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BROOM HEAD AND MEANS FOR REMOVABLY
ATTACHING IT TO A HANDLE
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2,642,610

FIG. 1.

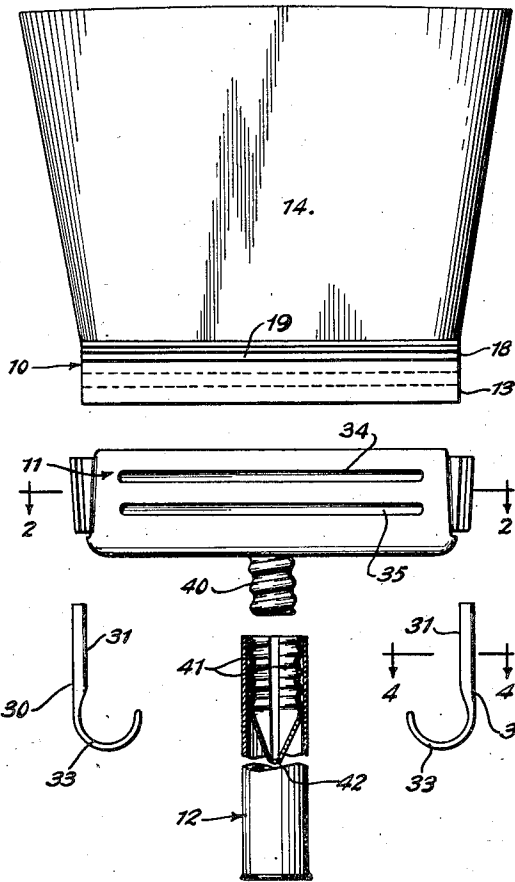


FIG. 6.

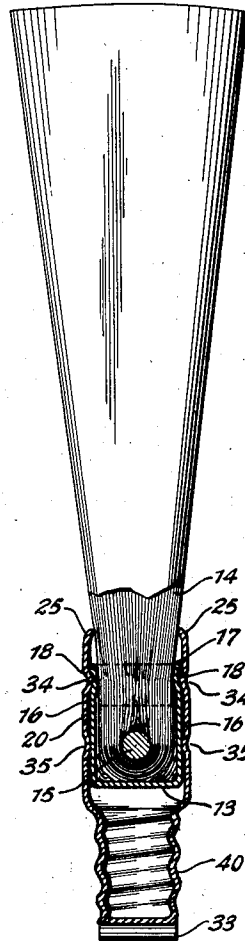


FIG. 2.

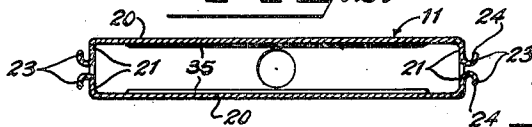


FIG. 3.

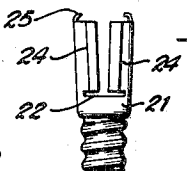


FIG. 4.

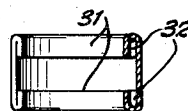
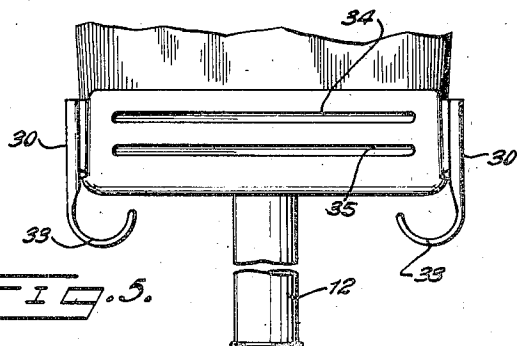


FIG. 5.



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BROOM HEAD AND MEANS FOR REMOV-
ABLY ATTACHING IT TO A HANDLEKarl Erik, Sheffield, Pa., assignor to G. G. Greene
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2 Claims. (Cl. 15—176)

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The present invention relates to brooms, brushes and similar articles of the class having a working head composed of a bundle or tuft of fibers or similar flexible sweeping or working elements, and it relates more particularly to those suitable for household purposes for sweeping, brushing and similar operations.

