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3,135,006

FOUNTAIN PAINT ROLLER ASSEMBLY

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2 Sheets-Sheet 1

FIG. 1.

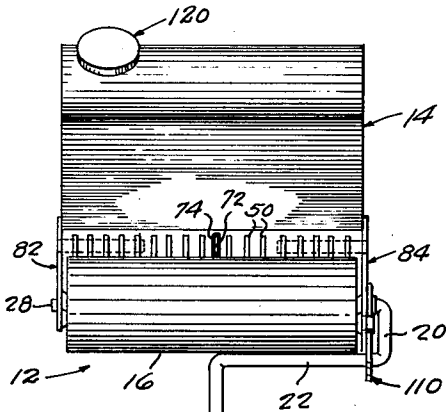


FIG. 2.

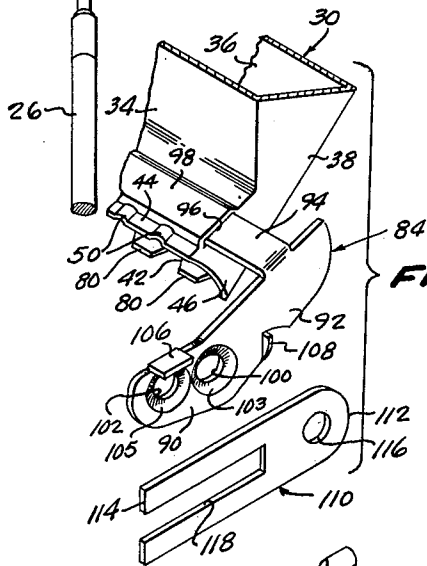
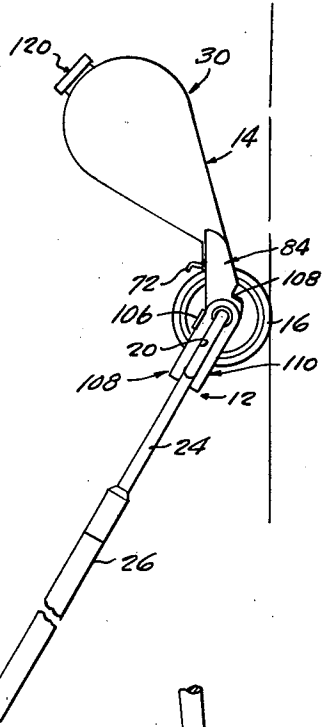


FIG. 9.

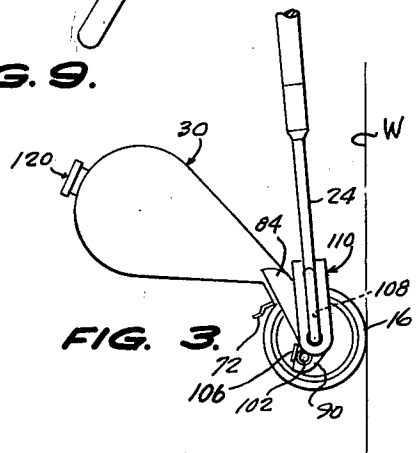


FIG. 3.

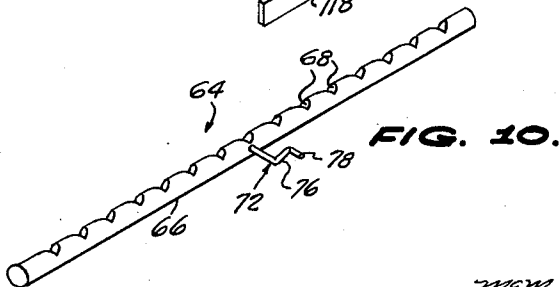


FIG. 10.

