(Specimens.)

J. W. GREENE, Jr., & G. C. MOORE.

ELASTIC FABRIC.

No. 360,432. Patented Apr. 5, 1887.

Fig: 1.

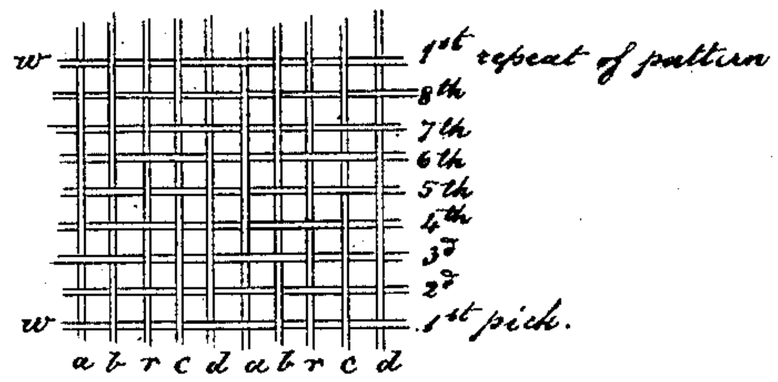


Fig: 2.

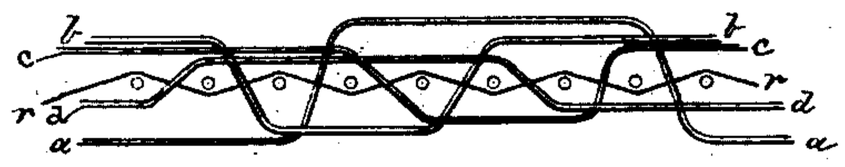


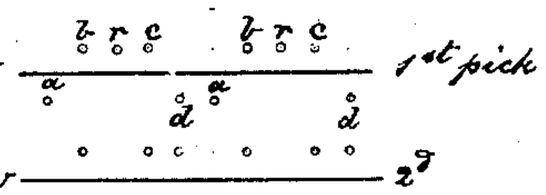
Fig: 3. 

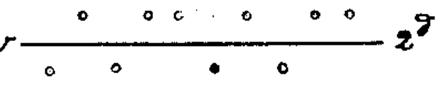
Fig: 4. 

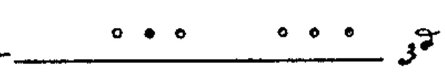
Fig: 5. 

Fig: 6.

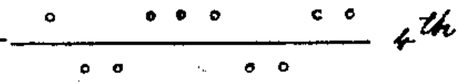
Fig: 7. 

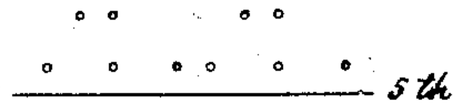
Fig: 8. 

Fig: 9.

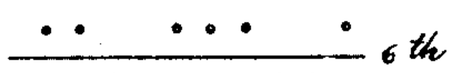
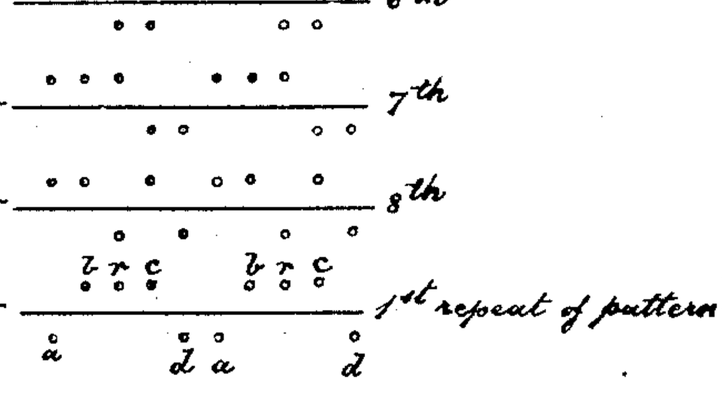
Fig: 10. 

Fig: 11. 

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UNITED STATES PATENT OFFICE.

JOSEPH W. GREEN, JR., AND GEORGE C. MOORE, OF EAST HAMPTON, MASS.

ELASTIC FABRIC.

