

March 18, 1952

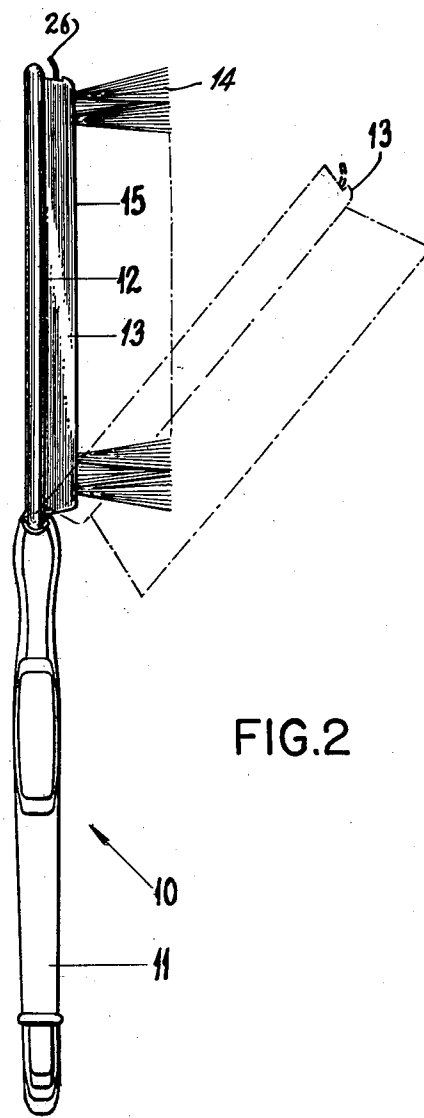
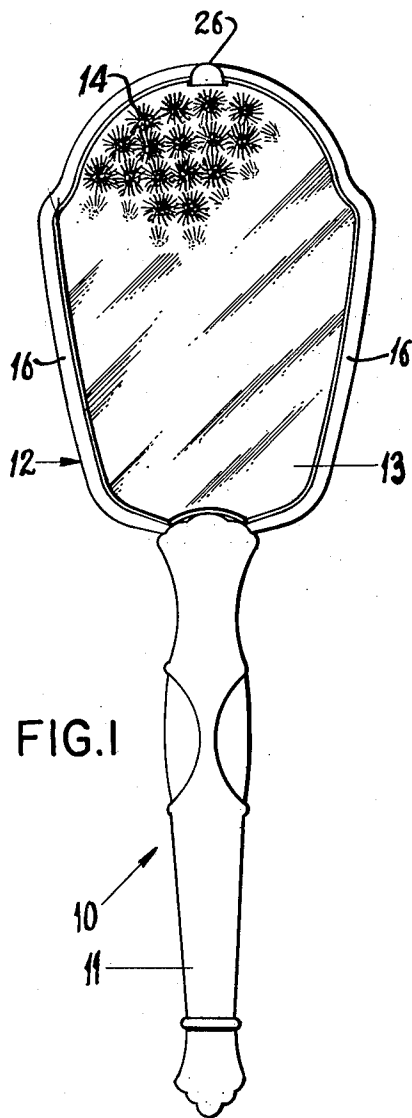
M. H. STORCH