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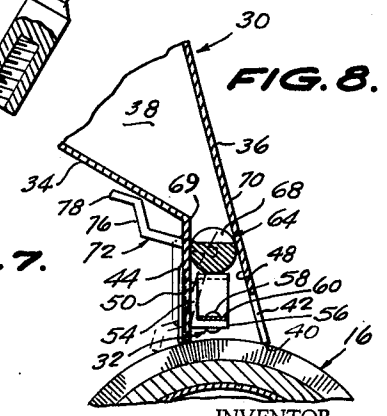
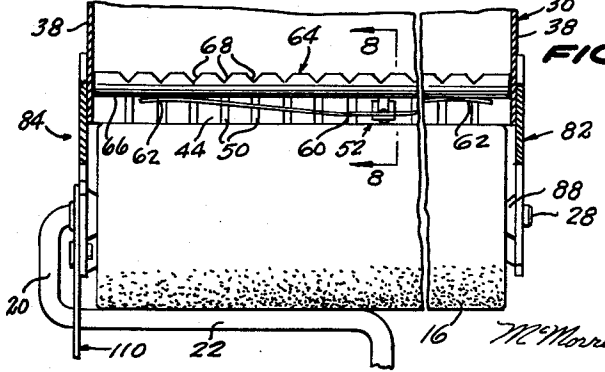
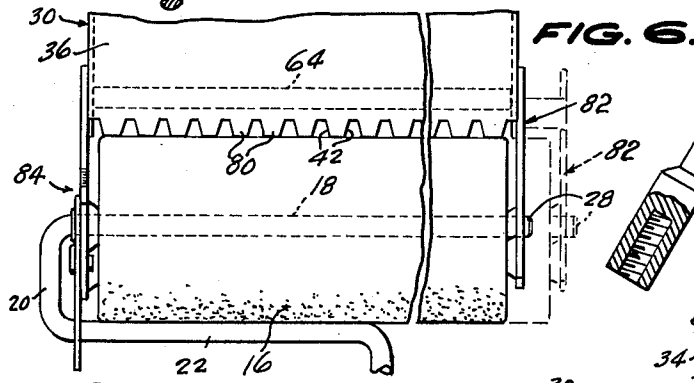
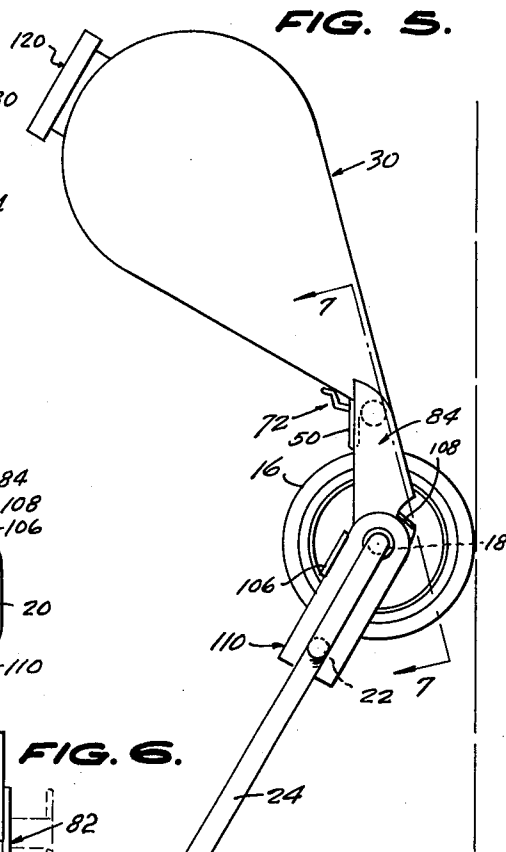
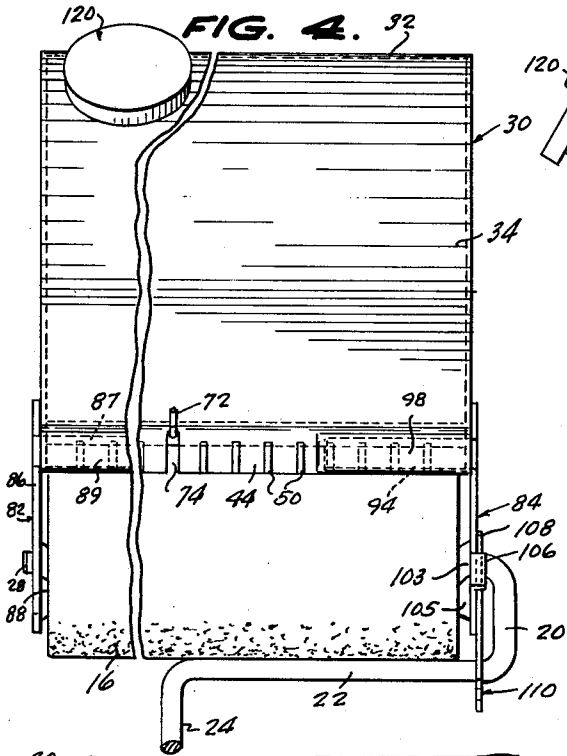
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FOUNTAIN PAINT ROLLER ASSEMBLY

