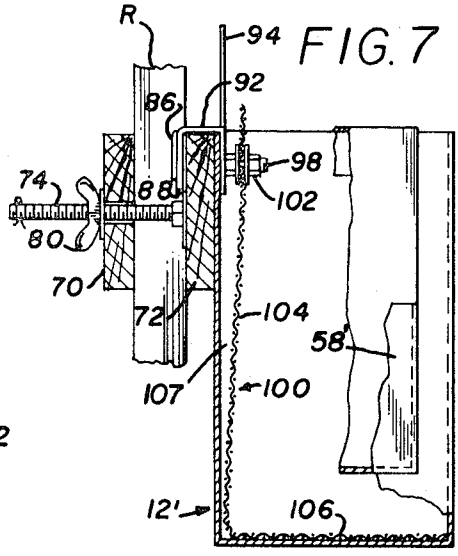


FIG. 7

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FIG. 9

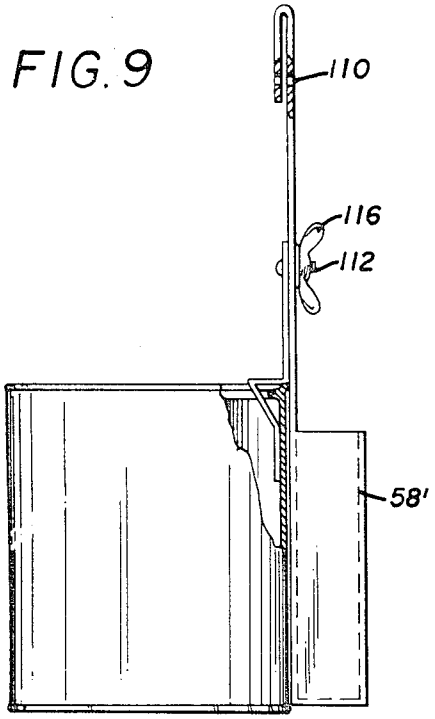


FIG. 8

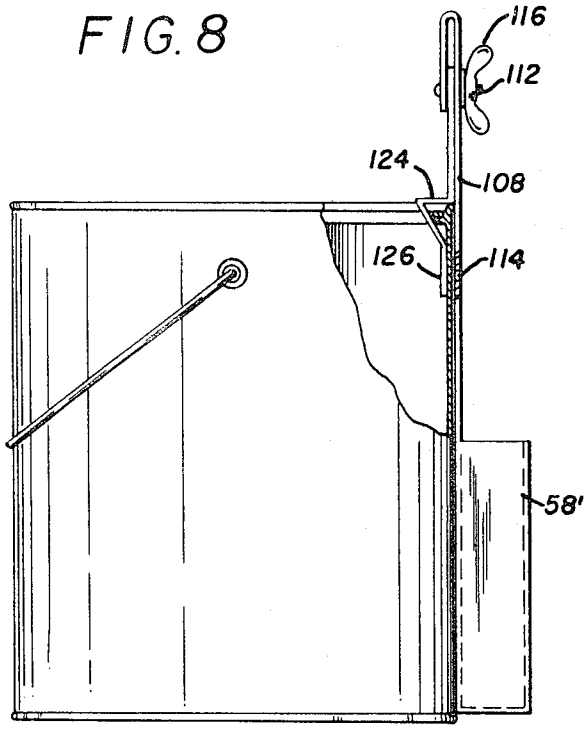


FIG. 10

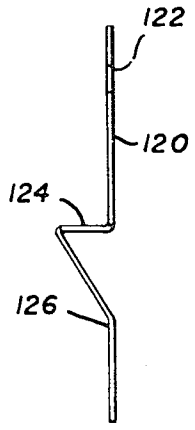
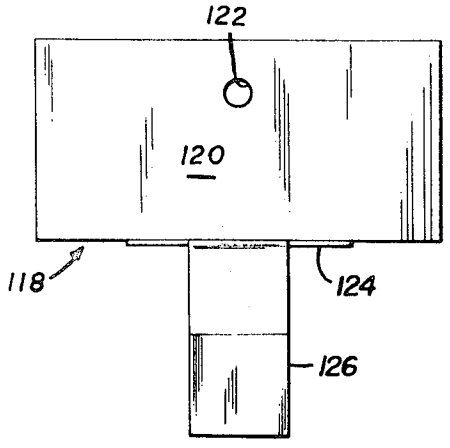


FIG. 11



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ROLLER LOADING PAINT CONTAINER AND HOLDING MEANS FOR SAID CONTAINER

This is a division of my copending application for U.S. Pat. Ser. No. 676,006, filed Oct. 2, 1967, now U.S. Pat. No. 3,536,187, issued Oct. 27, 1970, which is a continuation-in-part of an application filed by me on Nov. 9, 1966, entitled Roller Paint Container and bearing Ser. No. 593,083, and now abandoned.

