No. 696,331. Patented Mar. 25, 1902.

E. GRILL.

PAINTING APPARATUS.

(Application filed Apr. 18, 1901.)

(No Model.) 2 Sheets—Sheet 1.

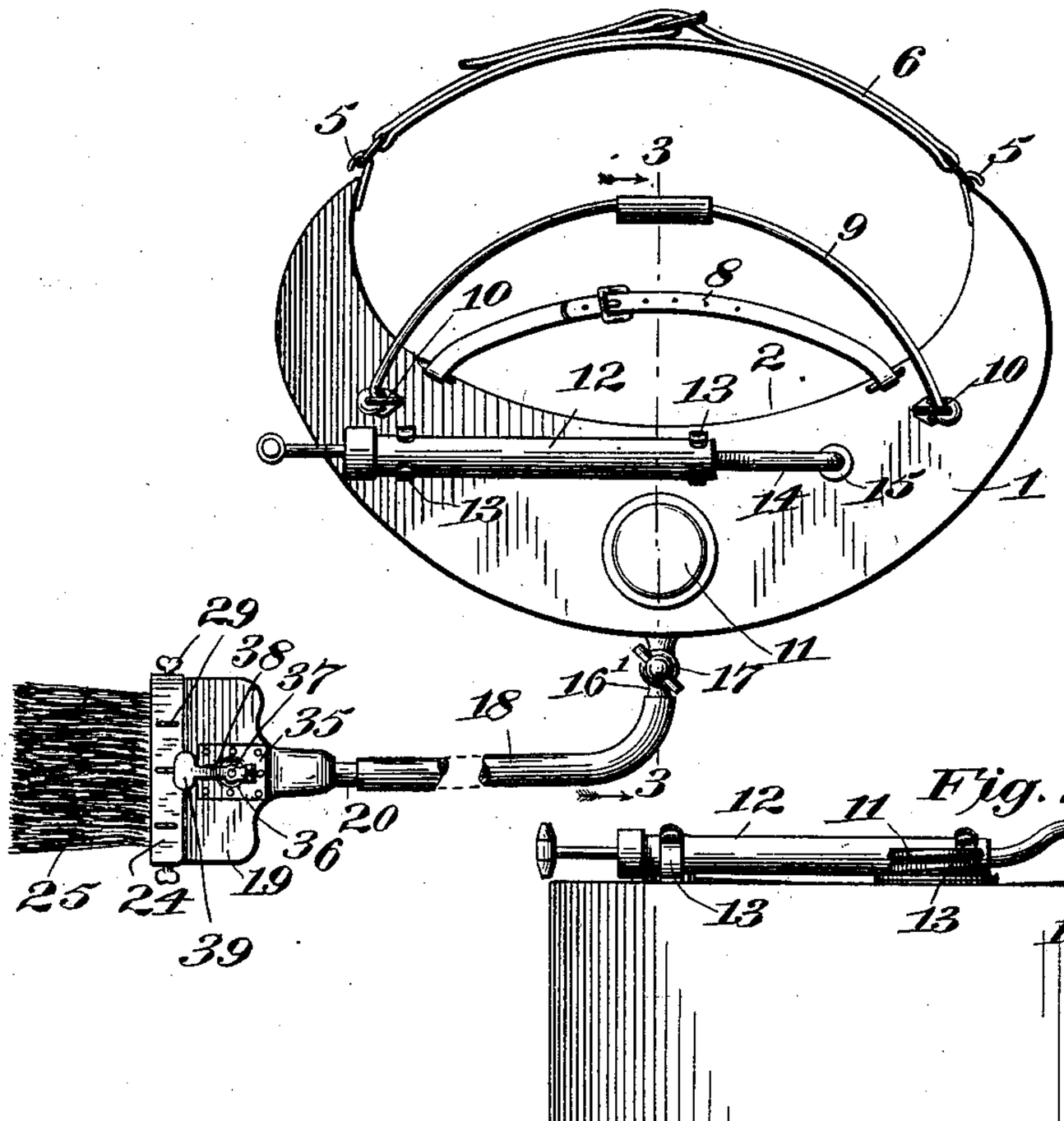

Fig. 1.