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2 Sheets-Sheet 2



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FOUNTAIN PAINT ROLLER ASSEMBLY

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11 Claims. (Cl. 15-575)

This invention relates to a novel fountain paint roller assembly.

The primary object of the invention is the provision of a generally superior, more efficient, and time- and labor-saving assembly of the kind indicated, which eliminates dripping and spilling of paint, uneven loading of the roller element with paint, and the frequent transfer of the roller between the work and a paint receptacle as required with conventional paint rollers.

Another object of the invention is the provision of an assembly of the character indicated above which has novel manually operated valve means, which is adapted to be moved from a spring-pressed fully closed, to partially open, and fully open positions, in conjunction with passages, whereby even flow of paint from a reservoir to and along the roller is provided for.

A further object of the invention is the provision of a compact, easily handled assembly of the character indicated above, wherein the paint roller component is a conventional paint roller and the reservoir, including the valve means, is a separate accessory, adapted to be quickly and easily applied to the paint roller, the reservoir being adapted to be merchandized as a separate unit, and being adjustable to fit paint rollers of different lengths.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, a specific form of the invention is set forth in detail.

In the drawings:

FIGURE 1 is a front elevation of an assembly of the present invention;

FIGURE 2 is a contracted right-hand elevation of FIGURE 1, showing the reservoir positioned for overhead painting;

FIGURE 3 is a view like FIGURE 2, showing the reservoir positioned for painting a vertical surface at a level below the level of the hands of a standing operator of the assembly;

FIGURE 4 is an enlarged horizontally contracted front elevation of the assembly, showing structural details;

FIGURE 5 is a right-hand end elevation of FIGURE 4;

FIGURE 6 is a horizontally contracted rear elevation of the assembly;

FIGURE 7 is a vertical longitudinal section taken on the line 7-7 of FIGURE 5;

FIGURE 8 is a fragmentary vertical transverse section taken on the line 8-8 of FIGURE 7;

FIGURE 9 is an exploded perspective view of the reservoir mounting and stop means, associated with the valve chamber and a fragmentary portion of the reservoir; and

FIGURE 10 is a perspective view of the rotary valve core.

Referring in detail to the drawings, wherein like numerals designate like parts throughout the several views, the illustrated assembly is composed of a substantially conventional manual paint roller unit 12, and a novel paint reservoir unit 14.

The paint roller unit 12 comprises a frame having a normally horizontal shaft 18 on which an absorbent roller 16 is journaled, and which terminates, at preferably its right-hand end, in a right-angled downwardly

extending portion 20 which merges, at its lower end, in a horizontal arm 22, shorter than the shaft 18, to whose free end is fixed a perpendicular handle bar 24, having a handle 26 on its lower end. The shaft 18 is somewhat longer than the roller 16, so that the left-hand end 28 of the shaft extends beyond the adjacent end of the roller, and the right-hand end of the roller is spaced from the portion 20.