One of the primary objects of the invention is to provide a novel and improved article of this class which is lighter in weight and more attractive in appearance than articles of this class as heretofore manufactured or proposed, and which may be manufactured inexpensively.

Another object is to provide novel and improved means for securing a bundle or tuft of fibers or similar sweeping or working elements in the working head whereby pulling of these elements is effectively prevented.

Another object is to provide an article of this class in which the bundle of fibers or other flexible elements of the head are carried by a member as a unit therewith and which is removably inserted in a holder attached to a handle, and which may be replaced by another similar unit when the fibers or other flexible elements of the head become worn.

Another object is to provide novel and improved means for firmly but removably locking the head unit in the holder and which may be easily operated to release a used or worn head and to lock a replacement head unit in the holder.

A further object of the invention is to provide, as an article of manufacture, a novel head unit which may be supplied as a refill or replacement for a unit the fibrous or other flexible working elements of which have become worn, so that replacement of the handle and the holder thereon is not necessary, thus effecting an economy in the ultimate cost of the article to the user.

To these and other ends, the invention consists in certain improvements and combinations and arrangements of parts, all as will be hereinafter described, the features of novelty being set forth more particularly in the claims at the end of this specification.

In the accompanying drawing which shows the preferred embodiment of the invention:

Figure 1 is a collective view in elevation and partly in section, showing the components of the article.

Figure 2 is a section taken on the line 2—2 in Fig. 1.

Figure 3 is an end view of the holder shown in Fig. 1.

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Figure 4 is a section taken on the line 4—4 in Fig. 1.

Figure 5 is an elevation of the article in its completely assembled condition.

Figure 6 is a section taken vertically through the head unit and its holder, showing the head unit inserted in the holder and secured therein.

Similar parts are designated by the same reference numerals in the different figures.

The invention is shown in the present instance applied to a broom of the type having a head composed of a bundle of relatively long flexible fibers, and having a handle for manipulating it in performing sweeping operations, as in a household, but it is to be understood that the invention is applicable to brushes and other similar articles having a working head of this general type.

The broom as shown comprises generally a head unit 10, a holder 11 to receive the head, and a handle 12 to which the holder is connected. The head unit 10 comprises an elongated base 13 composed preferably of a sheet of relatively stiff metal stamped into the form of a channel to receive the flexible sweeping elements 14 of the head. These elements are secured in the base by taking a bundle or a relatively wide tuft of parallel long vegetable fibers or other suitable flexible elements of double length of the completed head and folding the bundle midway of its length about a core 15 such as a rod or large wire and inserting the doubled portion of the bundle into the channel shaped base where they are clamped firmly between the opposite sides 16 of the base, and the sides of the base are rigidly secured together by cross members 17 which are welded or otherwise secured to and connect their ends. Portions of the sides of the base are also preferably pressed inwardly to form longitudinal ribs 18 which press the interposed doubled or folded portion of the bundle of flexible elements 14 inwardly above the core 15, thereby securely locking the flexible elements of the head in the base and preventing pulling of these elements therefrom. Longitudinal grooves 19 formed at the outer surfaces of the sides 16 by the pressing inwardly of the ribs 18 serve to retain the head unit in the holder, as hereinafter described.

The holder 11 is composed of a sheet of somewhat resilient material, such as cold rolled steel which is pressed into substantially channel form to provide longitudinal sides 20 which are spaced apart transversely sufficiently to receive the head unit 10 between them, and ends 21 which are

spaced apart longitudinally sufficiently to receive the ends of the head unit between them. Each end of the holder is slotted transversely at 22, and the portions of the end wall above the slot are turned longitudinally outwardly and then laterally to form a pair of flanges 23 which are spaced beyond the respective end wall of the holder, as shown in Fig. 2, and the lateral edges of these flanges, at each end of the holder, are inclined so that they diverge toward the top of the holder, as shown in Fig. 3. The upper longitudinal edges of the side walls of the holder are preferably bent inwardly or toward one another, as shown at 25, so that they will bear against the bundle of fibrous flexible elements in the base of the head unit when the latter is inserted in the holder, thereby providing a firm support for these elements.

