March 9, 1937. H. L. MYERS 2,073,167

SURFACE CLEANING MEANS

Filed Oct. 23, 1936

FIG. 1.

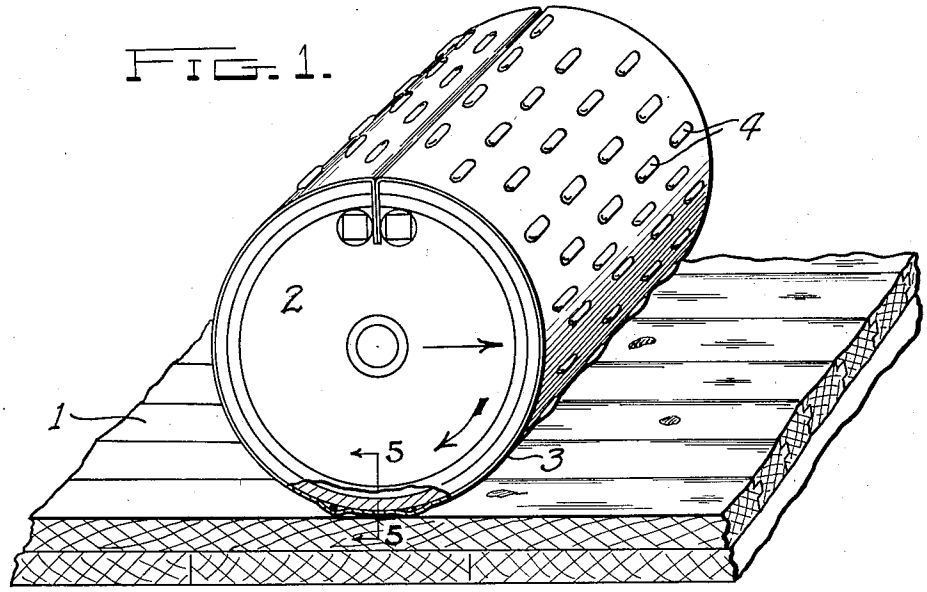


FIG. 2.

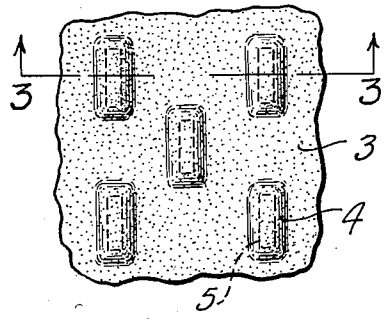


FIG. 3.

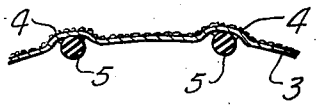


FIG. 4.

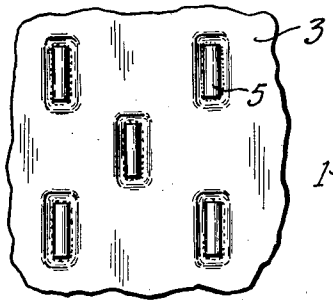
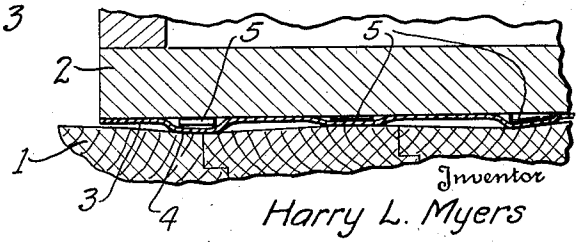


FIG. 5.



Inventor

Harry L. Myers

By Owen & Owen,

Attorneys

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UNITED STATES PATENT OFFICE

2,073,167

SURFACE CLEANING MEANS

Harry L. Myers, Toledo, Ohio, assignor to The American Floor Surfacing Machine Company, Toledo, Ohio, a corporation of Ohio

Application October 23, 1936, Serial No. 107,265

3 Claims. (Cl. 51—194)

This invention relates to surface cleaning machines, and particularly to means for use in connection therewith adapting it primarily for the uniform cleaning or slight abrading of floor surfaces of irregular form.

