Dec. 9, 1924. 1,518,798

T. F. KENDRICK

ELASTIC FABRIC

Filed April 23, 1923

Fig. 1.

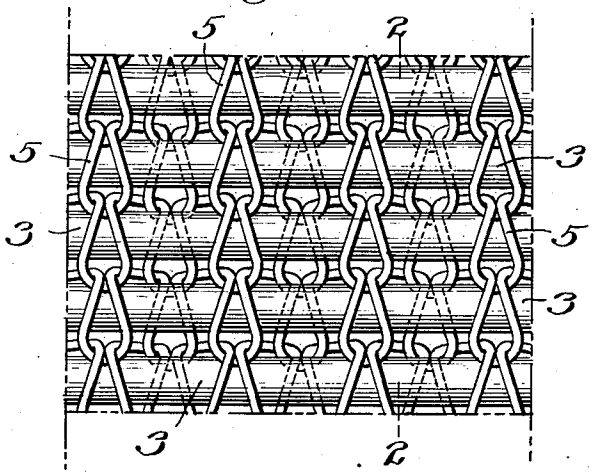



Fig. 2.

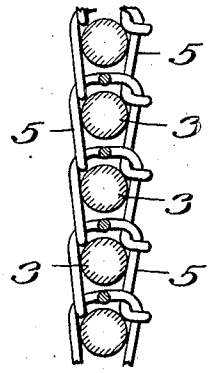



Fig. 3.

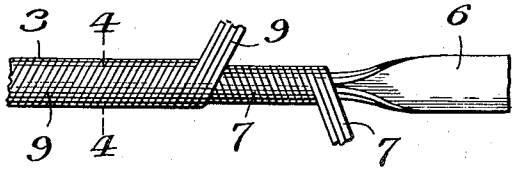



Fig. 4.

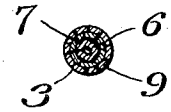



Fig. 5.

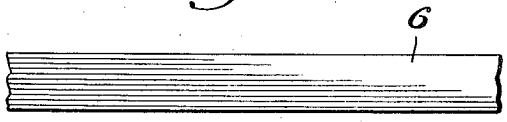



Fig. 6.




Fig. 7.



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# UNITED STATES PATENT OFFICE.

THOMAS FRANK KENDRICK, OF PHILADELPHIA, PENNSYLVANIA.

## ELASTIC FABRIC.

Application filed April 23, 1923. Serial No. 633,923.

*To all whom it may concern:*

Be it known that I, THOMAS FRANK KENDRICK, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Elastic Fabrics, of which the following is a specification.

This invention relates to improvements in elastic fabrics of the character employed in the manufacture of surgical appliances and wearing apparel and comprising covered strips of rubber forming elastic strands arranged side by side and held in place by co-operating binding threads, the elastic strands being enclosed in pockets formed between adjacent binding threads in a manner to permit the fabrics to be stretched longitudinally of the elastic strands.

When pieces of fabrics of this character are sewed together or sewed to pieces of other materials it frequently happens that the needle used to perform the sewing operation penetrates many of the rubber strips, usually square in cross section, of the elastic strands, sometimes leaving the threads of the stitches extending through the rubber strips and sometimes merely leaving holes or broken edge portions in the rubber strips; and the frequent stretching of the elastic fabric of the surgical appliance or article of wearing apparel containing the elastic strips thus impaired causes the strips to break and causes loose ends of the strips or elastic strands to protrude from within the main body of the fabric, thereby not only impairing the efficiency of the appliance or article, but rendering it rough and unsightly.

The object of the invention is to overcome the aforesaid objection by the provision of a novel elastic strand and by combining the elastic strand with the other elements of the fabric to form a product in which the impairment of the rubber strips of the fabric by the sewing needle will be greatly reduced or entirely eliminated.

With the foregoing object in view, the invention consists of the novel fabric and the novel elements thereof hereinafter described and claimed.

In the accompanying drawings, illustrating the invention,

Figure 1 is a front view of a piece of elastic fabric embodying my invention.

Figure 2 is a section through the fabric, on line 2—2 of Fig. 1.

Figure 3 is a side view of one of the elastic strands, enlarged, showing a portion of the strip of rubber forming core of the strand exposed by the removal of a part of its covering.

Figure 4 is a transverse section through the elastic strand, on line 4—4 of Fig. 3.

Figure 5 is a side view of the rubber strip of one of the elastic strands, enlarged, in the normal condition thereof before the covering is applied thereto.

