March 3, 1936. N. J. RAPTIS 2,032,664

COMBINATION OF BRUSHES, BRUSH HOLDERS, AND BRUSH HANDLES

Filed Sept. 18, 1934 3 Sheets-Sheet 1

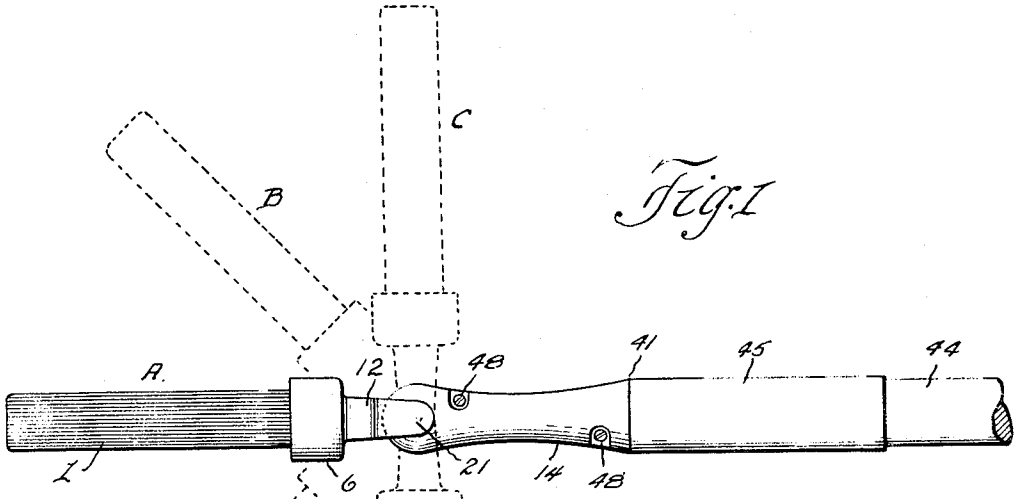


Fig. 1

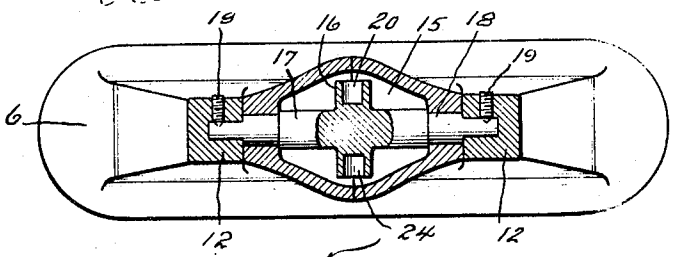


Fig. 5

