

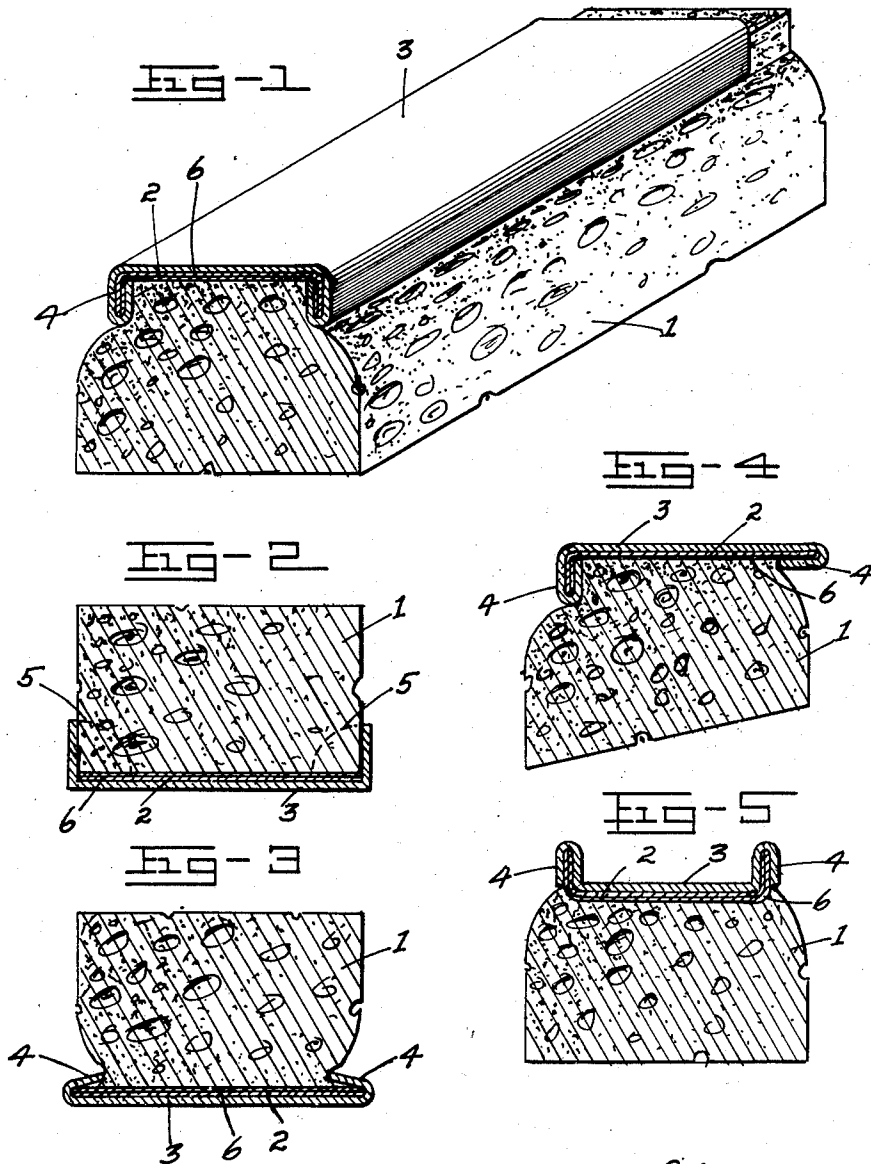
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2,313,787

CLEANING DEVICE AND METHOD OF MAKING SAME

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2,313,787

CLEANING DEVICE AND METHOD OF
MAKING SAME

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6 Claims. (Cl. 15-269)

(Granted under the act of March 3, 1883, as
amended April 30, 1928; 370 O. G. 757)

This invention relates to cleaning devices generally, but has special reference to a novel and improved method and means for attaching a compressible material, such as cellulose sponge and rubber sponge, to a metal holder or backing.

A further object of the invention resides in the provision of a method of securing compressible material to a backing in an expeditious manner and at a reduced cost, and which method provides for ease of assembly and yet produces a neat and attractive article.

A still further object of the invention consists in attaching cellulose sponge or rubber sponge to a metal backing in such a manner that the article may be boiled and otherwise cleaned and disinfected without breaking down the connection between the sponge and its metal backing.

Other objects and advantages of the invention will be apparent from the following description when taken in connection with the accompanying drawing, in which,

Fig. 1 is a perspective view, partly in section, of one form of the finished article which may be used either as a sponge brush or as a cleaning element for mops and the like.

Fig. 2 is a cross section illustrating the second step in assembling the sponge in its metal backing.

Fig. 3 is a cross section illustrating the third step in assembling the sponge in its metal backing.

Fig. 4 is a cross section illustrating a modified form of the finished product particularly adaptable for use in mops.

Fig. 5 is a cross section illustrating another modified form of finished product.

Like numerals refer to like parts throughout the several views.

Referring to the drawing, numeral 1 designates an elongated block of spongy material, such as cellulose sponge or rubber sponge, which is adhesively attached to a sheet of cloth 2, or other suitable material, by an adhesive 6, such as cellulose cement. The numeral 3 designates a metal backing, or a backing made of other suitable material, having double hemmed or folded flanged edges 4 which lock around the lower corners of the sponge and the edges of the cloth and adhesive, as indicated in Fig. 3, to hold the sponge securely attached to the metal backing.