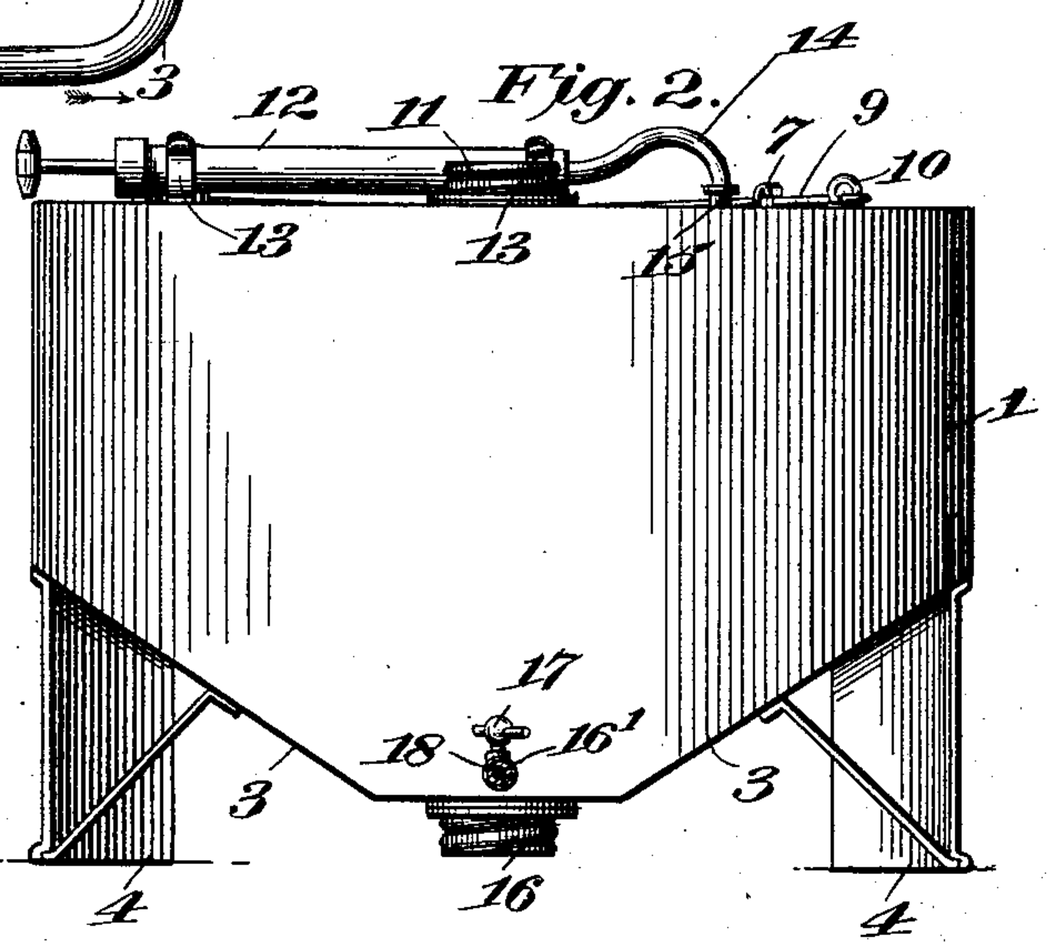

Fig. 2.

