Nov. 29, 1932. E. C. ROSENBERG 1,889,182

BRUSH

Filed Nov. 17, 1930

FIG. 1.

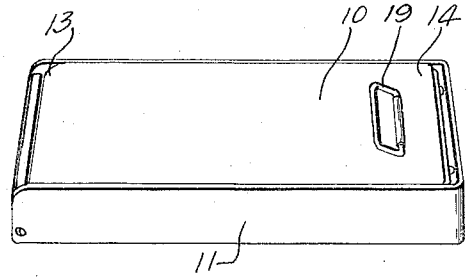
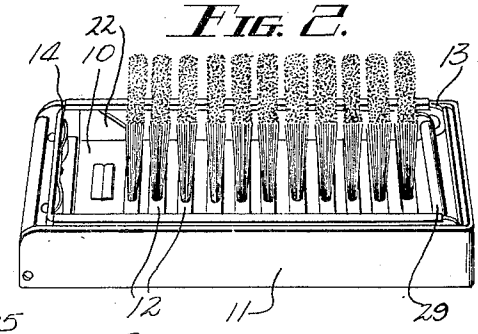


FIG. 2.



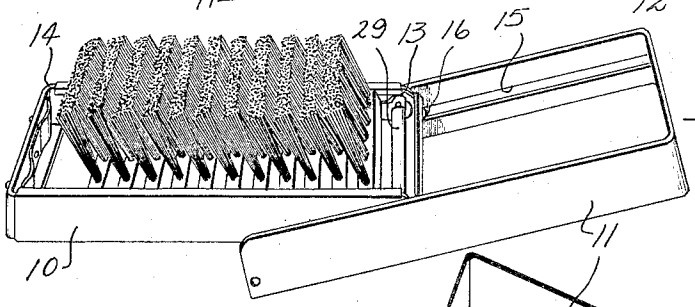


FIG. 3.

FIG. 4.

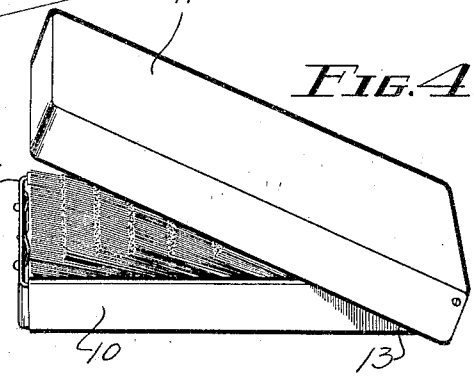
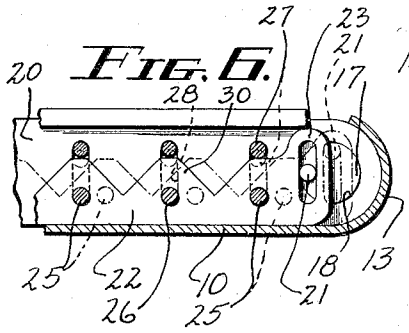
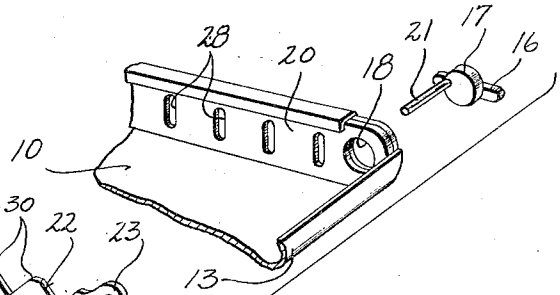


FIG. 6.





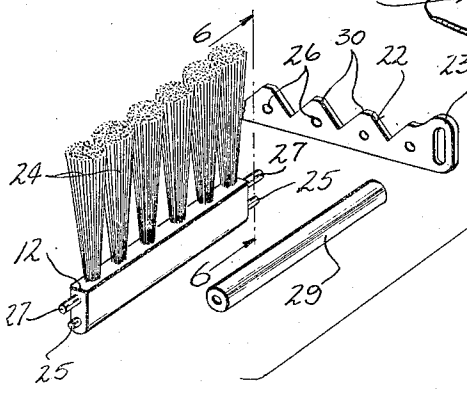


FIG. 5.

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UNITED STATES PATENT OFFICE

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BRUSH

Application filed November 17, 1930. Serial No. 496,052.

My invention relates to an improvement in brushes.

The object of my invention is to provide a brush within a case of very small dimensions and provided with bristle carrying members collapsed within the case and extensible in the opening of the case to provide a workable brush.

Another object of my invention is to provide an actuating mechanism for collapsible bristle carriers.

Another object of my invention is to provide a case and holder for brush bristles which will take up very little room in a suit case or other package and will, when unfolded or opened up, comprise a back for the brush in compact, solid form.

In the drawing:

Figure 1 shows my brush and case completely closed.

Figure 2 shows the same case in completely open position.

Figure 3 shows the brush and case partially opened.

Figure 4 shows the case almost closed.

Figure 5 shows the internal mechanism in exploded view.

Figure 6 is a section drawn on line 6—6 of Figure 5.

Like parts are designated by the same reference characters throughout the several views.

My improved folding or collapsible brush includes certain major structural parts including the bristle holding case 10, a cover 11, and a number of bristle clips 12. The mechanical features important to my invention include a sliding hinge mechanism connecting the case 10 and the cover 11 and a number of mechanical devices and elements shown most clearly in Figure 5 for controlling the bristle clips so as to cause the bristle to fold or collapse or to stand erect in accordance with the change of position of the cover 11 with reference to the case 10.