2,589,746

SANITARY HAIRBRUSH WITH REMOVABLE HEAD

Filed Oct. 13, 1949

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

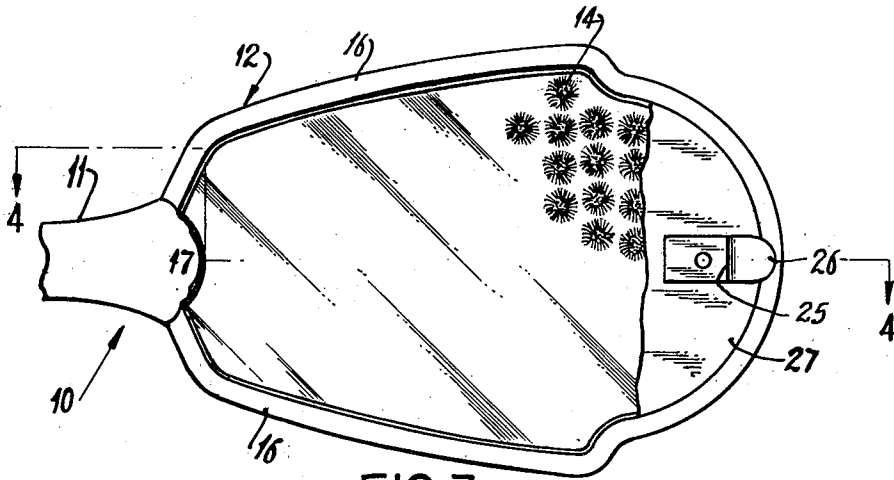


FIG. 3

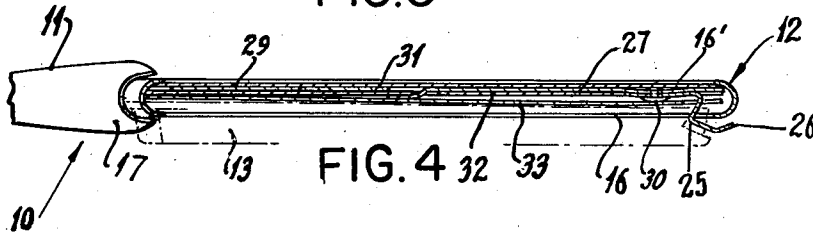


FIG. 4

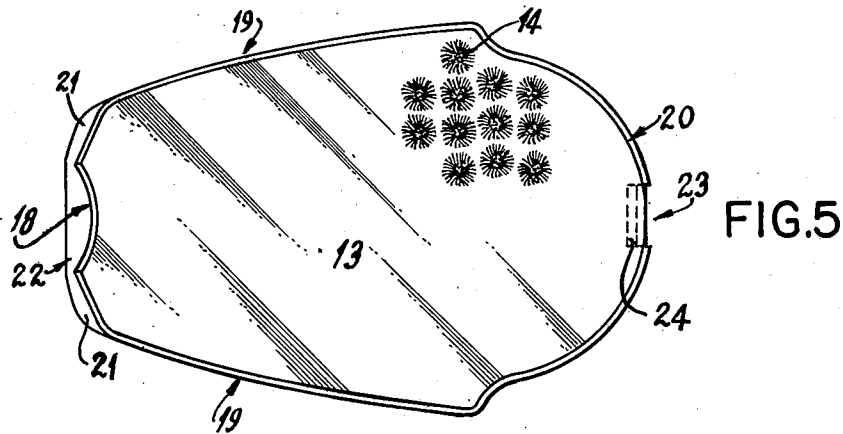


FIG. 5

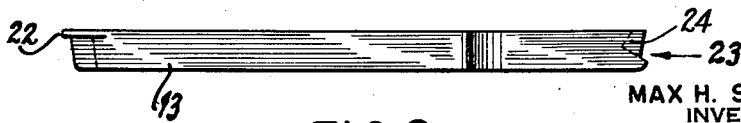


FIG. 6

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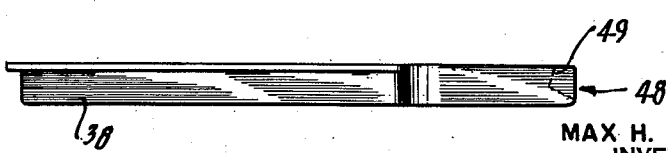
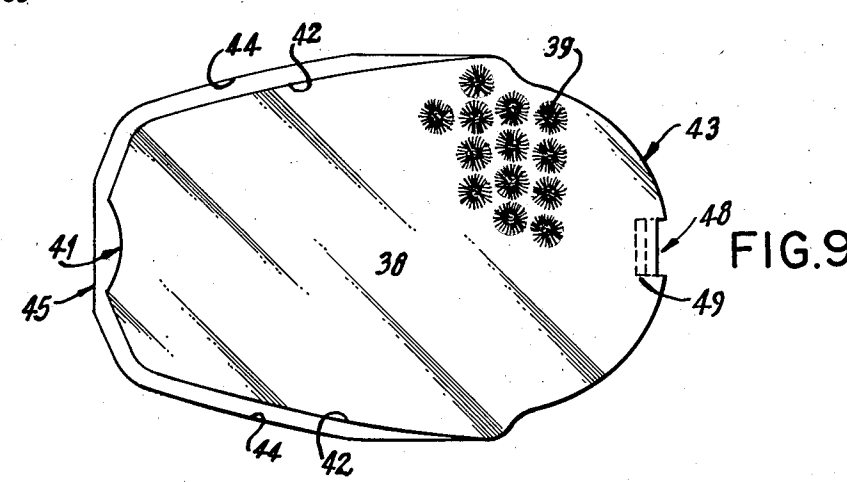
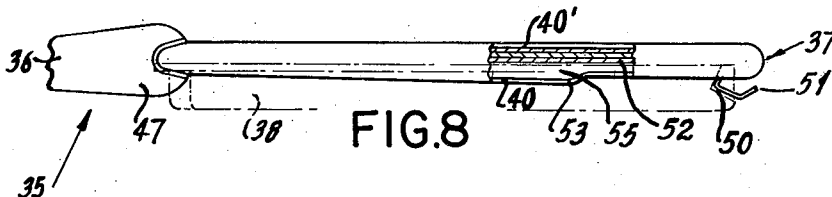
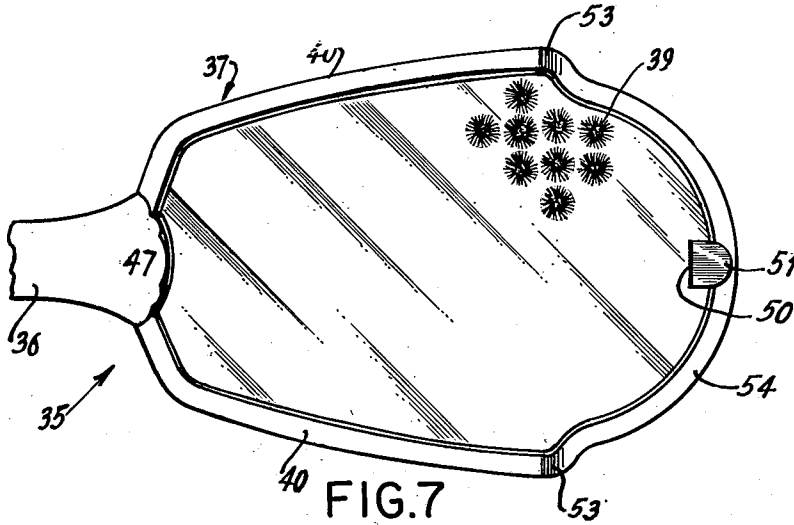


FIG. 10

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# UNITED STATES PATENT OFFICE

2,589,746

## SANITARY HAIRBRUSH WITH REMOVABLE HEAD

Max H. Storch, Belle Harbor, N. Y.

Application October 13, 1949, Serial No. 121,159

5 Claims. (Cl. 15-176)

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This invention relates to improvements in sanitary hair brushes, in which a handle and frame or brush back is adapted to maintain a removable bristle block within the frame structure, the bristle block being disengageable from the back to permit thorough sterilization of the bristle block.

An object of this invention is to provide a two-part detachable brush having a non-washable metal back member and a washable bristle block member made of plastic material and locking means in coacting relation with both members to positively interengage the members in assembled relation.

Another object of this invention is to make the bristle block of modified trapezoidal cross-section, the bristle block having a flange extending around two equal sides and around a small end wall of the bristle block, the large end wall of the bristle block having an acute angularly shaped cavity with the vertex of the angle extending into the block, the metal back having hollow sides forming a raised circumscribing flange, the metal back having a spring movable into the cavity, whereby the bristle block may be inserted into the hollow back with the flanges of the bristle block underlying the flange of the metal back to be positively retained in interlocking engagement with the metal back on three sides, and the spring pressing against the large side of the bristle block to retain the bristle block in engagement with the metal back on all four sides.

With the above and other objects in view, the invention will be hereinafter more particularly described, and the combination and arrangement of parts will be shown in the accompanying drawings and pointed out in the claims which form part of this specification.

