Sept. 9, 1969 G. D. THOMAS 3,465,377

DUST MOP HEAD HAVING CUSHION MEANS

Filed Sept. 11, 1967 4 Sheets-Sheet 1

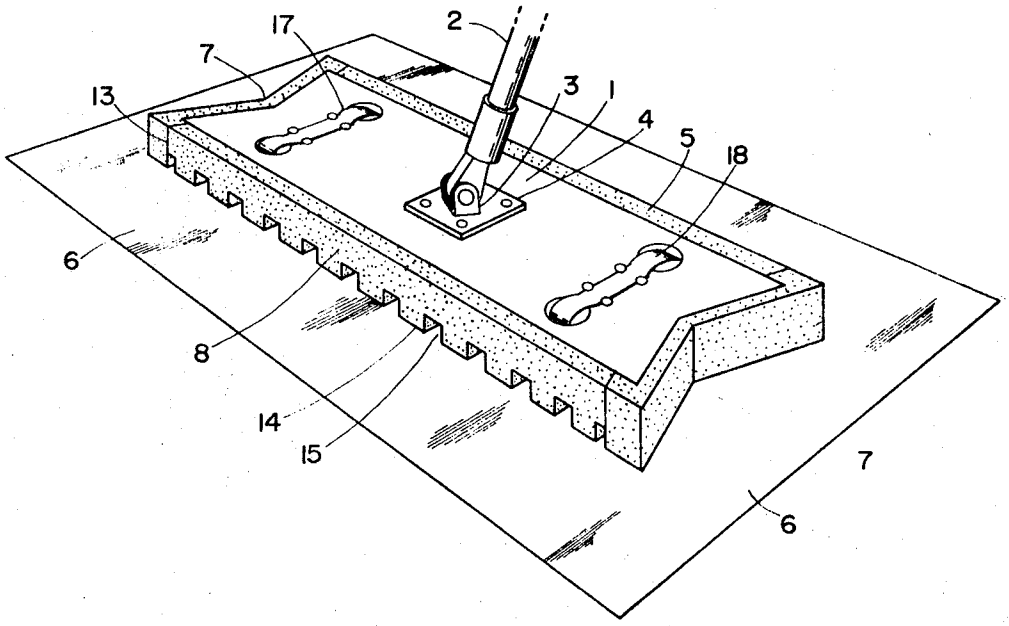


FIG. 1

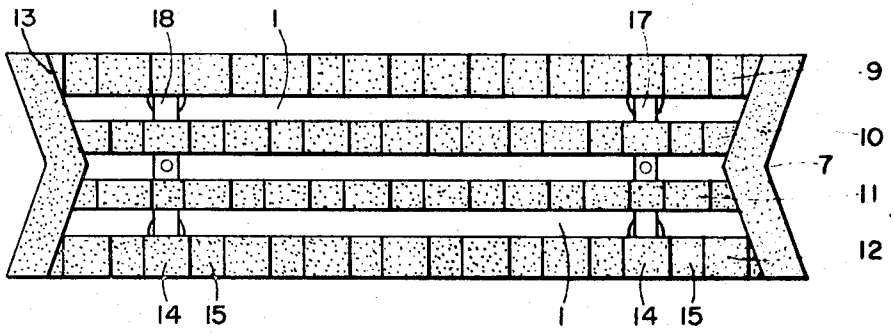


FIG. 2

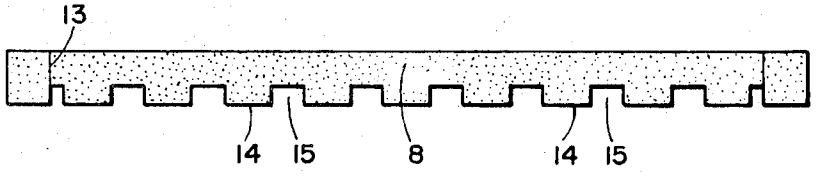


FIG. 3

DUST MOP HEAD HAVING CUSHION MEANS

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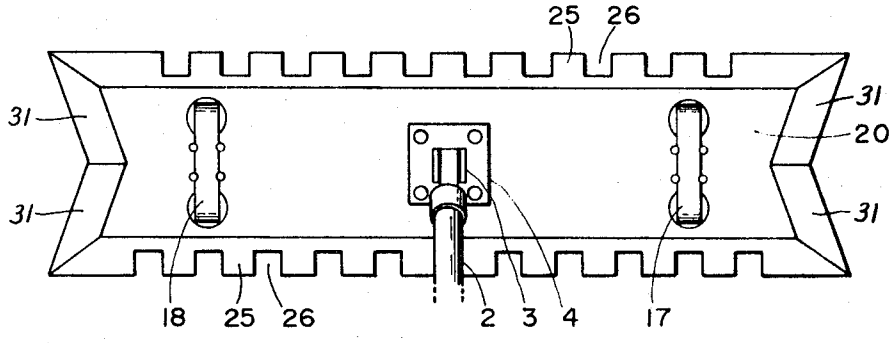


