Nov. 21, 1944. D. P. ISRAEL 2,363,064

CLEANING PAD

Filed July 31, 1943

Fig. 1.

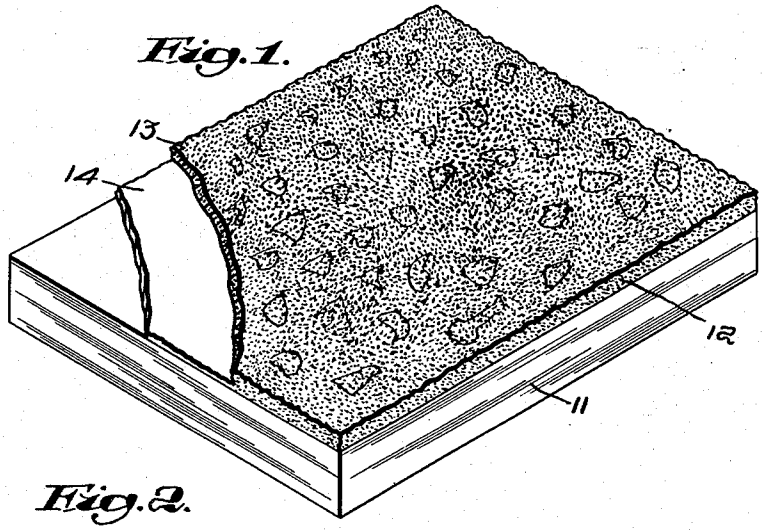


Fig. 2.

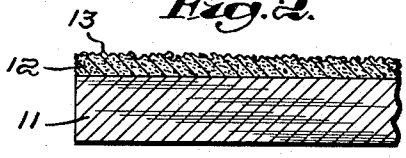


Fig. 3.

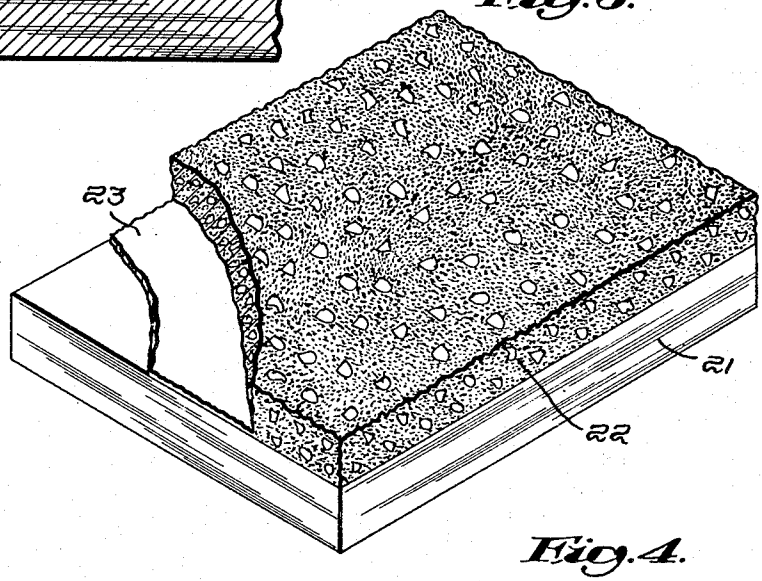
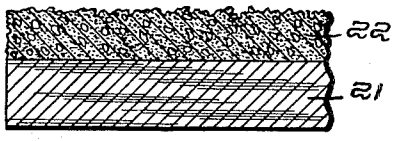


Fig. 4.



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Patented Nov. 21, 1944

2,363,064

UNITED STATES PATENT OFFICE

2,363,064

CLEANING PAD

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Application July 31, 1943, Serial No. 496,932

1 Claim. (Cl. 15—244)

This invention relates to improvements in cleaning pads of the type utilizing a rubber-like cleansing agent which effectively removes dirt or surface marks from various kinds of articles or materials without marring or otherwise injuring the surface which is cleaned by rubbing the cleansing agent thereon.

The rubber-like materials which are suitable for use as such cleaning pads comprise any natural or synthetic rubber which is capable of being formed in the manner hereinafter described to present an irregular surface having soft protuberances which are adapted successively to crumble or break off under light rubbing and then to be rolled about on the surface being cleaned and pick up or "erase" the dirt, dust or grime deposited thereon. I prefer, however, to use a sulpho-chlorinated oil as the cleansing agent of the improved pad, for that rubber-like substance has a soft and friable texture which is peculiarly adapted for this purpose because of its absorptive capacity for dust and dirt.

The general characteristics and preferred method of manufacturing a sulpho-chlorinated oil of the kind suitable for use as a cleaning agent and widely sold in block form as a factice eraser, are described in my Patent No. 2,287,477, dated June 23, 1942. In that patent, I recommend that the solidified material be ground to the consistency of coarse sand and contained in a porous, loosely knitted bag forming a cleaning pad particularly designed for cleaning wall papers and window shades.

The principal purpose of the present invention is to provide an improved form of cleaning pad which utilizes the peculiar cleansing properties of the soft, springy particles of solidified sulpho-chlorinated oil or other suitable rubber-like material, in a form better adapted for more vigorous application in the general cleaning of a variety of articles or materials. The improved pad is effective, for example, in cleaning surfaces of paper, leather, textile fabrics, wood, plastics or metal, glass, and various painted or enameled surfaces. On metals, glassware and the like, the cleaner also has a polishing action. As the friable cleaning agent contains no gritty or abrasive particles and will crumble or wear away under the friction of reasonably light rubbing, none of these surfaces, however delicate or however decorated, will be scratched, smudged or streaked while the surface dust and dirt is being removed.

