April 4, 1944. E. T. COX 2,345,730

CLEANING PAD

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FIG. 1.

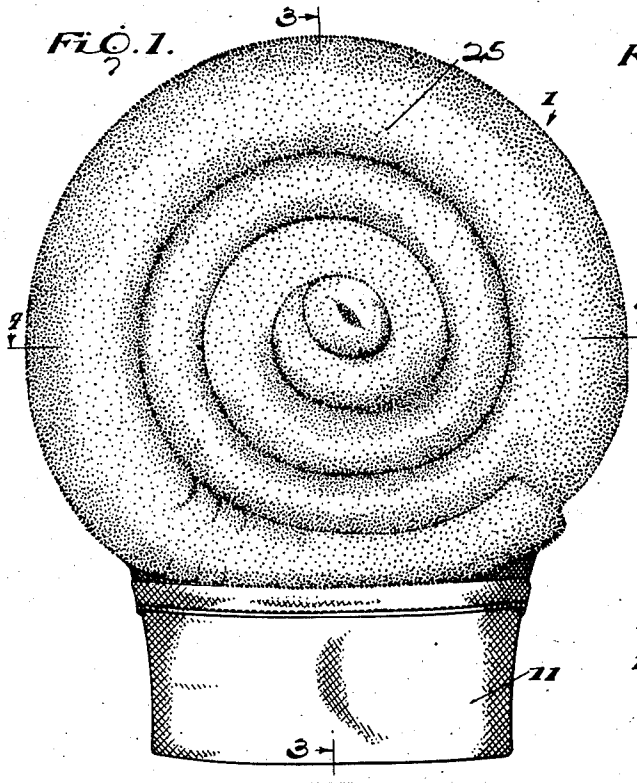


FIG. 2

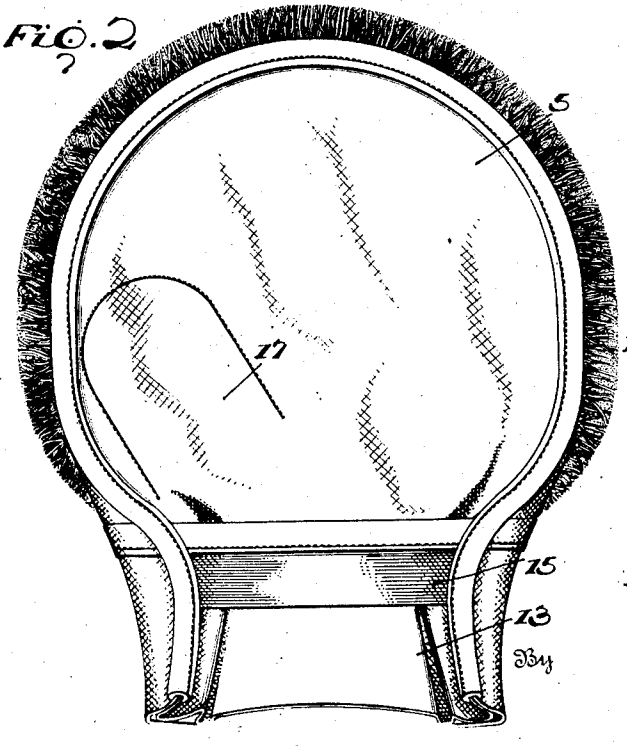
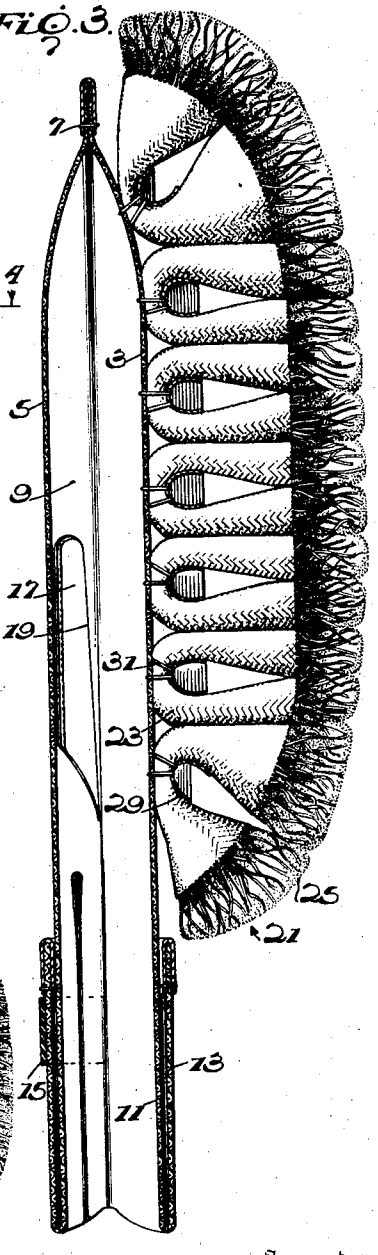


FIG. 3.