FIG. 4

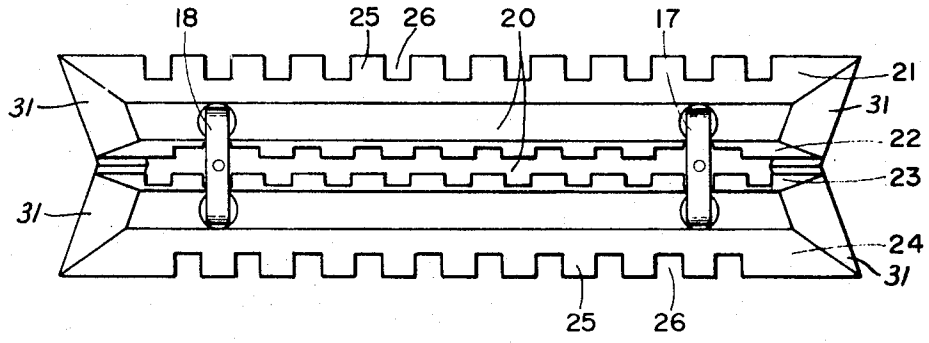


FIG. 5

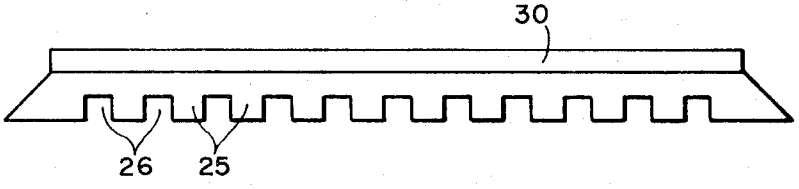


FIG. 6

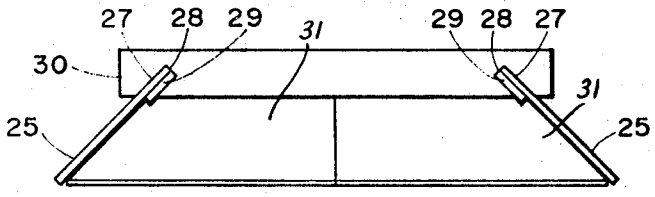


FIG. 7

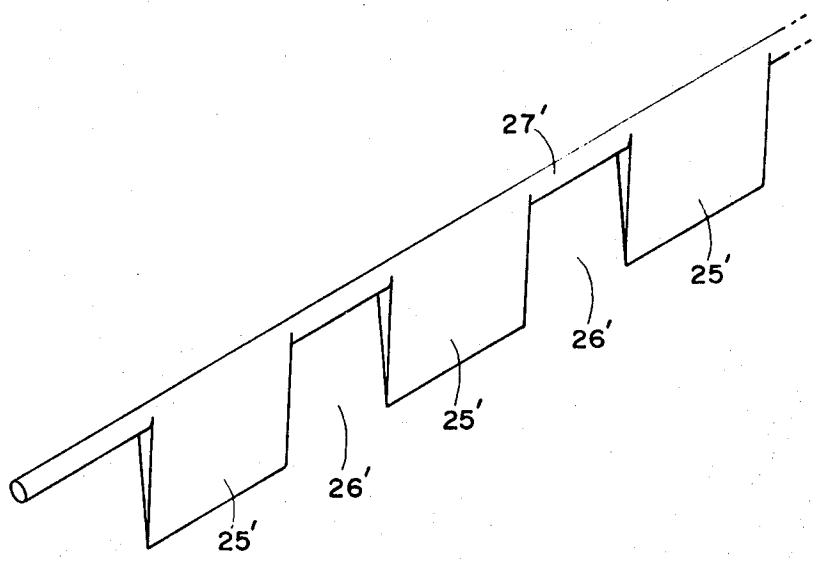


FIG. 8

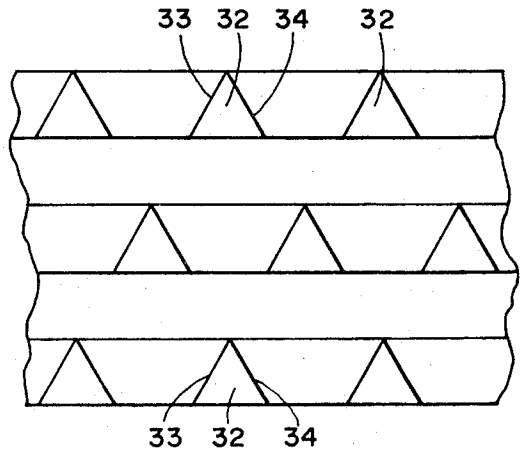


FIG. 9

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DUST MOP HEAD HAVING CUSHION MEANS