Figs. 2 and 3 illustrate one method of assembling the sponge in the metal backing. The sponge 1 is securely attached to a sheet of cloth material 2 by a suitable adhesive 6 and the edges

trimmed to the size of the sponge. The sponge with cloth attached is then placed in the trough of a metal plate 3 having flanged edges 4 extending toward and alongside of the sponge. The flanged edges 4 are then folded inwardly to form closed locks which grip tightly the lower corners of the sponge, as indicated by the dotted lines 5 in Fig. 2, and the edges of the cloth and adhesive as illustrated in Fig. 3. From this step on the folded edges of the metal backing may be flanged at any desired angle, depending upon how the article is to be used.

The folded edges illustrated in Fig. 3 may be flanged inwardly toward the sponge at right angles as illustrated in Fig. 1, which article is suitable as a sponge brush or as a cleaning element for mops. In certain cleaning devices it is desirable to have only one of the folded edges flanged inwardly alongside of the sponge and to have the opposite flanged edge extend outwardly as illustrated in Fig. 4, which form is particularly suited for certain types of sponge mops. In other types of cleaning devices it is desirable to have the folded edges flanged away from the sponge as illustrated in Fig. 5.

In certain forms of construction it may be desirable to eliminate the cloth insert 2 and depend entirely upon the thickness and toughness of the adhesive alone to hold the sponge securely attached to the metal backing. One form of such construction is illustrated and described in my U. S. Patent No. 2,153,601.

In this invention the construction and method of assembly is somewhat modified. When the cloth insert is eliminated and the thickness and toughness of the cement is to be relied upon entirely to hold the sponge securely attached to the metal backing, the ends of the flanged backing 3, Fig. 2, are closed about half the depth of the flanged sides by any suitable means and a liquid adhesive such as cellulose cement is poured into the trough to a depth that will provide a substantially thick and tough adhesive when dry. After the adhesive is poured into the backing, the sponge is placed in the trough between the flanged sides, which act as guides, and compressed against the bottom of the backing until the cement is dry. After the cement has dried sufficiently the sponge is decompressed and the flanged edges 4 are folded inwardly to form a closed lock which grips tightly the lower corners of the sponge, as indicated by the dotted lines 5 in Fig. 2, and the edge portion of the cement 6 as indicated in Fig. 3. From this step on the folded edges may be flanged in any direction de-

sired as indicated in the drawing and described above.

From the foregoing description and the attached drawing it will be apparent to those skilled in the art that I have devised an extremely simple and inexpensive means and method for permanently attaching backings to sponge material such as cellulose sponge or rubber sponge; that the resulting product is neat and attractive in appearance; and that the invention is adaptable for many purposes.

In accordance with the patent statutes I have described what I now consider the preferred embodiments of my invention, but various changes or modifications can be made without departing from the spirit of the invention, and all such changes and modifications are intended to be included within the scope of the appended claims.

The invention described herein may be manufactured and used by the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

What I claim is:

1. The method of securing a block of spongy material to a backing member which comprises adhesively securing the spongy material to a sheet of cloth material placed in the channel of a flanged backing, folding inwardly the flanged edges of the backing member to grip and lock securely corner portions only of the sponge and the edges of the cement and sheet of cloth material to the backing member, and folding inwardly toward the sponge that part of the backing which locks and grips the sponge and cement, whereby the major portion of the sponge remains in uncompressed condition.

2. The method of securing a block of spongy material to a backing member which comprises placing a substantial quantity of adhesive in the trough of a flanged backing member, placing the block of spongy material on the cement in the trough and compressing it against the backing member, folding inwardly one or more of the flanged edges of the backing member to grip and lock corner portions only of the sponge material and the edges of the cement securely to the backing member, and folding inwardly toward the sponge that part of the backing which locks and grips the sponge and cement, whereby the major portion of the sponge remains in uncompressed condition.

3. The method of securing a block of spongy material to a backing member which comprises placing the spongy material in the channel of a flanged backing member, folding inwardly the flanged edges of the backing member to grip and lock securely corner portions only of the block of spongy material to the backing member, and folding inwardly toward the block of spongy material at least a part of the backing member which locks and grips the block of spongy material, whereby the major portion of the block of spongy material remains in uncompressed condition.

4. In a cleaning unit, a block of initially uncompressed spongy material and a U-shaped channel member, the bight of said U being of substantially no greater width than the width of the base of the initially uncompressed block of spongy material, the legs of said U being folded inwardly and downwardly to grip only the adjacent corners of the base of the block of spongy material between such legs and the bight of the U, with a major portion of the sponge remaining in an uncompressed condition.

5. In a cleaning unit, a block of initially uncompressed spongy material and a U-shaped channel member, the bight of said U being of substantially no greater width than the width of the base of the initially uncompressed block of spongy material, one of the legs of said U being folded inwardly and downwardly to grip only the adjacent corner of the base of the block of spongy material between such leg and the bight of the U, the other of the legs of said U being folded inwardly to grip the opposite adjacent corner of the base against the bight of the U, with a major portion of the sponge remaining in an uncompressed condition.

6. A cleaning unit including a block of initially uncompressed material secured to a backing member having a width substantially no greater than the width of the base of the initially uncompressed block of spongy material and sides extending from said backing member, said sides being folded inwardly into the spongy material to grip and compress at least two edges of the block of spongy material against the backing member and leave a major portion of the block of spongy material in an uncompressed condition.

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The above entitled patent was extended November 13, 1951, under the provisions of the act of June 30, 1950, for 4 years and 341 days from the expiration of the original term thereof.

Commissioner of Patents.