Aug. 20, 1929. H. H. FITZGERALD 1,725,133

FLOOR BRUSH

Filed Jan. 30, 1925

Fig. 1.

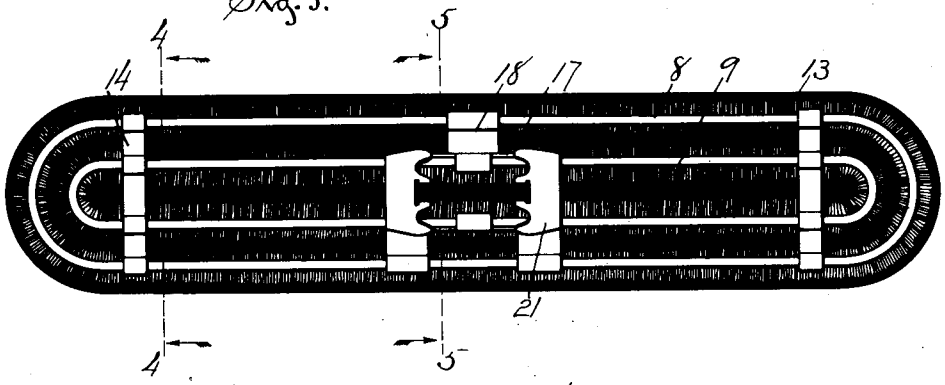


Fig. 2.

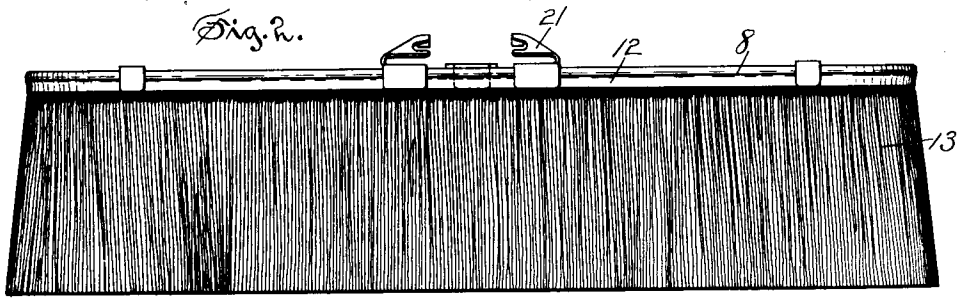


Fig. 3.

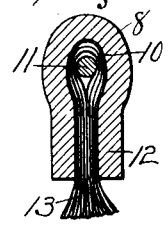


Fig. 4.

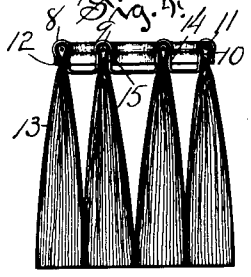


Fig. 5.

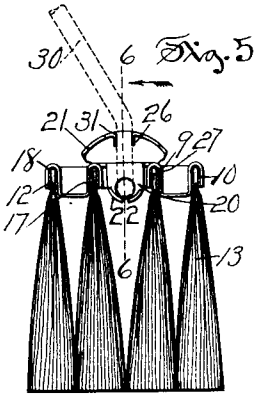


Fig. 6.

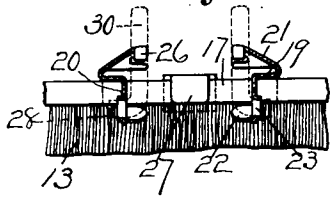
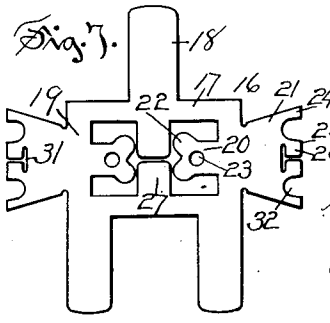


Fig. 7.



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UNITED STATES PATENT OFFICE.

