April 24, 1951 I. CHASAN ET AL 2,550,404

ATTACHMENT FOR AIR BRUSHES

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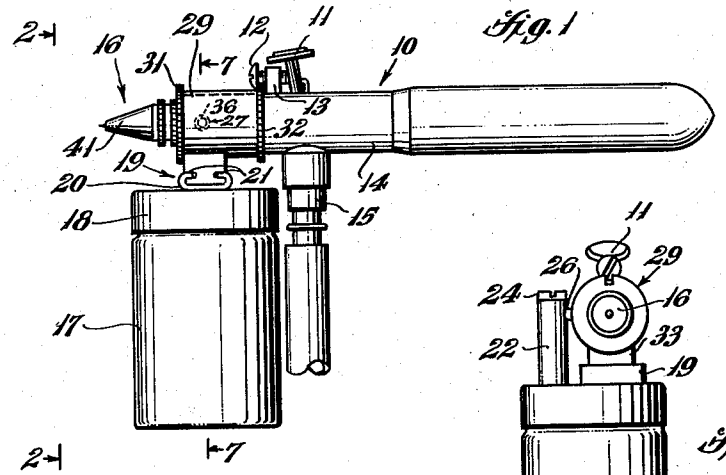

Fig. 1

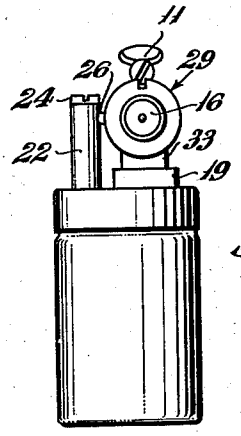

Fig. 2

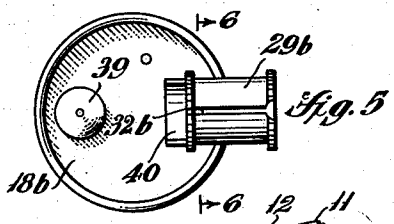

Fig. 5

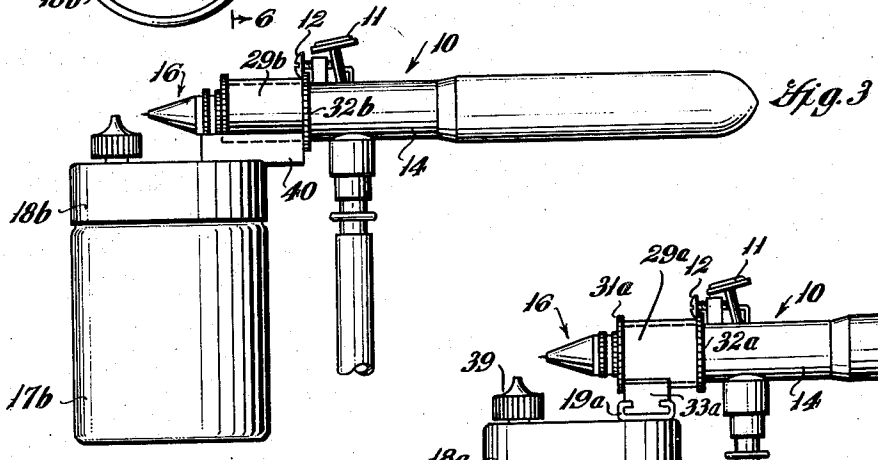

Fig. 3

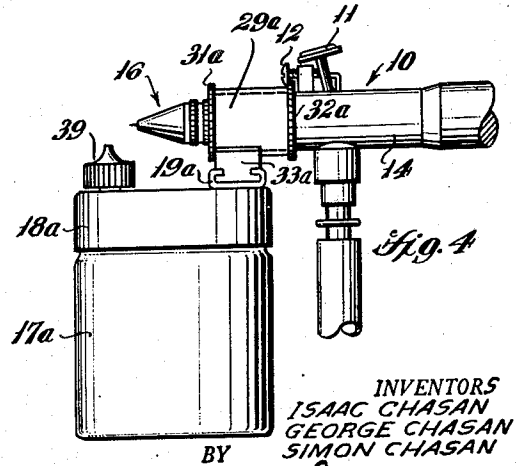

Fig. 4

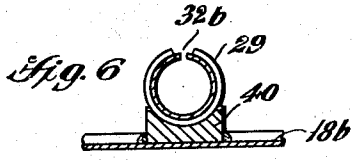

Fig. 6

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Fig. 7

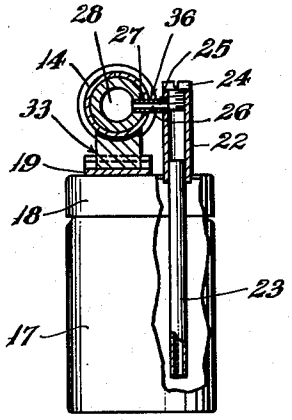


Fig. 8

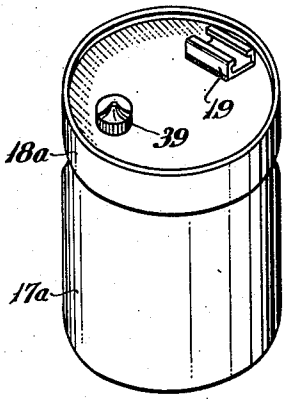


Fig. 9

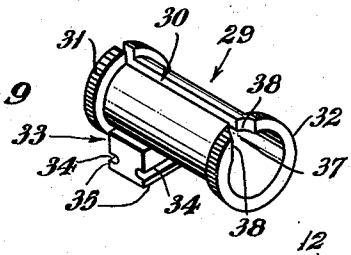


Fig. 16

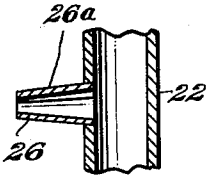


Fig. 11

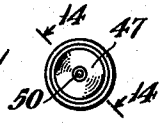


Fig. 10

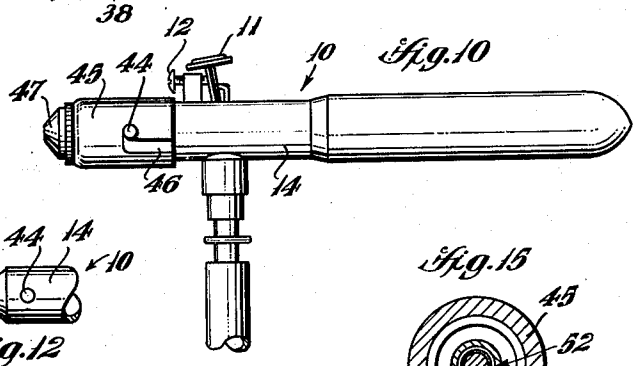


Fig. 13

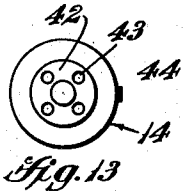


Fig. 12

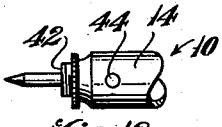


Fig. 15

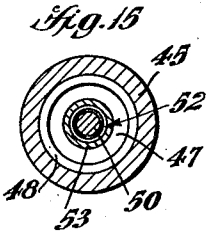
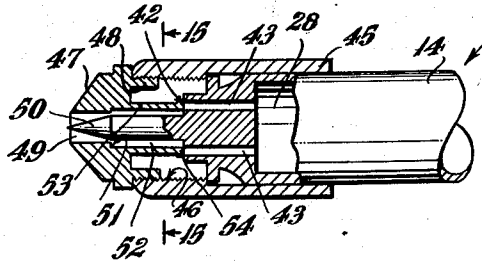


Fig. 14



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UNITED STATES PATENT OFFICE

2,550,404

ATTACHMENT FOR AIRBRUSHES

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5 Claims. (Cl. 299—88)

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This invention relates to air brushes such as are used by artists, and aims to provide certain new and useful improvements therein whereby the general efficiency, utility and convenience of the user, are enhanced.

A further object of the invention is the provision of an attachment for air brushes by means of which the jar containing the paint or color may be readily attached to or removed from the brush and another jar containing a different color may be as readily attached in its place.

The above general as well as additional and more specific objects will become apparent in the following description, wherein characters of reference refer to like-numbered parts in the accompanying drawings. It is to be noted that the drawings are intended for the purpose of illustration only, and that it is neither desired nor intended to limit the invention necessarily to any or all of the exact details of construction shown excepting insofar as they may be deemed essential to the invention.

Referring briefly to the drawings,

Fig. 1 is a side elevational view of an air brush with a jar attached thereto through the medium of an attachment embodying the instant invention.

Fig. 2 is a front elevational view of the same.

Fig. 3 is a side elevational view of an air brush with a different type of jar attached thereto, through the medium of the attachment of this invention, in slightly modified form.

Fig. 4 is a fragmentary side elevational view of the air brush and jar of Fig. 3, but utilizing the attachment substantially in the form illustrated in Fig. 1.

Fig. 5 is a plan view of the device shown in Fig. 3 with the air brush in its entirety omitted, thus illustrating only the jar and the attachment which in this form is fixed to the cap of the jar.

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 5.

Fig. 7 is a sectional view taken on the line 7—7 of Fig. 1.

Fig. 8 is a perspective view of the jar per se which is shown in Fig. 4.

