July 9, 1957 M. HERMAN ET AL 2,798,749

CONNECTOR FOR TWO PIECE HANDLES

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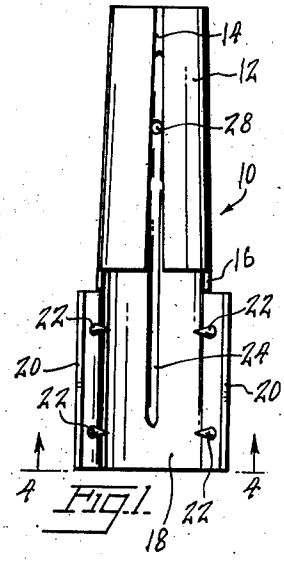


FIG. 1.

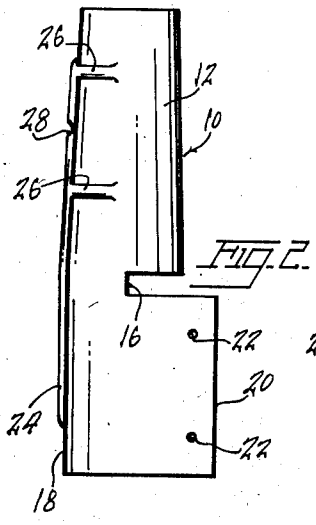


FIG. 2.

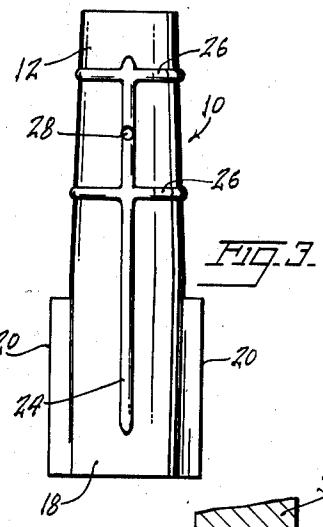


FIG. 3.

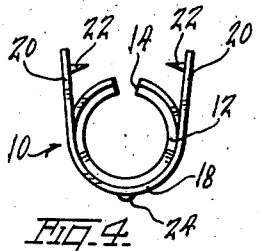


FIG. 4.

FIG. 5.

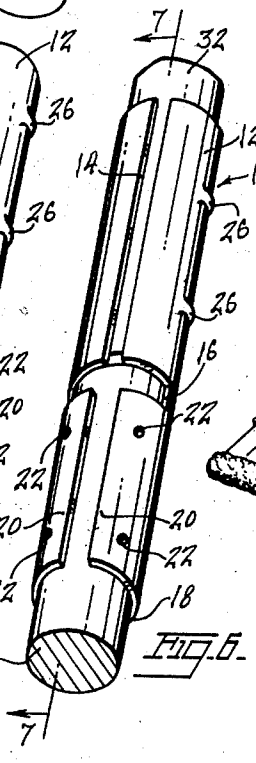


FIG. 6.

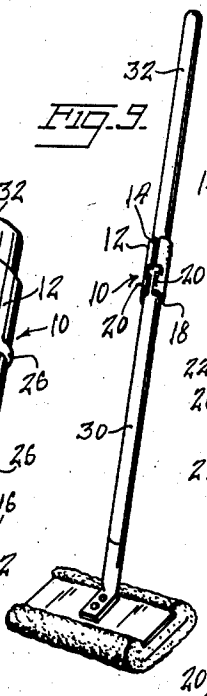


FIG. 9.

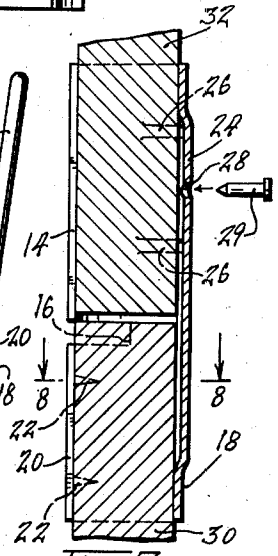


FIG. 7.

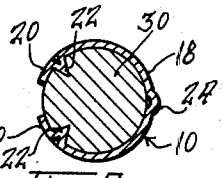


FIG. 8.

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CONNECTOR FOR TWO PIECE HANDLES

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1 Claim. (Cl. 287—108)

This invention relates to connecting devices and, more particularly, has reference to a device of the type stated that is especially adapted for fixedly joining, in end to end, abutting relationship, adjacent sections of the handle of a mop, wax applier, broom, or the like.

It is one important object of the invention to permit manufacture of the connector at a minimum of cost, from a single piece of inexpensive sheet metal material, while still designing the same in a manner that will insure a wholly tight, strong connection between the sections to be joined.

A second object is to facilitate the manufacture and shipment of a device such as a wax applier in separate pieces that can be compactly housed in a relatively small carton, with said connector to be preferably secured, before sale of the device, to one of the handle pieces, and to be readily attached to the other handle piece with a minimum of effort.

Yet another object is to form one end of the connector with a tapered portion, that will taper in a direction away from the other end thereof, said tapered portion to be so designed as to assume a constant diameter, cylindrical shape on extension of a handle piece thereinto, while maintaining a tight grip on said handle piece.

A further object is to provide, in association with said tapered portion, an opposite end portion having divergent wings adapted to embrace a second handle piece, said wings being bent into clamping engagement with the second handle piece to fixedly join the pieces to one another.

Still another object of importance is to effect a positive connection between each wing and the second handle piece, through the medium of inwardly struck, conically shaped, lugs adapted to bite into the second handle piece when the wings are bent into engagement therewith.

