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METALLIC ABRASIVE FABRIC

Filed June 8, 1928

Fig. 1

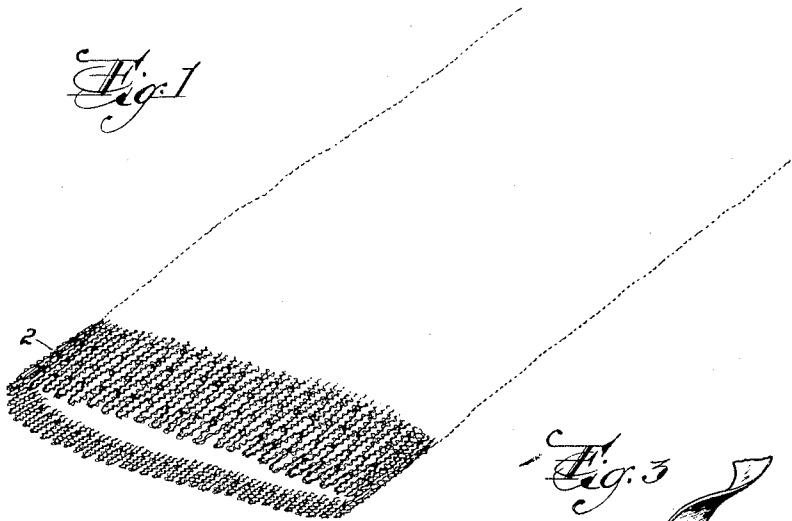
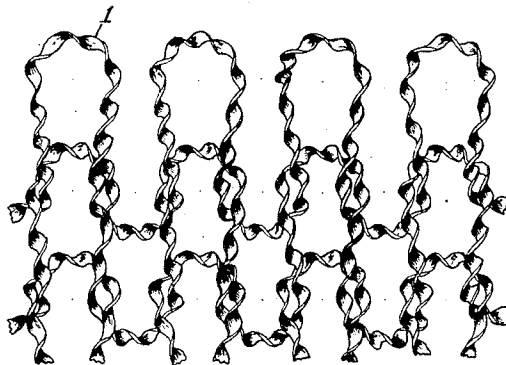


Fig. 3



Fig. 2



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METALLIC ABRASIVE FABRIC.

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This invention relates to improvements in abrasive fabrics; and the invention has reference to a novel construction of abrasive fabric generally, whether knitted or woven; and more especially to a tubular knit abrasive fabric for manufacturing scouring cloths, mits and similar articles.

The invention has for its principal object to provide an abrasive fabric comprising a spirally twisted strand knitted or woven to form a fabricated body, said strand being preferably a thin ribbon-like wire having any desired degree of twist and made of preferably non-corrosive metal possessing a suitable degree of hardness, such, e. g. as copper. When the fabric is of knit form a structure is produced which, by reason of the inter-looping of its stitches, tends to irregularly dispose the spirals or turns of the ribbon-like wire, so that the edges of this wire project at a great variety of angles, thus greatly increasing the abrasive qualities of the fabric, while the substantially flat surface provided by the knit body disposes such projections so that a great number of projections, per given square area of fabric, may be brought into contact with the surface upon which the fabric is rubbed; all of which greatly increases the efficiency and durability of scouring articles made out of such novel fabric.

The abrasive fabric of the novel character above outlined, renders it possible to manufacture scouring mits and similar articles, so that the same are seamless, except for the stitching required to close one end of the tubular body, and consequently the finished article better retains its shape in use, while at the same time a superior article can be made with less labor and more cheaply and quickly.

Another object of the invention is to provide a fabric of the above character that may be made to have a wide range of abrasive effects by varying the degree of twist of the strand composing the fabric, thereby correspondingly varying the number of projecting edges and the sharpness of the bends of these edges.

Other objects and advantages will become

apparent from the specification, taken in connection with the accompanying drawings wherein the invention is embodied in concrete form.