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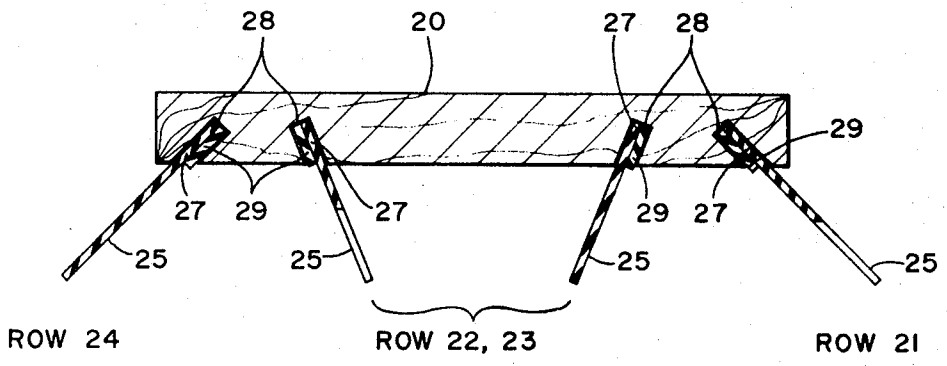


FIG. 10

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DUST MOP HEAD HAVING CUSHION MEANS

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Int. Cl. A47l *13/257, 13/254*
U.S. Cl. 15—147 4 Claims

ABSTRACT OF THE DISCLOSURE

A cleaning mop in which the mop head is provided with cushion means. The cushion means receive thereover a wipe which may be of many convenient types but, most suitably, is of low stretch characteristics so that it will conform well with the cushion means over a long service life. The cushion means include spaced rows of resiliently deformable material such as sponge rubber. The rows extend longitudinally of the mop head and each row has a multiplicity of depending projections. The depending projections of alternate rows lie intermediate the projections of adjacent rows to serve as stops and provide closed paths to dust preventing dust passage through the mop width.

Field of the invention

My present invention relates to cleaning implements and particularly dust mops. More particularly, the present invention is concerned with a dust mop which is efficient, readily maneuverable in close spaces and provided with resiliently deformable means for close intimate contact of the mop head and wiper with a surface to be wiped.

Background of the invention

Dust mops, particularly those for commercial service as in office buildings and the like, require a sturdy structure but one which will conform readily to the surface to be wiped. Further, the mop must be capable of picking up and retaining large quantities of dust and the like with minimum wiper change and minimum repair to the mop head, mop swivel and other mop components.

I have found that the foregoing and other desirable objects may be achieved in a mop which has a base which includes resilient material capable of itself deforming to the contour of floors, furniture and the like and of simultaneously imparting to a wiper a pressure which provides for intimate contact of the wipe with the object to be dusted.

Brief description of the drawings

The invention will be more fully understood by reference to the accompanying drawings wherein:

FIG. 1 is a perspective view of a cleaning mop in accordance with the present invention and with the wiper opened out and detached from the mop head;

FIG. 2 is a bottom plan view of the mop head of FIG. 1 particularly illustrating the arrangement of the resiliently deformable material;

FIG. 3 is a view in front elevation of the resiliently deformable material of FIGS. 1 and 2;

FIG. 4 is a top plan view of a further embodiment of the invention, illustrating another type of resiliently deformable material on the mop head;

FIG. 5 is a bottom plan view of the structure of FIG. 4 particularly illustrating the arrangement of the rows of resilient material;

FIG. 6 is a front view of the structure of FIGS. 4 and 5;

FIG. 7 is an end view of the structure of FIGS. 4 to 6 inclusive particularly illustrating a channel-header arrangement for retention of the resilient material;

FIG. 8 is a view illustrating another kind of header structure;

FIG. 9 is a view like that of FIG. 2 and of a further embodiment; and

FIG. 10 is a transverse cross-sectional view of the device of FIGS. 4–7 inclusive further illustrating the cooperative relation of channels and resilient material.