This invention relates to a container for holding paint in such a way that the paint can readily be applied with a roller.

The embodiment of the present invention that is described in more detail hereinafter includes a generally rectangular-shaped container having substantial depth as compared with its width and length dimensions. The depth of the container is sufficiently great to avoid wasting paint by spillage and by premature drying from air currents. The width of the container is only slightly in excess of the width of a conventional paint roller, and the length of the container is approximately equal to the circumference of the paint roller to enable the roller to be fully loaded with paint. Vertically supported within the container is one or more perforate plates over which the paint roller can be rolled to remove excess paint from the roller. In addition, the invention includes a clamp structure which adapts the container for efficient use at a worksite on a ladder.

The principal object of the present invention is to provide a roller paint container for efficient use from an elevated worksite, i.e., a ladder. Achievement of this object is made possible by providing a container of sufficient depth that spilling of paint is avoided when the ladder is moved.

Another object is to provide a container adapted to hold sufficient paint that the roller can be totally immersed in the paint. By attaining this object, the present invention materially expedites roller painting, since the time needed for loading the roller with paint is reduced significantly. For removing excess paint from the roller after it has been immersed in the paint, the present invention includes one or more perforate plates over which the roller can be moved as it is withdrawn from the container.

A still further object of the present invention is to provide a container that can be securely and expeditiously affixed to a ladder at an elevated position. The present invention thus eliminates any possibility of spilling the paint and also permits ready attachment and detachment of the container from the ladder.

Yet a further object is to provide an auxiliary container for supporting a brush adjacent the paint container so that the brush will be available for trim and like precise work. Attainment of this object is made possible by providing an improved clamp that will fix the auxiliary container to the roller paint container or to a conventional paint can.

Other objects, features, and advantages will be more apparent after referring to the following specification and accompanying drawings in which:

FIG. 1 is a perspective view of a paint container of the present invention secured to a ladder;

FIG. 2 is a cross-sectional view taken along line 2–2 of FIG. 1;

FIG. 3 is a rear view of the ladder-clamping mechanism of the invention taken along line 3–3 of FIG. 2;

FIG. 4 is a cross-sectional view similar to FIG. 2 and showing certain modifications of the invention;

FIG. 5 is a fragmentary view showing in greater detail a portion of FIG. 1;

FIG. 6 is an exploded view showing a modified form of ladder clamp for the paint container of this invention;

FIG. 7 is a side view of the device of FIG. 6 in place on a ladder, parts thereof having been broken away to reveal internal details;

FIG. 8 is an elevation view of a gallon can with an auxiliary container mounted thereon in accordance with the present invention;

FIG. 9 is a view similar to FIG. 8 showing the auxiliary container mounted on a quart can;

FIG. 10 is a side view of the mounting clamp for the auxiliary container;

FIG. 11 is a front view of the clamp of FIG. 10; and

FIG. 12 is a perspective view of a modification of the invention.

Referring more particularly to the drawing, reference numeral 12 indicates a paint container of the present invention secured to an upright rail R of a conventional ladder. Container 12 includes generally rectangular sidewalls 14 and 16, rectangular end walls 18 and 20, and bottom wall 22. As seen most clearly in FIG. 2, sidewalls 14 and 16 have a horizontal extent, indicated at 24, at least as great as the circumference of paint roller or at least as great as 3.14 times the diameter 26 of the roller. FIG. 2 also shows that bottom wall 22 meets sidewalls 14 and 16 along arcuate regions that have radii of curvature substantially equivalent to the curvature of roller P.

Supported in parallel spaced relation with respect to end walls 18 and 20, and above bottom wall 22, are perforate plates 28 and 30 which define surfaces over which the paint roller P can be rolled to remove excess paint therefrom. Plates 28 and 30 are shown in the drawings, by way of example, as being formed of expanded metal, a material that possesses the requisite characteristics of rigidity and perviousness to paint applied thereto. The perforate plates terminate at their lower edges at a level spaced above bottom plate 22 that exceeds the diameter 26 of the paint roller P so that the paint roller can be rolled the full length of bottom plate 22 without interference from the perforate plates. The plates are supported in the container so that they can be removed during cleaning operations.