The paint reservoir unit 14 comprises a reservoir 30 of teardrop vertical transverse cross section, which has an arcuate top wall 32 and straight flat front and rear walls 34 and 36, respectively which converge downwardly toward each other, and flat parallel end walls 38. As shown in FIGURE 8, the rear wall 36 is straight throughout its length and width, and has a lower edge 40, adapted to bear upon the peripheral surface of a paint roller 16, at a retreating angle, and has downwardly flaring, evenly spaced notches 42 opening thereto.

A lower portion 44 of the front wall 34 is angled forwardly relative to the remainder of the front wall, so as to be approximately normal to the surface of the roller 16. The lower portion 44 together with the lower notched part of the rear wall 36, the end walls 38, and downwardly curved ends 46 on the portion 44, define a valve chamber 48. The lower portion 44 is indented at equally spaced intervals therealong, with vertical channels 50, which face into the chamber 48 and open, at their lower ends, only to the surface of the roller 16.

An L-shaped spring mounting bracket 52 has a vertical arm 54 suitably fixed to the forward side of the front wall lower portion 44, at the midlength point of this portion, and has a forwardly extending arm 56, upon which is fixed, as indicated at 58, the center of a downwardly bowed leaf spring 60. The spring 60 is somewhat shorter than and extends lengthwise in the valve chamber 48, and has outwardly and downwardly curved ends 62, which bear upwardly against the bottom of a rotary valve core 64.

As shown in FIGURES 8 and 10, the valve core 64 comprises an elongated cylindrical rod 66 having paint passages evenly spaced along one side thereof, preferably in the form of notches 68, which are spaced at the same distance apart as and are adapted to be registered with the channels 50 in the front wall portion 44, and the notches 42 in the lower end of the rear wall 36 of the reservoir 30, when the valve core is in place in the chamber 48. As shown in FIGURE 8, the valve core is of a diameter to fit rotatably in and close a restricted throat 69 defined between the upper end 70 of the front wall portion 44 and the rear reservoir wall 36, on a level above the channels 50 and the notches 42. The core 64 is normally in its closed position, wherein its notches 68 are uppermost, as shown in FIGURE 8, and has a fixed rearwardly extending handle 72, which extends rearwardly through and works vertically in a vertical slot 74, provided in the lower portion 44 of the front reservoir wall 34. The handle 72 terminates in a rearwardly and upwardly angled portion 76, having a terminal 78 which is adapted to bear upwardly against the front surface of the front reservoir wall 34, above its lower portion 44, so as to maintain the core 64 in its closed position. The leaf spring 60 holds the core 64 in occluding relation to the throat 69, in all rotated positions of the core.

In operation, when it is desired to have paint feed gravitationally from the reservoir 30 to the paint roller 16, the valve core handle 72 is depressed so as to register the notches 68 of the core with the channels 50 of the front wall portion 44, either fully for full flow of paint to the channels, or only partially for a diminished flow of paint thereto, and hence to the surface of the roller 16. The notches 42 in the lower edge of the

rear reservoir wall 36, and the teeth 80 defined between the notches 42, serve to evenly distribute over the surface of the roller, the paint flowed thereto in the chamber 48.

The above described reservoir unit 14 is mounted to the paint roller unit 12, by means of an adjustable left-hand bracket 82 and an adjustable right-hand bracket 84. The left-hand bracket 82 comprises a flat arm 86, having a lateral arm 87 which slides through the open outer end of an outset channel 89 formed in the lower portion 44 of the front reservoir wall 34. The arm 86 is traversed, adjacent to its lower end, by the left-hand end 28 of the roller shaft 18, with a spacer 88, on the arm, circumsposed on the shaft between the bracket arm 86 and the adjacent end of the roller 16.

