Nov. 19, 1935. W. G. STEARNS 2,021,158

IMPLEMENT OPERATING MEANS

Filed Dec. 13, 1933

Fig. 1.

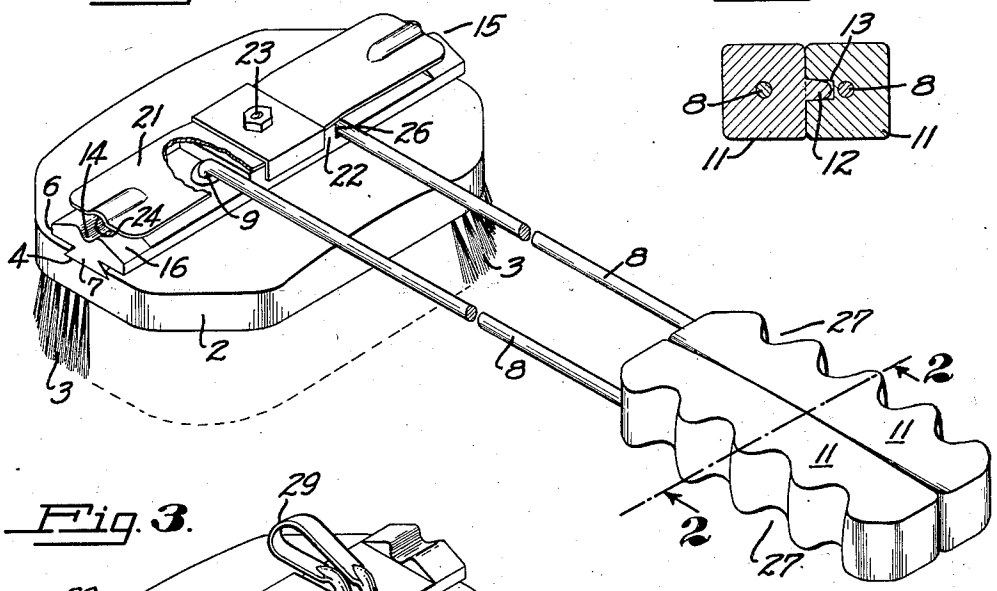


Fig. 2.

Fig. 3.

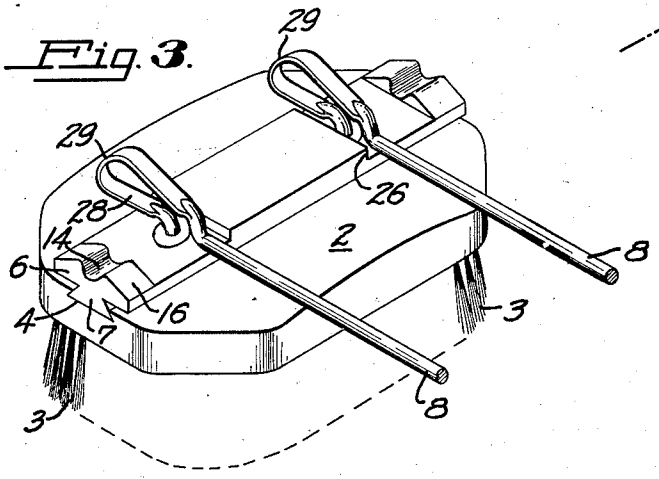


Fig. 6.

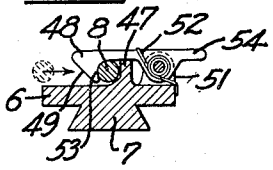


Fig. 4.

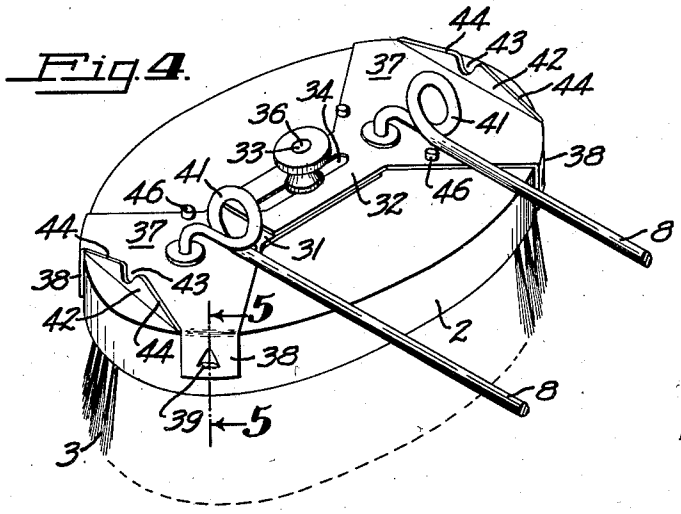
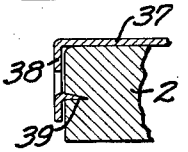


Fig. 5.



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IMPLEMENT OPERATING MEANS

William G. Stearns, San Francisco, Calif.

Application December 13, 1933, Serial No. 702,144

8 Claims. (Cl. 306—2)

My invention relates to operating means for implements and particularly to an improved handle construction therefor.