Fig. 9 is a perspective view of one member of the two-part attachment shown in Fig. 4 and which, except for the omission of a hole through one side thereof, is also a perspective view of the corresponding one member of the two-part attachment shown in Figs. 1, 2, and 7.

Fig. 10 is a side elevational view of the air brush per se from which the normal conical tip has been unscrewed and in place of which a spotting attachment has been substituted.

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Fig. 11 is a front end view of the air brush of Fig. 10.

Fig. 12 is a fragmentary view similar to Fig. 10, showing only the front end of the air brush, with the spotting attachment above-referred to removed.

Fig. 13 is a front end view of Fig. 12.

Fig. 14 is a sectional view taken on the line 14—14 of Fig. 11.

Fig. 15 is a sectional view taken on the line 15—15 of Fig. 14.

Fig. 16 is an enlargement of a fragment of Fig. 7.

Referring in detail to the drawings, the numeral 10 indicates a standard air brush having the usual pivoted trigger 11 whose swing is adjustably controlled by the set screw 12 supported in a standard 13. The barrel of the brush is shown at 14 and the air attachment at 15. As the construction of air brushes is well known, no detailed description thereof will here be given, and the description will be limited to those parts which are essential to an understanding of the instant invention.

Air brushes commonly operate on the injector principle, that is, air is forced transversely past an opening into a liquid container within the barrel so that the liquid and air emerge in a stream from the nozzle 16. When a jar is used to hold the liquid, and this is generally desirable as there is the ever present danger of spilling the liquid when it is contained in an open cup, it is desirable that the jar be made as readily attachable and detachable as possible, and this desirable feature is a characteristic of this invention. The jar 17 is a standard jar but its cap is of novel construction. The cap 18, which is screwed on the jar by means of screw threads, not shown, has a member 19 secured thereon by any suitable means or in any desired manner, as, for example, by means of solder 20. The member 19 is a support in the shape of a strip having its lateral extremities turned up and inward to provide guide rails 21. A tube 22 is mounted on the cap 18 about an opening through the cap and in alignment with the longitudinal median line of the member 19; an extension or suction tube 23 extends from the tube 22 toward the bottom of the jar. The upper end of the tube 22 is closed by a screw 24, the lower end of which is adapted to vary the degree of opening of an outlet 25 into an exit nipple 26, this nipple being rigid with the tube 22. The barrel 14 has an opening 27 into the central passage 28 of the brush.

A cylindrical sleeve 29 which is split longitudinally along the slit 30, has knurled flanges

31 and 32 at its ends. Secured to, or formed integrally with, the underside of the sleeve 29 adjacent one end thereof, is a slide block 33 having transverse grooves 34 thereby forming flanges 35 at the bottom of the block. It is obvious that the sleeve 29 may be attached to the cap 18 by registering the rails 21 in the grooves 34 and sliding the block on the said member. The sleeve 29 has an opening 36 through one side thereof, receptive of the nipple 26.

In use, the sleeve 29 is first slid over the front end of the barrel 14, with the opening 36 thereof on the same side as the opening 27 of the barrel, and when pushed home, these openings are in alignment. The surfaces 38 of the split 37 in the flange 32, which is a continuation of the slit 30 of the sleeve, are slightly beveled to permit the head of the set screw 12 to ride over these surfaces as the sleeve gets home against the standard 13. Owing to the obvious slight resiliency of the flange 32, the ends at the split 37 are slightly spread by the screw head and after the head has passed them they retract, thus providing a means for releasably retaining the sleeve 29 on the brush barrel and thus preventing it from slipping off. With the sleeve 29 thus mounted on the barrel, the jar 17 is secured in place by sliding the block 33 along the member 19 in the manner described, whence the nipple 26 passes through the aligned openings 36 and 27 so that its open end lies in the barrel passage 28. To provide a frictional holding engagement of the sleeve and block assembly on the jar cap, the inturned rails 21 may possess a sufficient resiliency, but such frictional engagement may also be provided by tapering the rear portion of the nipple 26 as shown at 26*a* so that the farther the nipple enters the sleeve 29 the tighter is the fit of the nipple in the sleeve.

The same attachment, comprising the same parts with the one exception that the sleeve 29*a* lacks the hole 36, is shown in Fig. 4 applied to a jar to be used in the manner of an atomizer spray, 17*a*. Parts in this figure which are equivalent or identical to those previously described, bear the same reference numeral followed by the letter "*a*," except for the air brush which is in all respects the same as the brush 10 of Fig. 1. The cap in this case, shown at 18*a*, has the atomizer nozzle 39, and the member 19*a* is positioned at right angles to an imaginary diameter drawn through the axis of this nozzle, instead of longitudinally as in the case of the tube 22 above described. It is apparent that the attachment as applied in Fig. 4 serves the function of enabling the air brush to utilize a spray discharge, which is useful in some phases of air brush work.