Alternate forms of structure for removably supporting the perforate plates are shown in the drawing. For supporting perforate plate 28, U-shaped channel members 32 are secured to the interior surfaces of sidewalls 14 and 16. U-shaped members 32 define confronting slots for slidably receiving perforate plate 28 therein. An abutment 34 is provided at the lower extremity of each U-shaped channel member 32 so as to support perforate plate 28 above bottom wall 22 by the required distance. Abutment 34 is shown most clearly in FIG. 2, in which FIG. perforate plate 28 is shown for clarity in a position somewhat above normal position.

Another satisfactory structure for supporting the perforate plates in operative position is shown at the right-hand side of FIG. 2. Such structure includes a pair of upper hooks 36 secured to perforate plate 30 and a pair of lower hooks 38 similarly secured to the perforate plate. Projecting from the inner surface of end wall 18 is an upper bracket bar 40 for engagement by hooks 36 and a lower bracket bar 42 for engagement by hooks 38. It will be noted that hook 38 has a downward extent somewhat in excess of the downward extent of hook 36; such construction expedites insertion of perforate plate 30 since hook 38 can first be engaged into bracket bar 42 and moved downwardly a certain amount before hook 36 is engaged with bracket bar 40.

Irrespective of the expedient employed for mounting perforate plates 28 and 30, the respective plates are supported in parallel spaced-apart relation with respect to respective end walls 18 and 20. Because the perforate plates are spaced from the end walls, sufficient space between the rear face of the plate and the wall is provided to permit paint that is squeezed through the perforations in the plates to travel by gravity back to the reservoir of paint in the bottom of the container. It will also be noted that, since the perforate plates are removably supported in the container, the perforate plates and the container can be cleaned with great facility.

It is particularly important when working from an elevated worksite on a ladder that the container be firmly secured to the ladder to avoid spillage of the paint. For so securing the container, the present invention provides a first mounting plate 44 to which the container 12 is secured. In the embodiment of FIG. 2, such securement is afforded by bolts 46 and 47 extending through plate 44 and wall 20, nuts 48 being provided on the bolts to secure the plate to the container wall. A second mounting plate 50 is provided and has a shape generally similar to that of plate 44, as seen in the exemplary structure shown in the drawings. Second plate 50 has an elongate notch 52 that communicates with the edge of the plate

and is adapted for cooperation with bolt 46 and an elongate slot 54 adapted for cooperation with bolt 47. Wingnuts 56 are provided for threaded engagement with bolts 46 and 47. As can be seen most clearly from FIG. 3, the extent of elongate slot 54 exceeds the depth of notch 52 so that when both wingnuts 56 are loosened the plate 50 can be moved, leftwardly as viewed in the FIG. and as shown in broken lines, to disengage groove 52 from bolt 46. When the groove is so disengaged, plate 50 can be rotated in order to remove or attach the clamping mechanism to rail R of the ladder. This form of construction is efficient in that neither wingnuts 56 nor plate 50 need be totally removed from the structure in order to engage the device onto a ladder. The possibility of losing these small parts is thus eliminated.

It is frequently desirable in roller painting to have a brush readily available for painting small corners and trim pieces and the like which are inaccessible by a roller. For this purpose, the invention includes an auxiliary container 58 which is of generally rectangular form and includes a mounting hook 60. Hook 60 is seen most clearly from FIG. 5. The hook is formed to hook over the top edge of side panel 16 and is of sufficient vertical length that the top of a brush in auxiliary container 58 will not project above the top edge of container 12 by a significant amount. It will be seen that auxiliary container 58 is readily removable from container 12 so that the container can be used independently of the auxiliary container and so that the auxiliary container can be removed to facilitate cleaning of both the containers.

