Dec. 3, 1963 J. C. THORNTON 3,112,513

LIQUID APPLICATORS

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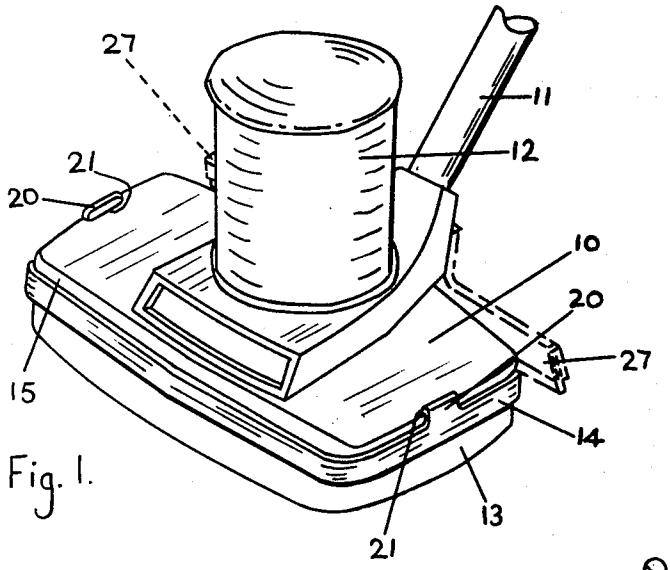



Fig. 1.

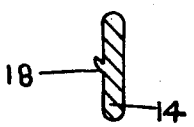



Fig. 3.

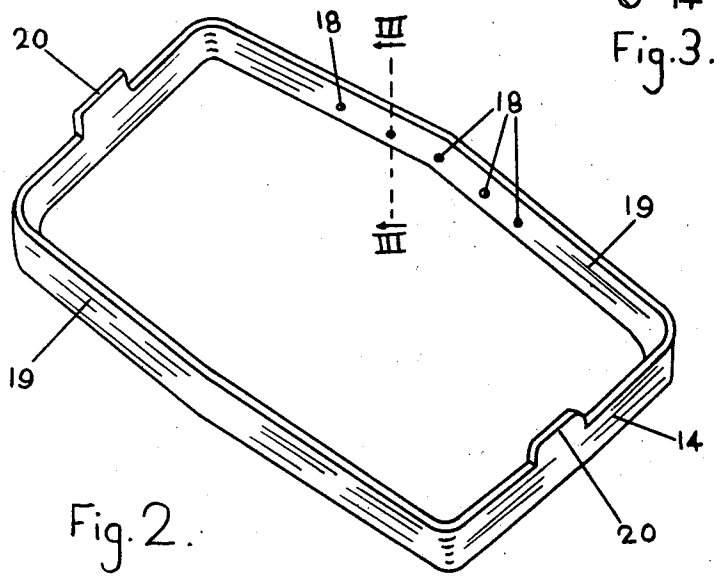



Fig. 2.

Inventor
James Coward Thornton
by Albert W. Jacobs
Attorney

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LIQUID APPLICATORS

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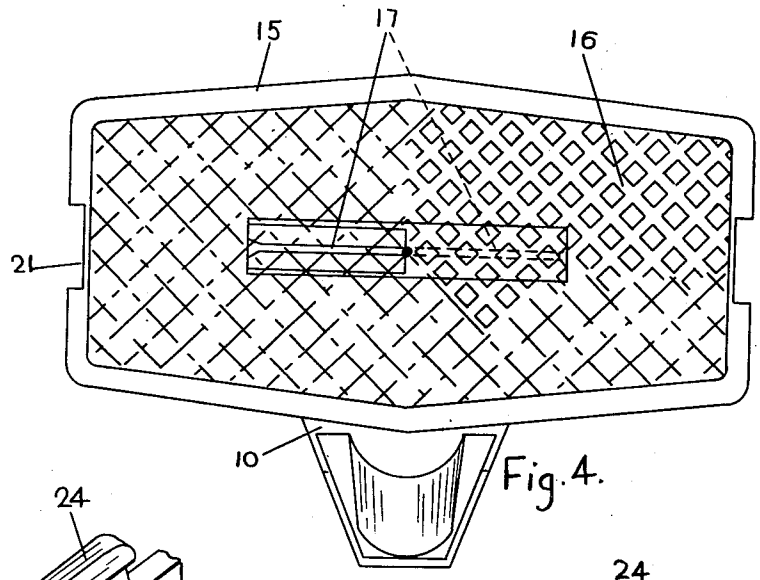



Fig. 4.