In the form shown in Figs. 5 and 6, the sleeve 29*b*, which is otherwise identical to the sleeve 29*a*, is fixed to a support 40 which itself is fixed on the cap 18*b*, substantially as shown. In this case the air brush 10 is simply attached to or detached from the jar cap 18*b* by inserting its forward end into the sleeve 29*b* until the head of the screw 12 has ridden over the flange 32*b*. The jar, not shown, to which the cap 18*b* is attached, also serves as an atomizer, like the jar 17*a*. It is to be noted that, since the sleeves 29*a* and 29*b* lack the hole 36, when they are mounted on the barrel of the brush they cover up and close the opening 27 through the barrel.

In Figure 12 is shown the forward end of the brush 10, after the nozzle cap 41 has been

unscrewed, and the wall 42 which serves as a baffle to the passage 28, has a plurality of openings or passages 43 therethrough. A pin 44 is mounted on the barrel 14 at the proper position so that when a friction sleeve 45 having the bayonet slot 46 therein, is pushed home, the sleeve will stop substantially at the position shown in Figs. 10 and 14. Internally the forward end of this sleeve is of reduced diameter and threaded, shown at 46, and a cap 47 has its threaded flange 48 engaging the threads 46. This cap has an axial passage 49 to accommodate the brush needle 50, and this passage 49 has a shoulder 51 intermediate the length of the cap so that the passage 49 on the other side of the shoulder is of larger diameter, shown at 52. An extension tube-like flange 53 extends integrally from the cap and surrounds the passage 52. The outer rim of the flange 53 is widened or flanged to give it sufficient area so that, when it registers against the wall 42 as shown in Fig. 14 it blocks the openings 43. By unscrewing the cap 47 these openings are unblocked, and the degree of unscrewing determines the degree of freeing the openings 43 and thus controls the quality and quantity of fluid exiting through the exit from the passage 49. This means permits of a very fine degree of adjustment for the operation of spotting with the air brush.

We claim:

1. In combination with an air brush having a barrel and a nozzle at one end of the barrel, and a container having a cap secured thereto, means for releasably attaching said container to said barrel comprising a member secured to said cap and having longitudinal rails thereon, a sleeve slidably mounted on said barrel, a second member secured to the bottom of said sleeve at right angles thereto and having longitudinal grooves therein, said second member being slidably mounted in said first member with said rails registering in said grooves, said cap having an opening therein and having an upright tube extending from said opening, said tube having a nipple thereon at right angles thereto, said barrel having an opening thereinto from one side thereof, said sleeve having an opening therethrough on the corresponding side thereof registrable with said barrel opening, said barrel having a limit stop to the rearward movement of said sleeve on said barrel over said nozzle, said barrel and said sleeve openings being so positioned as to align when said sleeve is slid against said limit stop, the axis of said tube lying in a vertical plane through said first member and equidistant from said rails, said sleeve when mounted on said barrel being so positioned that said nipple aligns with said barrel opening and said sleeve opening with said nipple registering in said barrel opening and said sleeve opening.

2. The combination set forth in claim 1, having means partly on said barrel and partly on said sleeve for releasably locking said sleeve in said limit stop position.

3. The combination set forth in claim 1, said sleeve having a longitudinal split therethrough thereby providing frictional gripping action against said barrel.

4. The combination set forth in claim 1, said sleeve having a longitudinal split therethrough, said limit stop comprising a radial projection on said barrel in alignment with said split, said sleeve having a flange on that end thereof adjacent said projection, said projection having a set

screw screwed into the forward side thereof and having a head on said screw adapted to ride over the opposed sides of the split in said flange and thereby releasably spread said sides as said sleeve is moved against said projection and to permit said sides of said split flange to return to normal position after said head has ridden thereover whence said head releasably locks said sleeve against forward movement.

5. In combination, an air brush including a barrel and an upstanding pivoted trigger pivoted on an axis at right angles to the axis of the barrel, said barrel having a standard thereon positioned forward of said trigger, a set screw passing through said standard on an axis parallel with the axis of the barrel, said set screw having the rear end thereof in contact with said trigger thereby providing means for limiting the forward movement of said trigger, and a container having a cap thereon, means for attaching said container on said barrel comprising a sleeve slidably mounted on said barrel and having a longitudinal split in the top thereof lying in the same vertical plane as said set screw, the walls of said split at the rear end of said sleeve being beveled thereby providing a tapering mouth at said rear end of said split, the forward end of said set screw registering frictionally in said mouth upon pushing of said sleeve home in a rearward direction, and means partly on said sleeve and partly on said cap for securing said sleeve to said cap.

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