Aug. 17, 1943. S. P. NEUHAUSEN 2,326,879

BRUSH

Filed Nov. 22, 1940

Fig. 1

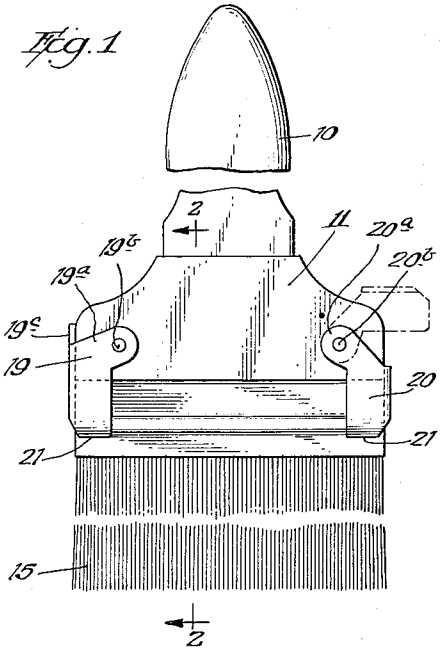


Fig. 2

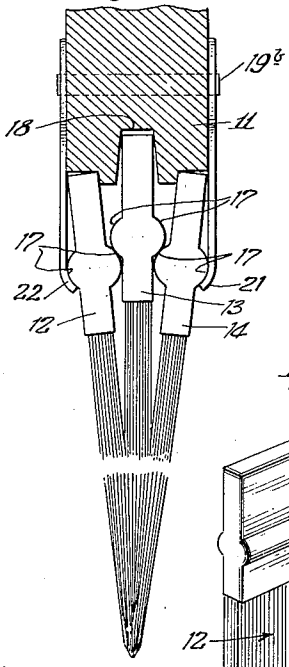


Fig. 3

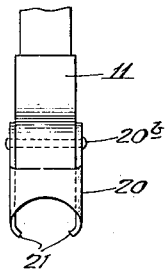


Fig. 4

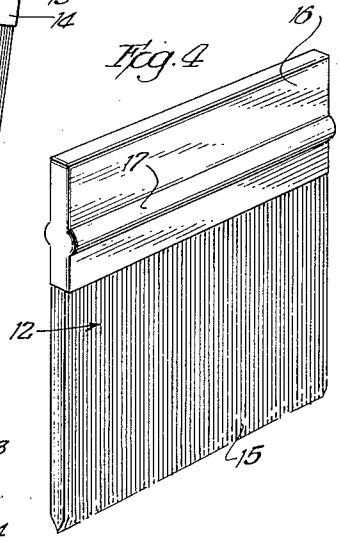


Fig. 5

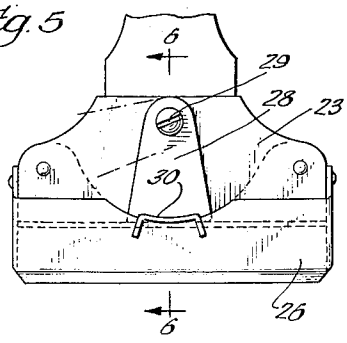


Fig. 7

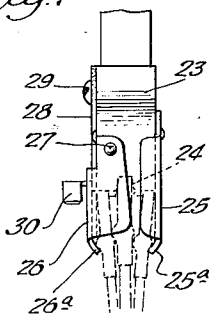


Fig. 6

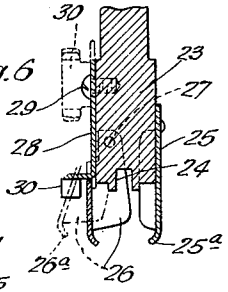


Fig. 9

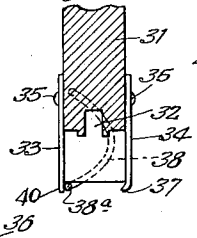


Fig. 8

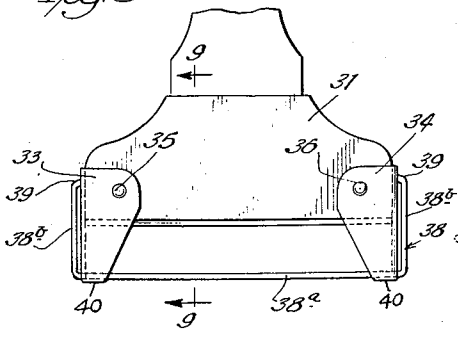
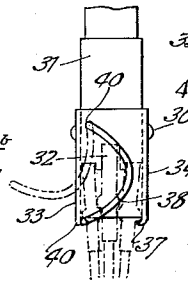


Fig. 10



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BRUSH

Sebastian P. Neuhausen, Lombard, Ill.