In opening my brush case the case 10 is not only hingedly open but it is also longitudinally slidably transposed so that the hinge end 13 as shown in Figure 1 is disposed at the opposite end of the cover as shown in Figure 2 and the free end 14 in Figure 1 assumes the position shown at 14 in Figure 2. In the intermediate partially open position the respective ends of the case 10 are in the position shown in Figure 3. This is accomplished through the inclusion in the side walls of the cover of slots 15 which receive slides 16 with which bearing members 17 are integral.

It will be noted that the bearing member 17 is eccentrically positioned with respect to the slide 16 and that the aperture 18 which receives the bearing member 17 is substantially centrally positioned with respect to the vertical dimension of the case 10. This compensates for the difference in elevation of the case which I have found preferably when the brush is closed for packing or open for use. As shown in Figure 1 the case is snugly positioned within the margins of the cover level and some additional space is provided in the open brush between the case 10 and the cover 11 so that a handle 19 has plenty of room between the cover and the case and comprises a brace against which the pressure during use of the brush may be exerted at one end of the brush while the hinge construction at the other end of the brush maintains the parts in rigid relationship.

From the above it will be understood that when the closed or folded brush device is to be opened the handle 19, as shown in Figure 1, will be pulled so as to hingedly remove the case 10 from the cover 11. Then, when the end 13 of the case is free from its corresponding end of the case 11 the end 14 may be slidably moved to the other end of the cover 11 and the end 14 of the case may be pressed down into the cover, as indicated in Figure 2.

The mechanism for folding or unfolding the bristle clips 12 includes slotted side members 20 at either side of the case 10 through which a stub shaft 21 eccentric to the hinge part 17 projects. Just inside the slotted side member 20 I provide a bristle clip actuator 22 which is provided with a slotted end 23 which is engaged by the stub shaft 21 so that as the case 10 is hingedly moved with reference to the hinge member 17 the clip actuator 22 upon the eccentrically mounted stud shaft 21

is caused to reciprocate in its position along the side wall of the side member 20. Each of the clips 12 holding bristles 24 is provided with trunnions 25 receivable in holes 26 provided, therefore, in the clip actuator 22. Studs 27 at either end of the clips 12 project between the saw teeth of the clip actuator 22 and are receivable in the slots 28 in the side member 20. A spacer tube 29 receivable upon the stub shafts 21 serves to maintain the clip actuators in spaced relation and prevent them from bending upon the ends of the bristle clips. It will be noted that the tips of the saw teeth 30 are blunt and that they are of sufficient height to slide beneath the studs 27 when the clip and bristles are in a position perpendicular to the floor of the case 10 and when the clip actuator is moved with reference to the studs 27, the space between the saw teeth 30 of the clip 22 permit the bristles and the bristle clip to assume a position parallel or nearly parallel to the bottom of the case 10.

In operation therefore the parts described above are disposed and moved as follows:

When the case is opened as shown in Figure 2 the bristle clips are in position perpendicular to the floor and the case 10, the studs 27 are disposed over the tops of the blunt tips of the saw teeth 20 and the actuator 22 and extend into the slots 28 in the slide members 20. Then as the case is hingedly pulled from the cover 11 the slides 16 hold the stub shaft 10 in fixed relation to the cover so that the actuator 22 with its slotted end 23 embracing the stub shaft 21 is moved longitudinally of the case so as to actuate the bristle clip 12 by moving the trunnions 25 while the studs 27 are held by the slots 28, thus swinging the clip 12 toward a horizontal position.

I claim:

1. The combination with a case and a slotted cover therefor, of a bristle clip mounted for oscillation in the case, a slide fitted to the slot in the cover and a hinge in connection with said slide to support the case with reference to the cover, an actuator for the bristle clip mounted within the case and connected with the hinge, whereby to oscillate the clip in coordination with the movement of the cover hingedly with reference to the case.

2. The combination with a slotted case and a bristle clip provided with studs projecting into the slots of said case, an actuator notched to embrace said studs and provided with apertures, a trunnion upon said bristle clip receivable in an aperture in the actuator whereby in the movement of said actuator to cause said clip to oscillate pivotally upon said trunnions.

3. The combination with a slotted case and a bristle clip provided with studs projecting into the slots of said case, an actuator notched to embrace said studs and provided with apertures, a trunnion upon said bristle clip receivable in an aperture in the actuator whereby in the movement of said actuator to cause said clip to oscillate pivotally upon said trunnions, said notched actuator acting as a cam and blunt points between said notches in the actuator interacting with the said studs to brace the clip in upright position when the trunnion is in the end of a slot.

4. The combination with a box member and cover member, one nested within the other, of a hinge member on said box member provided with a laterally extended slide, the exterior member being provided with a slot to receive said slide, whereby the box member may be slidably, hingedly inverted from one nested position to another.

5. The combination with a box member and cover member, one nested within the other, of a hinge member on said box member provided with a laterally extended slide, the exterior member being provided with a slot to receive said slide, whereby the box member may be slidably, hingedly inverted from one nested position to another, and a bristle holder mounted for movement within the box in accord with the articulate movement of the members.

EDWIN C. ROSENBERG.