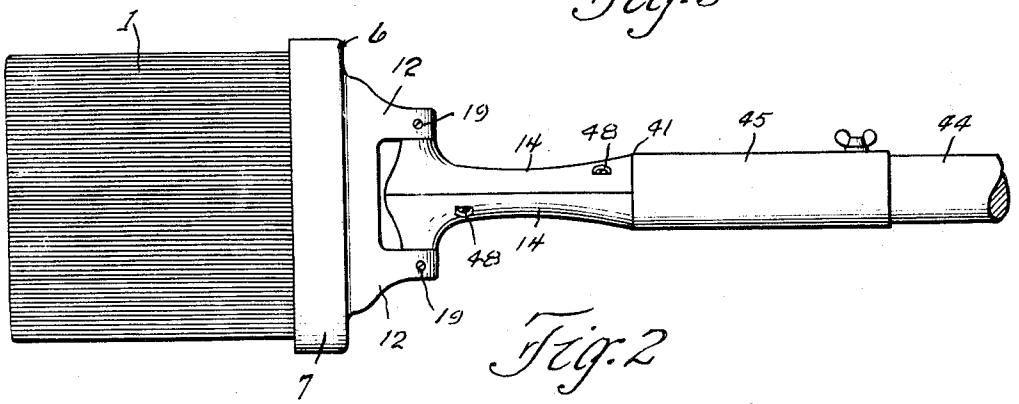


Fig. 2

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COMBINATION OF BRUSHES, BRUSH HOLDERS, AND BRUSH HANDLES

Filed Sept. 18, 1934 3 Sheets-Sheet 2

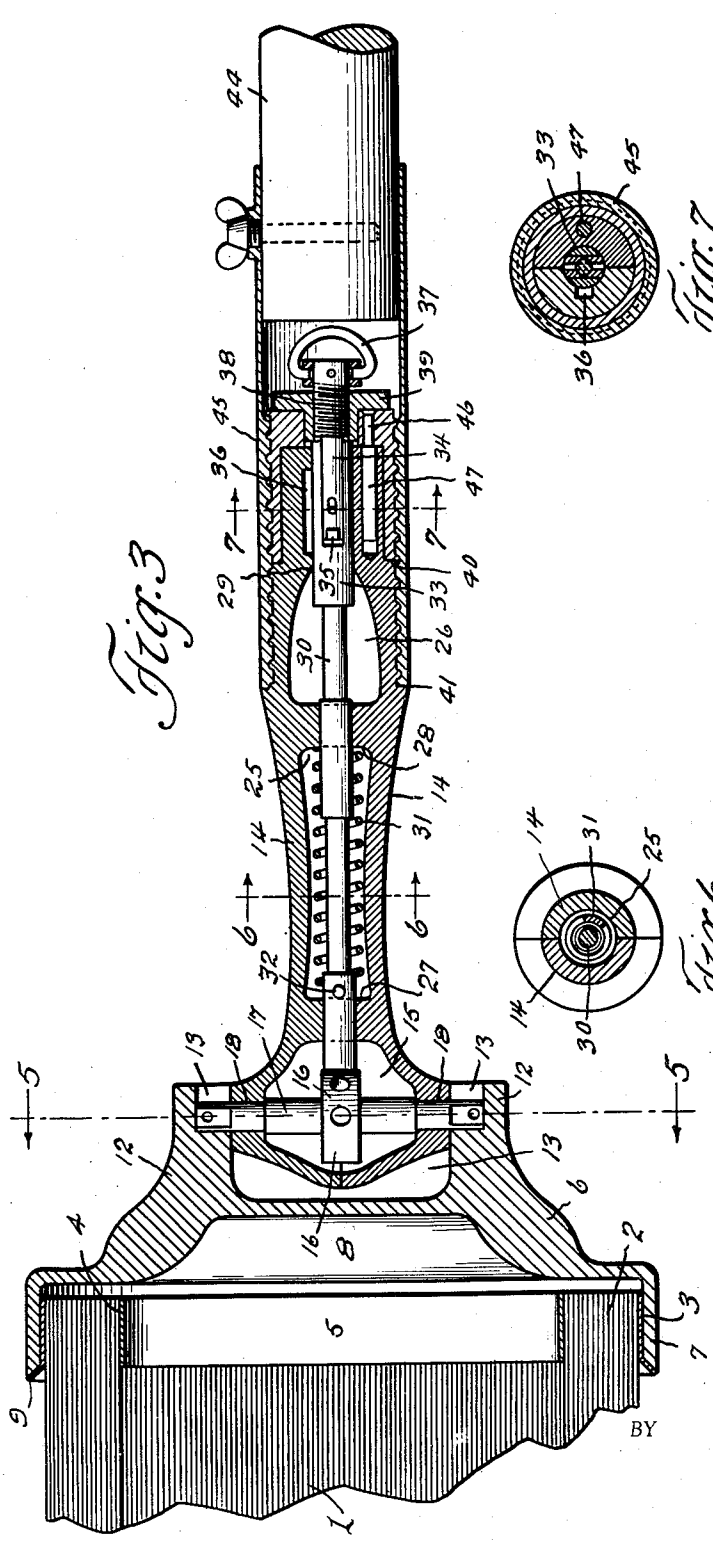


Fig. 3

Fig. 7

Fig. 6

