Sept. 16, 1924. 1,508,995

D. L. SILVER

MOP HEAD AND DETACHABLE CONNECTION THEREFOR

Filed Aug. 24, 1922

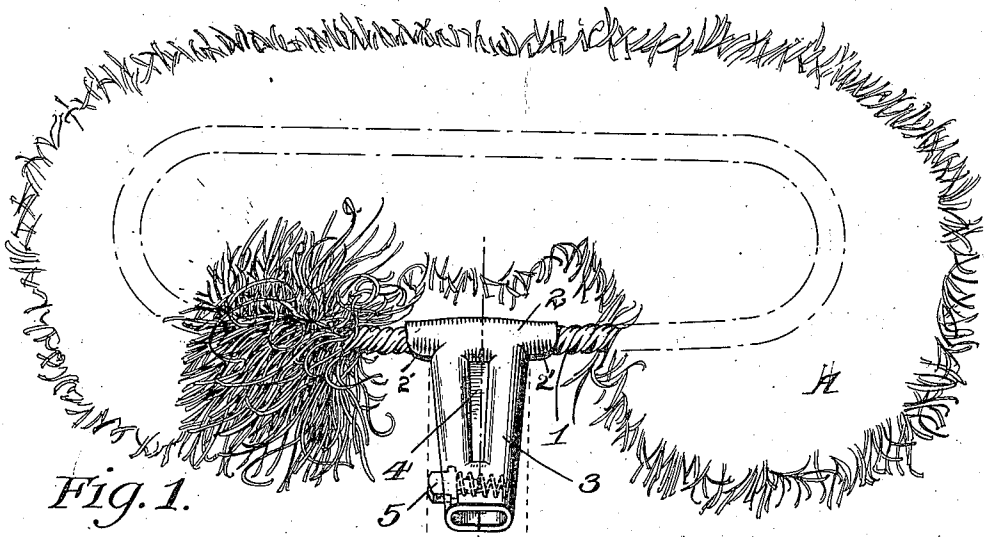


Fig. 1.

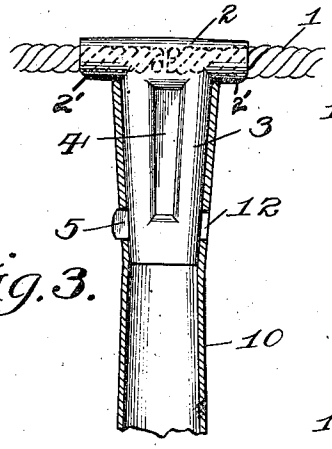


Fig. 3.

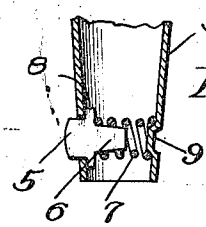


Fig. 4.

Fig. 2.

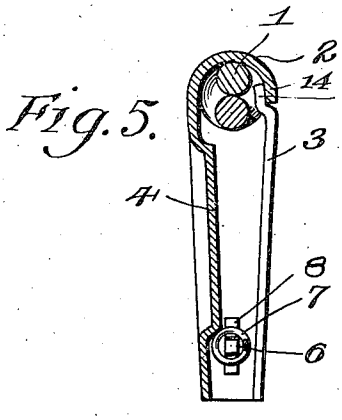


Fig. 5.

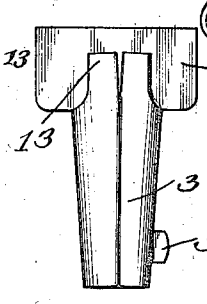


Fig. 6.

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UNITED STATES PATENT OFFICE.

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MOP HEAD AND DETACHABLE CONNECTION THEREFOR.

Application filed August 24, 1922. Serial No. 584,034.

To all whom it may concern:

Be it known that I, DAVID L. SILVER, a citizen of the United States, residing at Clayton, in the county of Gloucester and State of New Jersey, have invented certain new and useful Improvements in Mop Heads and Detachable Connections Therefor, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates generally to mop or brush heads, wherein the mop strands or brush bristles are secured between a plurality of twisted wires, said wires being bent upon reverse turns and having oppositely facing ends in substantial contact.

The invention relates specifically to means for clamping said ends rigidly in position and in substantial contact, and to the production of means adapted for detachable connection to an operating handle. One of the objects of the invention is the provision of an element which will not only provide the necessary clamping means, but which also co-operates with the operating handle whereby it may be automatically secured to the latter by the application of pressure only.

Another object of the invention is the provision of means whereby the head may be detached from the handle by the application of pressure at one point only.

Still another object of the invention is the provision of a mop or brush handle so constructed and so co-operating with the head, that either side of the head may be applied flat-wise to the work, the handle remaining at the same inclination thereto.

Other objects will be apparent from the following specifications.

In the drawing forming a part of this specification:—

Figure 1 is a composite view showing the mop-head and the handle separated therefrom;

Fig. 2 is a perspective view of the receiving end of the handle;

Fig. 3 is a fragmentary view, partly in section, showing the handle applied to the mop-head;

Fig. 4 is a section through the stem portion of the mop-head, showing the spring pressed detent;

Fig. 5 is a section on line 5—5 of Fig. 1;

Fig. 6 is a plan view of the stem portion of the mop-head, before it is bent to clamping position.

Referring specifically to the drawings, the invention is here shown as applied to a mop-head A. As hereinbefore indicated, the invention is equally applicable to a brush, or any other kind of head.