Among the objects of my invention are: to provide an improved handle construction for implements such as devices used in treatment of the skin; to provide a handle construction which permits greater pressure to be applied to the device during manual operation thereof; to provide a handle construction, for devices of the character described, which permits comfortable operation of the implement in reaching parts of the body which normally require the assumption of uncomfortable postures by the operator; and to provide a light, easily constructed operating means for implements which permits the use thereof with both hands simultaneously.

Other objects of my invention will be apparent or will be specifically pointed out in the description forming a part of this specification, but I do not limit myself to the embodiment of the invention herein described, as various forms may be adopted within the scope of the claims.

Referring to the drawing:

Figure 1 is a perspective view of the preferred form of my invention. Portions of the view are broken away, in one instance to conserve space in the drawing, and in the other to disclose the construction more clearly.

Figure 2 is a cross sectional view through the handles of the device, as indicated by the line 2—2 of Figure 1.

Figure 3 is a perspective view showing a modified form of arm construction.

Figure 4 is a perspective view showing a modified means for attaching the operating device to a brush.

Figure 5 is a fragmental sectional elevation of the modification shown in Figure 4, the plane of section being indicated by the line 5—5 of that figure.

Figure 6 is a sectional elevation of a modified arm latching means.

In broad terms, the device of my invention comprises a base which is adapted to be, preferably, removably secured to the implement to be operated. The base is provided with a plurality of arms which are pivoted on the base, and terminate in hand grips to permit manual operation of the implement.

The conventional forms of bath brushes, or like implements used in the treatment of the body, are usually provided with a single long handle which is rigidly secured to the brush. In the use of brushes of this type, in order to reach certain parts of the body such, as for example, points on the back, the arm operating the brush is caused to assume positions which are uncomfortable and which tend to hasten fatigue. Another bad feature is that, due to the particular position of the arm, insufficient pressure is applied to the brush, with the result that the time required to properly bathe these parts is unnecessarily extended or the parts are insufficiently cleansed.

I have provided an improved construction for the operating handles of these brushes, or like implements, which permits comfortable operation of the brush in reaching any part of the body. Consequently, by the use of such a device, the time for bathing is materially reduced, as is the degree of fatigue of the operator at the completion of the bath.

I have illustrated the preferred form of my invention in Figure 1, wherein a brush having the usual back 2 and bristles 3 is provided with a dovetailed slot 4. A base 6 is provided with a dovetailed portion 7 which meshes with the slot 4; the two engaging parts being provided with a taper extending longitudinally thereof, so that, when in engagement, they will be frictionally held against relative movement.

Disposed in spaced relationship on the base are a pair of resilient operating arms 8 having downturned ends 9 which are journaled for pivotal movement in suitable bearings in the base, the other end of the arms being provided with hand grips 11. As shown in the figure, these hand grips may be brought together to provide a single grip, in which case one of the grips is provided with a dowel 12 which engages in an aperture 13 formed in the other grip. (See Figure 2.) This construction is for the purpose of preventing relative movement between the grips when they are in engagement. In this condition the brush may be used with one hand, as is the conventional type of brush.

In bathing parts of the back, the operator places the brush behind him and grasps a hand grip 11 in each hand; the handles, of course, pointing upwardly so that the brush contacts the back. By moving the arms in a reciprocatory motion, and in a vertical plane, it is possible to direct the brush to any portion to be cleansed; this being done by shifting the arms in horizontal or vertical directions without the operator assuming uncomfortable postures with their attendant fatigue.

When bathing the lower portions of the back, or adjacent areas, it is desirable to extend the arms 8, so that they are latched in axial align-

ment with the direction of movement of the brush. To accomplish this, a groove 14 is provided in a raised portion 15 at each end of the base 6, and inclines 16 are provided extending from the ridges of the groove to the edges of the base.

Disposed above each groove is a spring plate 21 secured to a boss 22, formed adjacent the center of the base, by means of a screw 23. The plate 21 is provided at each end thereof, with a shallow depression 24 which overlies the groove 14. The arms 8 may be latched in extended position by swinging about their pivots until the arms contact the inclines 19. Continued movement of the arms will cause them to ride up on the inclines, at the same time being stressed by the rise thereof, until they snap into the groove 14 and the depression 24.

The frictional engagement of the arms with the latches is sufficient to prevent their displacement during normal operation of the brush; however, they may readily be dislodged by forcing the arms 8 against the slightly inclined walls of the groove, whereupon the arms will be lifted to clear the groove ridge so that they may be swung free of the latch.

It usually happens that one of the arms will be released prior to the other, and to assist the release of the second arm, I utilize the shoulders 26, formed by the boss 22, as stops against which the free arm may be engaged while the latched arm is being released. These stops also function to limit the movement of the brush relative to the arms, maintaining the longitudinal axis of the brush in a position substantially at right angles to the direction of movement of the arms when the brush is in use. It will be observed that the arms are engageable or releasable with the latch from either side thereof, permitting movement of the arms through substantially 180°. This is done so that the finger grooves 27, of the grips 11, will be located correctly for comfortable use of the brush, i. e., the grooves will be facing each other, when the brush is being used on the back of the operator.

