PLASTIC ABRASIVE PAD

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Fig. 1

Fig. 2

Fig. 3

Marginal Seal

Tubular Scouring Pad

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attys.
The present invention relates to improvements in the manufacture of scouring pads and, more particularly, to fibrous masses of such material and a method of producing the same from extruded molten plastic materials containing an abrasive scouring substance.

Generally, it is an object of the present invention to provide such a pad as herein described which is economical of manufacture, sturdy and durable against disintegration, and otherwise well suited to the purposes for which it is intended.

A principal object of the invention is the provision of a scouring and cleansing pad and method of producing the same in which a molten plastic mass having dispersed therein an abrasive substance is extruded in any suitable manner, the resulting filaments or threads being wound into a fibrous mass to form a pad which will impart a scouring and abrasive action thereto.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the several steps and the relation of one or more of such steps with respect to each of the others, and the article possessing the features, properties, and the relation of elements, which are exemplified in the following detailed disclosure, and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

Fig. 1 is a perspective view diagrammatically representing means for providing plastic sheets containing abrasives and cut from a flat web of gathered extruded filaments;

Fig. 2 is a diagrammatic illustration, in perspective, of a means of sealing together opposed marginal cut ends of such a sheet; and

Fig. 3 is a perspective view of a tubular scouring pad severed from a sealed tube such as that shown in Fig. 2.

Specifically, the present invention contemplates the provision of a plastic material of a thermoplastic or thermosetting nature, or any other suitable type of plastic, such as urea-formaldehyde, phenol-formaldehyde or a melamine-formaldehyde type of resin. A mass of such material is converted to a molten state and then there is dispersed throughout the mass a suitable form of abrasive material such as, for example, pumice stone, fuller's earth, rotten stone or any other similar abrasive substance. This substance can more thoroughly be dispersed by means of an agitator, or in any other suitable manner, and after the abrasive has evenly been distributed and the mass has reached a desirable state of plasticity, the same can then be extruded in the form of fine threads or filaments by passing the same through any conventional form of extrusion device.

In order that this extrusion operation may not, because of the abrasive substance contained in the plastic mass, unduly wear away the dies, it is recommended that dies of the diamond type or preferably a sintered tungsten carbide be utilized. It is likewise contemplated that in order to lend additional abrasive characteristics to the ultimate mass or article to be formed, the dies may be so shaped that they will shape the resulting threads or filaments into angular edges. Any suitable form of edge can be obtained by so shaping the dies that the extruded filaments are, for example, triangular, concave or convex, or rectangular in cross section.

Extruding a plurality of such abrasive containing plastic filaments will readily permit their being gathered and wound into a fibrous pad-like mass. This mass, if flattened, can be rolled into the form of tubular batts and, if desirable, the end overlap may be sealed against the underlying layer, if still plastic, by pressure, or a slight application of heat, if necessary. Thereafter, the tubular formations easily can be cut into pads of desirable length and shape and packaged ready for use.

As an alternative procedure the tubular batts, or the individually cut pads, can interstitially be impregnated by immersing them in a suitable soapy solution, whereupon they can be dried and packed ready for distribution to the ultimate user.

Other means of providing the abrasive filaments, it will be appreciated, will also readily become apparent as falling within the scope of the present invention. For example, heavy continuous "wires" or "rods" of plastic which have been impregnated while in the plastic state with a suitable abrasive, after having been extruded, can be run through conventional wool forming or slaving machines, such as those utilized in connection with the manufacture of steel wool, wherein the rods are run against knives which shave off and curl the material into suitable form for gathering and converting into scouring and cleansing pads.

The plastic material upon extrusion, and while
still in moist or tacky form, can also, as a further alternative, be dusted with a suitable abrasive material to give an abrasive surface coating. Another method contemplated for securing a partial impregnation is to run masses of such filaments dusted with an abrasive between pressure rolls which also shape the threads as well as embed the abrasive into the individual plastic threads.

A further modification contemplates applying the abrasive material by dipping or spraying the same on the fibrous mass of plastic incorporating therewith a suitable water-repellent resinous adhesive which would secure the particles of abrasive material in position on the threads as well as also hold the fibrous mass of filaments in bound relationship with respect to each other.

Pads made by any of the foregoing methods are strong and durable in that they are unaffected by water, will not readily disintegrate, are free from rusting characteristics, do not transfer finely divided splinters to the hands of the user and, particularly, are entirely free from characteristic odors such as those which adhere to conventional forms of pads shortly after use. Different colored plastics to provide different attractively colored pads are also contemplated.

Since certain changes in carrying out the above method and certain modifications in the article which embody the invention may be made without departing from its scope, it is intended that all matter contained in the above description shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

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

1. The method of manufacturing articles of the character described, which comprises providing a plastic mass and extruding the same in the form of a plurality of filaments, dispersing an abrasive substance throughout said plastic mass of filaments, compressing said mass of filaments into a web, cutting the web into sheets, folding the sheets upon themselves and marginally sealing together the cut edges to provide tubular scouring pads.

2. An article of the kind described, which comprises a plastic mass of extruded filaments, said mass being provided with adhering particles of abrasive material and being compressed into sheets, said sheets being cut and folded upon themselves with adjacent cut marginal edges being sealed together to form tubular scouring pads.

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