

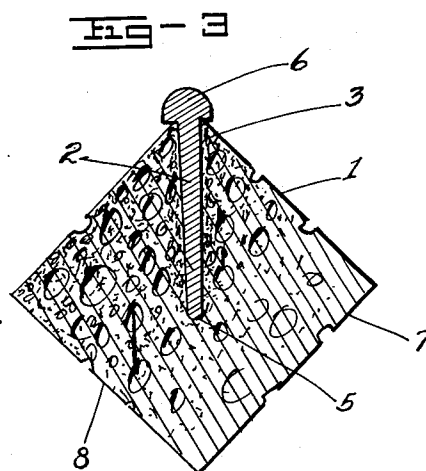
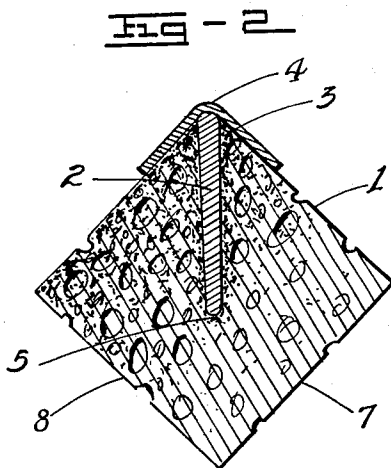
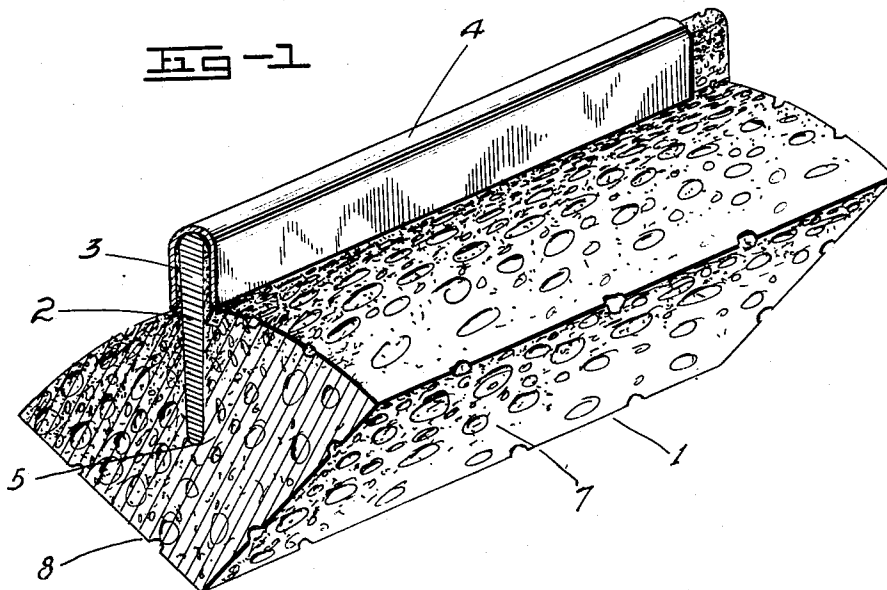
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2,229,147

CLEANING DEVICE

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UNITED STATES PATENT OFFICE

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CLEANING DEVICE

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1 Claim. (Cl. 15-244)

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

This invention relates to cleaning devices such as mops, wall brushes, counter brushes, made of spongy material such as cellulose sponge, rubber sponge, felt, etc.

5 In this invention cellulose sponge is the preferred form of cleaning element forming a part of the cleaning device. Due to the fact that cellulose sponge is very soft and pliable when wet, special means must be provided for holding it
10 onto a stiff backing so that it can be used successfully in mops and the like.

The principal object of this invention is to provide a new and novel means for attaching a spongy material to a relative stiff backing so
15 that it may be used successfully as a cleaning element in mops and the like for cleaning floors, walls, ceilings, windows, counters, etc.

A further object is to provide a method of attaching a spongy material such as cellulose
20 sponge to a stiff backing in such a manner that the least amount of sponge is used in the process.

A further object is to provide in a cleaning element such as cellulose sponge, a core or supporting element that will increase the stiffness
25 of the sponge and prevent it from rolling over a surface to be cleaned when the direction of stroke is changed in cleaning operations.

