Dec. 9, 1947. J. E. HORN 2,432,098

HANDLE OPERATED BRUSHES, BROOMS, AND LIKE ARTICLES

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Fig. 1

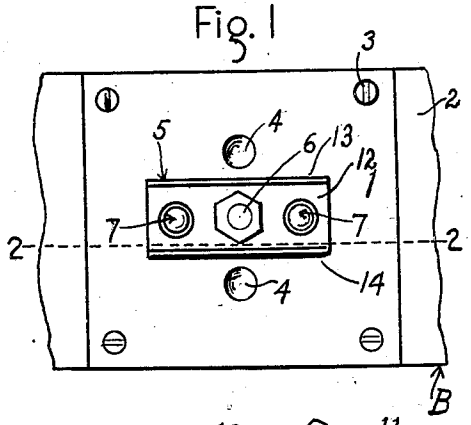


Fig. 4

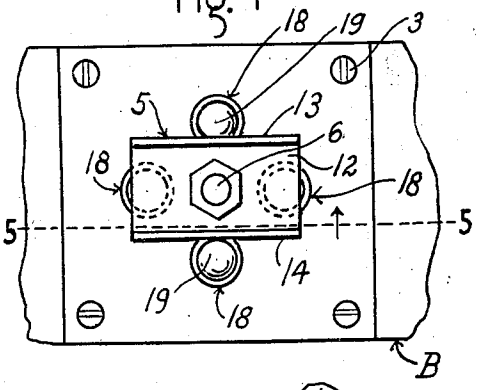


Fig. 2

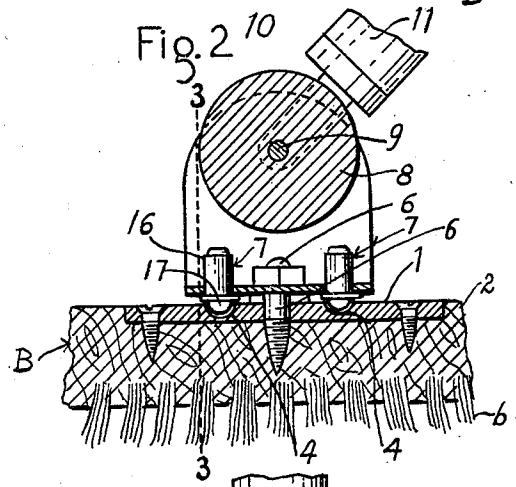


Fig. 5

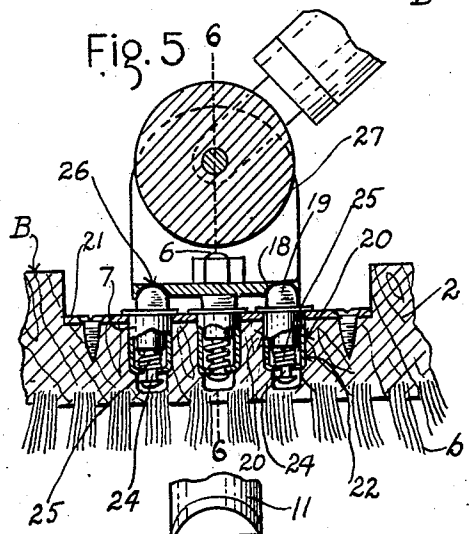


Fig. 3

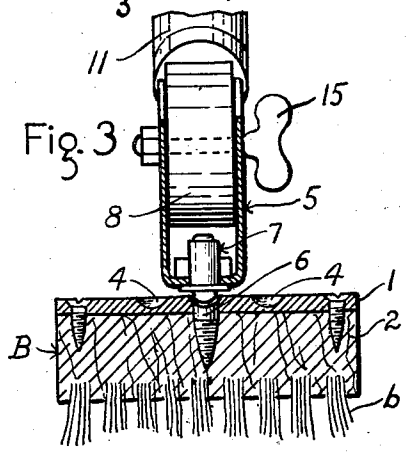
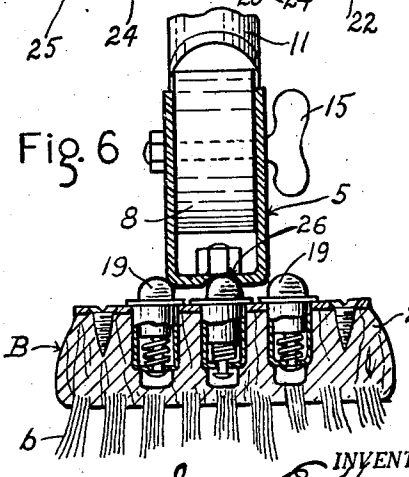