Reference will now be had to the drawings, wherein like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is a plan view of the sanitary brush comprising a brush back made of metal and a detachable bristle block made of plastic material.

Figure 2 is a side view of the brush shown in Figure 1, the view showing in dot-and-dash lines the position of the bristle block in partly detached position from the brush back.

Figure 3 is a view of a fragmentary portion of the brush shown in Figures 1 and 2, the bristle block being broken away to show a spring clamp.

Figure 4 is a view of a fragmentary cross-sectional portion of the brush, the cross-section being taken on line 4-4 in Figure 3.

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Figure 5 is a plan view of the bristle block.

Figure 6 is a side view of the bristle block.

Figure 7 is a view of a fragmentary portion of a modified brush back made of metal and a detachable bristle block made of plastic material.

Figure 8 is a view of a fragmentary portion of the modified two-part detachable brush, the circumscribing metal flange being partly broken away to show a portion of the flange pressed down to permit insertion of a three-sided flange on the bristle block into the circumscribing flange.

Figure 9 is a plan view of the bristle block shown in Figure 7.

Figure 10 is a side view of the bristle block shown in Figure 9.

In the illustrated embodiment of the invention, the numeral 10 indicates a two-part detachable brush comprising an integral hollow handle 11 and a hollow metal back 12 made of metal and a bristle block 13 made of plastic material. The bristle block 13 has bristles 14 suitably secured therein and extending from its outer face 15.

The hollow metal back 12 is in the form of a hollow frame having substantially U-shaped sides which form circumscribing front and rear flanges 16 and 16'.

The metal back 12 is preferably fabricated from an elongated metal strip to the desired form of frame and the ends of the strip are housed in the hollow handle and fixed thereto to form a unit of the handle 11 and the metal back 12.

The bristle block 13 has a modified trapezoidal cross-section defined by a small end wall defining a cavity 18, two equal converging side walls 19, and a convex large end wall 20. The bristle block 13 has two thin tapering flange sections 21 extending partly around the two equal sides 19, 19 of the bristle block 13.

The small end wall 18 of the bristle block 13 has a thin flange 22 forming a U-shaped unit with the flange sections 21. The flange sections are made of a thickness to permit their insertion into the metal back 12 and below the front flange 16 and below the free end portion of the top wall 17 of the hollow handle 11.

The large end wall 20 of the bristle block 13 has an acute angularly shaped cavity 23 with the vertex of the angle extending into the bristle block so as to form an undercut wall 24 serving to receive a reversely bent retaining edge 25 of a leaf spring 26 which is fixed to a metal plate 27 which is suitably retained within the circumscribing metal back 12.

In operation, the bristle block 13 is inserted into the hollow frame-shaped metal back 12 with the U-shaped flange 22 underlying the rear por-

tion of the metal back and the rear portion of the top wall of the hollow handle 11 and positively retained in interlocking engagement with the metal back on three sides. The leaf spring 26 moves into engagement with the wall 24 of the cavity 23 in the bristle block at the large wall of the block, and retains the bristle block in engagement with the metal back 12, by pressure against the bristle block in the same direction the block enters the metal back. All four sides of the bristle block are securely retained in engagement with the metal back 12.

As shown in Figure 4 the rear face of the metal back 12 is defined by an ornamental metal plate 29 which is inserted into the hollow metal back 12 into contact with the rear flange 16'.

Adjoining the ornamental metal plate 29 is the metal plate 27 having a rivet 30 which fastens the spring 26 thereto and which serves as a carrier for the spring 26 and for an elongated stiffener bar 31. In practice, the bar 31 is suitably fixed to the metal plate 27, such as by welding. The bar 31 extends lengthwise of and into the handle 11 and stiffens the handle and the metal back assembly.

Adjoining the metal plate 27 is a cardboard 32 which serves as a filler having cutouts through which the spring 26 and the stiffener bar 30 pass. The cardboard 32 provides a smooth surface for a metal foil paper 33 having an adhered moisture-proof metal coating on the outer face.

Figures 7 to 10 inclusive show a modified two-part detachable brush 35 comprising an integral hollow handle 36 and a hollow metal back 37 made of metal and a bristle block 38 made of plastic material and having bristles 39 suitably secured therein.