Referring to FIG. 4, a modification of the ladder-clamping structure is shown to include hooks 62 extending from the top edge of end panel 20 of the container. The hooks are formed to engage mounting plate 44. As can be seen in FIG. 4, a bolt 47' passes only through plate 44 and not through sidewall 20. In all other respects, the clamping structure formed by plates 44 and 50 is identical to that previously described. The container is secured to the clamping structure by engagement of hook 62 over plate 44, and the plate is secured to the ladder as described hereinabove. Thus, the container 12 can be removed from the ladder quickly in order to refill the container with paint without removing the clamping structure from the ladder. It is to be understood that hooks 62 are exemplary of any means for removably attaching container 12 to the clamping structure formed by plates 44 and 50.

Also shown in FIG. 4 is another modification of the present invention. Four tension springs 64 are supported adjacent the corners of container 12 and have secured to their bottom ends a perforate plate 66 which is approximately congruent to the interior shape of container 12. Plate 66 is shown in its normal position in heavy lines in the FIG. and is retained in such position by force of springs 64 biasing the plate into engagement with the lower edges of plates 28 and 30 and above the level of paint in the container. When one wants to load a roller with paint, he need only push the roller against perforate plate 66 to depress the plate and the roller into the paint. One may then remove the excess paint from the roller by rolling the roller over perforate plate 66 and/or over vertically extending perforate plates 28 or 30. Of course, perforate plate 66 is removable to expedite cleaning the container after use.

A modified form of ladder clamping structure according to the present invention is shown in FIG. 6. An inner mounting plate 70 and an outer mounting plate 72 are provided; these mounting plates are virtually identical to mounting plates 50 and 44, respectively, of FIGS. 1—3. That is to say, bolts 74 are rigidly affixed to mounting plate 72 and transpierce a slot 76 and a notch 78 in mounting plate 70. Bolts 74 are provided with wingnuts 80 so that plates 70 and 72 can be securely clamped to a ladder rail R.

On the inner face of plate 72 are clips 82 that form one element of a connector for connecting a paint container to plate 72. Clip 82 has an aperture centrally thereof for receiving bolt 74 therethrough, a nut 84 being threaded on bolt 74 for retaining clip 82 firmly and rigidly against the inner face of plate 72. Each clip 82 has a hook 86 for cooperating with a complementary member on the paint container.

The paint container 12' includes a pair of projecting connector hooks 88 that are adapted to hook on to plate 72 and engage hooks 86. Each hook 88 is formed with a slot 90 that has a horizontal extent approximately equal to the horizontal extent of hook 86 on clip 82 so that the portion of plate 88 adjacent the slot can fit beneath hook 86 and be engaged thereby. Hook 88 has a horizontal portion 92 that has a length approximately equal to the thickness of mounting plate 72. Horizontal portion 92 is formed integrally with a handle structure 94 which structure includes a base flange 96 that is attached to container 12 by suitable fastening means such as bolts 98. Although handle structure 94 has relatively complicated cutouts and bends, it is relatively easy to fabricate because it is separable from container 12'; after fabrication the two are joined together by fasteners 98.

After plates 70 and 72 are firmly attached to ladder rail R as described previously in connection with FIG. 1, hooks 88 are engaged over the edge of plate 72 in position rightwardly of hooks 86, as viewed in FIG. 6. The container 12' is then moved leftwardly with respect to plate 72 so that connector member 88 slides beneath hook 86 or so that hook 86 enters slot 90. In this position the container is firmly engaged onto the ladder and will not be dislodged therefrom even during movement of the ladder. Because handle 94 extends upwardly from and is rigid with container 12', the container can be engaged with and disengaged from the clamping structure with one hand.

As can be seen most clearly in FIG. 7, a reticular plate 100 is secured within container 12' by a nut 102 associated with fastener 98. Plate 100 can be formed of any suitable reticulate material, including expanded metal or wire mesh. Although ⅝-inch wire mesh is an excellent general purpose material for controlling the quantity of paint applied to the roller, I have discovered that the quantity of paint loaded onto a roller varies in proportion to the size of the openings in the reticular plate over which the roller is rolled. This characteristic can be exploited in the present invention to provide a versatile device. Reticular plate 100 includes a vertical leg 104 and a horizontal leg 106. Vertical leg 104 is arranged to slant downwardly so that the space 107 between the wall of container 12' and the vertical leg is comparatively large at the top of the container and small near the bottom of the container. A suitable expedient for so arranging vertical leg 104 is constituted by a horizontal leg 106 that has a length approximately equal to the length of the container.