Application November 22, 1940, Serial No. 366,575

6 Claims. (Cl. 15—202)

This invention relates to improvements in brushes.

One object of the invention is to provide an improved brush, such as a paint brush, for example, the bristle body of which comprises co-operating sections or units which are readily separable from a handle or holder for convenience in cleaning the bristles after use, or in substituting therefor a different set of such bristle units when desired.

Another object of the invention is to provide a brush having a bristle body comprising separable bristle units or sections each so held by a holder as to provide a bristle body of improved form or shape which facilitates the reception or pick-up of paint by the bristles.

Another object of the invention is to provide improved bristle sections or units, a number of which may be assembled to provide a bristle body for a brush and which are provided with means which mutually co-act for retaining the units in a definite bristle-body forming relation.

Other objects and advantages of the invention relate to various features of construction and arrangement of parts which will be apparent from a consideration of the following specification and accompanying drawing, wherein

Figure 1 is a side elevation of a brush embodying the present improvements;

Figure 2 is an enlarged section taken on the line 2—2 of Figure 1;

Figure 3 is a broken end elevation of the brush shown in Figure 1, viewed from the right of said figure, the bristle units not being shown;

Figure 4 is a detached perspective view of a bristle unit or section;

Figure 5 is a broken front elevation of a modified form of bristle holder;

Figure 6 is a sectional view taken on the line 6—6 of Figure 5;

Figure 7 is an end elevation of the structure shown in Figure 5;

Figure 8 is a front elevation of another embodiment of the improved bristle holder;

Figure 9 is a sectional view taken on line 9—9 of Figure 8;

Figure 10 is an end elevation of the holder shown in Figure 8.

In the drawing 10 indicates generally a handle of a brush which, for example, may be a paint brush, and is provided with a bristle holder comprising a base or head 11 attached to or integral with the handle. For use with the brush head a plurality of bristle sections or units are provided, one of which is shown in perspective in Figure 4. In the embodiments of the invention shown the head is designed for holding three such units, which in Figure 2 are designated by numerals 12, 13 and 14 for convenience of description, the units, however, being identical. Each unit, as exemplified by the unit designated by numeral 12 in Figure 4, comprises bristles 15 preferably vulcanized into a united group at the upper ends, which ends are enclosed in a ferrule 16 which may be of sheet metal. The ferrules are provided with any appropriate engageable formations such as ribs 17 which, in Figure 4, are shown as being disposed in opposite sides of the ferrule.

For the purpose of giving the bristle body of the composite brush a desired shape in end elevation, that is, the bristle body formed by the bristles of the sections 12, 13 and 14, the bristle units are disposed in non-parallel relation when in operative position in the holder, as shown in Figure 2. In said figure it will be seen that the intermediate bristle unit 13 is disposed parallel with the longitudinal axis of the brush, whereas the lateral units 12 and 14 tend to converge at the lower or free end of the bristles, thus giving the brush a wedge shape, as illustrated. For the purpose of facilitating the disposition of the bristles in the wedge or chisel-like shape mentioned, the intermediate bristle unit 13 is offset or staggered vertically with respect to the sections 12 and 14. In order that the units may be thus staggered, the brush head 11 is provided with a channel 18 in which the upper end of the intermediate section 13 seats. It will be obvious that the depth of the channel 18 is such that when the bristle units 12, 13 and 14 are in the assembled position shown in Figure 2 the ribs 17 of the intermediate section 13 contact the upper surface of the adjacent ribs 17 of the units 12 and 14. The intermediate unit 13 will thus be held in position by the latter units 12 and 14 when the latter, in turn, have been secured within the brush holder.

For retaining the bristle units in the position shown in Figure 2, the brush head shown in Figures 1, 2 and 3 is provided with a pair of clips 19 and 20. Clip 19 is provided with ears 19a secured to the head 11 by a rivet 19b, or the like, and provided with an upstanding flange 19c which contacts the end of the head 11. The arrangement described holds the clip 19 in stationary relation with reference to the head 11. The clip 20 is somewhat similar to clip 19 but has no flange corresponding to flange 19c but is provided with ears 20a secured by a pivot member

20[b] to the brush head whereby the clip can be swung from the full line to the dotted line position shown in Figure 1.