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Fig. 4.

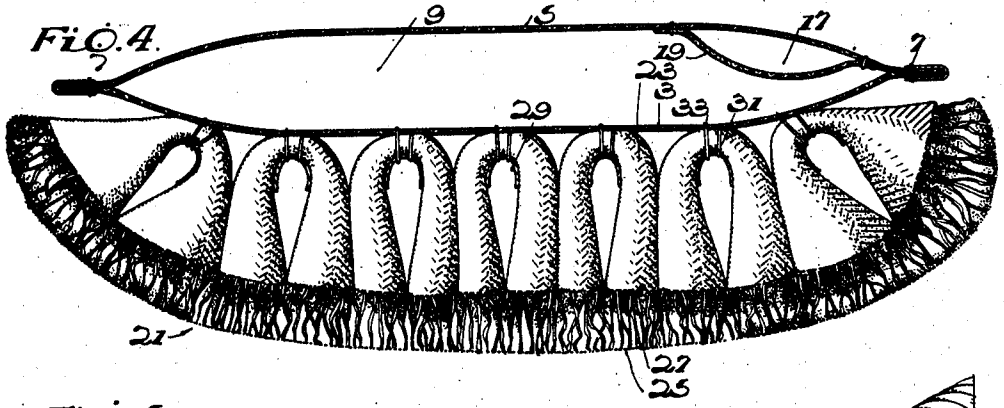


Fig. 5.

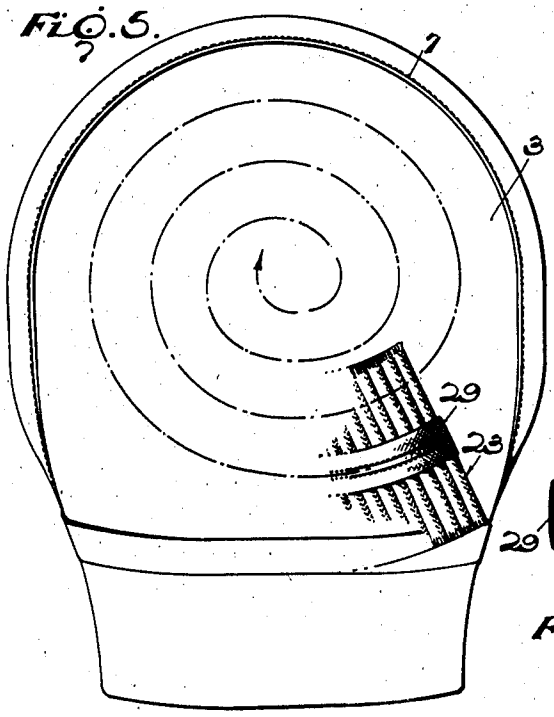


Fig. 7.

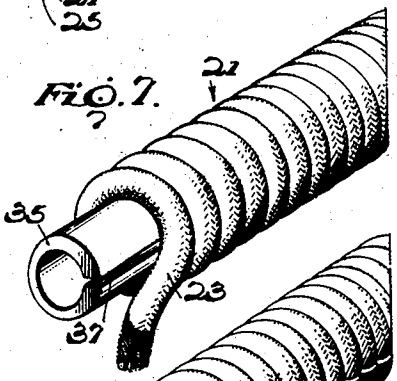


Fig. 8.

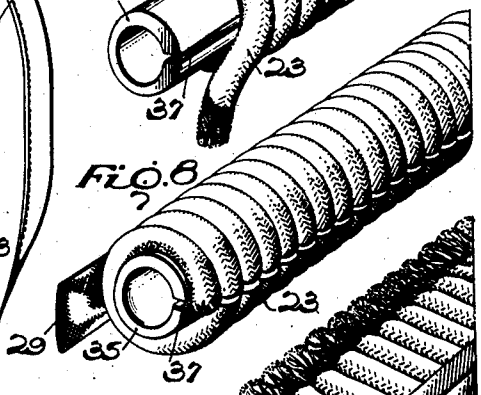


Fig. 9.