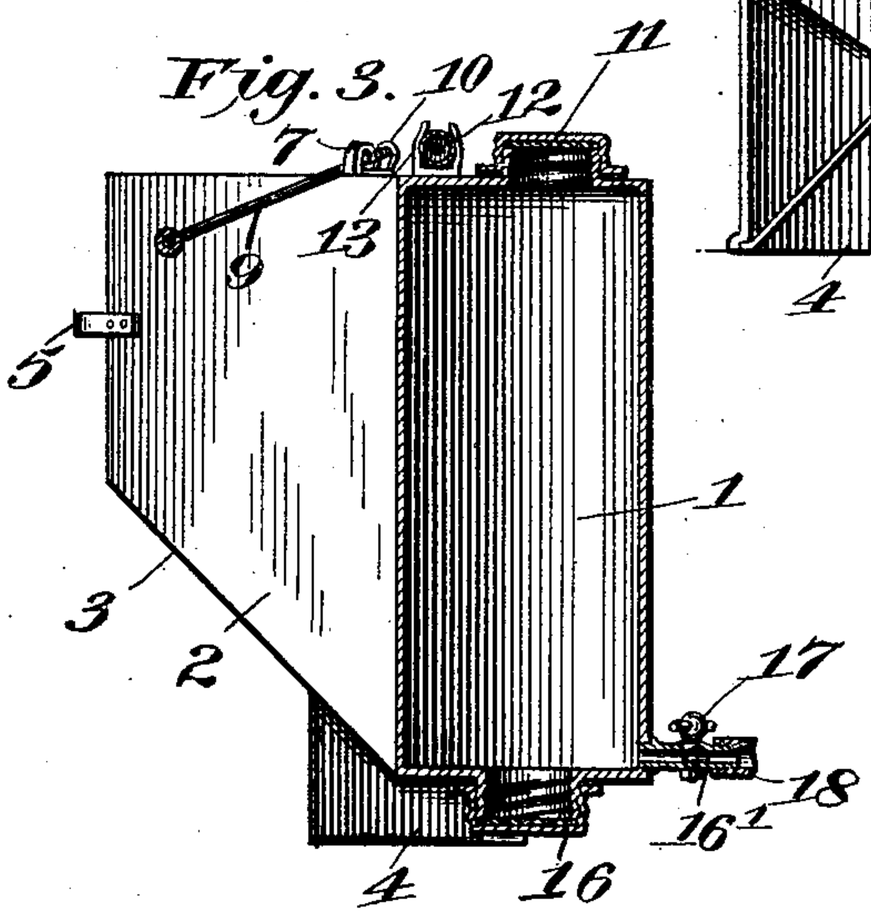

Fig. 3.

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Fig. 4.

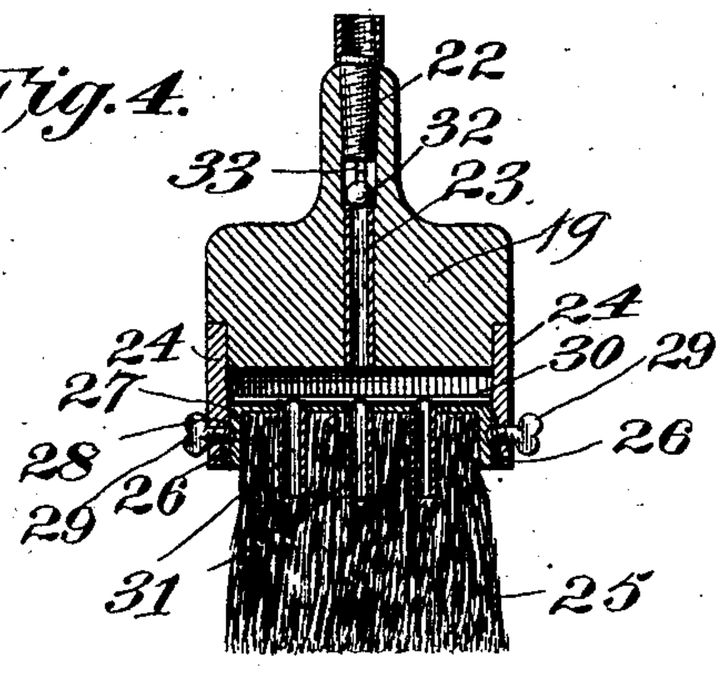

Fig. 5.