The hollow metal back 37 is in the form of a hollow frame having substantially U-shaped sides which form circumscribing front and rear flanges 40 and 40'. The metal back 37 is preferably fabricated from an elongated metal strip to the desired form of frame and the ends of the strip are housed in the hollow handle 36 and suitably fixed thereto to form a unit of the handle 36 and the metal back 37.

The bristle block 38 has a modified trapezoidal cross-section defined by a straight small end wall 41, two equal converging side walls 42, and a convex large end wall 43. The bristle block 38 has two thin tapering elongated flange sections 44 extending completely around the two equal sides 42, 42 and around the small end wall 41 of the bristle block 38.

The small end wall 41 of the bristle block 38 has a thin flange 45 forming a substantially U-shaped unit with the flange sections 44. The flange sections are made of a thickness to permit their insertion into the metal back 37 and inwardly, below the flange 40 and below the top wall 47 of the hollow handle 36.

The large end wall 43 of the bristle block 38 has an acute angularly shaped cavity 48 with the vertex of the angle extending into the bristle block so as to form an undercut wall 49 serving to receive a reversely bent retaining edge 50 of a leaf spring 51 which is fixed to a metal plate 52 suitably retained within the circumscribing metal back 37.

In operation, the bristle block 38 is inserted into the hollow frame-shaped metal back 37 with the U-shaped flange 45 underlying the rear portion of the metal back and the rear portion of the top wall 47 of the hollow handle 36 and positively retained in interlocking engagement with the

metal back on three sides. The leaf spring 51 moves into engagement with the wall 49 of the cavity 48 in the bristle block 38 at the large wall of the block, and retains the bristle block in engagement with the metal back 37, by pressure against the bristle block in the same direction the block enters the metal back. All four sides of the bristle block are thus securely retained in engagement with the metal back 37.

It is to be noted that in order to permit the substantially U-shaped flange 45 and the elongated flange sections 44 to enter into the hollow metal back 37, that a portion of the flange 40 is pressed down or offset, starting at points 53, so as to make the convex or large end wall 54 of the metal back 37 thinner than the two sides of the said metal back.

The difference in the heights of these metal back sections is made to cause an opening 55 to be formed in the metal back 37, equal to the thickness of the U-shaped flange 45 on the bristle block 38. This opening permits insertion of the three sided flange into the metal back 37 and clear of the convex end wall portion 54 of the flange 40.

This difference in thickness of the metal flange portions makes it possible to positively retain the bristle block 38 of the two-piece detachable brush 35 in interlocking engagement with the metal back 37 on three sides. In assembled relation, the spring 51 presses against the large convex end of the bristle block 38 and retains the bristle block in its undersurface engagement with the metal back 37. The spring urges the bristle block in the same direction in which the block enters the metal back. The bristle block 38 is thus positively retained on all four sides against lateral outward movement from the metal back.

In accordance with the patent statutes I have described and illustrated the preferred embodiments of my invention, but it will be understood that various changes and modifications can be made therein without departing from the spirit of the invention as defined by the appended claims.

I claim:

1. In a sanitary hair brush comprising a handle and brush back made of metal and a bristle block removable from said metal back to permit sterilization of said block, said metal back having hollow sides forming a raised circumscribing flange, said bristle block being made of plastic material and having a modified trapezoidal cross-section with one large and one small end, a flange extending around two equal sides and around a small end wall of said bristle block, the large end of said bristle block having an acute angularly shaped cavity with the vertex of the angle extending into said block, said metal back having a spring fixed thereto and extending into said cavity, the large end wall portion of said metal back being thinner than the two sides of said metal back, providing an opening into said metal back whereby said three sided flange of said bristle block may be inserted into said hollow metal back with the flanges of said bristle block underlying the flange of said metal back and positively retained in interlocking engagement with said metal back on three sides, said spring being pressed into engagement with said metal back at the large side of said bristle block to retain said bristle block in engagement with said metal back on all four sides.