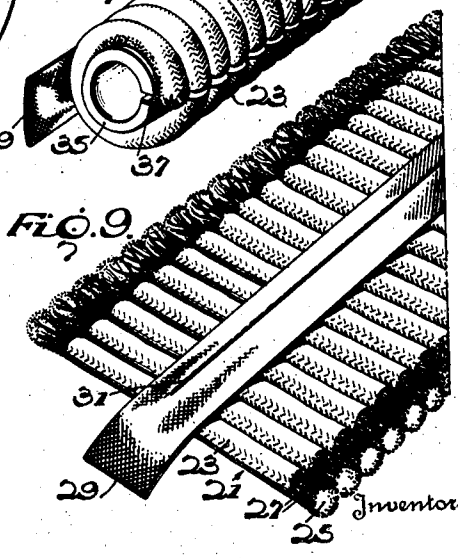


Fig. 6.



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Patented Apr. 4, 1944 2,345,730

UNITED STATES PATENT OFFICE

2,345,730

CLEANING PAD

Elmer T. Cox, Powell Station, Tenn.

Application February 14, 1942, Serial No. 430,962

2 Claims. (Cl. 15—226)

This invention relates to improvements in pads for washing, polishing, dusting operations and the like and to the method of making the same.

In its more specific aspects my invention pertains to a hand operated cleaning pad formed as a glove or mitt designed to provide a soft absorbent working surface for general use in washing, polishing, and dusting of automobiles, furniture, floors and the like.

In articles of the class described it is highly desirable to provide a soft absorbent non-scratching or marring working surface so that highly polished and relatively easily scratched areas may be operated upon with no harmful results.

It is, therefore, an object of my invention to provide a pad having a working surface which is highly absorbent.

A further object of my invention is to provide a pad having a working surface which is formed of a soft material.

Another important object of my invention is to provide a pad having a working surface formed of a multiplicity of independent soft absorbent polishing and washing elements.

A further object of my invention is to provide a pad having a working surface in which each polishing element is individually protected and separated from the other elements.

Another object of my invention is to provide a pad in which the soft absorbent polishing and washing elements will not become frayed and matted in continued use.

It is also an object of my invention to provide a pad having the polishing and washing elements so arranged as to provide a maximum number of such elements within the area defined by the working surface.

Another object of my invention is to provide a pad in which the polishing and washing elements are so arranged that they will support one another in desired position.

Another object of my invention is to provide a pad which is strong and durable and the working surface of which will under all normal working conditions and under continued use retain a feather softness.

Another object of my invention is to provide a pad which is formed to greatly facilitate the hand operation thereof.

Another object of my invention is to provide an improved method of making a pad of the type described and the assembly thereof.

With the foregoing general objects, features, and results in view, as well as certain others which will be apparent from the following explanation, the invention consists in certain novel features and design, construction, mounting and combination of elements, as will be more fully and particularly referred to and specified hereinafter.

Referring to the accompanying drawings:

Fig. 1 is a plan view of the front or working surface of the pad.

Fig. 2 is a plan view of the back or reverse side of the pad from that shown in Fig. 1.

Fig. 3 is a view in section of the pad taken on the line 3—3, of Fig. 1.

Fig. 4 is a view in section of the pad taken on the line 4—4 of Fig. 1.

Fig. 5 is a diagrammatic view of the pad in the process of assembly.

Fig. 6 is a view of a portion of a polishing and washing element and its protective member.

Fig. 7 is a perspective view of the mandrel and strand wound thereon in one step of the method of making the pad.

Fig. 8 is a perspective view similar to Fig. 7 with the tape secured to the strand by an adhesive in a further step in the method of making the pad.

Fig. 9 is a perspective view of the strands with the tape sewed thereto.

It is of primary importance to the successful use of pads of this type that the working surfaces thereof retain the required feather softness and absorbency under the most difficult use conditions. Obviously, a surface which becomes tangled and matted presents a relatively hard working surface and its practical use value is thereby reduced if not completely lost. Now, I have solved such disadvantage which has been present in the pads which have heretofore been known, by utilizing a soft, absorbent material for polishing, washing, and dusting elements, and being aware of the tendency of such material to knot, mat and become badly frayed when left in a free and independent condition, I have protected, braced and separated such elements and by such structure and arrangement I have eliminated the possibility of the occurrence of such undesirable results.