Other objects are to permit a connection to be made between adjacent handle pieces without requirement of any tools other than a simple tool of the pliers type; to reinforce a connector with particular effectiveness by a specially arranged series of outwardly struck ribs; and to facilitate the disconnection of the handle sections for storage or for other purposes.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a front elevational view of a connector formed in accordance with the invention, as it appears prior to attachment to the handle sections.

Fig. 2 is a side elevational view.

Fig. 3 is a rear elevational view.

Fig. 4 is an end elevational view taken from the line 4—4 of Fig. 1.

Fig. 5 is an exploded perspective view showing the connector and fragmentary portions of the handle sections to be joined thereby.

Fig. 6 is a perspective view in which the connector has been applied to the handle sections.

Fig. 7 is a perspective view on line 7—7 of Fig. 6.

Fig. 8 is a transverse sectional view on line 8—8 of Fig. 7.

Fig. 9 is a perspective view of a wax applier in which the handle sections have been joined by the connector.

The connector constituting the invention has been generally designated at **10** in the several figures of the drawing, and is formed from a single piece of sheet material which initially may be in the shape of a flat, rectangular blank, thus allowing manufacture with a minimum wastage of metal, with the design allowing quantity production at low unit cost.

When the device is manufactured, it is shaped at one end with a tapered sleeve **12** split from end to end as at **14**. The slit or open-ended continuous slot **14** of the sleeve **12** is itself tapered as shown to advantage in Fig. 1, with the side edges of the slit converging in the direction of the smaller end of the sleeve. It should be noted at this point that the taper of the sleeve, and of the slit formed therein, has been exaggerated in the several figures of the drawing for the purpose of clarity of understanding. In actuality, in a commercial embodiment of the invention, the taper of the sleeve, and of its associated slit, would be very slight, though distinctly a salient characteristic of the construction.

At its larger end, the sleeve is integral with a connecting portion or saddle **16** cut away transversely of the sleeve so as to be of semicircular cross section.

Integral with the saddle **16** and constituting an extension thereof is a clamp member **18** of arcuate cross section merging at its opposite sides into flat wings **20** diverging in a direction away from the clamp member. Wings **20** are provided, adjacent their free edges, with inwardly struck, conical lugs **22**, each wing having two of said lugs in the illustrated example. The number of the lugs of each wing may be varied, but it has been found that two will suffice in assuring a strong connection between the clamp member and the handle section received therein. In the preferred, illustrated form of the invention, the lugs of each wing are arranged in a series extending parallel to the longitudinal center line of the connector.

The connector, though fabricated of inexpensive sheet metal material, is of substantial strength, being formed with a specially arranged series of reinforcing ribs. The several ribs are struck outwardly from the material of the connector, and include a main rib **24** the ends of which terminate adjacent the opposite ends of the device. Rib **24** is arranged longitudinally and centrally of the sleeve **12** and clamp member **18**, and that portion thereof extending along the sleeve intersects with auxiliary, transverse ribs **26**. Two ribs **26** are provided, one intersecting with the main rib intermediate the ends of the main rib and the other being disposed at that end of the main rib that terminates near the smaller end of the sleeve.

Formed in the main rib, between the transverse ribs, is an aperture **28**, through which a nail **29** or equivalent fastening element may be extended when handle sections **30**, **32** are to be joined through use of the device.

When the handle sections are joined, the smaller end of the sleeve, which has an inner diameter slightly less than that of the handle section **32**, is spread slightly to receive said section **32**. To spread the sleeve, one can insert the bit of a screw driver or like tool in the smaller end of the slit, to exert a prying action on the slit edges tending to shift the same away from each other. The handle section **32** can now be extended into the sleeve, until its end registers with the inner end of the sleeve. The sleeve will now tend to spring back to its original tapered shape, but will be prevented from doing so by the

inserted handle section. The sleeve will thus be caused to assume a constant diameter, cylindrical shape as shown in Figs. 6 and 7, but while of course exerting a strong grip on the inserted section throughout the length of the sleeve, will be springably tensioned into particularly strong engagement with the section at the outer, initially smaller end of the sleeve.

To insure against separation of the sleeve and handle section **32**, a nail **29** can be driven radially and inwardly of the handle section, through aperture **28**, at the option of the user. Said nail might be employed, for example, not for any lack of a tight grip of the sleeve upon the handle section, but to provide a positive means for holding the sleeve and handle section against relative rotation.

The sleeve can be preassembled with section **32** during the manufacture of a cleaning device such as a wax applier of the type shown in Fig. 9, but this is not essential, and the ultimate purchaser can effect the connection between section **32** and the sleeve.

As a next step in connecting the handle sections, the user positions section **30** in the clamp member, in abutting relation to section **32**. Wings **20** are now bent inwardly toward one another to the position shown in Fig. 6, a pliers or like tool being used. This causes the lugs **22** to bite into the wooden handle section, as shown and the resulting handle can be used on a wax applier in Fig. 8.

The device thus serves to fixedly connect the sections (Fig. 9) or any other implement, such as a broom, mop, etc.

While we have illustrated and described the preferred embodiment of our invention, it is to be understood that we do no limit ourselves to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claim.

Having thus described our invention, what we claim as new, and desire to secure by United States Letters Patent is:

A device for connecting handle sections in end to end relationship comprising a tubular body slotted from end to end, one end portion of said body being tapered and circular in cross section for encircling and gripping one of the handle sections, the other end portion of the body being semicircular and merging into lateral wing portions, said semicircular portion being adapted to encircle the other handle section, a saddle portion connecting said end portions, lugs carried on the inner surface of the wing portions adjacent the free edges thereof for permanently attaching the wing portions to said other handle section, and longitudinal and transverse reinforcing ribs on the tubular body opposite the slot therein.

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