The applicator of the present invention comprises a relatively firm backer which may be made of any appropriate material and of any suitable size and shape to be grasped by the hand in using the pad. The mass of the friable cleansing substance is adhesively united to at least one side of the backer and formed by one of several optional methods to present a rubbing surface having a large number of points or protuberances which quickly wear off under frictional application to the surface being cleaned.

Some of the recommended embodiments of the invention are illustrated in the accompanying drawing, but it will be understood that these forms are suggestive and that the structural details of the improved cleaning pad may be varied to suit particular conditions, without departing from the essence of this invention as defined in the appended claim.

In the drawing,

Fig. 1 is a perspective view of a preferred form of pad made with sulpho-chlorinated oil as the cleansing mass, portions of the structure being broken away to indicate a preferred mode of production;

Fig. 2 is a fragmentary vertical section through the pad of Fig. 1; and

Figs. 3 and 4 are views similar to Figs. 1 and 2 respectively, illustrating a modified, sponge-like form of the cleansing mass.

In the form shown in Fig. 1, the cleaning pad comprises a backer 11 which is suitably made of a light weight but relatively rigid fibrous board such as "Celotex," but which may be formed of wood, plastic, metal, textile fabric or heavy paper. The backer may obviously be shaped to fit the hand and the thicker and heavier types may have suitable loops or straps (not shown) to hold it in place, if desired.

The rubber-like mass 12 of a soft and friable cleansing substance is preferably made, as aforesaid, of solidified sulpho-chlorinated oil; and in this form the cleaning surface 13 preferably comprises a multitude of granular particles of this factice material, embedded in and bonded to the surface of an initial coating of the same material or other suitably flexible cement applied to the backer 11. Such a pad is easily produced by flowing the oil while in a viscous state onto a large sheet of the backing material to form a relatively thick film or coating 14, and then dusting onto its soft surface a mass of dry, granular particles of the solidified oil. These particles may be of a fineness of coarse sand. Some of them will sink into the coating 14 if it is sufficiently fluid, but the bulk of the granules will remain on the surface as indicated at 13 (the

thickness of the granular layer being exaggerated in the drawing) and amalgamate with the coating 14 as that solidifies. Excess granules of the dry factice may be shaken or blown off the surface, and the backing sheet may then be cut into a number of pads or units of the desired size.

The retained granules thus provide a rough, irregular surface, presenting a multitude of soft, friable projections which slough off as soon as the pad is used. The springy abraded particles are rolled over the surface to be cleaned by the rubbing action of the applicator, and these particles tend to attract, collect and absorb any dust, dirt or grime which have accumulated on said surface. Hence, when the dirt coated particles are blown or brushed away, the surface is clean and uninjured.

It will be evident that the granules which are rubbed off the surface of the cleansing mass and perform the cleaning action need not be of regular or uniform size or shape, and that particles of different sizes may be desired for different types of work surfaces. It is not necessary, therefore, that the particles be separately preformed and dusted onto a soft film or coating of the sulpho-chlorinated oil or other adhesive which may be employed as the binder in Fig. 1.

Similar results are obtained by other means of forming a rough or irregular surface composed of friable projections. For example, the mass 12 of Figs. 1 and 2 could be poured as a single layer and, while still soft, the surface could be embossed with a die, grained with a tool or brush or otherwise treated so that the solidified surface presents the desired irregularities or protuberances and intervening depressions.

A further modification in the mode of forming such a surface is indicated in Figs. 3 and 4 which show a backer 21 having a sponge-like mass 22 of sulpho-chlorinated oil affixed thereto through the medium of a film or coating 23 of adhesive or binding material such as the soft oil employed in forming the coating 14 of Fig. 1. The openings in the spongy factice may be produced by any of the methods used in making sponge rubber.

A cleaning pad of the character herein described is simple and economical to manufacture, handy to use, and efficient as well as safe in its cleansing action. The friable particles of the rubber-like substance constantly wear away until the mass entirely disintegrates within a relatively short time, but because of the small cost of the article, the inexpensive backers or applicators may be successively discarded without appreciable waste, after the cleansing mass has been used up. It will be evident, however, that a new layer of the cleansing substance may be applied to an old backer, if it is so desired.

It will be appreciated from the foregoing that the essential feature of this invention resides in the production of a cleaning pad having a relatively firm backer or support and a cleansing mass of a relatively soft and friable rubber-like substance, preferably factice or solidified sulpho-chlorinated oil, adhesively applied to the backer; the surface of the mass presenting numerous irregular protuberances and intervening depressions, so that the crumbly projecting points or embedded granules are quickly rubbed off and then rolled around on the surface to be cleaned during frictional application of the pad. The backer may be quite thick and rigid as shown in the drawing, or it may be quite thin and flexible, like sandpaper sheets, depending on the nature of the work to be performed. If a rubber-like substance other than factice is employed as the cleaning medium, better results will be obtained if a reasonable quantity of pumace or factice is combined with the neutral or synthetic rubber.

I claim:

A cleaning pad of the character described comprising a relatively firm backer, and a mass of a relatively soft and friable, resilient substance adhesively attached to said backer, said mass consisting of a solidified layer of sulphochlorinated oil bonded to the backer and having numerous granules of the same material scattered over and embedded in its exposed surface whereby they project as small protuberances above said surface, so that said granules of friable substance are worn off and individually absorb and collect dirt when the pad is rubbed on a surface to be cleaned.

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