

J. F. PALMER.
BRUSH HANDLE CONNECTION.
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1,397,899.

Patented Nov. 22, 1921.

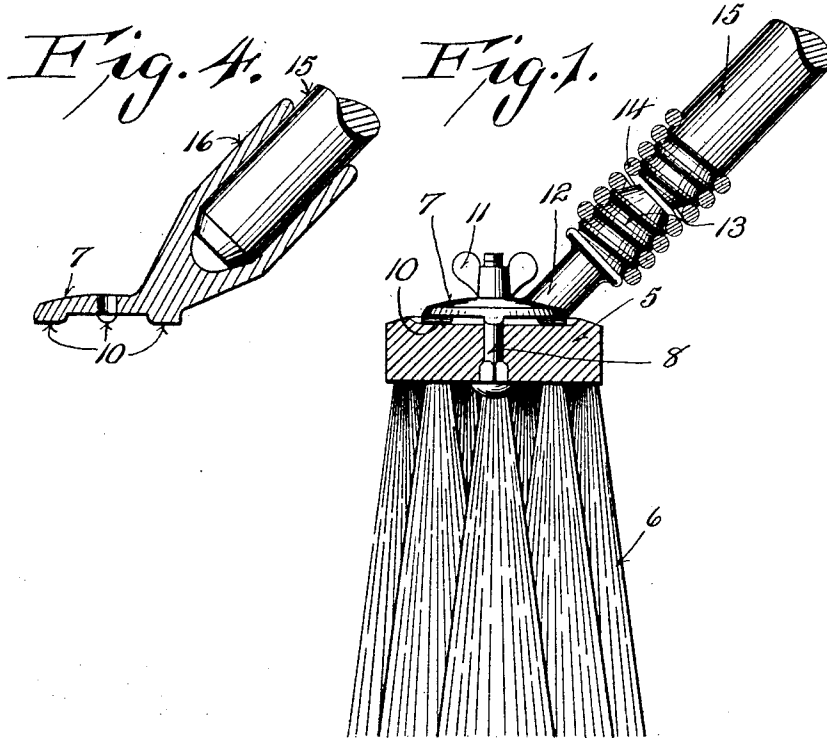


Fig. 2.

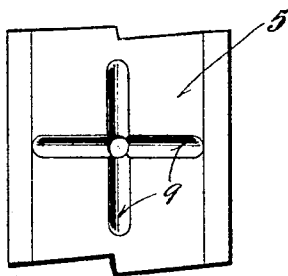
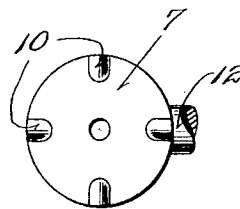


Fig. 3.



Inventor
J. Frederick Palmer

Witness
J. F. Britt

By *Young & Young*
Attorneys

UNITED STATES PATENT OFFICE.

JOHN FREDERICK PALMER, OF MILWAUKEE, WISCONSIN.

BRUSH-HANDLE CONNECTION.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN FREDERICK PALMER, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Brush-Handle Connections; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to new and useful improvements in brush handle connections more particularly of that resilient type wherein the desired spring action is procured by a stiff coil spring forming the juncture between the inner end of the handle and a shank section of the brush head.

It is in general the object of my invention to simplify and otherwise improve the structure and to increase the efficiency and convenience of manipulation afforded by this type of connection.

It is more particularly my object to provide a connection of this character wherein the convolutions of the coil spring employed to impart resiliency thereto, are directly engageable with the opposed ends of the handle and the shank of the brush head to provide a screw thread securement in a structure of maximum simplicity and consequent economy, the frictional grip procured by the resilience of the thread-forming convolutions serving to prevent possible accidental unthreading movement.

It is further my object to provide an exceedingly simple attaching head which may be adjustably secured to the usual elongated wooden head block of the brush.

With the above and other objects and advantages in view, which will be apparent as the description proceeds, my invention resides in the novel features of construction, combination and arrangement of the parts as hereinafter described and defined by the appended claim.

In the accompanying drawings:

Figure 1 is a transverse sectional view through a brush and my improved handle connection therefor.