The adjustable right-hand bracket 84, as shown in detail in FIGURE 9, comprises a flat arm which is composed of a lower portion 90, adapted to extend lengthwise of the portion 20 on the roller shaft 18 and an upwardly and forwardly angled upper portion 92. The upper portion 92 has on its upper edge a flat longitudinally inwardly extending arm 94, which slides supportably through a slot 96, provided in the adjacent end of a forwardly outset channel 98 formed in the lower portion 44 of the front reservoir wall 34, and slidably and supportably engages in the channel, whereby the bracket 84 is adjustable toward and away from the right-hand end of the reservoir, for accommodating roller units of different lengths. The adjustability of the brackets 82 and 84 enables extending or retracting the brackets, relative to the reservoir 30, to accommodate paint rollers of different lengths, while maintaining the reservoir centered relative to the rollers.

The lower portion 90 of the bracket 84 is provided with longitudinally spaced upper and lower holes 100 and 102, respectively, which are surrounded by conical spacers 103 and 105, respectively, which project laterally inwardly from the bracket, and engage the right-hand end of a paint roller 16, for spacing the same from the bracket 84. The upper hole 100 is adapted to receive the shaft 18 of the roller frame, where a small diameter roller is used, the hole 102 being provided to receive the shaft 18 of a larger diameter roller when such is used.

The lower bracket portion 90 has, on its upper edge a laterally outwardly extending stop lug 106, which is provided for stop engagement with the upper edge of a retaining plate 110, for retaining the reservoir 30, in an upstanding rearwardly over-balanced position, relative to the roller unit 12, as for overhead painting, as shown in FIGURES 2 and 5. The lower edge of the upper bracket portion 92 is mutilated to provide a laterally outwardly extending stop lug 108, disposed at right angles to the stop lug 106 for retaining the reservoir unit 14 in a rearwardly overbalanced position, as in FIGURE 3 with the handle 26 of the roller unit extending upwardly from the reservoir unit 14, as shown in FIGURE 3, as when painting a part of a wall W, on a level below the hands of a standing operator of the assembly. The lug 108 is engaged in the slot of the retaining plate, as shown in FIGURE 3.

The retaining plate 110 is flat and elongated, has a rounded upper end 112 and a squared lower end 114, a hole 116 adjacent to its upper end, and a longitudinal slot 118 opening to its lower end. The retaining plate 110 is positioned at the laterally outward side of the bracket 84, with the roller shaft 18 extending through the hole 116, and with the slot 118 engaged over the arm 22 of the roller handle bar 24, whereby the retaining plate extends along the portion 20, in the plane of the handle bar 24 and is secured in non-rotatable relationship thereto.

A filler plug 120 is provided in the arcuate top wall of the reservoir 30, and, when the paint is low in the reservoir 30 and tends to move sluggishly to the valve core 64, the plug 120 can be turned out far enough to

provide additional access of outside air into the reservoir, in aid of a freer flow of paint to the valve core.

The reservoir unit 14 is moved from the position of FIGURE 2 to the position of FIGURE 3, by rotating the handle rearwardly and upwardly until the lug 108 comes across the retaining plate 110 and enters the slot 118, whereby the handle and the reservoir unit are held in the new position.

Although there has been shown and described a preferred form of the invention, it is to be understood that the invention is not necessarily confined thereto, and that any change or changes in the structure of and in the relative arrangements of components thereof are contemplated as being within the scope of the invention as defined by the claims appended hereto.

What is claimed is:

1. In combination, a paint roller unit comprising a frame having a shaft having a free end and another end, a paint roller journaled on the shaft and spaced from said ends, a lateral portion on said other end of the shaft and terminating in an arm parallel spaced from the shaft, and a handle bar fixed to and extending at right angles to said arm, a paint reservoir unit comprising a reservoir extending along the roller and supported on the shaft above the roller, said reservoir having a valve chamber at its lower end opening to the surface of the roller, and downwardly extending brackets on the reservoir journaled on the shaft, said reservoir being of downwardly tapering cross section and having end walls and downwardly convergent front and rear walls, said front and rear walls having lower end portions which define a restricted throat leading into said chamber, a rotary valve core positioned in the chamber, spring means on the reservoir biasing the core upwardly to close the throat, and means for rotating the core.