A further object is to provide means whereby, when a cleaning element such as cellulose
30 sponge is used and is supported by a core to increase stiffness, the sponge material will not crawl around the core in cleaning operations.

Other objects and advantages of the invention will become apparent from a study of the following description, taken in connection with the accompanying drawing wherein:

Fig. 1 illustrates a perspective view of the cleaning device made in the preferred form according to the present invention. One end is
40 shown in section to illustrate the form of construction.

Fig. 2 illustrates a cross sectional view of Fig. 1 before the sponge material is clamped to its
45 core.

Fig. 3 illustrates a cross sectional view of a modified form of construction.

Like numerals refer to like parts throughout the drawing.

50 Heretofore sponge material in sheet form has been attached by various means to many shapes and types of mop heads. The prevailing method has been to wrap a rectangular sheet of sponge material around a head or holder and to clamp
55 it thereto in some manner. Another method

has been to cut the sponge into thick strips and to clamp the edge of the strip. While these methods may be satisfactory for felt and rubber sponge, they are not suitable for cellulose sponge due to the soft and pliable nature of
5 cellulose sponge when wet. Cellulose sponge has a great tendency to expand when wet and to shrink considerably when dry, and ordinary methods used in attaching a cleaning material to a backing member are not suitable for cellu-
10 lose sponge.

Referring to the drawing, Fig. 1 illustrates the preferred finished form of the cleaning device embodying my invention, and Fig. 2 illustrates a
15 cross section of the cleaning device before it is completely assembled and formed to the shape illustrated in Fig. 1. The cleaning device comprises a cleaning element preferably made out of an elongated block 1 of cellulose sponge or other compressible cleaning material such as rubber
20 sponge or felt. Before it is attached to its backing it is cut substantially square or diamond shape in cross section. In order to attach the block of spongy material to a stiff backing, the block of sponge is first split or slotted length
25 wise on a cross section diagonal line from one of the elongated corners to a depth slightly beyond the longitudinal axis of the block as illustrated in Figs. 2 and 3. After the block has been
30 slotted, an elongated flexible core 2, made preferably of soft rubber and substantially wedge shape in cross section, is inserted in the slot with the toe of the wedge shaped strip resting
35 against the bottom of the slot 5. The core is preferably vulcanized or cemented to the walls of the slot to prevent movement of the cleaning element around the core when the device is used in cleaning operations such as mopping floors. The edges 3 of the slotted portion of the cleaning
40 element are securely attached to the head portion of the core by a clamping member 4 comprising an elongated U shaped metal channel. The U shaped channel is first formed with
45 right angular walls as illustrated in Fig. 2. In the assembly of the parts the flexible core 2 is inserted in the slot of the cleaning element and the angular channel member 4 is placed on top as illustrated in Fig. 2, after which, the channel member is compressed laterally to compress
50 the edges 3 of the cleaning element tightly against the walls of the core. When the clamping member 4 has been tightly compressed the cleaning device takes the form illustrated in
Fig. 1.

In Fig. 3 a modified form of construction is
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illustrated in which the wedge shaped core member 4 is provided with an enlarged head 6 formed and adapted to be clamped by any suitable form of holder. In this arrangement the sponge is not compressed laterally by a clamp as illustrated in Fig. 1. Instead, a suitable cement is used and relied upon to hold the cleaning element 1 securely attached to the core.

The cleaning device may be used in any suitable form of holder or clamp which may be provided with a long handle such as used in mops.

In both types of cleaning devices illustrated, two broad flat surfaces 7 and 8 are provided and arranged substantially at right angles to each other to permit effective application of either of the two surfaces to a surface to be cleaned, such as floors and walls. No holding member with handle is shown in the drawing for the reason that they may be made in many forms, and do not form a part of this invention.

Modifications of the invention may be resorted

to without departing from the spirit thereof or the scope of the appended claim.

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

I claim:

A cleaning device comprising an elongated block of compressible material substantially rectangular in cross section, a slot formed lengthwise in one elongated corner of said block and extending to a line adjacent the center of the block, a relatively thin core member mounted in the slot and extending from its outer to its inner edge, said core member being of a stiffness greater than that of the compressible material, and means for clamping the compressible material adjacent the slot against the core member.

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The above entitled patent was extended October 2, 1951, under the provisions of the Act of June 30, 1950, for 7 years and 173 days from the expiration of the original term thereof.

Commissioner of Patents.