Such advantageous consequences flow from the novel structure of the pad, and the materials of which the various members are made, and from the relative disposal thereof on the pad, all as to be particularly described hereinafter.

The pad of the invention illustrated comprises a body designated as a whole by the numeral 1 consisting of a front or palm portion 3 and a back portion 5 stitched together at a portion of

their edges as at 7 to provide an envelope or hand receiving pocket 9 having a wrist encircling sleeve 11, which is doubled back on itself to provide a cuff 13. An elastic band 15 is sewed to opposite sides of the wrist encircling sleeve to extend thereacross, and being of slightly less length than the width of the sleeve tends to pull the sides together. A thumb receiving pocket 17 is formed within the pocket 9 by sewing a properly shaped piece of material 19 to the back portion 5 of the body. In the particular embodiment of my invention which is illustrated the pad is shown with the thumb receiving pocket disposed in position for a right handed user, however it is to be understood that this pocket may be properly disposed to adapt the pad for facile use by a left handed person.

Thus it is apparent that I have provided a pad of generally annular shape for fitting the hand of the user, and having a portion to protect the user's wrist. The elastic band aids in retaining the pad in proper position on the hand in combination with the thumb receiving pocket, the latter aiding in the proper manipulation of the pad when in operation.

The body of the pad is made of any desirable fabric material and is preferably though not necessarily liquid proofed. While I have disclosed the pad as being formed as a mitt or glove for use on the hand of the operator thereof it is to be understood that it is clearly within the spirit and scope of my invention to make the pad in various shapes and forms, with or without the hand receiving pocket, and for use on rotary elements and the like, or in any shape or form found desirable in washing, polishing, dusting and the like operations.

With the front and back body forming portions sewed together as described it is apparent that a fabric surface is provided, which in the particular embodiment illustrated is of generally circular contour. The front or palm portion 3 of the body provides a backing member for the elements which are secured thereto and which form the soft, absorbent and durable working surface of the pad.

The members which are secured to the front or palm portion of the body of the pad and which form the working surface thereof are designated generally by the numeral 21. Such members 21 comprise a braided or woven protective tube or fabric sleeve 23 into which is disposed a filler 25 consisting of one or more strands of twisted cotton twine. It is not my intention to limit the filler to cotton twine as any filler may be employed which has the requisite qualities of absorbency, softness and capacity for high sheen polishing. The filler element is enclosed within and protected by the braided sleeve throughout a substantial portion of its length. As will be hereinafter described in greater detail the members 21 are cut to form a plurality of individual lengths thereof, and reference particularly to Fig. 6 of the drawings discloses the cut or end portions of each length where the braided sleeve becomes unraveled at the ends to provide loose threads 27 which extend about the end portion of the cotton filler 25 which projects from the sleeve body.

The sleeve with the filler therein is cut to provide a plurality of separate members 21 of preferably equal lengths and to which a tape or carrier strip 29, preferably of fabric material is secured adjacent the central portions of the members by means of an adhesive and by offset stitching 31. In applying the tape to the members 21 the latter are disposed in close contacting position as clearly seen in Fig. 9 of the drawings. The tape used in making each pad is of a length sufficient to carry an ample number of members 21 thereon to completely cover the back portion 3 of the body 1 with said members when the tape is secured on the back portion.

A length of tape having a plurality of members 21 stitched thereto is applied by stitching 33 to the back portion 3 in a spiral manner, commencing at the extreme outer periphery of the palm or back portion of the pad as particularly shown in Fig. 5 of the drawings. As the tape and washing and polishing members 21 are sewed to the body of the pad the members are pushed back and outwardly from the tape and from the back or palm portion of the pad, to dispose the members is substantially erect or perpendicular position relative to the pad body. Now it is of importance to so space the tapes on the pad body that the erect or perpendicular portions of the members 21 of one spiral or ring thereof applied to the back portion will act as a brace or tend to support the next adjacent spiral of members 21, thereby actually providing a mutual supporting arrangement of individual washing and polishing members. By this arrangement and application there is a uniform spacing of the tape on the pad body and the resulting supporting actions of the members 21 on each other. Such mutual bracing and supporting action resulting from the manner of application of the tape to the pad body and the positioning of the members 21 after the tape is sewed to the body is made especially evident in Fig. 4 of the drawings where the members 21 are visibly in engagement for mutual support.