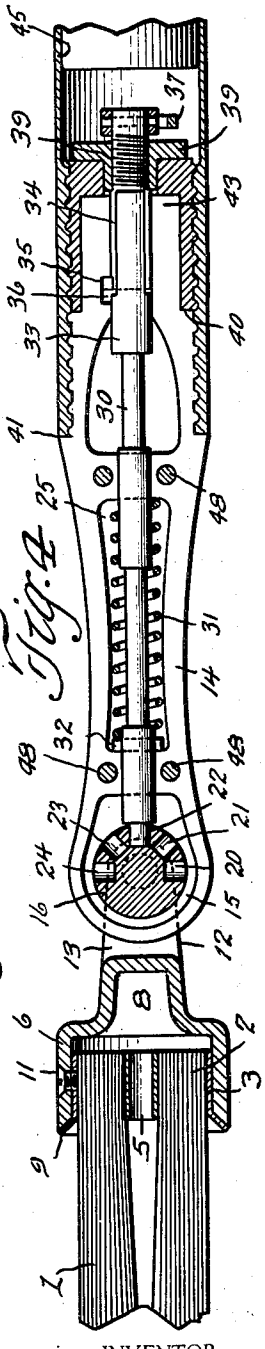


Fig. 4

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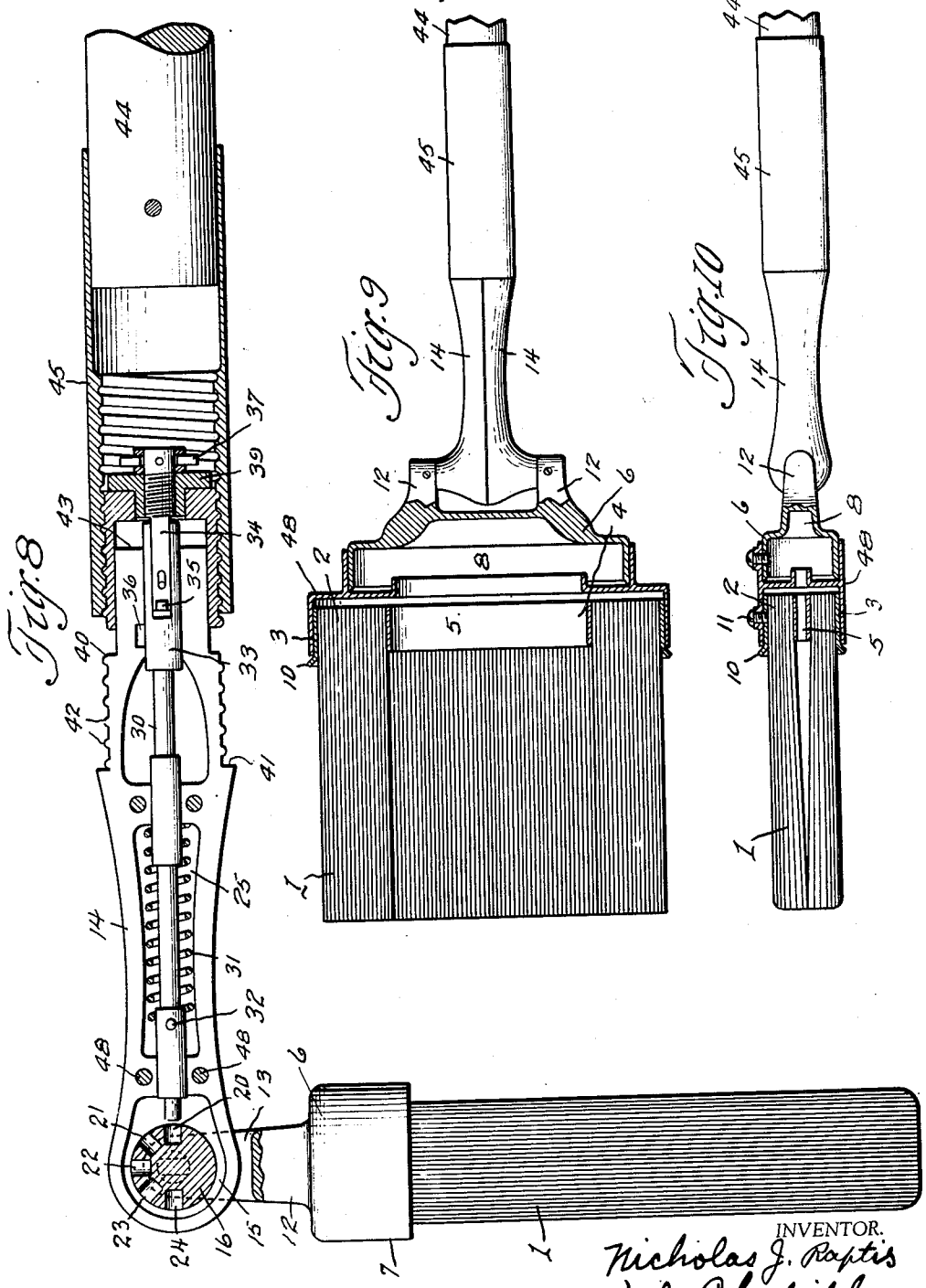
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COMBINATION OF BRUSHES, BRUSH HOLDERS, AND BRUSH HANDLES