Fig. 6



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Fig. 7

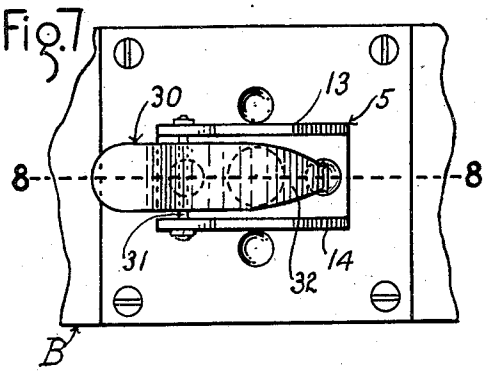


Fig. 8

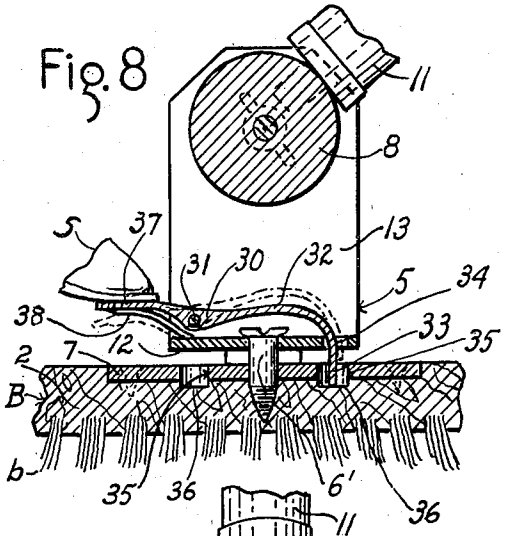
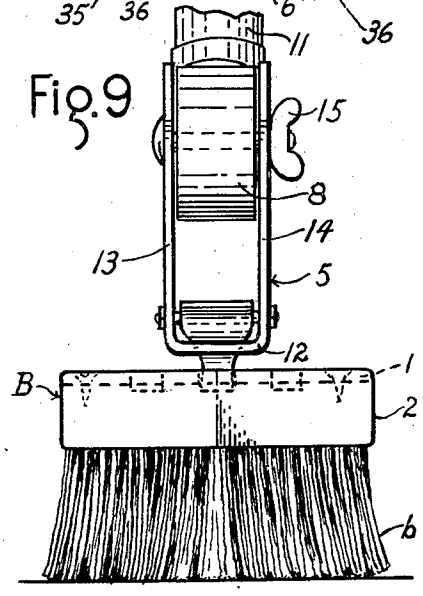


Fig. 9



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Patented Dec. 9, 1947 2,432,098

UNITED STATES PATENT OFFICE

2,432,098

HANDLE OPERATED BRUSHES, BROOMS, AND LIKE ARTICLES

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Application October 5, 1944, Serial No. 557,280

1 Claim. (Cl. 306—3)

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This invention relates to improvements in handle-operated brushes, brooms and like articles.

It has heretofore been the practice to provide on brushes, such as dust brushes or bristle brooms and scrubbing brushes, bearing brackets or lugs in which handles are mounted. Such handles were usually pivotally movable in a vertical plane in the bearing bracket about a horizontal pivot or pivots from a position at right angles to the head at one side thereof to and through intermediate positions to a position at right angles to the head on the opposite side thereof. This enabled the angularity of the handle to the brush head and its bristles to be changed and reversed so as to enable equalization of wear of such bristles during use at two edges of the bristles, it being understood that constant contact of one edge of the bristles with the surface to be cleaned, while the handle is in one position, will cause uneven wear and an inclination of the bristles in relation to the head, and that a movement of the handle will assist in avoiding such uneven wear at two of the longitudinal edges of the bristles.

