Nov. 6, 1945. J. FRIEDEL 2,388,356

CLEANING BROOM

Filed Jan. 31, 1944

Fig. 1.

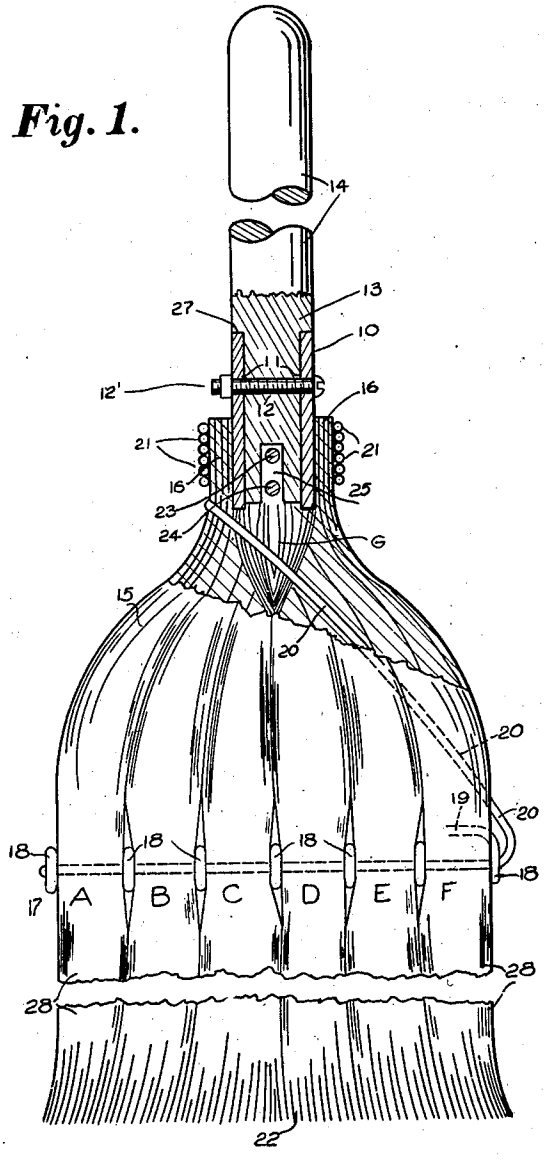


Fig. 2.

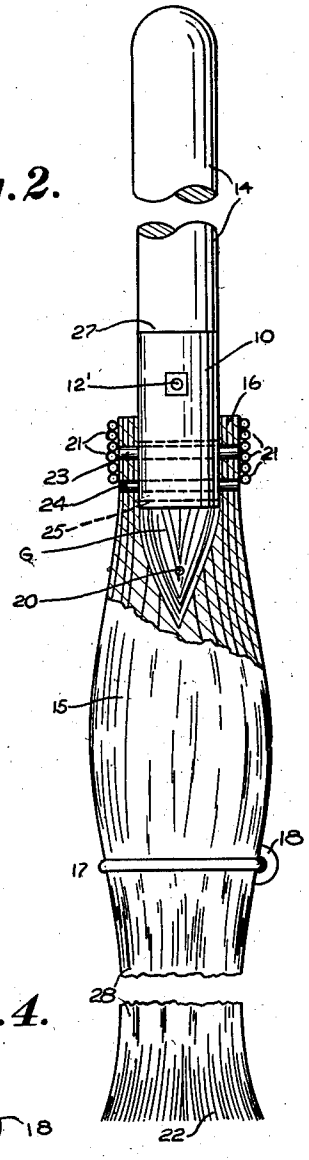
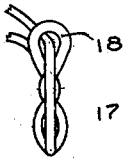


Fig. 4.



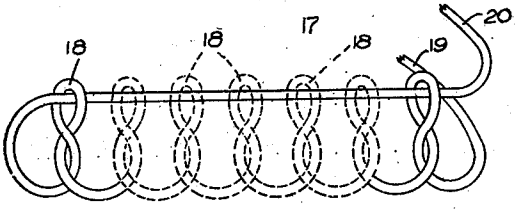


Fig. 3.

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Patented Nov. 6, 1945 2,388,356

UNITED STATES PATENT OFFICE

2,388,356

CLEANING BROOM

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Application January 31, 1944, Serial No. 520,455

1 Claim. (Cl. 15—170)

The present invention relates to the cleaning art and more particularly to brooms.

It is an object of the invention to provide a broom structure, the parts of which are so constructed and arranged with respect to each other that the handle portion thereof may be readily removed from its other portions, whereby at the time the flexible straws of the broom head have lost their resiliency, resultant from use, said straws and head may be abandoned for a new straw head portion of the device and operatively secured to the handle readily, for consummating a saving in broom operating expense and the like.

Another object of the invention is to provide a broom head from which its handle may be readily detached for use at times when cleaning or sweeping under tables or the like where it is desired to hold the broom straws of the head in a substantially vertical position and a long handle would strike the bottom of the table top during operation.

A further object of the invention is to provide a wire twisted to form a plurality of loops disposed side by side through the broom straws for economically providing bunches of straws bound together side by side, whereby costly machine sewing and stitching of the straws of a broom head are eliminated.