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UNITED STATES PATENT OFFICE

2,032,664

COMBINATION OF BRUSHES, BRUSH HOLDERS, AND BRUSH HANDLES

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Application September 18, 1934, Serial No. 744,507

4 Claims. (Cl. 15—172)

This invention of mine is the result of more than forty years of personal experiences in the use of brushes as a painter of practically every kind of structure painted under all kinds of difficulties, circumstances and conditions, and said invention relates to a new and useful construction of brushes, brush-holders and brush-handles which, when used in coordinative and cooperative combinations, will avoid many of the hardships and difficulties involved in the scrubbing, cleaning and painting of structures and articles and will save time, labor and expense.

Among the salient objects of my invention are:

1. To produce a brush which will collect the particles or drops of paint, which usually drip from the brush when in use to the space below, into a reservoir provided in the brush-holder and to cause such drops to return to the tip-end of the brush to be applied to the surface intended to be painted;

2. To produce a brush which can be easily adjustable to any practical angle with reference to the handle thereof so as to enable the user to reach and paint with it surfaces inaccessible with the ordinary brushes now in use;

3. To produce a brush which will be easily removable from its holder and substituted with a new brush, a larger brush, a smaller brush, or with a brush of different shape, as the exigencies of the situation may require, so that when the bristles of a brush are worn out it will not be necessary to discard the entire thing, but it will be possible, and consequently economical, to discard only the worn out bristle part and to retain the holder and handle to which a new bristle portion can be attached.

The same will be true in cases where a hoe-shaped brush is required. Instead of submitting to the necessity, as it is now done, of carrying a different kind of a brush to meet these situations, my invention will enable the painter to adjust and transform a straight brush into a hoe-shaped one;

4. To produce a brush to which a longer handle or pole may be attached and the paint-applying part of the brush to be capable of being adjusted to suit the convenience of the operator for efficient work and service; and

5. To produce a brush which will be light in weight, durable in service, economic in manufacture, and which in itself will be adaptable to be used in any required place or manner without the operator being compelled to exchange or interchange a variety of brushes to meet a variety of conditions, situations and requirements.

These and many other features and advantages of my invention will be made clear and apparent as the specification proceeds.

In the drawings which form a part of this application, and which serve to illustrate, and in nowise to limit, the spirit of my invention:

Fig. 1 is a side elevation view of my invention showing the brush holder, and brush attached, in its normal position in full lines, while the various positions to which the brush holder and brush may be adjusted are indicated by dotted lines;

Fig. 2 is a plan view of my improved brush showing the same completely assembled and in a normal position;

Fig. 3 is a horizontal sectional view of my invention showing the brush holder, the brush mounted therein, the brush handle and the inside mechanisms of same;

Fig. 4 is a vertical sectional view of my invention showing further details of construction of the different parts thereof;

Figs. 5, 6 and 7 are transverse sectional views of my invention taken on lines 5—5, 6—6 and 7—7 respectively of Fig. 3;

Fig. 8 is a view similar to Fig. 4 showing the various parts in the positions to which they are moved to enable the adjustment of the holder in order to bring and lock the brush to any position required by the operator;

Fig. 9 is a sectional plan view of my invention showing an adapter attached to the brush holder thereby illustrating how the brush holder may be enabled to accommodate brushes of any shape or size by attaching thereto, in the manner shown, an adapter corresponding in shape and size with the brush desired to be used;

Fig. 10 is a sectional side elevation of the structure shown in Fig. 9.

Referring now more particularly to the drawings, wherein like numerals and characters represent like parts and positions.

Numeral 1 indicates the loose ends of the brush which may be of any desired length, quality or character and which may be arranged to form any desired shape or size brush. The lower ends 2 of the bristles forming the brush are held together between an outer band 3 and an inner ferrule 4. Thus held together, the lower ends of the bristles are dipped into a binding material such as rubber cement and then properly baked or vulcanized so as to cement them together and render them inseparable. After the bristles have

been thus cemented together, either one or both of the bands may be removed or left on, as requirements may dictate. I show them both in place while the brush is in use, but the same may be removed without affecting the efficiency of the brush.

The main and important thing is that the brush thus constructed is provided at the center of the bottom thereof with a slit or opening 5 for a purpose and function to be explained later.