Referring now to FIGS. 1–3 inclusively particularly, the numeral **1** designates a base of a floor cleaning mop having a conventional handle **2**, a swivel **3** and a connecting plate **4** attaching the handle to the base **1**. The base **1** completely around the perimeter thereof, as is particularly shown in FIGS. 1 and 2, is provided with a cushion of sponge rubber designated at **5**. As shown in FIG. 1, the mop base is designed to receive a wiper **6** which is required to be flexible and conformable to the resilient material **5**. More suitable also, the wiper has relatively low stretch characteristics and is conveniently made of cloth, paper, impregnated paper or the like.

The mop base or mop head is generally rectangular but is recessed or dished at **7** to permit the mop to conveniently contact chair legs and other supporting structures of a similar nature. The forward edge of the mop is designated for convenience by the numeral **8** in FIGS. 1 to 3 inclusive. As shown particularly in FIG. 2 in bottom plan, the resiliently deformable material forming the cushion means extends longitudinally of the base in spaced rows designated from the forward to the rearward edge as **9**, **10**, **11** and **12**. Each row includes a multiplicity of depending projections of the resiliently deformable material. Such projections are indicated at **14** in FIGS. 2 and 3 particularly. In each row the projections are spaced apart and the spaces are designated at **15**. In effect, each designated row **9–12** inclusive is a strip of sponge rubber having cut out portions at **15** to provide the projections or teeth **14**. The projections **14** of FIGS. 2 and 3 are, in effect, blocks of the deformable material which are depressible vertically to intimately contact or to provide a wiper **6** in intimate contact with a surface to be dusted. The forward and rearward rows **9**, **12** in a preferred embodiment of the invention are simply conveniently cemented to an edge portion of the base, and to the underside of the base.

Thus, a portion of the strips **9** and **12** each project beyond the forward and rearward edges of the base. The strips, however, terminate and do not overlap the upper surface of the base **1**. The dependent projections of the deformable material of the forward and rearward rows are also coincident with the outer extremities of the resiliently deformable material and thus are positioned to engage dust which may be close to furniture legs or the like.

The resiliently deformable material may be formed as a single piece and appropriately cut out to provide the

depending projections **14** and to expose the base on its underside (FIG. 2) if so desired. However, we have found it suitable to provide the strips as shown in FIG. 2 with the end portions cemented as at **13** to the longitudinally disposed rows or strips **9–12** inclusive.

For the purpose of fastening the wiper **6** to the base, suitable clamps may be provided as generally indicated at **17, 18.** It will be understood that it is much preferable to employ a removable and washable wiper or a disposable wiper with the resilient material as such wipes generally have a much greater capacity for dust retention than the resiliently deformable sponge rubber or other similar material.

Referring now most particularly to FIG. 2 but also to FIG. 3, it is to be noted that the depending projections **14** of row **9**, for example, lie laterally intermediate the projections of an adjacent row (row **10**, for example) to provide closed paths from the forward edge to the rearward edge of the cleaning mop. This arrangement inhibits the movement of dust completely through the mop and, together with the pressure conditions existing in use at the projections, insures of a thorough cleaning action. Spacing of the projections permits the whole area under the mop head to be used for dust pickup and provides a light weight mop capable of developing higher unit pressure than a flat-faced mop of somewhat greater weight.

Referring now more particularly to FIGS. 4–7 inclusive, the numeral **20** designates a base of a mop similar to that of the base **1** of FIGS. 1–3 inclusive. Rows **21–24** inclusive of resiliently deformable material extend longitudinally of the base and each row includes a multiplicity of teeth **25** and spaces **26.** As shown in FIGS. 5–7 inclusive, the resiliently deformable material in this instance is provided with projections **25** in the nature of flaps, the flaps having a common and integral header **27** of about the same thickness as the flaps. These flaps, like the projections **14** of FIGS. 1–3 inclusive, are depressible under pressure and cause a wiper mounted over the base **20** to be urged into intimate contact with flooring or the like. As shown in FIGS. 5–7 inclusive and FIG. 10, the header **27** is of substantially the same thickness as the depending projections **25** and the header is received in channels **28** formed in the base **1** as clearly shown in FIG. 7. To insure secure retention in the channels, a wedge element **29** corresponding substantially to the header portion **27** is forced into the channel with the header by the means described. Each longitudinally extending row of resilient material may be separately mounted in a channel and separately replaced, should such become necessary under service conditions. As is most clearly shown in FIGS. 6 and 7, it is not necessary in this instance that the forward edge **30** of the base **20** be actually covered by the resilient material. The resilient material of the outer rows, as will be noted, extends from the base downwardly and outwardly in opposite directions and thus serves the function of a guard against striking furniture and the like while the flaps of the intermediate rows **22, 23** project towards each other and in a direction opposite from the outer rows. The structure has end flaps designated at **31** suitably shaped (FIG. 4) to close the mop head ends, two such flaps being provided at each base end. The flaps **25,** similar to the blocks **14** of FIGS. 1–3 inclusive, are so arranged as to prevent a direct path for dust from the forward edge to the rearward edge of the mop. Under pressure the projections or flaps **25** depress in a hinge-like action to project the necessary intimate contact of the wiper and object to be wiped.