In the drawings:—

Figure 1 is a perspective diagrammatic view of a section of the novel seamless or tubular knit abrasive fabric, made according to and embodying the principles of this invention;

Figure 2 is a face view of a fragment of the novel fabric drawn on an enlarged scale; and

Figure 3 is a perspective view of the spiral metallic strand from which the novel tubular fabric is knitted.

Similar characters of reference are employed in all of the hereinabove described views, to indicate corresponding parts.

In producing the novel abrasive fabric, a strand 1, which may be in the form of a thin ribbon-like or flat wire is twisted or wound with any desired degree of twist into spiral form as illustrated in Fig 3. This invention is not limited to wire of such conformation, but use may be made of a wire of any other cross-sectional shape which when twisted will present a plurality of corners or edges. The strand 1 is preferably of metallic material, as copper, so as to possess the necessary hardness and abrasive qualities for the use to which it is adapted to be put. The strand 1, after being turned into this spiral form, is knitted or woven to produce the desired form of fabric body. A knitted fabric is especially efficient and to produce the same the twisted metallic strand is delivered to the needles of a tubular knitting machine, whereby a tubular fabric, designated as a whole by the reference numeral 2, and consisting of a series of rows of inter-looped stitches or meshes is produced (see Figure 1). As will be quite apparent from an inspection of Fig. 2, the twining of the twisted strand 1 to form intermeshed loops during the process of knitting, results in a constant or successive shift of the angles of projection of the many sharp bends of the twisted ribbon-like strand 1, so that in the finished fabric, the sharp many angled

- scraping edges presented at the surface of the latter by such projecting bends of the twisted strand 1, are presented or extended in many different directions, thus tending, when the fabric is in use, to produce upon the surface to which the fabric is applied and rubbed, an exceedingly strong abrasive action, no matter in what direction the fabric may be moved during such operation. Furthermore, owing to the substantially flat character of the knitted fabric, the abrasive surface, produced by the projecting edges of the bends of the twisted strand 1, is comparatively even and true, so that a greater multiplicity of such projecting abrasive edges of the bends for a given area of fabric are presented against a surface over which the fabric is rubbed, than is the case with woven fabrics. Another advantage of the knitted fabric is that the even formation of intermeshed loops tends to produce a fabric which easily maintains its shape, and yet is open enough so that the same may be readily cleansed from grease, dirt, etc., which may accumulate therein when the fabric is employed in scouring operations.
- The novel tubular knit fabric of the character set forth is admirably adapted for the production of scouring mits, pot cleaners and similar articles, which may be made in the form of a two-fold body open at one end for the insertion of the hand of the user. For such articles the novel tubular knit abrasive fabric of this invention provides a seamless two fold body, which may be formed into a mit, by closing one end by suitable stitching or other fastening means. The fabric may also be utilized to form scouring balls, pads, etc., in the manner now familiar in the art.
- By varying the degree of twist of the strand 1, the number of projecting edges and the longitudinal angle of bend of these edges in a given portion of the fabric 2 is correspondingly varied, thereby likewise varying the abrasive action of the fabric. Thus, it is only necessary to give the strand 1 the proper number of twists per unit of length before knitting in order to secure any one of a plurality of abrasive effects from the resulting fabric.
- As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.
- What is claimed is:
1. An abrasive fabric made of a ribbon like strand twisted into spiral form so as to present a plurality of curved projecting edges, said strand being knitted into a seam-
- less tubular body providing rows of intermeshed open loops with twists projecting in a plurality of directions.
2. An abrasive fabric made of a strand that is formed by twisting a ribbon-like wire into spiral form to present a plurality of curved sharp abrasive edges, said strand so formed being knitted into a seamless tubular body providing rows of intermeshed loops, which by their turns project the curved sharp abrasive edges of the twisted wire in many different directions.
- In testimony that I claim the invention set forth above I have hereunto set my hand this 5th day of June, 1928.
- RUSSELL B. KINGMAN.