The clips 19 and 20 are provided with inwardly turned flanges 21 at their lower edges (see Figures 2 and 3), which are adapted to engage the outer ribs 17 of the lateral brush units 12 and 14 for retaining the latter in the assembled position shown in Figure 2. In inserting the brush units in the holder formed by the co-action of the clips 19 and 20 with the head 11, clip 20 is first swung to the dotted line position whereupon the bristle units can be placed in the relative position shown in Figure 2, in which position the inwardly turned flanges 21 of clip 19 will engage the outermost ribs 17 of the latter units 12 and 14. The clip 20 is then swung from the dotted line to the full line position of Figure 1 wherein the flange 21 thereof firmly engage beneath the ribs 17 on the outside of the units 12 and 14. The brush units thus are held in firm but releasable engagement by the bristle holder and in the relation shown in Figure 2, that is, with the lateral units converging at the free ends of the bristles.

In the described position of the bristle units, it will be noted they are spaced apart slightly at their upper ends but that the bristles are compacted or held firmly together at the lower ends. The spacing or well-like arrangement of the bristles immediately below the lower ends of the ferrules 16 enables paint or the like to enter the bristle body quite readily when the brush is dipped into the paint, thus facilitating the picking up of the paint by the improved brush. The compacting of the bristles adjacent the lower ends thereof not only gives the brush a desirable wedge shape, but such relation of the bristles tends to inhibit the dripping of surplus paint from the end of the brush.

When it is desired to clean the bristles of the improved brush, the clip 20 is merely swung to the dotted line position of Figure 1, and the bristle units withdrawn and washed out or laid in the bottom of a receptacle containing a solvent for the paint or the like with which the brush has been used. It is thus not necessary to stand the bristles on their ends which, as is well known, eventually results in the deformation of the bristles and the ruination thereof. The bristle units being relatively thin from side to side, each being about one-third of the thickness of a bristle head of a conventional brush of corresponding size, permit ready penetration of the solvent and more thorough cleansing of the paint from the bristles.

Another advantage of the improved brush is that with an additional set of bristle units a user can merely remove one set and substitute a clean set when it is desired to use the brush with paint of a different color. It is thus not necessary to take the time to clean the first set thoroughly before using the brush with paint of a different color. Inasmuch as the bristles on the outer surface of the brush head wear more quickly than the bristles on the interior of the brush head the units can be altered in position so as to bring the less worn bristles to the exterior of the brush and thus retain the brush in its best condition for a longer period of time than is possible with brushes having fixed bristle bodies.

The embodiments of the invention shown in Figures 5 to 10, inclusive, differ from that above described only with respect to the construction of the bristle holder. In the form shown in Figures 5, 6 and 7 the brush head is indicated by the numeral 23, which is provided with a groove 24 corresponding to the groove 18 of the above described embodiment. The holder comprises a pair of clips 25 and 26, clip 25 being permanently secured to the brush head 23, while clip 26 is pivoted to the head at 27 to enable the same to be swung from the full to dotted line position shown in Figure 6. When the clip 26 is swung outwardly to the dotted line position, the bristle sections can readily be placed in or removed from the same relative position as that of the bristle sections shown in Figure 2, after which the clip 26 is swung to full line position. The clips 25 and 26 are provided with inwardly directed flanges 25[a] and 26[a], respectively, for engagement with the lower portions of the ribs 17 on the lateral surfaces of the exterior brush units for retaining the same in operative positions. A latch member 28 is pivoted at 29 to the brush head on the side of the pivoted clip 26 and is provided with a thumb piece 30 which engages the clip 26 to restrain pivoted movement thereof and to retain the same in the full line position shown in the drawing. The latch 28 may, by means of the thumb piece 30, be swung to the dotted line position shown in Figure 5 to release the clip 26 when the bristle units are to be removed from the holder.