In the modification of FIG. 8 the header designated at **27′** is of generally circular cross-section for snug mounting in cylindrical channels. The flaps **25′** are not planar as in FIGS. 4–7 but wedge-shaped and bound spaces **26′.**

It is not necessary that the projections themselves be of generally rectangular form as shown in FIGS. 1–7. A very suitable arrangement is shown in FIG. 9 wherein the teeth or projections as viewed in plan are generally triangular, such projections being designated at **32.** This arrangement presents relatively long sides **33, 34** of a projection to the dust as the projections are triangular in shape and have their apices extending toward the forward edge of the base.

I claim:

1. In combination, in a cleaning mop, an elongated base having forward and rear edges, and cushion means carried by the base, said cushion means including resiliently deformable material extending outwardly of the base completely around the perimeter of the base and including resiliently deformable material lying in spaced rows from the said forward edge to the said rear edge of the base and each row including a multiplicity of depending projections, the depending projections of alternate rows lying intermediate the projections of adjacent rows to provide closed paths to dust from the forward edge to the rear edge of the cleaning mop, the depending projections of the deformable material of the forward and rear edges being coincident with the outer extremities of the resiliently deformable material and the projections being spaced apart blocks of the resiliently deformable material and the blocks along the front and rear edges presenting a surface conformable to the contour of floors and furniture to be dusted.

2. In combination, in a cleaning mop, an elongated base having forward and rear edges, and cushion means carried by the base, said cushion means including resiliently deformable material extending outwardly of the base completely around the perimeter of the base and including resilient deformable material lying in spaced rows from the said forward edge of the said rear edge of the base and each row including a multiplicity of depending projections, the depending projections of alternate rows lying intermediate the projections of adjacent rows to provide closed paths to dust from the forward edge to the rear edge of the cleaning mop, the depending projections of the deformable material of the forward and rear edges being coincident with the outer extremities of the resiliently deformable material and the projections being flaps and the flaps extending downwardly and outwardly from the base in opposite directions along the front and rear edges of the base.

3. In combination, in a cleaning mop, an elongated base having forward and rear edges, and cushion means carried by the base, said cushion means including resiliently deformable material extending outwardly of the base completely around the perimeter of the base and including resiliently deformable material lying in spaced rows from the said forward edge to the said rear edge of the base and each row including a multiplicity of depending projections, the depending projections of alternate rows lying intermediate the projections of adjacent rows to provide closed paths to dust from the forward edge to the rear edge of the cleaning mop, the depending projections of the deformable material of the forward and rear edges being coincident with the outer extremities of the resiliently deformable material and the projections being spaced apart blocks and triangular in shape as viewed in bottom plan and having their apices extending toward the front end of the base.

4. In combination, in a cleaning mop, an elongated base having forward and rear edges, and cushion means carried by the base, said cushion means including resiliently deformable material extending outwardly of the base completely around the perimeter of the base and including resiliently deformable material lying in spaced rows from the said forward edge to the said rear edge of the base and each row including a multiplicity of depending projections, the depending projections of alternate rows lying intermediate the projections of adjacent rows to provide closed paths to dust from the forward edge to the rear edge of the cleaning mop, the depending projections of the deformable material of the forward

and rear edges being coincident with the outer extremities of the resiliently deformable material and the projections being flaps, the flaps of a row having a common header and flaps extending downwardly and outwardly from the base in opposite directions along the front and rear edges of the base, the flaps of the intermediate rows projecting toward each other.

References Cited

UNITED STATES PATENTS

2,815,601	12/1957	Hough	15—210.5
2,885,809	5/1959	Pastoret	15—210.5
3,056,989	10/1962	Murphy	15—231
3,261,049	7/1966	Murphy	15—231 XR

FOREIGN PATENTS

753,302	8/1933	France.
571,724	3/1933	Germany.
724,147	8/1942	Germany.
18,615	9/1908	Great Britain.
466,645	6/1937	Great Britain.
487,209	6/1938	Great Britain.
281,496	1/1931	Italy.
107,351	5/1943	Sweden.

DANIEL BLUM, Primary Examiner

U.S. Cl. X.R.

15—188, 231, 244