One of the objects of my invention is to provide means whereby the wear of the bristles will be equalized at all four of the edges of the brush.

Another object of my invention is to facilitate the movement of the handle to varying positions about the head of the brush.

Still another object of my invention is to enable the projection of the brush into long narrow spaces, within which only the narrow edge of the brush will fit and which could not otherwise be entered to the same extent with a handle-operated brush.

Another object of my invention is to provide a bearing bracket for the handle of the brush that may be turned axially about a vertical pivot on the head thereof, so that the narrow portion of the brush may be arranged parallel to the handle to enable insertion of the brush lengthwise into corners and narrow spaces.

Another object of my invention is to provide an easy and quick method of reversing the position of the handle to opposite sides of the brush head.

Another object of my invention is to utilize my axial turning means in combination with the turning means for movement in a vertical plane and thus to permit better projection and operation of the brush in narrow and low spaces.

In accordance with my invention, a conventional brush head is provided with a fixed base plate and a handle-mounting bracket is swiveled about a vertical axis and means is provided for locking the handle-mounting bracket to the base plate in a plurality of positions, and preferably in four handle positions, two at opposite sides of the head and two at the opposite ends thereof,

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thus enabling efficient brushing of all surfaces.

With these and other objects in view, the invention comprises the combination of members and arrangement of parts so combined as to coact and cooperate with each other in the performance of the functions and the accomplishment of the results herein contemplated, and comprises in one of its adaptations the species or preferred form illustrated in the accompanying drawings, in which:

Fig. 1 is a top plan view of a fragmentary portion of a brush head showing one form of my handle-mounting bracket, with automatically engageable and releasable locking members on the bracket, the handle being omitted;

Fig. 2 is a section substantially on the line 2—2 of Fig. 1 but showing the handle mounted in the bracket;

Fig. 3 is a section substantially on the line 3—3 of Fig. 2;

Fig. 4 is a top plan view similar to Fig. 1 of my handle-mounting bracket, with similar locking members mounted in the plate beneath the bracket;

Fig. 5 is a section substantially on the line 5—5 of Fig. 4;

Fig. 6 is a section substantially on the line 6—6 of Fig. 5;

Fig. 7 is a top plan view similar to Figs. 1 and 4 of my handle-mounting bracket showing a foot-operable form of locking member mounted on the bracket;

Fig. 8 is a section substantially on the line 8—8 of Fig. 7;

Fig. 9 is an end elevation of my brush-head and handle-mounting bracket showing the form of locking device illustrated in Figs. 7 and 8.

Referring now to these drawings, and particularly to Figs. 1 to 3 thereof, B indicates a brush having bristles *b* mounted in the head **2** and operable by a conventional long handle **11** which, as shown, is provided at its bottom end with a knuckle or spool **8** mounted pivotally in a U-shaped bearing bracket **5** on a horizontal pivot pin **9** and being movable to swing about said pin in a vertical arcuate path from one side of said head to the other and to project at right angles from either side of the head. The handle is preferably lockable in any suitable position for operation for use at either side of the head **2** by a thumb screw **15**, and this mounting thus provides for the swinging and locking of the operating handle in such reversed positions so as to enable equalization of the wear of the bristles at opposite side edges of the head.

In accordance with my invention, the bearing bracket **5** for the handle, instead of being fixedly connected to the head, is mounted to have an axial swivelling movement about a vertical pivot comprising, as shown, the upper cylindrical por-

tion of a screw 6 and preferably is mounted above a socketed base-plate 1 secured to the brush head 2 by screws 3. The bracket 5 is lockable to said base plate in four radial positions with reference to the brush head and the handle may thus be caused to project from the ends of the brush head as well as from the sides.

In all the embodiments of my invention shown, the bracket 5 comprises a U-shaped oblong member composed of a flat bottom plate 12 and two side-plates 13 and 14 extending vertically therefrom to form bearings for the knuckle or spool 8 to which the handle 11 is connected and, in accordance with my invention, the screw-pivot 6 passes vertically through the bottom plate at its central portion radially beneath the knuckle 8 and in vertical alignment with the horizontal pivot 9 and the ends of said oblong U-shaped member 5 move in a circular path about said pivot 6 and I provide in the base-plate 1 a series of four depressions or notches 4 disposed in a circular path and adapted, during axial turning movement of the bracket, to be reached by an engaging member or members 7 carried by the said bottom plate 12.