The embodiment shown in Figures 8, 9 and 10 comprises a brush head 31 provided with a channel 32 for receiving the intermediate brush unit as illustrated in the above described modifications and is provided at its ends with two stationary clips 33 and 34 at the ends of the head, which may be riveted to the head as at 35 and 36, respectively. The clips 33 and 34 are of U-shape in plan view and at one side only of the brush each clip is provided with an inwardly turned flange 37, as shown in Figures 9 and 10. The flanges 37 are adapted to engage beneath a rib 17 of one of the lateral bristle units, similarly to the rib 25[a] shown in Figure 7. In placing the bristle units in the holder of the form shown in Figures 8 to 10, inclusive, they are inserted axially of the brush and when in such position a pivoted latch 38, in the form of a U-shaped spring wire having ends 39 inserted in openings 40 to provide pivotal anchorage in the end walls of the clips 33 and 34, is swung from the dotted line position to the full line position shown in Figure 10. In such full line position the transverse portion 38[a] of the clip 38 is disposed back of the ends 40 on the side of the brush opposite the inwardly turned flanges 37. The ends or flanges 40 are not turned inwardly, however, but serve merely to engage the section 38[a] of the latch 38. The arms 38[b] of the latch 38 are somewhat U-shaped and resilient and thus permit the portion 38[a] of the latch to be sprung over the flanges 40 into the position shown in full lines in Figure 10. In such position the portion 38[a] engages beneath the rib of the adjacent lateral brush unit in somewhat the same manner as do flanges 26 of the modification shown in Figure 7. By exerting a downward thrust on the portion 38[a] of the latch 38 it can be released from the flanges 40 and swung to the dotted line position shown in Figure 10, whereupon the brush units are released and can readily be removed from the holder.

In the embodiments of the invention illustrated, the gripping or holding action of the ferrule engaging portions of the holders, being imposed on the lateral bristle units in lines below

the respective ribs, tend to cause the two lateral units to converge toward the lower ends as illustrated in Figure 2. Thus, by reason of the above mentioned arrangement and the vertical offsetting or staggering of the intermediate unit, not only is the bristle head of the composite brush given a desirable wedge shape in side elevation, but the ribs of the intermediate unit are caused to engage the adjacent ribs of the lateral units for retaining the former unit in operative position.

While I have shown and described certain embodiments of my improvements for the purpose of illustration, it will be apparent that various changes can be made therein without departing from the spirit of the invention.

I claim:

1. A brush comprising three elongated bristle units each having a ferrule at one end provided with elongated engageable members on the sides thereof, and a holder for receiving the units in side-by-side relation and provided with retaining means for engaging said members of two lateral units and having means for effecting the disposition of the intermediate unit in a position wherein the engageable members thereof are engaged by the said members on the adjacent sides of the lateral units.

2. A bristle unit for a multi-bristle unit brush adapted for co-action with other like units to form a bristle body comprising bristles having a ferrule at the upper end thereof, and elongated members on opposite sides of the ferrule adapted for engagement in vertically staggered relation with similar members of other bristle units and with ferrule engaging means of a bristle holder when the said unit and other like units are inserted in such holder.

3. A brush comprising three separable elongated similar brush units each provided with a ferrule at one end and a holder for receiving the units in side-by-side relation and provided with means abutting the upper ends of the ferrules for locating the upper ends of two lateral units in a plane off-set vertically from the plane of the upper end of the intermediate unit for spacing the lower ends of the bristles of the intermediate unit from the plane of the lower ends of the bristles of the lateral units.

4. A brush comprising three separable similar bristle units each provided with a ferrule at the upper end and similar opposed engageable means on opposite sides of the ferrule, and a brush holder comprising a pair of spaced flanges defining a space therebetween for receiving the ferrules of said units in side-by-side and alternate vertically staggered relation with the engageable members of the intermediate unit interengaged with the adjacent members of the lateral units, and means comprising inwardly turned lips on the lower edges of said flanges for engaging the other engageable members of said lateral units for retaining all the units in said space.

5. A brush comprising similar separable bristle units each having a ferrule at the upper end, said ferrules being provided with similar engageable members on opposite sides thereof and a bristle holder provided with members defining a space for receiving therebetween the ferrules of said units in side-by-side contacting relation with the adjacent engageable members thereof in alternate vertically staggered relation, and means engageable with the engageable members of the ferrules of the lateral units for retaining the units in bristle body forming relation.

6. A brush comprising a holder provided with a lower surface having a central longitudinal groove therein corresponding in width to approximately one-third the width of said surface for dividing the surface into three bristle-unit abutting areas against which the upper ends of three separable similar bristle units are adapted to abut and effect the staggering of the intermediate unit vertically with respect to the two lateral units, and means for gripping and removably retaining such bristle units in said staggered relation comprising opposed members projecting beyond said lower surface and having inturned ferrule-contacting portions at their lower edges.

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