The holder 11 is of a length and width to snugly receive the base 13 of the head unit, the inherent resilience of the holder preferably holding the sides of the holder apart to a sufficient extent to enable the base of the head unit to be inserted therein easily. Means is provided for forcing the sides of the holder toward one another to firmly clamp and secure the base of the head unit therein, such means comprising in the present instance a pair of clips 30 which cooperate with the flanges 23 on the ends of the holder. Each of these clips comprises a strip of metal or other suitable material having its longitudinal edges turned inwardly in substantial parallelism to form a pair of flanges 31 which, at one end of the clip, are spaced from the body thereof to form parallel grooves 32 to slidably receive the flanges 23 at the respective end of the holder and to cooperate with the out-turned divergent edges 24 thereof. The flanges 31 of the clip are preferably flattened against the body thereof toward the other end of the clip to stiffen it, and this end of the clip is preferably curved to form a finger grip 33. After the base 13 of the head unit has been inserted into the holder 11, the clips 30 are placed over the lower ends of the flanges 23 at the respective ends of the holder and pushed upwardly, the engagement between the upwardly divergent edges 24 of the flanges 23 on the ends of the holder and the parallel grooves 32 of the clips acting as wedges which force the opposite longitudinal sides of the holder inwardly and into firm clamping relation with the base 13 of the head unit therein.

In order to more firmly and rigidly secure the head unit 10 in the holder, the opposite sides of the latter are pressed inwardly to form longitudinal ribs 34 at a height to enter the grooves 19 formed at the outer sides of the longitudinal ribs 18 in the base 13 of the head unit, thereby providing a yieldable lock between the holder and the head unit therein. Portions of the sides of the holder below the ribs 34 may also be pressed inwardly to form longitudinal ribs 35 located at a height to bear frictionally against the respective ungrooved portions of the sides of the base of the head unit, thereby preventing any looseness of said unit in the holder and increasing its security of hold therein.

Since the head unit is separate from the holder, it may be readily removed therefrom when the fibres or other flexible elements of

the working portion of the head become worn, by simply removing the clips 30 from the ends of the holder, thus permitting the sides of the holder to spread apart sufficiently to relieve the clamping action on the base 13, which may then be removed from the holder and another similar head unit may then be inserted as a replacement in the holder and clamped therein by applying and setting up the clips 30.

The holder may be connected to a suitable handle in any suitable manner, the holder being shown in the present instance as having a threaded stem 40 fixed to or formed integrally therewith, and the handle 12, which is preferably tubular as shown, is provided with a correspondingly threaded socket, this socket being composed of a pair of substantially semi-tubular portions 41 which are pressed into the end of the tubular handle, the inner ends of the semi-tubular portions of the socket being connected at their inner ends by a strap 42 which is preferably formed integrally with the semi-tubular portions of the socket.

I claim:

1. An article of the class described, comprising a base having flexible working elements secured therein, a holder having opposed sides which are relatively movable and spaced apart to receive said base between them, and having their ends turned in opposite directions and formed with divergent edges, and channel-shaped wedge members slidable on said oppositely turned ends and cooperative with their divergent edges to force the sides of the holder toward one another and into clamping engagement with the base in the holder.

2. A broom comprising a base member carrying a bundle of flexible fibers, a holder member adapted to receive the base member, a rib being formed in a side of one of said members and a groove being formed in a side of the other member in a position to receive said rib when the base member is in operative position in the holder member, and said side of one of said members having a second rib thereon spaced from the first-mentioned rib and said groove when the base member is in operative position in the holder member and engaging frictionally with an un-grooved portion of the side of the other member, and means for forcing the sides of the holder toward one another to thereby retain said first-mentioned rib in said groove and to provide a frictional grip between said second rib and the un-grooved portion of the side of the cooperative member.

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