2. In a sanitary hair brush comprising a handle and brush back made of metal and being non-washable and a bristle block made of washable

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plastic material and being removable from said metal back to permit sterilization of said block, said metal back having hollow sides forming a raised circumscribing flange, said bristle block having a modified trapezoidal cross-section with one large and one small end, a flange extending around two equal sides and around a small end wall of said bristle block, the large end of said bristle block having an acute angularly shaped cavity with the vertex of the angle extending into said block, said metal back having a spring extending into said cavity, the large end wall portion of said metal back being thinner than the two sides of said metal back, providing an opening into said metal back whereby said three sided flange of said bristle block may be inserted into said hollow back with the flanges of said bristle block underlying the surface of said metal back flange to be positively retained in interlocking engagement with said metal back on three sides and the spring pressed into engagement with said metal back at the large side of said bristle block to retain said bristle block in engagement with said metal back by pressing against said bristle block on all four sides.

3. In a sanitary brush comprising a handle and brush back made of metal, and a bristle block made of plastic material and being removable from said metal back to permit sterilization of said bristle block, said metal back having hollow sides forming a raised circumscribing flange, said flange extending into said handle, the small end wall of said bristle block having a cavity, the free end portion of said handle extending into said cavity, said bristle block having a modified trapezoidal cross-section with one large and one small end and a U-shaped flange extending around two equal sides and around the small end wall of said bristle block, the large end of said bristle block having an acute angularly shaped cavity with the vertex of the angle extending into said block, said metal back having a spring fixed thereto and extending into said cavity, the large end wall portion of said metal back being thinner than the two sides of said metal back, providing an opening into said metal back whereby said three sided flange of said bristle block may be inserted into said hollow back with said U-shaped flange underlying the flange of said metal back and positively retained in interlocking engagement with said metal back on three sides while the spring presses into engagement with said bristle block at the large side of said block to retain said bristle block in engagement with said metal back by pressure against said bristle block in the same direction and on all four sides thereof.

4. In a sanitary brush comprising a handle and brush back made of metal, and a bristle block made of plastic material and being removable from said metal back to permit sterilization of said bristle block, said metal back having hollow sides forming a raised circumscribing flange, said flange extending into said handle, said metal back comprising a U-shaped portion, the small end wall of said bristle block having a cavity, the free end portion of said handle extending into said cavity, said bristle block having a modified trapezoidal cross-section with one large and one small end and a U-shaped flange extending

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around two equal sides and around the small end wall of said bristle block, the large end of said bristle block having an acute angularly shaped cavity with the vertex of the angle extending into said block, said metal back having a spring fixed thereto and extending into said cavity, the large end wall portion of said metal back being thinner than the two sides of said metal back, providing an opening into said metal back, whereby said three sided flange of said bristle block may be inserted into said hollow back with said U-shaped flange underlying said U-shaped portion of said metal back and positively retained in interlocking engagement with said metal back on three sides while the spring presses into engagement with said bristle block at the large side of said block to retain said bristle block in engagement with said metal back by pressure against said bristle block in the same direction said bristle block enters said metal back and on all four sides thereof.

5. In a sanitary brush comprising a handle and brush back made of metal, and a bristle block made of plastic material and being removable from said metal back to permit sterilization of said bristle block, said metal back having hollow sides forming a raised circumscribing flange, said metal back comprising a substantially U-shaped portion, a small end wall and a large end wall, the small end wall of said bristle block having a cavity, the free end upper portion of said handle extending into said cavity, said bristle block having a modified trapezoidal cross-section with one large and one small end and a substantially U-shaped flange extending around two equal sides and around the small end wall of said bristle block, the large end wall of said bristle block having an acute angularly shaped cavity with the vertex of the angle extending into said block, said metal back having a spring fixed thereto and extending into said cavity, the large end wall portion of said metal back being thinner than the two sides of said metal back, providing an opening into said metal back whereby said three sided flange of said bristle block may be inserted into said hollow metal back with said U-shaped flange underlying said U-shaped portion of said metal back and positively retained in interlocking engagement with said metal back on three sides while the spring presses into engagement with said bristle block at the large end wall of said block to retain said bristle block against lateral outward movement from said metal back on all four sides thereof.

MAX H. STORCH.

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