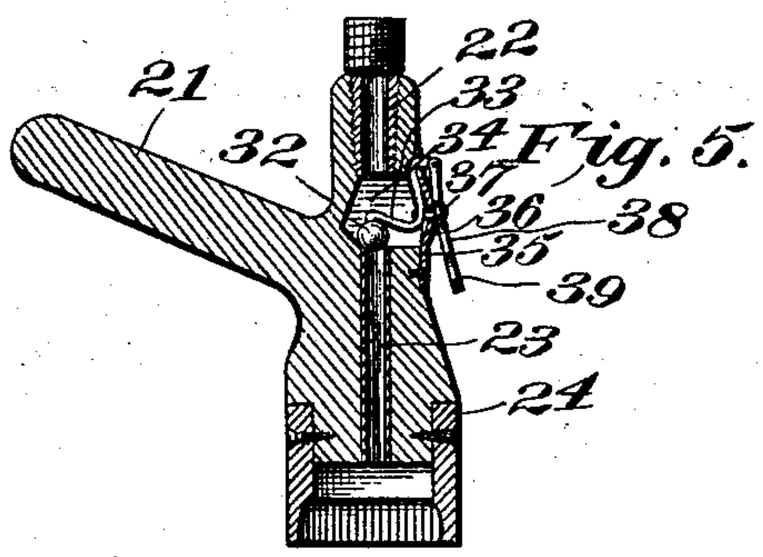

Fig. 6.

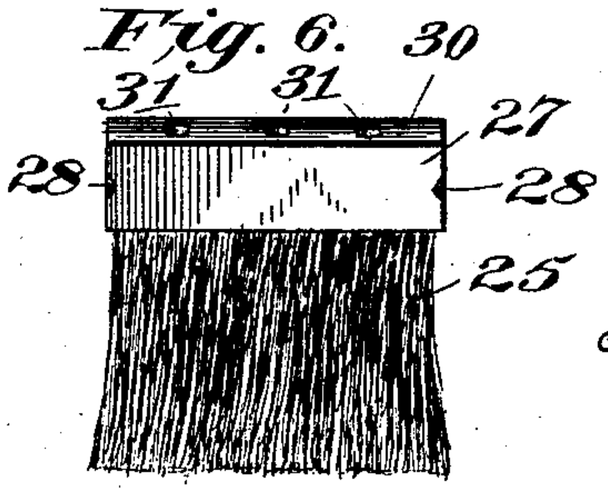

Fig. 7.

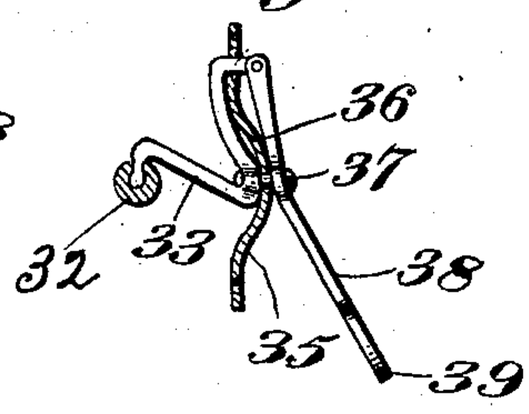

Fig. 8.

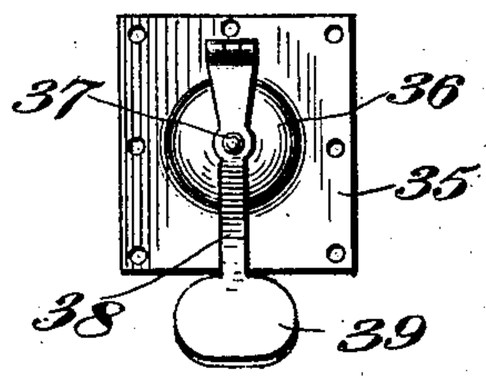

Fig. 11.