The above described brush is then fitted into the brush holder 6 which is provided with an elliptical flange 7 to receive the brush within it and forms a cup-like opening which is open all the way down and leads into a reservoir 8. The lips of the elliptically shaped flange of the brush holder, forming the cup-like opening are inwardly bevelled at the edges as shown at 9 as are correspondingly bevelled the upper edges of the band 3 as shown at 10.

The obvious purposes and functions of the constructions above referred to, together with the novel construction of the brush formed with the slit or opening at the bottom thereof are to catch the drops of paint that gravitate toward the handle of the brush and to cause them to slip through the bristles, down through the slit or opening and into the reservoir 8. At proper intervals the operator may hold or operate the brush in an inverted position, holding the loose ends of the bristles downwardly, thereby causing the paint in the reservoir to flow to the end of the brush and be applied to the surface to be painted.

If necessary, the brush may be made fast to the brush holder by any suitable means such as shown at 11.

The brush holder 6 is provided with a pair of ear-like depending flanges 12, each of which is provided on the inner side thereof with an elongated rectangular slot 13.

Numerals 14 indicate two practically alike sections which when matched together form the handle of the brush and brush holder above described. This handle, when assembled, is T-shaped in form and resembles a machinist's hammer. The center of the head bulges out like the hub of a wheel, tapers out and is cut to provide flat circular surfaces at each end. Each section 14 of the handle is hollow so that when matched with the other there is formed on the inside thereof a slot or aperture of varying depths and dimensions. The hub-like part of the handle head is hollowed out as shown at 15 to accommodate therein a wheel-like flange 16, having spindle-like arms 17 extending outwardly from the center thereof, and passing through and beyond the circular apertures 18 in the head part of sections 14 of the handle. The portions of the spindles 17 which are in contact with the circular apertures 18 are also circular, but the portions of said spindles which extend beyond the said circular apertures are rectangular in shape to match and fit in to the slots 13 of the depending ear-like flanges of the brush holder 6.

These rectangularly shaped extensions, which are fitted in the slots 13 are held in place by such means as shown at 19 in Fig. 2.

The wheel-like flange 16, which is now located in the centre of the hollow space 15, on the inside of the hub-shaped handle head formed by sections 14, is provided along the perimeter thereof with radially bored holes 20, 21, 22, 23 and 24 for a purpose and function set forth below.

As stated above, the slot or aperture formed by the hollowed out portions of sections 14 extends through the whole length of the inside of the handle and is divided into three comparatively large compartments 15, 25 and 26 which interconnected to form a continuous passage by the relatively smaller openings in the center of the portion walls 27, 28 and 29.

A plunger rod 30 carrying a coil spring 31 is laid in the opening or aperture of the hollow handle section 30 that the coil spring carried by the rod lies in compartment 25 and is kept under a compressed tension by causing its lower end to press against partition wall 28 and its upper end to press against a lug pin 32 pierced through near the upper end of the plunger rod, said lug pin being made to abut against partition wall 27 thereby limiting the upward movement of the rod 30.

The extreme upper end of rod 30 passes through partition wall 27 into the hub cavity 15 and interengages with any of the radially bored holes 20, 21, 22, 23 or 24, whichever one may be brought in direct line with it.

The lower end of the plunger rod is provided with a section 33 which is rotatably hinged thereto and which section 33 in turn has mounted thereon a vertically movable section 34, said section 34 having a lug 35 adapted to be turned along with section 33 and to be brought in interengagement with slot 36 in the wall of the aperture which leads from compartment 26 to the outer end of the brush handle.

Section 34 on section 33 is provided with a ring 37 at its extreme outer end for the purpose of enabling the operator to turn the rotatably hinged section 33 so that the lug 35 may be brought into interengagement with slot 36, and said section 34 is further provided with screw threads 38 to receive the screw threaded nut 39 whereby the vertically movable section 34 may be drawn outwardly to lock the lug 35 against the slot 36 and thus keep the entire plunger rod in a fixed position.

Sections 14 of the brush handle are circular at their lower ends and are provided with two inset portions. One inset portion begins from the lower end and terminates at a shoulder 40 and the other inset portion begins at shoulder 40 and terminates at shoulder 41.

The inset portion between the end and shoulder 40 is smooth; the inset portion between shoulders 40 and 41 is threaded as shown at 42 in Fig. 8.

When sections 14 are matched together, the threads on each section meet and form one continuous threaded cylindrical surface.