Figure 3 shows a modified form of construction to provide greater resiliency for the arms. In this instance the arms are provided with a flattened portion 28 which is formed in a U shaped bend 29. This provides considerably greater resilience in the arm and permits easier engagement and disengagement of the arms with the latch groove 14.

Figures 4 and 5 illustrate still another modification which is applicable to brushes not provided with the attachment groove shown in Figures 1 and 3. This variation takes the form of a base comprising a pair of plates 31 and 32, the former being provided with a threaded stud 33 fixed to the plate 31 and passing through a slot 34 formed in the upper plate 32. A thumbnut 36 is provided, threaded on the stud, by means of which the plates may be frictionally secured in position.

Each plate is provided with an enlarged end 37 which is provided with downturned lugs 38; each being provided with a pointed spur 39 which is struck inwardly from the material of the lugs. This base plate may be secured to a brush, such as the one shown, by loosening the thumbnut 36 to permit the plates 31 and 32 to be shifted longitudinally. The lugs 38 may then be dropped over the rim of the brush and the spurs forced into the wood. The thumbnut is then tightened to hold the base in engagement with the brush.

The operating arms 8, in this modification, are pivoted on the base in the same manner as the other arms, and are each provided with a closed looped portion 41 which provides the desired resilience in the arm. The latches for the arms are provided by an upturned portion 42 of each plate having a notch 43 and inclines 44 formed thereon. Pins 46 are provided which function as stops in the same manner as the stops 26 in conjunction with the preferred form of the device shown in Figure 1.

While the various modifications shown utilize frictional means for latching the arms in extended position, I may choose to provide means for locking the arms in this position. Such means is illustrated in Figure 6 wherein the base plate 6 is provided with a stop 47 for the arm 8. A latch 48, provided with an inclined face 49, is pivotally mounted on a bracket 51 rising from the plate 6 and a spring 52 is provided for urging the latch downwardly against the plate. As the arm is swung toward the latch the inclined face 49 will be contacted, lifting the latch and permitting the arm to pass the hooked end 53 of the latch and be locked in the space between the latch end and the stop 47. Manually operable means, such as the extension 54, is provided on the latch for permitting release of the arm when desired.

In reiteration, it has been found, under actual working conditions, that with the operating means of my invention implements such as bath brushes, massaging devices, and other implements for the treatment of the body, window washing apparatus, paint brushes and various other mechanical devices may be used with greater ease and permit given operations to be accomplished in a shorter space of time than is possible with the known types of implements for these purposes.

I claim:

1. Operating means for an implement comprising a base adapted to be secured to an implement and a plurality of separate arms pivotally mounted on the base, said arms cooperating in one position to form a unitary handle.

2. Operating means for an implement comprising a base adapted to be secured to an implement and a plurality of separate arms pivotally mounted on the base, said arms being movable in a plane substantially parallel to the plane of operation of the implement, said arms cooperating in one position to form a unitary handle.

3. Operating means for an implement comprising a base adapted to be secured to an implement, a plurality of separate arms pivotally mounted on the base, said arms being movable in a plane parallel to the plane of operation of the implement, a handle on each of said arms, said handles adapted to engage in one position to provide a single handle, and means on the handles for preventing relative movement therebetween in directions other than in said plane when the handles are in engagement.

4. Operating means for an implement comprising a base adapted to be removably secured to an implement, a plurality of separate resilient arms mounted for pivotal movement on the base, and a grooved latch for each arm formed on the base, and adapted to frictionally engage an arm at a point on its path of movement, said arms cooperating at another point to form a unitary handle.

5. Operating means for an implement comprising a base adapted to be removably secured to an implement, a plurality of separate resilient

arms mounted for pivotal movement on the base, a grooved latch for each arm formed on the base, and adapted to frictionally engage an arm at a point on its path of movement, and means for guiding said arms into the latches, said arms cooperating at another point to form a unitary handle.

6. Operating means for an implement comprising a base adapted to be removably secured to an implement, a plurality of separate resilient arms mounted for pivotal movement on the base, a latch for each arm mounted on the base and having a grooved portion for engaging the arm to hold said arms apart, and a resilient member disposed adjacent each latch for urging said arm into engagement with the grooved portion of the latch, said arms being rotatable when unlatched to approach each other to form a unitary handle.

7. Operating means for an implement comprising a base adapted to be removably secured to an implement, a plurality of separate resilient arms mounted for pivotal movement on the base, resilient means for engaging said arms at a point on their path of movement for preventing relative movement therebetween, and means disposed at other points on the path of movement of the arms when said arms are parallel and adjacent for limiting the movement thereof.

8. Operating means for an implement comprising a plate having lugs thereon for engaging an implement, a pair of separate operating arms mounted for pivotal movement on the plate, and means on the plate for preventing relative movement between the operating arms when in line, and separate means for preventing rotation when said arms are engaged in parallel relation to form a unitary handle.

WILLIAM G. STEARNS.