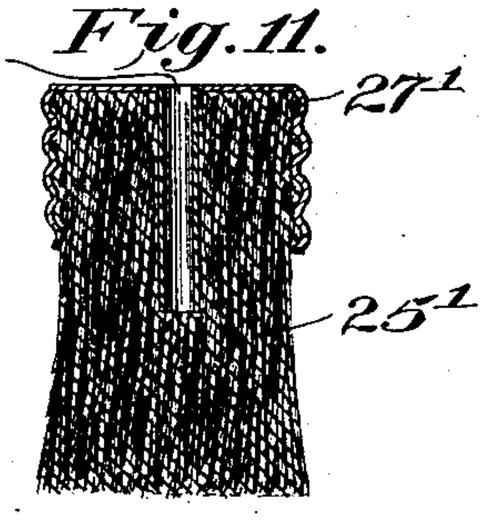

Fig. 10.

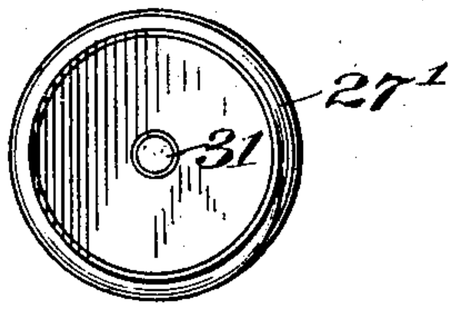

Fig. 9.

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UNITED STATES PATENT OFFICE.

ENOCH GRILL, OF TUSTIN, MICHIGAN, ASSIGNOR TO WALTER J. KENNEDY, OF GRAND RAPIDS, MICHIGAN.

PAINTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 696,331, dated March 25, 1902.

Application filed April 18, 1901. Serial No. 56,397. (No model.)

To all whom it may concern:

Be it known that I, ENOCH GRILL, a subject of the King of Sweden and Norway, residing at Tustin, in the county of Osceola and State of Michigan, have invented certain new and useful Improvements in Painting Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in painting apparatus of that class in which the paint is contained under pressure within a can or fountain and is fed continuously therefrom to the brush while the latter is being used.

The object of the invention is to provide a painting apparatus in which the paint is fed from the reservoir to the brush under the action of compressed air supplied by a suitable pump and in which the brush is constructed so as to secure an equable distribution of the paint and embodies valve mechanism, which may be conveniently manipulated to regulate the flow of paint as desired.

A still further object of the invention is to provide a brush for use in connection with a reservoir or fountain of this character, which may be readily and conveniently operated and in which the valve is so arranged as to enable the operator to control the same to regulate the feed of the paint to the brush while the latter is in use.

With these and other objects in view, which will appear as the nature of the invention is better understood, the invention consists in certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a top plan view of a complete painting apparatus constructed in accordance with my invention. Fig. 2 is a front elevation of the fountain or reservoir. Fig. 3 is a vertical section through the same on the line 3 3 of Fig. 1. Fig. 4 is a vertical longitudinal section of the brush. Fig. 5 is a vertical transverse section through the center of the brush, the bristles being omitted. Fig. 6 is a perspective view of the bristle-cap. Figs. 7 and 8 are detail views of the controlling-valve and operating means therefor. Fig. 9 is a detail view of one of the nipples of the conducting-tube; and Figs. 10 and 11 are respectively a top plan view and a vertical section through a modified form of brush.