2. In combination, a paint roller unit comprising a frame having a shaft having a free end and another end, a paint roller journaled on the shaft and spaced from said ends, a lateral portion on said other end of the shaft and terminating in an arm parallel spaced from the shaft, and a handle bar fixed to and extending at right angles to said arm, a paint reservoir unit comprising a reservoir extending along the roller and supported on the shaft above the roller, said reservoir having a valve chamber at its lower end opening to the surface of the roller, and downwardly extending brackets on the reservoir journaled on the shaft, said reservoir being of downwardly tapering cross section and having end walls and downwardly convergent front and rear walls, said front and rear walls having lower end portions which define a restricted throat leading into said chamber, a rotary valve core positioned in said chamber, spring means on the reservoir biasing the core upwardly to close the throat, means for rotating the core, and spaced stop means on one of said brackets adapted to engage portions of the frame in oppositely-angled positions of the reservoir relative to the frame.

3. In combination, a paint roller unit comprising a frame having a shaft having a free end and another end, a paint roller journaled on the shaft and spaced from said ends, a lateral portion on said other end of the shaft and terminating in an arm parallel spaced from the shaft, and a handle bar fixed to and extending at right angles to said arm, a paint reservoir unit comprising a reservoir extending along the roller and supported on the shaft above the roller, said reservoir having a valve chamber at its lower end opening to the surface of the roller, and downwardly extending brackets on the reservoir journaled on the shaft, said reservoir being of downwardly tapering cross section and having end walls and downwardly convergent front and rear walls, said front and rear walls having lower end portions which define a restricted throat leading into said chamber, a rotary valve core positioned in the chamber, spring means on the reservoir biasing the core upwardly to close the throat, and means for rotating

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the core, said front wall having a lower portion angled away from the rear wall, and having a lower edge bearing upon the surface of the roller, the upper end of said lower portion and the rear wall defining said restricted throat, said valve core being cylindrical, said core having longitudinally spaced passages along one side thereof adapted to provide for flow of paint from the reservoir to the chamber when the core is rotated to an open position.

4. In combination, a paint roller unit comprising a frame having a shaft having a free end and another end, a paint roller journaled on the shaft and spaced from said ends, a lateral portion on said other end of the shaft and terminating in an arm parallel spaced from the shaft, and a handle bar fixed to and extending at right angles to said arm, a paint reservoir unit comprising a reservoir extending along the roller and supported on the shaft above the roller, said reservoir having a valve chamber at its lower end opening to the surface of the roller, and downwardly extending brackets on the reservoir journaled on the shaft, said reservoir being of downwardly tapering cross section and having end walls and downwardly convergent front and rear walls, said front and rear walls having lower end portions which define a restricted throat leading into said chamber, a rotary valve core positioned in the chamber, spring means on the reservoir biasing the core upwardly to close the throat, and means for rotating the core, said front wall having a lower portion angled away from the rear wall, and having a lower edge bearing upon the surface of the roller, the upper end of said lower portion and the rear wall defining said restricted throat, said valve core being cylindrical, said core having longitudinally spaced passages along one side thereof adapted to provide for flow of paint from the reservoir to the chamber when the core is rotated to an open position, said lower front wall portion having longitudinally spaced channels facing into the chamber with which the passages of the valve core register in the open position of the core.

5. In combination, a paint roller unit comprising a frame having a shaft having a free end and another end, a paint roller journaled on the shaft and spaced from said ends, a lateral portion on said other end of the shaft and terminating in an arm parallel spaced from the shaft, and a handle bar fixed to and extending at right angles to said arm, a paint reservoir unit comprising a reservoir extending along the roller and supported on the shaft above the roller, said reservoir having a valve chamber at its lower end opening to the surface of the roller, and downwardly extending brackets on the reservoir journaled on the shaft, said reservoir being of downwardly tapering cross section and having end walls and downwardly convergent front and rear walls, said front and rear walls having lower end portions which define a restricted throat leading into said chamber, a rotary valve core positioned in the chamber, spring means on the reservoir biasing the core upwardly to close the throat, and means for rotating the core, said front wall having a lower portion angled away from the rear wall, and having a lower edge bearing upon the surface of the roller, the upper end of said lower portion and the rear wall defining said restricted throat, said valve core being cylindrical, said core having longitudinally spaced passages along one side thereof adapted to provide for flow of paint from the reservoir to the chamber when the core is rotated to an open position, said lower front wall portion having longitudinally spaced channels facing into the chamber with which the passages of the valve core register in the open position of the core, said rear wall having teeth in its lower edge bearing upon the surface of the roller.

