R. B. KINGMAN

KNIT ABRASIVE FABRIC AND ARTICLE MADE THEREFROM

Filed June 14, 1923
To all whom it may concern:

Be it known that I, Russell B. Kingman, a citizen of the United States, residing at Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Knit Abrasive Fabrics and Articles Made Therefrom; and do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The invention relates to improvements in abrasive fabrics; and the invention has reference, generally, to a novel construction of abrasive fabric, and more specifically to a tubular knit abrasive fabric for manufacturing scouring cloths, mitts and similar articles.

The invention has for its principal object to provide an abrasive fabric comprising a suitable base thread knitted to form a tubular body, said base thread being gimped with a thin ribbon-like wire made of a preferably non-corrosive metal possessing a suitable degree of hardness, such as copper, which is twisted or turned around the body of the base thread. The tubular knit fabric thus produced, by reason of the interlooping of its stitches, tends to regularly dispose the twists or turns of the ribbon-like wire, so that the same project from the surface of the finished fabric at a great variety of projecting angles, thus greatly increasing the abrasive qualities of the fabric, while the substantially flat and even surface provided by the knit body supports such projections so that a greater number of projections, per given square area of fabric, may be brought into contact with the surface upon which the fabric is rubbed, than is the case with a woven fabric, all of which greatly increases the efficiency and durability of scouring articles made out of such novel fabric.

The tubular knit abrasive fabric of the novel character about outlined, renders it possible to manufacture scouring mitts 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.

Other objects of this invention, not at this time more particularly enumerated, will be clearly understood from the following detailed description of the same.

The invention is clearly illustrated in the accompanying drawings, in which:

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 view of a fragment of the novel fabric drawn on an enlarged scale; Figure 3 is an elevation of a piece of the base thread gimped with flat metallic wire from which the novel tubular fabric is knitted; and Figure 4 is a face view of a seamless scouring mit made out of the novel tubular knit fabric.

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

In producing the novel abrasive fabric, I take a base thread a, which may be of yarn, jute, cord, metal wire or other suitable material, and I twist or turn around the body thereof one or more ribbon-like metallic wires b (see Figure 3). The base thread a, thus gimped with metallic wire b, being prepared, the same is delivered to the needles of a tubular knitting machine, whereby a tubular fabric A consisting of a series of rows of interlooped stitches or meshes is produced (see Figure 1). As will be quite apparent from an inspection of Figure 2, the twining of the gimped main or base thread to form intermeshed loops during the process of knitting, results in a constant or successive shift of the angles of projection of the sharp bends of the ribbon-like gimping wire b, so that in the finished fabric, the sharp scraping edges presented at the surface of the latter by such projecting bends of the wire b, 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, a 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 wire b, is comparatively...
even and true, so that a greater multiplicity of such projecting abrasive bends or edges 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 above set forth is most admirably adapted for the production of scouring mits, pot cleansers and similar articles, which are 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 provides a seamless two-fold body, which may be formed into a mit, by closing one end by suitable stitching or other fastening means. Such an article thus made is illustrated in Figure 4, in which the reference character c indicates the two-fold seamless body of the novel tubular knit abrasive fabric, one end of the same being closed by suitable stitching d or other fastening means, thus completing by very simple and quick operations the manufacture of the mit-like scouring device. The scouring mit thus made will easily keep its shape, and can be readily and quickly cleansed.

In the manufacture of the novel tubular knit abrasive fabric, I may make an all metallic fabric by using a suitable metallic wire for the main or base thread which is gimped with the additional ribbon-like metallic wire; or I may make various forms of combination fabrics, in which the main or base thread is made of yarn, cord, jute or the like gimped with the ribbon-like metallic wire.

I claim:

An abrasive fabric made of a base thread around which is convoluted a thin ribbon-like metallic wire adapted to present by its convolutions a multiplicity of sharp abrasive edges, said base thread so formed being knitted into a seamless tubular body providing rows of intermeshed loops which by their turns project said sharp abrasive edges of the convoluted wire in many different directions.

In testimony that I claim the invention set forth above I have hereunto set my hand this 9th day of June, 1923.

RUSSELL B. KINGMAN.

Witnesses:

GEORGE D. RICHARDS,

MARCUS A. FOX.