In the construction shown in Figs. 1 to 3, the depressions or notches are positioned at quadrant positions of the circular path, thus providing four positions in which the bearing bracket may be locked and these positions confront the two sides and the two ends of the bracket, and the pair of engaging members comprise conventional latch elements composed of a casing 16 and a spring-pressed plunger member 17, the construction of which is more particularly illustrated in Figs. 4 to 6.

In Figs. 4 to 6 inclusive, I have shown a modified form of my invention in which, instead of the engaging members or latch members being carried by the bracket member, a series of four latching elements, each composed of a casing 18 and a spring-pressed plunger 19, are mounted in holes or sockets 20 partially formed in the base plate and partially in the head 2. The plungers extend upwardly to enter into sockets 26 formed in the bottom plate 12 of the bracket 5. As shown, each latching element comprises a plunger 18 mounted to slide in a casing 19 and provided at its lower end with a guide-pin 24 fixed or connected to the plunger and having a slidable connection with the end of the casing. The pin 24 has mounted thereon a spiral spring 25 arranged between the contracted bottom portion of the casing and the lower end of the plunger 18. As above indicated, four of these spring-pressed latch-elements are arranged in the arc of a circle to confront the sides and ends of the bracket member, and said bracket is provided with sockets or depressions 23 at opposite ends of the axial swivel or pivot pin 27. In other respects the construction shown in Figs. 4 to 6 is similar to that described and illustrated in regard to Figs. 1 to 3.

In Figs. 7 to 9 I have illustrated a modified and preferred construction of my invention, in which a latching element or pawl 30 is pivotally mounted on a horizontal pivot 31 extending between the sides 13 and 14 of the bracket member 5, which is substantially similar in all respects to the brackets hereinabove described in relation to Figs. 1 to 6. This latching element has an inwardly-extending arm 32 extending across the axial pivot 6' and provided at its end with a toe portion 33 adapted to pass through an aperture 34 in the bottom plate 12 of the bracket 5 and to enter one of a series of four sockets or apertures composed of registering portions 35 and 36 in the base plate 1 and head 2. At the opposite side of the pivot 31, the latching member is provided with an operating arm 37 extending outside the bracket 5 so as to permit foot-operation or a stepping upon the same by means of the shoe S of the operator. The latching member or pawl 30 is provided with a spring 38 which is preferably suitably fastened to the arm 37 and bears against the upper surface of the bottom plate 12 of the bracket. This construction is otherwise similar to that shown in Figs. 1 to 6 inclusive and, because of the embodiment therein of a foot-actuated latching element, provides a very handy method of changing the position of the bracket in relation to the head.

The operation of the device will be substantially obvious from the foregoing description and it will only be necessary to say that in Figs. 1 to 6 the latching elements are automatically engageable and releasable by the mere turning of the handle bracket, while in Figs. 7 to 9 the engagement is positive and is releasable by the pressure of the toe of the user on the extension portion 37 and the simultaneously turning of the handle-bracket by the use of the handle.

Having described my invention, I claim:

A handle-operated brush embodying, in combination, a brush-head member having bristles projecting from its lower surface and provided on its upper surface with a flat faced base plate, a pivot member mounted centrally of said base plate, a handle-bracket member of U-shaped conformation mounted to swivel on said pivot member in a completely circular path relative to said base plate and having a flat bottom plate movable, during said swiveling of said bracket member, in parallelism with and closely adjacent to said flat base plate, a handle mounted in the side walls of said U-shaped bracket, a manually releasable latching element mounted on one of said adjacent plates and latch sockets in the other plate said latching element in latched position directly engaging said bottom plate said socket being arranged in quadrant positions in an arc of a circle surrounding said pivot member, and independent spring means for moving said latching element into latching position whereby a readily releasable and rugged latching construction capable of rough usage is provided.

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