Referring now more particularly to the drawings, the numeral 1 represents the paint fountain or reservoir of the apparatus, which contains the paint stored therein under pressure and which consists of a crescent-shaped metallic can or vessel, whose concave side forms a body-recess 2, whereby the can may be carried in close contact with the body, so as not to project unduly, and enables it to be carried with ease and convenience by the user. This can is provided with inclined bottom walls 3, inclined downwardly from the opposite sides thereof to the central portion of the bottom, so as to direct the paint and cause it to flow easily to the point of discharge. Rest or supports 4 extend downwardly from opposite sides of the reservoir to support the same while not in use. At the rear extremities or upon opposite sides of the concave portion forming the body-recess of the reservoir said reservoir is provided with hooks 5 for the reception of a belt 6 for securing the same about the body of the wearer to prevent movement thereof while the wearer is in motion, and to support the reservoir loops or hooks 7 are provided for the reception of shoulder-straps 8, by means of which the reservoir may be supported and carried in a convenient manner. A bail-handle 9, pivoted to ears 10 upon the top of the reservoir, is provided to enable said reservoir to be carried when the apparatus is not in use and it is not desired to employ the belt and shoulder-straps.

In practice the reservoir is filled with paint through a filling-opening in its top, which is closed by a screw-cap 11 to prevent evaporation and drying out of the paint and the entrance of dust and dirt. A sufficient space is left in the top of the reservoir in filling the same for the reception of the compressed air which feeds the paint to the brush, which air is supplied by means of an air-pump 12, detachably secured by means of spring clasps or holders 13 to the top of the reservoir and having connected thereto a tube 14, which is

attached to an inlet-tube 15, which is in communication with and through which the air from the pump is delivered into the upper portion of the fountain.

In the bottom of the fountain or reservoir is located a vent or discharge opening closed by a screw-cap 16, which may be removed whenever it is desired to draw off all sediment from the paint settling at the bottom of the reservoir. The paint is discharged from the reservoir through a discharge-spout 16′, which is provided with a valve 17 for cutting off the flow of paint therefrom to the flexible conducting-tube 18 in the event that said tube should become ruptured or otherwise injured and leakage of the paint therefrom should occur while the apparatus is in use.

The tube 18 is connected at its opposite ends to the discharge-spout 16′ and brush-head 19 by means of nipples 20 of the form and construction shown in detail in Fig. 9.

The brush-head 19 is formed of wood or other suitable material and has projecting at an upward angle of inclination from its rear side a handle 21, which is grasped by the operator to manipulate the brush. In the upper end of the brush-head is inserted the threaded tube 22, which connects with the nipple 20 on the adjacent end of the flexible conducting-tube 18. Below the threaded tube 22 and in axial alinement therewith is a conducting-tube 23, which fits within a bore in the head 19 and extends from the lower end of said threaded tube to the lower end of the head, where it opens through the bottom of the head. The lower end of the head 19 is reduced to form a space in which fits a clamping band or collar 24, which secures the bristles-cap 27 in place, the lower portion of said band or collar on its inner surface being reduced or recessed to form a space for the reception of packing 26, forming an air-tight connection between said band and bristles-cap to prevent any waste of paint. The bristles or hairs of the brush are confined at their inner or upper ends in a cap 27, which is provided at its opposite end with recesses or indentations 28 to receive the inner ends or points of clamping-screws 29, passed through the collar 24 and whereby the bristles-cap is detachably secured in place. This cap 27 is spaced apart from the bottom wall of the head 19 and is concaved in its top face to form a channel 30, into which the paint flowing through the conducting-tube 23 discharges. Communicating with this channel are a series of distributing-tubes 31, arranged at suitable distances apart and projecting down through the bristles 25 to a point about midway thereof to equably distribute the paint thereto. The flow of paint from the brush-head to the bristles is regulated through the medium of a supply-valve 32, which is interposed between the threaded tube 22 and conducting-tube 23 and is mounted upon the inner end of a vibrating lever 33, occupying a socket 34, formed in the front portion of the head 19. This lever is carried by a resilient metallic cover-plate 35, secured to the front side of the head 19 to close said socket 34 and having a dished or deflected portion 36, through which is passed a rivet 37, which secures the intermediate portion of the lever 33 thereto. This dished or deflected portion 36 acts in the nature of a yielding support and retracting-spring for the valve-lever 33, whereby said lever may be forced inwardly to open the valve 32 and is automatically retracted to close said valve. An operating-lever 38 is hinged or pivoted to a portion of the lever 33, which projects outwardly through the cover-plate 35 and is also connected to the rivet 37, which serves as a guide therefor, and this operating-lever has an outwardly or angularly projecting finger-piece 39, whereby it may be conveniently manipulated. This lever is so arranged that it may be operated by the thumb of either hand of the operator grasping the handle 21 to operate the brush. When the finger-piece 39 is pressed upon, the dished portion 36 of the plate 35 is bent or forced inwardly, thereby moving the lever 33 to open the valve 32 proportionate to the amount of pressure applied and to the extent of movement of said finger-piece, and when the latter is released the said deflected portion 36 assumes its normal position by its own resiliency, thereby drawing upon the lever 33 and closing the valve 32 to cut off to a greater or less extent the flow of paint from the tube 18 to the tube 23, whereby it is distributed to the bristles.