Reticular plate 100 is useful for regulating the amount of paint on the roller, and the tapered shape of space 107 enhances efficient regulation. The relatively large distance between leg 104 and the sidewall of container 12' near the top of the container gives better accommodation to long napped rollers and the space allows the nap to push through the interstices of the reticular plate to eliminate excess paint and enhance paintability of the roller. Short nap rollers do not require much space, and the quantity of paint on such rollers is regulated better by the portion of vertical leg 104 near the bottom of the container 12'.

An alternate form for mounting an auxiliary paint brush container 58' onto container 12' and onto paint cans of conventional size is shown in FIGS. 8—11. Extending upwardly from auxiliary container 58' is a mounting plate 108 that has at the upper extremity thereof a hook portion 60'. Plate 108 has two vertically spaced holes: an upper hole 110 through which a bolt 112 extends as seen in FIG. 6 and a lower hole 114. The sidewall of paint container 12' has a hole that corresponds to upper hole 110 so that the auxiliary container 58' can be securely attached to container 12' by registering the hole in the large container with hole 110 and by passing bolt 112 through the registered holes. A wingnut 116 completes the attachment.

A clamping member 118 is provided for mounting the auxiliary container 58' onto a paint can or bucket. The clamping member has a vertically upwardly extending plate 120 centrally of which is a hole 122 for registering with one or the other of holes 110 or 114 in plate 108 of auxiliary container

58'. The clamp member also has a horizontal portion 124 which is adapted to rest on the upper rim or lip of a paint can so as to position the auxiliary container accurately. The clamp member has a depending leg 126 which, as shown most clearly in FIG. 8, bears against the inner surface of the paint can sidewall. For use with a gallon paint can, hole 122 is registered with hole 110 in plate 108 and screw 112 is passed therethrough. In this position, because hole 110 is relatively high, the bottom of auxiliary container 58' is at approximately the same level as the bottom of the paint can. A standard gallon container has a height of about 7½ inches, and the distance from horizontal portion 124 to the bottom of container 58' corresponds to such height. Thus, a stable assembly with a low center of gravity is formed. When it is desired to use auxiliary container 58' with a quart paint can, hole 122 is registered with hole 114, and when screw 112 is passed therethrough and wingnut 116 is threaded on the screw, an assembly as shown in FIG. 9 is formed. Because a standard quart container has a height of about 4⅞ inches, the distance between horizontal portion 124 and the bottom of container 58' when hole 122 is in registry with hole 114 corresponds to such height. It will be noted that the lower surface of the container is at approximately the same level as the bottom of the quart can so that a stable assembly is formed.

In FIG. 12 is a modification of my invention that has extreme commercial importance, particularly with respect to the amateur home painter or do-it-yourselfer. This structure includes a generally L-shaped rigid support 128 that is formed with a pair of holes at the top thereof for receipt of bolts 98 therethrough. A corresponding pair of holes is formed in a container 132 that is constructed of inexpensive disposable material, such as paraffin-coated or plastic-coated paperboard. The above-mentioned pairs of holes register with the holes in flange 96 of handle structure 94 so that bolts 98 can be passed through all three members to join them together. Accordingly, the container is firmly retained on the L-shaped member and is reinforced by the member. When use of container 132 has been completed, the container can be thrown away since replacement therefor will be of relatively slight expense. Consequently, time consuming and unpleasant cleaning is avoided by the embodiment of FIG. 12.

Thus, it will be seen that the present invention provides a roller paint container that is readily attached to a ladder and is securely attached to such ladder to avoid paint spillage or danger to the user of the device. Moreover, the container is adapted to facilitate greatly the loading of a roller and the removal of excess paint from the roller after it is loaded. These objects are all accomplished in a relatively simple structure which is readily disassembled when such becomes necessary for cleaning.

Although several embodiments of the invention have been shown and described, it will be obvious that other adaptations and modifications can be made without departing from the true spirit and scope of the invention.

I claim:

1. Apparatus for loading an elongate cylindric paint roller comprising: a container having a pair of sidewalls of generally rectangular shape and having a horizontal extent greater than the length of the roller, a pair of end walls of generally rectangular shape spanning the lateral edges of said sidewalls to support said sidewalls in parallel confronting relation, said end walls having a horizontal extent at least equal to the circumference of the paint roller, and a bottom wall spanning the lower edges of the sidewalls and end walls in fluidtight relation, said bottom wall meeting said sidewalls along arcuate regions that have radii of curvature substantially equivalent to that of the paint roller; a perforate rectangular plate having a width substantially equal to the horizontal extent of said sidewalls and a height substantially equal to the amount by which the depth of said container exceeds the diameter of the roller; and means for removably supporting said perforate plate in parallel spaced apart relation to one of said sidewalls with the lower extremity of said perforate plate spaced above said bottom wall by an amount at least as large as the diameter of the roller, so that the roller can be rolled on said perforate plate to remove excess paint therefrom, said perforate plate being disposed sufficiently close to said sidewall that the roller can be rolled along the entirety of the bottom wall and said arcuate region.