SPECIFICATION forming part of Letters Patent No. 360,432, dated April 5, 1887.

Application filed May 8, 1886 Serial No. 201,537. (Specimens.)

To all whom it may concern:

Be it known that we, JOSEPH W. GREEN, Jr., and GEORGE C. MOORE, of East Hampton, county of Hampshire, and State of Massachusetts, have invented an Improvement in Elastic Fabrics, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of a fabric in which the rubber shall be bound at each pick, and which shall have both of its faces twilled, all the warp-threads except the india-rubber appearing at each face, the warps being separated in such order as to effect the formation of a twill at both faces.

Figure 1 represents in open plane the warp-threads and rubber used in two dents of the reed, together with the weft-thread; Fig. 2, a longitudinal section of the fabric with the threads separated; and Figs. 3 to 10 represent longitudinal sections of the fabric made in each shed of the eight sheds which constitute the pattern, Fig. 11 representing the first repeat of the pattern, it being the same as Fig. 3.

In the manufacture of our improved fabric we employ one harness-frame for the usual rubber warps and four additional frames for the fibrous warp-threads, and for the weft we employ one shuttle. The harness-frame carrying the rubber warp-threads is raised for one pick and lowered for the next pick. The four remaining harness-frames for the fibrous warp-threads are worked by what is known as "eight-time motion"—that is, eight picks to each revolution of the cam-shaft—and at the first pick two of the fibrous warps are up and two are down. At the second pick one of the fibrous warps is lifted, so as to place three of them in the top of the shed at one pick and one of them in the lower part of the shed, and at the next pick one of the warp-threads which was in the top of the shed is lowered, thus leaving two warp-threads up and two down, and at the fourth shed the thread which was down in the first pick is elevated, thus leaving three up and one down, not counting, however, the rubber; and when there is but one fibrous warp down the rubber is always down with it, and when there are but two of the fibrous warps up the rubber is always up.

Our improved fabric does not contain a set of binder-warps; but the fibrous threads carried by four of the harness-frames are so moved as to make some of them serve at each pick as binders, and also in our fabric the weight of the material is, as it will be seen, thrown to the face.

Referring to the drawings, Figs. 3 to 10, inclusive, show the positions of the warp and weft at each of the eight picks which constitute the pattern of the fabric.

In Fig. 3, which refers to the first pick, it will be seen that the fibrous warp *a* is down. From the other views it will be seen that it remains down on the second and third picks, rising at the fourth pick and remaining up until after the eighth pick, when it falls for the first repeat of the pattern. For the first pick the fibrous warp *b* is up, and it remains up for the second pick, falling at the third pick and remaining down until after the fifth pick, rising on the sixth pick and remaining up through the tenth pick, being up at the first pick of the repeat. In the first pick the rubber warp *r* is up; but it goes down for the second pick, rises for the third, goes down for the fourth, and so on, rising and falling for each alternate pick.

In the first pick it will be seen that the fibrous warp *c* is up, and that it remains up throughout the fourth pick, falls for the fifth pick, remains down until after the seventh pick, rising for the eighth pick, and being up for the first repeat of the pattern.

As shown in the first pick, the fibrous warp *d* is down; but it rises for the second pick and remains up until after the sixth pick, falling for the seventh pick, and remaining down on the tenth pick in the first repeat of the pattern.

In the drawings, *w* represents the weft-thread.

An inspection of Fig. 2 will show the manner in which the rubber warp is made to alternate with the fibrous weft, so that the rubber warp is down at every other pick.

It will also be seen from an inspection of the drawings that a fibrous warp is caused to alternate with a rubber warp at every pick, so that

as a rubber warp is lowered a fibrous warp is raised, and vice versa.

We claim—

As an improved article of manufacture, the herein-described elastic fabric having a twilled face and back and of the same color at face and back, the said fabric containing four sets of fibrous and one set of rubber warps and a weft-thread, the weft-thread binding the rubber warps at each pick, the fibrous warp-threads being moved, substantially as described, to remain up for five picks and down for three picks while the rubber rises and falls, one fibrous warp alternating with the rubber at every pick.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOS. W. GREEN, JR.
GEO. C. MOORE.

Witnesses:
GEORGE M. JOHNSON,
EDWARD H. SAWYER.