Fig. 2 is a plan view of the central portion of the brush block.

Fig. 3 is a bottom view of the attaching head for the connection.

Fig. 4 is a view similar to Fig. 1, but showing a modified means of securing the handle shank to attaching head.

Referring now more particularly to the

accompanying drawings my improved handle connection is associated in the present instance with a brush of that type comprising an elongated wooden head block 5 carrying the body of bristles 6, and my improved handle connection includes an attaching head in the form of a circular plate 7 centrally apertured for the reception of a bolt 8 passed through the brush block 5. To hold the attaching head in various relatively adjusted positions on the bolt 8, the upper face of the brush block is provided with a series of grooves 9 radiating from the bolt, and the peripheral portion of the bottom face of the attaching head plate 7 is provided with a corresponding series of depending projections 10 selectively engageable in the grooves 9, the various projections and grooves of the series being equally spaced apart. A wing nut 11 is threaded on the upper end of the bolt 8 and engages the head plate 7 to hold the projections in the grooves.

A shank section 12 projects obliquely upward from the head plate 7 at one side of its bolt aperture and the upper end of the shank section is slightly enlarged and provided with a series of threads 13. A heavy helical coil spring 14 forms a spring juncture between the shank and the brush handle 15 and the lower end of this coil spring is threaded on the upper end of the shank, the threads of the shank having slightly greater diameter than the internal diameter of the coil spring, whereby the convolutions of the coil spring are slightly expanded as they are engaged on the shank, thus procuring an exceedingly tight frictional grip which serves to positively prevent any tendency of looseness or accidental unthreading movement. Likewise, the handle 15 is forced with threading movement into the convolutions of the upper end of the coil spring, thus slightly expanding the convolutions and the threads of the handle are cut as the handle is forced into the coil, thus highly compressing the wood of the handle end and procuring a securement which is very permanent under constant stresses to which the connection would be subjected in use of the brush. The opposed ends of the brush handle and shank are beveled to facilitate their insertion in the coil and are slightly spaced apart to permit the necessary spring flexure of the coil.

I have thus provided an exceedingly simple and efficient spring connection by

reason of utilizing the convolutions of the coil spring to procure direct threaded connection with the handle and the shank of the attaching head, the resiliency of the coil spring being also utilized to procure an exceedingly tight frictional grip in the connection by expansion of the convolutions of the spring upon insertion of the members therein. The intermediate portion of the coil spring is, however, not placed under tension by transverse expansion of the convolutions, and thus is free to permit the desired resilient yielding action between the handle and brush head. By forming the projections 10 of the head plate 7 only at the peripheral portion of said plate a positive biting action of the projections in the grooves is procured by the clamping pressure of the bolt 8, preventing the projections from tending to work out of the grooves and from crushing the sides of the grooves.

In Fig. 4, I have shown a modified structure wherein the attaching head plate 7 carries a simple socket member 16 for receiving the handle shank 15, thus eliminating for certain conditions of use the spring action procured in the afore described structure, and providing a connection which is rotatably adjustable on a brush by reason of the bolt 8 and projections 10 as heretofore recited.

While I have shown and described preferred embodiments of my invention, it will be appreciated that various changes and modifications of structure may be employed

to meet differing conditions of use and manufacture, without departing in any manner from the spirit of my invention.

What is claimed is:

A brush handle connection comprising an attaching head, a shank extended therefrom and provided with a series of screw threads, a helical coil spring having its convolutions at one end portion engaged with the threads of the shank, a handle having its inner end portion provided with screw threads and forced into the other end of the coil spring with threaded movement, the radius of curvature of the threads on said shank and handle being uniform and slightly larger than the normal radius of curvature of the convolutions of the spring, whereby the latter is forcibly expanded upon threaded engagement with said shank and handle thus securing a strong and uniform frictional grip thereon, the ends of the shank and handle beyond the threaded portion being tapered to permit ready insertion thereof in the spring and having flat extremities which are nearly in contact when the device is assembled, whereby an initial flexure of the handle causes only a lateral tension of the spring but a continued flexure of the same causes the spring to be stretched longitudinally.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

J. FREDERICK PALMER.