Figure 6 is an end view of the rubber strip shown in Fig. 5.

Figure 7 is a side view of one of the elastic strands, showing a modification of the covering for the core thereof.

Referring to the drawings, the elastic fabric comprises elastic strands 3, arranged side by side, and co-operating binding threads 5. The elastic strands are bound within the fabric and held in place in their side by side relationship therein by the binding threads 5 which, as herein illustrated, are knitted together, forming a network extending throughout the fabric and enclosing the elastic strands in pockets formed by and between the loops of adjacent binding threads 5.

The construction of the fabric, as thus far described, is well known in this art. The elastic strands 3 are formed by one continuous strand which extends back and forth, from side to side or from end to end of the fabric and they are interwoven with the binding threads 5 to form suitable selvages at the edges of the fabric, as is well known in this art.

Each elastic strand 3 comprises a rubber core 6 enclosed in one or two coverings 7 and 9.

The core 6, in its normal condition, is a flat strip of rubber, as shown in Figs. 5 and 6. When the coverings 7 and 9 are applied to the core 6 it is distorted from its normal condition by being folded upon itself or buckled or compressed causing the coverings 7 and 9 and core 6 to assume a substantially round condition. The coverings 7 and 9 are each formed by wrapping a plurality of threads spirally around the rubber strip or core 6. The covering 7 is wrapped directly upon the core 6 and the covering 9 is wrapped upon the covering 7

and the core 6 therein, the finished strand presenting a substantially round and smooth appearance.

Before the coverings 7 and 9 are applied to the rubber strip 6 it is stretched longitudinally from its normal length and the coverings 7 and 9 are wrapped around the strip 6 while it is held in its stretched condition and thereafter the coverings 7 and 9 prevent the complete return of the rubber strip 6 to its normal length, leaving the rubber strip confined within the coverings 7 and 9 in the condition previously described. The rubber strip 6 is stretched to about four times its normal length before being covered, and, after being covered while it is thus stretched, the covering permits it to return to about three times its normal length. These proportions are varied somewhat to suit different requirements.

The coverings 7 and 9 are applied to the rubber strip 6 by the same machinery and in precisely the same manner that they have been heretofore applied to strips of rubber, which are round or square in cross section, in the manufacture of elastic strands.

Instead of covering the rubber strip 6 with wrappings of threads, as shown in Figs. 3 and 4, the strip may be covered with braid, as shown in Fig. 7; that is to say, each covering therefor may comprise two sets of threads wrapped spirally around the rubber strip in opposite directions and interwoven to form braid.

I have discovered that when pieces of fabrics, made in accordance with my invention, as hereinbefore described, are sewed together or to pieces of other fabrics in the manufacture of surgical appliances or articles of wearing apparel, and such appliances or articles are in service, the breakage of the elastic strands thereof in the regions of the lines of stitches uniting the parts of the appliances or articles will be much less than in prior constructions or entirely eliminated.

I claim as my invention:—

1. An elastic fabric comprising normally flat strips of rubber arranged side by side and cooperating threads retaining the strips of rubber within the fabric distorted from their normally flat condition.

2. An elastic fabric comprising elastic strands arranged side by side, each strand being formed of a flat strip of rubber transversely doubled upon itself and having covering threads surrounding it, and co-operating binding threads retaining the elastic strands in pockets formed by and between adjacent binding threads.

3. An elastic fabric comprising elastic strands arranged side by side, each strand being formed of a flat strip of rubber doubled upon itself and having a covering of threads wrapped spirally around the same, and co-operating binding threads retaining the elastic strands in pockets formed by and between adjacent binding threads.

4. An elastic fabric comprising elastic strands arranged side by side, each strand being formed of a flat strip of rubber transversely doubled upon itself and having covering threads surrounding it, and knitted binding threads enclosing the elastic strands in pockets and holding them in place.

5. An elastic fabric comprising elastic strands arranged side by side, each strand being formed of a flat strip of rubber doubled upon itself and having a covering of threads wrapped spirally around the same, and knitted binding threads enclosing the elastic strands in pockets and holding them in place.

6. An elastic fabric strand comprising a flat strip of rubber doubled upon itself and having covering threads surrounding it.

7. An elastic fabric strand comprising a flat strip of rubber doubled upon itself and having covering threads wrapped spirally around it.

8. An elastic fabric strand comprising a flat strip of rubber doubled upon itself and having a covering of two sets of threads wrapped spirally around the same in reverse directions.

In testimony whereof I affix my signature hereto.

THOMAS FRANK KENDRICK.