HORACE H. FITZGERALD, OF BERLIN, CONNECTICUT, ASSIGNOR TO THE FULLER BRUSH COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

FLOOR BRUSH.

Application filed January 30, 1925. Serial No. 5,759.

This invention relates more especially to that type of brushes employed for cleaning floors and similar surfaces, and an object of the invention, among others, is the production of a brush of this type that shall be particularly efficient in operation, and that shall have novel features of construction whereby the brush may be produced in a simple and economical manner.

One form of brush embodying the invention and in the construction and use of which the objects herein set out, as well as others, may be attained, is illustrated in the accompanying drawings, in which—

Figure 1 is a top view of this improved floor brush.

Figure 2 is a side view of the same.

Figure 3 is a detail view, scale enlarged, in cross section through one of the frame members illustrating the manner of securing the brush material therein.

Figure 4 is a view in section on a plane denoted by the dotted line 4—4 of Figure 1.

Figure 5 is a view in section on a plane denoted by the dotted line 5—5 of Figure 1, but showing a modified construction of the frame members with the brush material secured therein.

Figure 6 is a view in section on a plane denoted by the dotted line 6—6 of Figure 5.

Figure 7 is a detail view showing the plate from which the handle attaching bracket is formed.

A brush embodying the invention forming the subject matter of this application is comprised of a back of frame like construction in which the cleaning element, usually composed of fibrous material, is secured, this frame including a plurality of channeled members from which the cleaning material projects, said channeled members being secured together by tie pieces and spacers to provide a rigid structure, and a bracket to which a handle is secured is also attached to the frame in a manner to strengthen it.

In the accompanying drawings the numerals 8 and 9 designate two channeled members, of substantially the same shape, except as to size, these members being preferably of oblong shape and endless in construction with rounded ends and one of the members being located within the boundaries of the other and evenly spaced therefrom on all sides, as illustrated in Figure 1 of the drawings. Each of these members is provided with a channel 10 formed by bending the metal into U-shape in cross section, and the fibers or other elements comprising the cleaning material are doubled at about their lengthwise center and folded over an anchoring rod 11 that extends for at least the whole length of the brush material within the channeled member, the lips 12 of said channeled member being compressed closely against the cleaning material 13 to firmly and securely hold it within the channeled member.

The tie pieces and spacers 14, each of which possesses both of these functions, are preferably formed from sheet metal and each is bent into proper shape to provide recesses 15, which recesses are formed to correspond to the cross sectional shape of the channeled member 8—9. These tie pieces are fixed to the frame by springing them over the channeled members, and they may be located at such distances apart along the channeled members as may be desired, in the structure herein shown there being two of these tie pieces and spacers located one near each end of the frame, and as shown in Figure 1 of the drawings. Any other suitable means for securing the tie pieces in place may be employed.

The bracket for securing the handle to the structure is formed from a single plate of sheet metal 16 that is stamped to shape and comprising side bars 17, from which clips 18 project, and end pieces 19 connecting the side bars. Handle supporting sections 20 project inwardly into the opening formed by the side bars and end pieces, and handle positioning sections 21 project from opposite ends of the plate. The sections 20 have handle locating lugs 22 projecting from their ends and holes 23 to form sockets to receive the outwardly bent ends of a connecting piece extending from a handle, and as illustrated in dotted lines in Figures 5 and 6 of the drawings. The positioning section is formed with positioning prongs 24—25, the former being located at the outer sides of the section and the latter being located at the inner sides of the section and provided with fingers 26 extending toward each other, and as shown in Figure 7 of the drawings. Clips 27 also project into the central opening at the center thereof.