6. In combination, a paint roller unit comprising a frame having a shaft having a free end and another end, a paint roller journaled on the shaft and spaced from said ends, a lateral portion on said other end of the shaft and terminating in an arm parallel spaced from the shaft,

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and a handle bar fixed to and extending at right angles to said arm, a paint reservoir unit comprising a reservoir extending along the roller and supported on the shaft above the roller, said reservoir having a valve chamber at its lower end opening to the surface of the roller, and downwardly extending brackets on the reservoir journaled on the shaft, said reservoir being of downwardly tapering cross section and having end walls and downwardly convergent front and rear walls, said front and rear walls having lower end portions which define a restricted throat leading into said chamber, a rotary valve core positioned in the chamber, spring means on the reservoir biasing the core upwardly to close the throat, and means for rotating the core, a handle extending laterally from an intermediate part of the valve core, said lower wall portion having a slot through which the handle works.

7. In combination, a paint roller unit comprising a frame having a shaft having a free end and another end, a paint roller journaled on the shaft and spaced from said ends, a lateral portion on said other end of the shaft and terminating in an arm parallel spaced from the shaft, and a handle bar fixed to and extending at right angles to said arm, an elongated paint reservoir unit comprising a reservoir extending along the roller and supported on the shaft above the roller, said reservoir having a valve chamber at its lower end opening to the surface of the roller, and downwardly extending brackets on the reservoir journaled on the shaft, said reservoir being of downwardly tapering cross section and having end walls and downwardly convergent front and rear walls, said front and rear walls having lower end portions which define a restricted throat leading into said chamber, a rotary valve core positioned in said chamber, spring means on the reservoir biasing the core upwardly to close the throat, and means for rotating the core, spaced stop means on one of said brackets adapted to engage portions of the frame in oppositely-angled positions of the reservoir relative to the frame, the brackets being mounted on the reservoir for longitudinal adjustment relative to the reservoir.

8. In combination, a paint roller unit comprising a frame having a shaft having a free end and another end, a paint roller journaled on the shaft and spaced from said ends, a lateral portion on said other end of the shaft and terminating in an arm parallel spaced from the shaft, and a handle bar fixed to and extending at right angles to said arm, an elongated paint reservoir unit comprising a reservoir extending along the roller and supported on the shaft above the roller, said reservoir having a valve chamber at its lower end opening to the surface of the roller, and downwardly extending brackets on the reservoir journaled on the shaft, said reservoir being of downwardly tapering cross section and having end walls and downwardly convergent front and rear walls, said front and rear walls having lower end portions which define a restricted throat leading into said chamber, a rotary valve core positioned in the chamber, spring means on the reservoir biasing the core upwardly to close the throat, and means for rotating the core, the brackets being mounted on the reservoir for longitudinal adjustment relative to the reservoir, said brackets comprising plates having upper and lower portions, laterally inwardly extending arms on said plates slidably and supportably engaged with the front wall of the reservoir, said front wall having a lower portion angled away from the rear wall, said lower portion having longitudinal channels in which said lateral arms are slidably confined, the lower portion of one bracket having a hole receiving the shaft of the roller frame, said lower portion of said one bracket having a laterally outwardly extending first stop lug at its upper edge and a laterally outwardly extending second stop lug on its lower edge and spaced longitudinally from the first stop lug and located at opposite sides of the roller shaft, and a retaining plate engaged with the laterally outward side of said one bracket having an upper edge, means

securing the retaining plate non-rotatably to said lateral frame portion, said first lug being engageable with the retaining plate to support the reservoir in a forwardly overbalanced position relative to the roller unit frame with the handle in an upright position, said second lug being engageable with the retaining plate to support the reservoir in a forwardly inclined position with the roller unit frame in a pendant position.