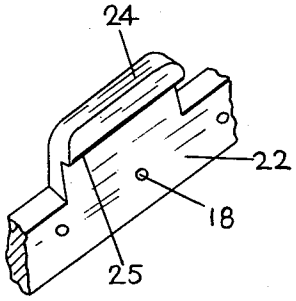



Fig. 6.

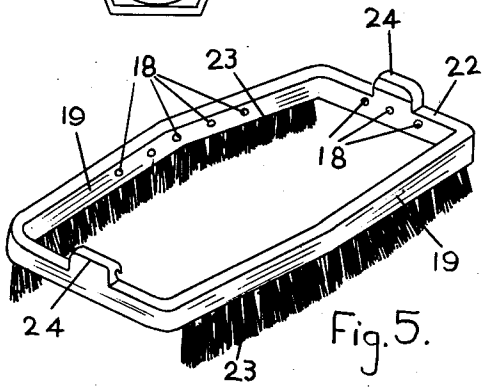



Fig. 5.

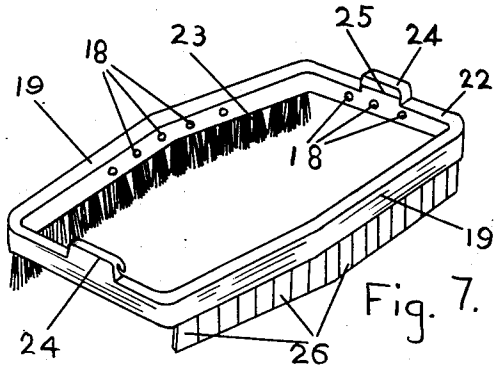



Fig. 7.

Inventor
James Coward Thornton
by Albert W. Jacobs
Attorney

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# 3,112,513
# LIQUID APPLICATORS

James C. Thornton, Mountsorrel, England, assignor to J. Goddard & Sons Limited, Leicester, England

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11 Claims. (Cl. 15—532)

This invention is for improvements in or relating to liquid applicators and is concerned with an improvement in or modification of the invention forming the subject of U.S. patent application Serial No. 805,204, now Patent No. 3,090,060, filed April 9, 1959. The present invention has for one of its objects to provide for retention of a pad on a head or holder in a simple and effective manner.

In accordance with the invention there is provided a head or holder having a mounting on its upper part for a canister to receive the latter in an inverted attitude with its cap removed and a restricted passageway leading from the canister mounting to the under-side of the head or holder, in combination with a compressible pad which extends across the bottom of the head or holder and has its edge portions turned upwardly around the side walls thereof and a band to embrace the edge portions of the pad and clamp them to the holder, such band being provided with inwardly directed projections to engage in the material of the pad and prevent its edge portions from slipping away from between the band and the head or holder. The projections aforesaid may be slightly upwardly inclined so as to resist more firmly any tendency for the edge portions of the pad to slip downwardly from it, and they may be positioned in groups at places at which the tendency for the pad to escape from the band is greatest. In a pad which is approximately rectangular in broad outline, groups of the projections may be positioned on the band at the central parts of the front and back portions of the band (i.e. the long sides) and if desired at central portions of the short sides.

The provision of projections as aforesaid results in the pad being held more firmly in place and enables a pad to be retained satisfactorily over a relatively shallow depth of the head by a correspondingly narrow band and thus facilitates use of a relatively light weight head which by occupying less volume requires less material for its construction as well as offering advantages in use by reason of its lightness and reduced bulk. Conveniently the underface of the head or holder is formed with channel like recesses over substantially its whole area communicating with said restricted passage-way as described in said earlier application.

It is advantageous to have the end portions or shorter sides of the band formed with central upward projections to engage in corresponding recesses in the shoulder flange on the head for locating the band in correct positions. These projections may if desired each be formed with or carry ratchet means to engage with the top of the head or holder to retain the band against detachment when in use. When the applicator is to be employed for certain purposes such as shampooing of carpets, pile fabrics or the like the clamping band may be provided with brushes formed by tufts of bristles, flexible fingers or the like projecting downwardly from one or both of its long forward and rearward edges to an extent slightly beyond the bottom of the inclined pad.

Certain preferred forms of construction incorporating the foregoing and other features of the invention are illustrated by way of example in the accompanying drawings and will now be described with reference to the drawings in which



FIGURE 1 is a perspective view of an assembled applicator head with a canister in place thereon;

FIGURE 2 is a perspective view of a clamping band drawn to a larger scale;

FIGURE 3 is an enlarged cross-sectional view of the clamping band taken on the line of III—III of FIG. 2;

FIGURE 4 is an under plan view of the applicator head with the pad removed;

FIGURE 5 is a perspective view of a modified clamping band;

FIGURE 6 is an enlarged perspective view of part of the band of FIG. 5; and

FIGURE 7 is a perspective view corresponding to FIGURE 5 but illustrating a further modification.