In forming the bracket the side bars 17

are bent at substantially right angles to the plane of the plate, the clips 18 are also bent to form grooves to receive the channel members 8, and the clips 27 are bent to form grooves to receive the channeled members 9. The handle supporting sections 20 are bent downwardly at substantially right angles to the end pieces and the handle positioning sections are bent to overlie the end pieces 19. The locating lugs 22 are bent into the position shown in Figures 5 and 6 of the drawings to form lugs to receive pivots 28 of a handle connector shown in dotted outlines in Figures 5 and 6 of the drawings, thus locating the pivots opposite the holes 23 into which said pivots move by a springing action of the connector. These lugs may also act to support the pivots in addition to their support in the holes 23. The fingers 26 are bent downwardly into the position shown in Figures 5 and 6 of the drawings, the arms 30 of the spring connector being received against these fingers when said arms are in the notches 31, and thus take a part of the wear of said arms upon said notches, as it has been found that in use the connector will more frequently be located in these notches than in the notches 32 at opposite sides of the notches 31, it being understood that the spring arms of the connector may be compressed toward each other to release them from any of the notches and the connector being then swung on its pivot in the holes 23 said arms may be located in any of the other notches.

While there has been shown and described herein an entire brush structure comprising a frame to which the brush material is secured and from which it projects, and a bracket serving as a means for attachment of a handle to the frame, my invention is embodied in the bracket structure and does not embrace the frame except as to the special construction of such bracket for attachment to said frame.

In accordance with the provisions of the patent statutes I have described the principles of operation of my invention, together with the device which I now consider to represent the best embodiment thereof; but I desire to have it understood that the device shown is only illustrative, and that the invention as contemplated by the appended claims may be carried out by other means and applied to uses other than those above set out.

I claim—

1. A brush comprising a frame composed of members located one within the boundaries of another, brush material projecting from an edge of each of said members, handle attaching bracket comprising clips formed with grooves within which the edges of said members opposite the edge from which said material projects are received to space them apart, and means for attachment of a handle to said bracket.

2. A brush comprising a frame composed of members located one within the boundaries of another, brush material projecting from an edge of each of said members, a handle attaching bracket comprising clips located at opposite sides of the bracket, each clip having a plurality of grooves within which the edges of said members opposite the edge from which said material projects are received to space them apart, and means for securing a handle to said bracket.

3. A brush comprising a frame composed of members located one within the boundaries of another, brush material projecting from an edge of each of said members, a handle attaching bracket comprising side bars with attaching clips projecting from opposite edges of a side bar and having grooves within which the edges of said members opposite the edge from which said material projects are received to space them apart, and means for securing a handle to said bracket.

4. A handle attaching bracket for a brush structure, said bracket being formed from a flat plate of sheet metal and comprising a flat frame with handle supports and handle positioning supports projecting in opposite directions from the plane of said frame, said handle supports formed of metal originally comprised in the flat plate and having means for the pivotal connection of a handle thereto and said positioning supports having notches for positioning a handle with respect to its pivotal connection.

5. A handle attaching bracket for a brush structure, said bracket being formed from a flat plate of sheet metal and comprising a flat frame with handle supports and handle positioning supports projecting on opposite sides of the plane of the frame from the end parts of said bracket, said handle supports formed of metal originally comprised in the flat plate and having means for the pivotal connection of a handle thereto and said handle positioning supports having notches for positioning a handle with respect to its pivotal connection, and clips projecting from opposite side bars of the frame and provided with means for receiving members of a brush frame to secure the bracket to said frame.

6. A handle attaching bracket for a brush structure, said bracket comprising a frame with a central opening bounded by side and end bars, and a handle support and a handle positioning support projecting from opposite edges of each of the end bars and having means for supporting and for positioning a handle.

7. A handle attaching bracket for a brush structure, said bracket comprising a frame with a central opening bounded by side and end bars, a handle support and a handle

positioning support projecting in opposite directions from opposite edges of each of said end bars, said supports being provided with means for supporting and positioning a handle.

8. A handle attaching bracket for a brush structure, said bracket comprising a frame with a central opening bounded by side and end bars, and clips projecting from opposite edges of each of said side bars.

9. A handle attaching bracket for a brush structure, said bracket comprising a flat frame with handle supports and handle positioning supports projecting in opposite directions from the plane of said plate at opposite sides of the opening in said frame.

HORACE H. FITZGERALD.