9. In combination, a paint roller unit comprising a frame having a shaft having a free end and another end, a paint roller journaled on the shaft and spaced from said ends, a lateral portion on said other end of the shaft and terminating in an arm parallel spaced from the shaft, and a handle bar fixed to and extending at right angles to said arm, an elongated paint reservoir unit comprising a reservoir extending along the roller and supported on the shaft above the roller, said reservoir having a valve chamber at its lower end opening to the surface of the roller, and downwardly extending brackets on the reservoir journaled on the shaft, said reservoir being of downwardly tapering cross section and having end walls and downwardly convergent front and rear walls, said front and rear walls having lower end portions which define a restricted throat leading into said chamber, a rotary valve core positioned in the chamber, spring means on the reservoir biasing the core upwardly to close the throat, and means for rotating the core, the brackets being mounted on the reservoir for longitudinal adjustment relative to the reservoir, said brackets comprising plates having upper and lower portions, laterally inwardly extending arms on said plates slidably and supportably engaged with the front wall of the reservoir, said front wall having a lower portion angled away from the rear wall, said lower portion having longitudinal channels in which said lateral arms are slidably confined, the lower portion of one of said brackets having a hole receiving the shaft of the roller frame, said lower portion of said one bracket having a laterally outwardly extending first stop lug at its upper edge and a laterally outwardly extending second stop lug on its lower edge and spaced longitudinally from the first stop lug and located at opposite sides of the roller shaft, and a retaining plate engaged with the laterally outward side of said one bracket having an upper edge, means securing the retaining plate non-rotatably to said lateral frame portion, said first lug being engageable with the retaining plate to support the reservoir in a forwardly overbalanced position relative to the roller unit frame with the handle in an upright position, said second lug being engageable with the retaining plate to support the reservoir in a forwardly inclined position with the roller unit frame in a pendant position, said retaining plate having a slot receiving the arm of the roller frame.

10. In combination, a paint roller unit comprising a frame having a shaft having a free end and another end, a paint roller journaled on the shaft and spaced from said ends, a lateral portion on said other end of the shaft and terminating in an arm parallel spaced from the shaft, and a handle bar fixed to and extending at right angles to said arm, a paint reservoir unit comprising a reservoir extending along the roller and supported on the shaft, said reservoir having a valve chamber opening to the surface of the roller, and a rotary valve core supported within the chamber, means for rotating the valve core, said reservoir being positioned above the roller, and downwardly extending brackets on the reservoir journaled on the shaft, said brackets each having an arm slidable in a channel formed in the adjacent end reservoir wall for accommodating rollers of different lengths.

11. A fountain paint roller assembly comprising a vertical elongated reservoir having front and rear walls having spaced lower edges, said walls having convergent portions which define a restricted throat spaced above said lower edges, the space within the reservoir below said restricted throat being a valve chamber, the front wall portion defining said chamber having longitudinally spaced channel means opening to its lower edge, the rear wall portion defining said chamber having longitudinally spaced opening means opening to its lower edge, said reservoir having end walls portions of which form end walls for the valve chamber, a cylindrical valve core extending across the reservoir in said chamber, said core being larger in diameter than the restricted throat, spring means on the reservoir urging said valve core up to closing relationship to the throat, said core having longitudinally spaced notches in one side thereof, and means for rotating the valve core on its axis from a throat closing position to an open position wherein its notches provide communication between the reservoir above the throat and said valve chamber, and a paint roller connected to the reservoir with its upper surface in contact with the lower edges of the front and rear walls of the reservoir and closing the lower end of the valve chamber.

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