The applicator head shown in FIG. 1 is suitable for applying liquid preparations to floors or other surfaces and comprises a body **10**, constructed substantially as described in U.S. patent application No. 805,204 filed April 9, 1959, now Pat. No. 3,090,060, and fitted with a handle **11**. As in said earlier construction the upper part of the body **10** has a connection to receive in liquid tight manner the neck of a canister whereof the cap has been removed such canister being indicated at **12**. In use the canister **12** is thus held in inverted attitude and its connection with the body communicates with a restricted passageway leading from the canister mounting to the under side of the head or holder across which a compressible pad **13** of the form described in said earlier specification extends with its edge portions turned upwardly around the side walls of the holder and clamped in place by a resilient plastic band **14**. The latter urges the edges of the pad **13** upwardly towards a flange **15** projecting outwardly from the top of the body **10**. As shown in FIG. 4 the bottom of the head or holder is formed with grooves **16** in criss-cross arrangement which receive liquid from branch passages **17** in the head or holder as in the said earlier construction.

It is advantageous to have the head or holder of substantially rectangular shape without endwise protuberances and to have the clamping band **14** as thin as is practicable so that the pad when in use can approach more closely to walls and into corners, narrow recesses and the like. The shoulder or outward flange **15** on the body of the head up to which the band **14** can be moved to clamp the edge of the pad **13** is desirably also made with a correspondingly narrow outward extent of projection.

In carrying out the invention the clamping band **14** is provided with inwardly directed projections **18** to engage in the material of the pad **13** and prevent its edge portions from slipping away from the band **14** and the body portion **10**. The projections **18** are positioned in groups near the centres of the long sides **19** of the band **14**, that is to say at places at which the tendency for the pad to escape from the band is greatest. There may be similar projections positioned towards the centres of the shorter sides of the band **14**. As shown more clearly in FIG. 3 the projections **18** are preferably slightly inclined upwardly so as to resist more firmly any tendency for the edge portions of the pad **13** to slip downwardly from the band **14**. As seen in FIGS. 1 and 2 the band **14** has its end portions or shorter sides formed with central upward

projections 20 to engage in corresponding recesses 21 in the shoulder or flange 15 for locating the band 14 in correct position. The projections 20 may each be formed with or carry latching means as later described.

The applicator may readily be adapted for use in applying liquids for other purposes than cleaning or polishing floors or other smooth surfaces. For example it may be employed for shampooing of carpets, pile fabrics or the like in which case it is advantageous to fit a modified band as illustrated at 22 in FIG. 5 in place of the band 14. The band 22 is fitted along one or both of its long sides 19 with depending brushes 23 formed by tufts or bristles preferably forming a continuous brush and either set into the material of the band 22 or carried in a mounting strip secured in convenient manner to the band for example by adhesive. The band 22 is shown as having the inward projections 18 in groups both on the long sides 19 and at the shorter sides or ends of the band. The band 22 is also shown as having central upward projections 24 of a modified form corresponding to the projections 20 of FIGS. 1 and 2. The projections 24 are each provided with latching means formed as an inwardly directed tooth 25, see FIG. 6, to engage on the top of the body 10 adjacent to the appropriate recess 21 so as to retain the band 22 against undesired detachment from the body 10 when the applicator is in use. Due to the resilient nature of the material of the band 22 the latching tooth 25 can be made to snap on to the head or holder when the band is applied, and can readily be released from engagement therewith when it is desired to remove the pad.

With an appliactor fitted with the brushes 23 and employed for treatment of carpets, fabrics and the like there is greater tendency for the pad to be pulled from the head during use and this tendency will be effectively counteracted by the inward projections 18 on the band 22 and by the latch means provided by the teeth 25 at opposite ends of the band 25 serving to hold the band against detachment from the head.

FIG. 7 shows a somewhat modified form of the band 22 in which along one side 19 a different form of brushing device is provided. This is formed by a succession of flaps or fingers indicated at 26 which may be fitted in edge to edge arrangement or with a slight spacing between them. Alternatively a continuous flexible blade may replace the flaps 26 and extend similarly over the whole width of the holder. The flaps or fingers 26 or an equivalent flexible blade may be mounted on the band 22 in a similar fashion to the mounting of the bristles 23 and like the latter are preferably caused to extend downwardly to slightly beyond the bottom of the applied pad.