The mop-head A is herein shown as including a supporting member 1 comprising a plurality of twisted wires, a plurality of strands of fabric being held between the wires and constituting a tuft which is of greater width than thickness, rendering it somewhat flat on each side.

The opposed meeting ends of the twisted wires 1, are secured adjacent each other, by means of an encircling metallic clamping member 2, which, by die stamping, is bent around the wires 1 in close contact therewith, and which may be rigidly soldered or brazed thereto, whereby rotative or lateral movement with respect to the wires is effectually prevented.

The clamp 2 is formed from the blank shown in Fig. 6, and preferably consists of a wide flange 14, and two relatively narrow flanges 13, as indicated. The wires 1 are laid between the flanges, transversely of the clamp, and the flanges 14 and 13 are subjected to the action of a die which clamps them to the position shown in Fig. 5, the flange 14 extending over the flanges 13, and the wires being clamped therebetween. By this construction part of the metal of the clamp is forced, under high pressure, into the spirals formed by the twisted wires, and rotative movement between the clamp and wires, as well as movement of the clamp longitudinally of the wires, is effectually prevented, a T-fastening being produced by the lateral extensions 2′, 2′, which fastening is absolutely rigid under all uses to which the device is subjected, and which is practically indestructible.

Integrally, or otherwise rigidly secured to the clamp 2 is a laterally-projecting, hollow stem 3, having substantially flat front and rear faces, and longitudinally provided on one face with a sunken strengthening rib 4, as shown in Figs. 1 and 3. As clearly indicated, the stem 3 tapers from its point of connection to the clamp 2, and, near the outer end thereof, is interiorly provided with a dog 5, provided with a shank 6, encircled by a coiled spring 7. The spring

7 is retained in its proper position by shoulders 8, projecting on each side of the dog 5, and by a projection 9, struck up from the body of the stem 3. This construction is clearly shown in Fig. 4. The head of the dog 5 is curved, for a purpose to be hereinafter explained, and extends outwardly through a slot formed in the wall of the member 3, the spring 7 always tending to hold the dog in the position shown in Figs. 1, 3 and 4.

A sleeve 10 is rigidly secured, by screws or otherwise, to the handle 11 of the mop, the handle extending into the sleeve to about the extent indicated by dotted lines in Fig. 1. The outer or free end of the sleeve 10 is hollow, and flares outwardly. The general shape of the outer portion of the sleeve 10 is such that it may pass over the stem 3, and the inner periphery of the sleeve will closely fit and contact the outer surface of the stem 3, the taper of the sleeve corresponding to the taper of the stem.

Upon each side of the sleeve 10, is an elongated slot 12, adapted to receive the dog 5 with a close fit, as shown in Figs. 1, 3 and 4, the slots being so located in the sleeve, with respect to the location of the dog 5, carried by stem 3, that, when the sleeve is applied and the dog extends through one of the slots 12, the extreme end of the sleeve bears against the adjacent edge of the clamp 2, as shown in Fig. 3.

In operation, when it is desired to attach the mop, brush, broom, or other device to which the stem 3 is connected, to its operating handle, the sleeve 10 is pushed over the outer end of the stem 3, and, in its forward movement, strikes the rounded head of the dog 5. This is easily possible because the flared opening of the extreme end of the sleeve 10 is much larger than the small end of the stem 3 as shown in dotted lines, Fig. 1. Increased pressure will cause the sleeve to ride over the bevel of the head, depressing the spring 7, until one of the slots 12 reaches the dog 5, whereupon the latter will snap into said slot, into the position shown in Fig. 3, the top periphery of the sleeve at this time being in contact with the extensions 2′, 2′, of the flange 2, as shown in full lines in Fig. 3, and indicated in dotted lines, Fig. 1. By such contact between the periphery of the sleeve 10, and the extensions 2′, 2′, a more rigid connection between the sleeve and stem is assured, as will be clear.

In detaching the handle, the thumb is pressed upon the dog 5, and a pull upon the handle will cause the sleeve to run downwardly over the rounded contour of the dog 5, as will be readily understood, and the handle disconnected.

It will be noted that the sleeve 10 carries a slot 12 on each side. This permits the brush to be applied to the handle so that either side may be presented to the work, while the handle is in the proper inclined position. Whenever it is desired to reverse the work side of the mop, the stem is released from the sleeve and the head is turned over, and the stem again re-inserted, the dog 5 entering the slot 12 at the other side of the sleeve 10.

It is clear that I have provided a construction which greatly facilitates the assembly of an operating head and handle. The stem 3, carrying the dog 5 and spring 7, together with the flanges 13 and 14, as shown in Figs. 3 and 6, may be made up in any sizes, as an article of manufacture. The method of attachment of the clamp to the head has already been described, as has also the method of attachment and detachment of the stem to the handle.

I claim:

The combination with a mop head provided with a body of twisted wires constituting a mop fabric support having oppositely facing end portions disposed in substantial axial alignment, of a stem provided at one end with flanges carrying extensions which project laterally on each side of said stem and along said end portions, said flanges and extensions being so die-pressed around the end portions of the body of twisted wires that the material of the flanges is permanently forced into the convolutions of the spirals of wire constituting said body, and means carried by the other end of the stem adapted for detachable connection to a mop handle.

In testimony whereof I hereunto affix my signature.

DAVID L. SILVER.