Other and further ejects and advantages of the invention will be obvious from the following detailed description thereof.

In the drawing:

Figure 1 is a side elevation of the new device, certain portions thereof being broken away and other portions being shown in section.

Figure 2 is a vertical end or edge elevation of the device shown in Figure 1.

Figure 3 is a diagrammatic view in part and a full line view in part, of a wire twisted upon itself to provide a row of spaced apart loops, certain end portions of the wire being broken away.

Figure 4 is an end view of the wire twists shown in Figure 3, certain end portions of the wire being broken away and showing one of the end loops thereof.

Referring now to drawing for a more particular description, the device includes an elongated sleeve 10 having oppositely disposed apertures 11 formed through the annular side wall thereof adjacent one end of said wall. A bolt 12' is preferably employed or a similar keeper for attaching the handle 14 to the sleeve. As shown, the bolt extends through the apertures 11 of the sleeve and the aperture 12 of the handle at times when the end 13 of the handle is inserted in said sleeve. The handle 14 is elongated, formed of wood or certain of the ornamental modern plastics, having a length substantially equal to the length of a conventional broom handle.

A quantity of resilient broom straws 15 are provided having their bound end portions 16 disposed side by side approximately in annular rows about the sleeve 10 as shown.

Referring to Figure 3, a wire generally indicated at 17, is provided. Portions of the wire are twisted together to provide spaced apart loops 18. Preferably seven loops are employed. For convenience of illustration, but two of the loops are shown in full lines in Figure 3 and the other loops are there represented diagrammatically by means of dotted lines. The loops 18 are inserted through the quantity of broom straws approximately midway between the ends thereof as shown in Figure 1. The end 19 of the wire is disposed into the mass of broom straws whereby during use it will not catch on an operator's clothing, said end 19 being illustrated by means of dotted lines in Figure 1. The other end of the wire is snugly and tautly passed or rove through the loops 18 as shown in Figures 3 and 1, whereby the quantity of broom straws is sub-divided into six bunches disposed side by side for providing a broom head which is wider than it is thick in accordance with conventional practice.

The portion 20 of the wire is caused to be inserted in the mass of broom straws and through the core portion G of the broom head and the said other end of the wire is then wrapped snugly about the end portions 16 of the annular rows of straws and about or around said sleeve an adequate number of turns as indicated at 21, in Figure 1.

The wire 17 is comparatively stiff and the loops 18 thereof may be formed by providing more twists adjacent each loop than is shown in Figure 3 for further stiffening the wire, whereby the six bunches of broom straws disposed between the seven loops 18 of the wire are maintained in side by side relation with respect to each other for providing a broom head which is broad in side elevation as shown in Figure 1 and narrow in edge elevation as shown in Figure 2. The wire being stiff and the portion thereof which is passed through the loops being snugly and tautly gathered, the six bunches of straw indicated at A through F are maintained rigidly aligned by and adjacent said wire, while permitting the free outer ends 22 of the straws to flex during cleaning or sweeping operations and at times when said

free ends 22 are in contact with a floor or carpet in a well known manner.

The construction further includes two like detents 23 and 24 disposed through said sleeve, said detents each having outer end portions which extend beyond said sleeve. Said outer ends of the detents are embedded between and against certain of said straws, whereby at the time the rows of straws adjacent to the sleeve are compacted against the sleeve by the wire, as indicated at 21, said detents prevent rotary movement of the broom head and its quantity of straws with respect to the sleeve.

The end 13 of the handle 14 is provided with a kerf 25, the side walls of which, as shown in Figure 1, are disposed at opposite sides of and against the detents for preventing rotary movement of the straws with respect to the handle. That end of the handle which is received in the sleeve is preferably provided with a step-cut for providing an annular shoulder 27 on the handle for abutment against the adjacent annular end edge of the sleeve, and at times when the end 13 of the handle is fitted snugly within the sleeve the bolt 12' may be dispensed with. The bolt 12' is preferably employed at times when the handle is moulded initially of plastic material of variegated colors, pleasing to a housewife or the like, since moulded material varies in diameter and it is not desired to machine the end 13 of the handle. Where the handle is turned in a lathe out of wood, the shoulder 27 may be provided on the handle at no extra cost of production for the lathe work.

In operation, the straws bend adjacent the portion 28 of the broom head and between the free ends 22 of the straws and the rigidly held portions thereof adjacent the wire loops whereby the free ends 22 flex during sweeping operations for well known purposes.

For sweeping under tables and the like, the handle may be readily removed from the other portions of the device and a shorter handle substituted for the handle 14. Also if desired, the operator may grasp the device adjacent the sleeve at times when the handle is omitted for sweeping operations in close quarters.

From the foregoing description, it is thought to be obvious that a broom structure constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason, I do not wish it to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice, except as claimed.

I claim:

In a broom, a handle, a quantity of resilient parallel broom straws having end portions disposed about an end of said handle, and a wire having a plurality of spaced apart loops thereon disposed approximately midway between the ends of said straws, said loops being disposed through said quantity, said wire having a portion disposed through said loops for binding said straws in a plurality of bunches disposed side by side, said wire having a further extended portion snugly disposed about said end portions of said straws and handle for securing said straws and handle together.

JONAS FRIEDEL.