In Figs. 10 and 11 I have have shown a round or circular-form of bristles-cap which may be employed in place of that shown in the other figures when necessary or desirable. The bristles 25′ have a cap 27′, which is cylindrical and threaded for connection with a modified form of clamping ring or band 24, similar to that shown in Fig. 4, but of cylindrical formation and having an inner threaded surface. A single centrally-located distributing-tube 31 is employed in this form of cap and will under all ordinary conditions of service be found sufficient to supply the paint thereto. In operation after the reservoir has been filled to the required depth with paint and the hand-pump operated to force air into the upper portion of the reservoir the valve 17 is opened to allow paint to flow from the reservoir into the conducting-tube 18 and thence into the brush-head 19. The tube 18 being flexible, the operator is enabled to move the brush as desired and to employ either hand for that purpose. The operator grasps the brush-handle 21 and employs the thumb of the hand grasping said handle to manipulate the finger-piece 39 to operate the valve 32 to control the feed of paint to the brush. The flow of paint to the bristles 25 in quantities desired for use may be readily controlled by pressing upon said finger-piece 39 with greater or less force to open the valve 32 to a greater or less extent, and when it is desired to completely cut off the flow of paint

the finger-piece 39 is released and the deflected portion 36 of the plate 35, being no longer restrained, returns by its own resiliency to its normal position and draws the lever 33 outwardly, thereby closing the valve 32 down upon its seat upon the upper end of the conducting-tube 23.

From the foregoing description, taken in connection with the accompanying drawings, the construction, mode of operation, and advantages of the invention will be readily understood, and it will be seen that it provides an apparatus which is comparatively simple, durable, and inexpensive of construction and enables the operator to have complete control of the flow of the paint and facilitates the operation of painting, whereby the operator may paint a maximum amount of surface within the minimum amount of time.

While the preferred embodiment of the invention is as herein disclosed, changes in the form, proportion, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a painting apparatus, the combination of a fountain or reservoir provided with means for supplying air under compression thereto, a flexible discharge-tube leading therefrom, a brush comprising a head and bristles portion, the former being connected with said tube and provided with a channel and socket, said bristles portion having a cap, one or more distributing-tubes leading into the body of the bristles, a clamping band or tube securing the head and the bristles portions together, a valve controlling the channel in the head, a lever connected with said valve, a plate having a resilient portion covering the socket in the head in which said lever is located, a handle pivoted to the lever at its upper end and also connected to said lever through the resilient portion thereby when the handle is pressed toward the brush-head the valve is opened, and the outward movement of said resilient portion closes the valve, substantially as specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ENOCH GRILL.

Witnesses:
JAMES A. KENNEDY,
LILLIE B. GRILL.