Numeral 43, Fig. 8, designates a thimble-shaped nut whose inside walls are smooth, whose outside surface is threaded and whose bottom is apertured. This thimble-shaped nut 43 is slidably mounted over the smooth inset portion of sections 14 between the end thereof and shoulder 40. The screw threads on the outer surface of 43 are of the same pitch and size as those on the surface of the inset portion between shoulders 40 and 41 so that when the lips of 43 abut up against shoulder 40 the entire outside surface of the brush handle from the outer end thereof to shoulder 41 is uniformly screwthreaded.

In case, therefore, it is desirable or expedient to lengthen the brush handle a pole, such as shown at 44 having fastened thereon an interiorly screwthreaded socket 45 is screwed onto the brush handle until the mouth of the socket abuts against shoulder 41, thereby elongating the han-

dle and sealing the joint against the possibility of any paint seeping in between the threads of the handle and pole socket.

It is to be noted that, as shown at Fig. 3, the thimble-shaped nut 43 has an aperture at the center of its bottom which is adapted to receive the neck of nut 39 and that the flange of nut 39 comes flat against the end of nut 43; this arrangement allows the operator to adjust the brush by pulling back the plunger rod either by the ring 37 or by thimble nut 43. When the plunger rod is pulled back so that its upper end is disengaged from the apertures 20 to 24, the brush holder 6 is turned to any of the positions shown from A to E in Fig. 1, the plunger rod is turned loose and is forced by the tension of the coil spring to enter the aperture on its path, then section 33 is given a turn until lug 35 engages slot 36, then nut 39 is screwed in, the lug is tightened against the slot and the brush is fixed and locked in position.

It is further to be noted that the thimblenut 43 has on the interior thereof an upwardly projecting pin 46 which engages into an aperture 47 on one of the handle sections 14. The purpose and function of this arrangement is to always keep the threads on the outer surface of the thimble nut in perfect alignment with threads 40 and to prevent it from getting out of alignment. This structure is best shown in Fig. 3.

Attention is also drawn to the adapter 48 in Figs. 9 and 10. This consists of a separate accessory made to accommodate a brush of any desirable size or shape and is adapted to be fitted over and attached to the brush holder as shown in Figs. 9 and 10.

Handle sections 14 may be held together by means of screws as shown at 48 in Figs. 1 and 2, or they may be constructed with overlapping or interengaging flanges and eliminate the screws altogether as shown at Figs. 9 and 10.

It is clear from the foregoing description and from the illustrations in the drawings accompanying this application that I have invented a new and useful combination of brushes, brush holders and brush handles and one which will fill a long felt need by those who have been engaged in the line of work to which it appertains.

And while I have not deemed it necessary to describe in every minute detail the various uses that this invention can be put to, yet it is obvious that instead of a paint brush a scrub or wire brush may be attached to the brush holder of my invention and be used to as great advantages as the paint brush. I, therefore, reserve the right to any and all uses that this invention may be put to, and to any and all similar devices which may hereafter be manufactured and which may properly fall within the spirit and scope of this invention.

Having thus described, set forth and illustrated my invention what I claim and desire to secure by Letters Patent of the United States is:

1. In combination with a brush and a brush holder detachably connected to each other, a pair of depending flanges on the brush holder, a pivot rod across the pair of depending flanges and means for holding the pivot rod between the depending flanges, a series of indentations on the pivot rod, a brush handle hingedly connected to the pivot rod, and a plunger rod in the handle for engaging the indentations on the pivot rod.

2. A brush, a brush holder, a pair of depending flanges on opposite sides of the brush holder, a bar mounted on the flanges and crossing the space between them, a hollow handle pivotally mounted on said bar, a rod in the hollow of the handle and resilient means for pressing the rod against the bar.

3. In combination with a brush and a brush handle pivotally mounted thereon, a spring actuated rod in the handle, a thimble-like nut slidably mounted on the lower end of the handle, said thimble-like nut having a perforation on the bottom thereof, the lower end of the spring actuated rod passing through said perforation, a nut screwed on the protruding end of said rod and in contact with the thimble-like nut, and interlocking means between the handle and the thimble-like nut to prevent the latter from any rotary motion.

4. The combination set forth in claim 3 with a portion of the handle and the entire outer portion of the thimble-like nut being screwthreaded.

NICHOLAS J. RAPTIS.