A liquid applicator fitted with brushes or equivalent means and intended for use in applying a shampooing liquid as above mentioned, may conveniently be fitted on the rear part of its head or holder with a downwardly projecting rigid or resilient blade extending across the back of the head at a short distance therefrom and at a level above the bottom of the applied pad. Such a blade is indicated in chain lines at 27 FIG. 1. By suitably canting the head or holder backwardly during its movement across a carpet or fabric to which shampoo has been applied, the blade 27 can be caused to press on the carpet or fabric and squeeze the shampoo solution therefrom.

What I claim is:

1. A liquid applicator head comprising in combination a body portion, a mounting provided on the upper part of the body portion to receive the neck of an inverted canister, said head being formed with a restricted passageway leading from the canister mounting and with openings on its under side communicating with said passageway, a compressible pad extending across the bottom of the body portion and having edge portions turned upwardly around the side walls of the body portion and a resilient plastic clamping band embracing the edge portions of the pad and the sides of the body portion and serving to clamp said edge portion to the body portion, said band having integral inwardly directed projections to engage in the material of the upwardly turned portions of the pad to prevent the edge portions from slipping away from between the band and the said body portion.



2. A liquid applicator head according to claim 1 having the inwardly directed projections on the band inclined upwardly to engage the material of the pad.

3. An applicator head according to claim 1 having the inwardly directed projections on the band positioned at the central parts of the ends of the bands.

4. An applicator head according to claim 1 having the inwardly directed projections on the band positioned at the central portions of the front and back of the band.

5. A liquid applicator head comprising in combination a body portion, a mounting provided on the upper part of the body portion to receive the neck of an inverted canister in liquid tight manner, said body portion being approximately rectangular in outline and being formed with a restricted passageway leading from the canister mounting and with openings on the under side of the body portion communicating with said restricted passageway, a compressible pad extending across the bottom of the body portion and having its edge portions turned upwardly around the ends, front and back of the body portion, a resilient plastic band of rectangular outline embracing the up-turned edge portions of the pad and the body portion, and groups of inwardly directed projections provided on said band and integrally formed thereon at the central parts of the front and back thereof.

6. A liquid applicator head comprising in combination a body portion, a shouldered flange projecting outwardly from the upper part of said body portion and formed with recesses at the sides of the body portion, a mounting provided on the upper part of the body portion to receive the neck of an opened and inverted canister, said body portion being formed with a restricted passageway leading from the canister mounting and with openings on its under side communicating with said restricted passageway, a compressible porous pad extending across the bottom of the body portion and having edge portions turned upwardly around the walls of the body portion, a resilient plastic clamping band embracing the up-turned edge portions of the pad and clamping them to the body portion and integral tongue like projections on said band extending upwardly from the sides thereof and engaging in the recesses formed in said shouldered flange on the body portion.

7. An applicator head according to claim 6 wherein the body portion and the band are of approximately rectangular form and the said recesses in the flange and tongue like projections on the band are positioned centrally of the shorter sides of the body portion and band.

8. An applicator head according to claim 6 comprising latching means provided on said tongue like projections on the band to engage with the top of the body portion and retain the band against detachment therefrom.

9. A liquid applicator head comprising in combination a body portion, a shouldered flange projecting outwardly from the upper part of said body portion and formed with recesses at the sides of the body portion, a mounting provided on the upper part of the body portion to receive the neck of an opened and inverted canister, said body portion being formed with a restricted passageway leading from the canister mounting and with openings on its under side communicating with said restricted passageway, a compressible porous pad extending across the bottom of the body portion and having edge portions turned upwardly around the walls of the body portion, a resilient plastic clamping band embracing the up-turned edge portions of the pad and clamping them to the body portion and integral tongue like projections on said band extending upwardly from the sides thereof and engaging in the recesses formed in said shouldered flange on the body portion and brush

members on the clamping band and projecting downwardly from at least one of its forward and rearward edges to extend slightly beyond the bottom of the pad.

10. An applicator head according to claim 9 comprising a downwardly projecting blade attached to the body portion to extend across the back thereof at a short distance therefrom and at a level below the bottom of the pad.

11. A liquid applicator head comprising in combination a body portion, a mounting on the upper part of the body portion to receive the neck of an open inverted canister, said body portion being formed with a restricted passageway leading from said mounting and openings in the under side of the body portion communicating with said passageway, a compressible porous pad extending across the bottom of the body portion and having edge portions turned upwardly around the side walls of the body portion, a resilient plastic clamping band embracing the up-turned edge portions of the pad and the sides



of the body portion to clamp the pad to the holder, inwardly directed integral projections on said band to engage in the material of the pad to prevent its slippage and brush members projecting downwardly from at least one of the forward and rearward edges of the clamping band to an extent slightly beyond the bottom of the pad.

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