Not only does this particular and novel application and arrangement of the members 21 on the back portion 3 result in the aforementioned advantages but it also provides for a maximum number of washing and polishing elements in the area of the pad body.

With the front of the pad body completely covered by the members 21 it is apparent that a working surface is provided, the outer face of which is formed by the strands 25 and the ends 27 unraveled from the tubes 23.

The twisted cotton strands 25 are highly absorbent and of a proper texture to provide a soft surface, which has great polishing ability. These strands if used alone would become knotted and frayed and would therefore present a hard surface which would mar or scratch the object being worked on, and in addition would lose much of their absorbent capacity. By encasing the strands in individual sleeves to thereby separate each twisted strand structure there is no possibility of the occurrence of knots or of matting. Hence, a working surface is provided which is made up of a plurality of individual twisted strands, each encased within a protective sleeve to keep the strands apart and in proper condition for the work to be performed. The braided tubular sleeve forming structure acts as a protecting medium for the soft absorbent strands, and at the ends of each member 21 the sleeve where cut becomes unraveled for a relatively short distance to provide free ends 27 hanging loosely about the projecting strand end. The material of which the sleeve 23 is made is a good conductor of liquid and therefore aids the strands 25 in absorbing liquid by conducting it to them, and the free ends 27 also tend to keep the individual

projecting strand ends from becoming entangled with other projecting strand ends. The body of the sleeves as well as the unraveled ends thereof are good liquid conductors and will of course act in this capacity by conducting liquid to the entire length of the absorbent filler.

I have devised a novel method of preparing the individual lengths of the members **21** and securing them to the tape **29** which greatly facilitates and reduces the cost of manufacture of pads of this invention. The first step of this method is to provide a length of washing and polishing member **21** and a strip of tape **29**, the latter being of a length necessary to make a sufficient number of spirals on the back portion **3** to cover it with the members **21**, and the former being of sufficient length to provide enough lengths of members when cut to provide an adequate working surface. The length of the washing and polishing member **21** is wound as closely as possible on a mandrel **35** having a longitudinal slot **37** therein as shown in Fig. 7 of the drawings. When the entire length of member **21** is wound about the mandrel it is held thereabout by any desirable means while the strip of tape is secured to the wound coils of the member by an adhesive. The tape being secured to the member longitudinally of the mandrel and diametrically opposite the slot therein as particularly shown in Fig. 8 of the drawings. With the member **21** wound about the mandrel and the tape adhesively secured thereto as described a knife is entered in the slot **37** at one end of the mandrel and caused to traverse the entire length of the slot to thereby cut each coil of the member **21** providing a plurality of individual washing and polishing members secured at their central portions to a tape. The tape is then sewed to the members and the resulting structure is seen in detail in Fig. 9 of the drawings.

It is therefore apparent that a strip of tape of the proper length is provided with the proper number of individual washing and polishing elements secured thereto and that it is ready to be applied to the body of the pad.

The washing, polishing and dusting pad as described presents a soft working surface having absorbent characteristics and provided with protective elements to retain the softness and feather like structure of the surface and increase the durability thereof. Furthermore, the pad presents a maximum number of washing and polishing elements which are arranged relative to one another to mutually coact to produce the results described.

I claim:

1. A pad of the class described, including a body portion and a working surface formed of a plurality of individual washing and polishing members secured to said body portion and extending therefrom, each of said members comprising an absorbent element, a major portion of which is encased within a protective sleeve to separate the major portions of said individual absorbent elements from each other, and a plurality of threads extending from each sleeve and disposed loosely about and in contact with the portions of each absorbent element which are outside the sleeve, whereby liquid will be conducted to the absorbent element and a separating means will be provided between those portions of each absorbent element which are outside the sleeve.

2. A pad of the class described, including a body portion and a working surface composed of a plurality of individual washing and polishing members secured to said body portion and extending therefrom, each of said members comprising an absorbent element encased within a protective sleeve formed of braided threads to thereby separate the absorbent element of one member from the absorbent element of another member, the threads forming the protective sleeve being unraveled at least at one end thereof and disposed loosely about and in contact with said absorbent element whereby liquid will be conducted to said absorbent element.

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