2. The invention of claim 1 in combination with a generally rectangular receptacle for retaining a paintbrush therein and a hook extending upwardly from said receptacle by an amount in excess of the uppermost extremity of a brush in said container, said hook being adapted for removable engagement with the upper edge of one of the walls of said container.

3. The invention of claim 1 in combination with means for removably securing said container to the side rail of a ladder which means comprises a pair of threaded bolts rigid with and extending outwardly from one of said sidewalls, said bolts being spaced from one another by an amount in excess of the depth of the ladder rail so that the rail can be disposed intermediate said bolts, a mounting plate having first and second apertures therethrough to receive said bolts through said plate, and a nut for threaded engagement with each said bolt to compressively clamp the rail intermediate said sidewall and said mounting plate.

4. The invention of claim 3 wherein said first aperture is formed by an elongate notch extending to the edge of said mounting plate and wherein said second aperture is formed by an elongate slot medially of said mounting plate, said slot being generally parallel to said notch and having a length at least as great as the depth of said notch so that said mounting plate can be disengaged from the bolt with which the notch is associated without removal of said nuts from said bolts, thereby permitting removal of said container securing means from said ladder without total disengagement of said nuts from said bolts.

5. Apparatus for mounting a container that has at least one generally vertical planar wall to a ladder rail comprising a pair of threaded bolts rigid with and extending outwardly from said planar wall, said bolts being spaced from one another by an amount in excess of the depth of the ladder rail so that the rail can be disposed intermediate said bolts at a suitable angle, a planar mounting plate having first and second apertures therethrough to receive said bolts through said plate, and a nut for threaded engagement with each said bolt to compressively clamp the rail intermediate said planar wall and said mounting plate.

6. In combination with an open topped disposable liquid container of generally right parallelepiped form, apparatus for mounting the container on a ladder rail comprising an L-shaped bracket having a horizontal leg for supporting the container and a vertical leg extending upwardly from said horizontal leg, means carried on said vertical leg for removably engaging the upper portion of said container to retain the container on said bracket, and means for removably securing said bracket to a side rail of a ladder.

7. The invention of claim 6 wherein said bracket securing means comprises a pair of threaded bolts rigid with and extending outwardly from said vertical leg, said bolts being spaced from one another by an amount in excess of the depth of the ladder rail so that the rail can be disposed intermediate said bolts, a mounting plate having first and second apertures therethrough to receive said bolts through said plate, and a nut for threaded engagement with each said bolt to compressively clamp the ladder rail intermediate said vertical leg and said mounting plate.

8. Apparatus for loading an elongate cylindric paint roller while working from a ladder of the type that has a side rail, said apparatus comprising: a container having a pair of sidewalls of generally rectangular shape and having a horizontal extent greater than the length of the roller, a pair of end walls of generally rectangular shape spanning the lateral edges of said sidewalls to support said sidewalls in parallel confronting relation, said end walls having a horizontal extent at least equal to the circumference of the paint roller, and a bottom

wall spanning the lower edges of the sidewalls and end walls in fluidtight relation, means removably mounted in said container for defining a reticular surface over which the roller can be rolled to regulate the amount of paint thereon; a pair of threaded bolts rigid extending outwardly from one of said sidewalls, said bolts being spaced from one another by an amount in excess of the depth of the ladder rail so that the rail can be disposed intermediate said bolts; a mounting plate having first and second apertures therethrough to receive said bolts through said plate; a nut for threaded engagement with each said bolt to compressively clamp the rail intermediate said sidewall and said mounting plate; and a flat, rigid sheet having adjacent the upper extremity thereof means for defining a handle and having below said handle-defining means a pair of holes that are spaced from one another so as to admit therethrough said threaded bolts, said holes being spaced below said handle-defining means sufficiently that said handle defining means extends above said container when said bolts are engaged in said holes.