Many attempts have been made to use sanding machines to clean dirty or discolored floors by merely removing the surface coat, but these attempts, so far as I am aware, have not been successful due to the unflexible or non-resilient nature of the sanding or abrading means employed, which prevents it from adapting itself to depressions and irregularities usually encountered in floors which have been laid for some time or which have been subjected to rough usage. In such case, a floor, after a cleaning operation, is left with black or unclean spots at each depression. In other words, the high spots alone are cleaned unless the abrasive or sanding action is continued to such an extent as to dress the floor down to a smooth surface which adds materially to the cleaning expense.

The primary object of the invention is the provision of an abrasive or sanding medium having a series of protuberant portions for abrading coaction with a surface being cleaned and being of a resilient nature to adapt them to be compressed to conform to irregularities in the surface, so that both high and low spots, within reason, are uniformly cleaned.

Other objects and advantages of the invention will be apparent from the following detailed description, and from the accompanying drawing, in which—

Fig. 1 is a perspective view of of a sanding drum equipped with my invention and having cleaning coaction with a floor of irregular surface contour, a portion of the drum being broken away; Fig. 2 is a view of the outer or abrasive side of a portion of an abrading sheet embodying the invention enlarged from the view shown in Fig. 1; Fig. 3 is a cross-section thereof on the line 3—3 in Fig. 2; Fig. 4 is an inner side view of a portion of the sheet, and Fig. 5 is an enlarged fragmentary section on the line 5—5 in Fig. 1 illustrating the adaptation of the abrading projections of the material to an irregular floor surface.

Referring to the drawing, 1 designates a floor, the surface of which is being cleaned, 2 the rotary sanding drum of a machine of the floor surfacing type, and 3 a sheet of abrading material such as sand or emery paper secured around and covering the periphery of the drum, as well understood in the art.

The present invention resides in the abrading material 3 and consists in forming the material with a plurality of projections or protuberant portions 4 of a resilient nature, or backed by resilient means so that such projections may reach into depressions and yield for elevations in the surface acted on, thus having cleaning abrading contact with the entire surface over which the drum passes irrespective of slight irregularities in such surface.

The projections 4, in the present instance, are of short bar or rib-like form arranged in successive circumferentially spaced rows extending substantially from edge to edge of the material lengthwise of the drum, with the projections in successive rows staggered and of a length greater than the circumferentially aligned spaces between adjacent projections of the rows. When the drum is rotated, this arrangement of projections causes two successive rows thereof to completely cover a line on the surface being acted on, which line is coextensive in length with the effective abrading length of the drum. To prevent a permanent collapsing of said projections when brought into contact with the surface acted on, each is backed by a member 5 of resilient nature, such for instance as soft rubber. This backing member may be retained in engagement with the abrading material 3 by a suitable adhesive, or in any other suitable manner.

The abrading projections 4 may be formed by pressing the material out from the inner side thereof into concavo-convex form, and the resilient members 5 are placed in the cavities formed at the inner sides of the projections. It is found, in practice, that by using an abraiding sheet of the nature described on a sanding drum of a floor surfacing machine, an irregular floor may be very efficiently cleaned without leaving dark or uncleaned spots in the low places on the floor, without removing any appreciable amount of the floor surface, and at a small expense compared with that required to dress down or resurface a floor.

In order that the abrading sheet may have merely a cleaning and not a dressing down action on a floor, it is preferable to treat the abrading surface of the sheet in a manner to round or remove the sharp cutting edges from the particles of sand, emery or other abrasive on the sheet.

I wish it understood that while the invention is referred to and illustrated as being in connection with an abrading machine of the sanding drum type, it is not restricted to use in connection with any particular type of such machines, and also is capable of numerous modifications

and changes without departing from the spirit of the claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent, is:

1. An abrasive sheet for surfacing machines, having a plurality of collapsible outwardly directed concavo-convex protuberances with abrading material thereon, and resilient backing means carried by the sheet and secured within the concavity of each protuberance.

2. An abrasive sheet for surfacing machines, having a plurality of concavo-convex portions forming collapsible abrading protuberances on the outer side of the sheet, said protuberances being arranged in successive rows and staggered, and resilient back members carried by the sheet and secured within the cavities of said portions to yieldably retain the portions in outwardly projected form.

3. An abrasive sheet for the sanding drums of surfacing machines, having a plurality of staggered embossed portions forming collapsible abrading protuberances on the front side of the sheet, and soft rubber backing members carried by the sheet and secured within the cavities of the embossed portions.

HARRY L. MYERS.