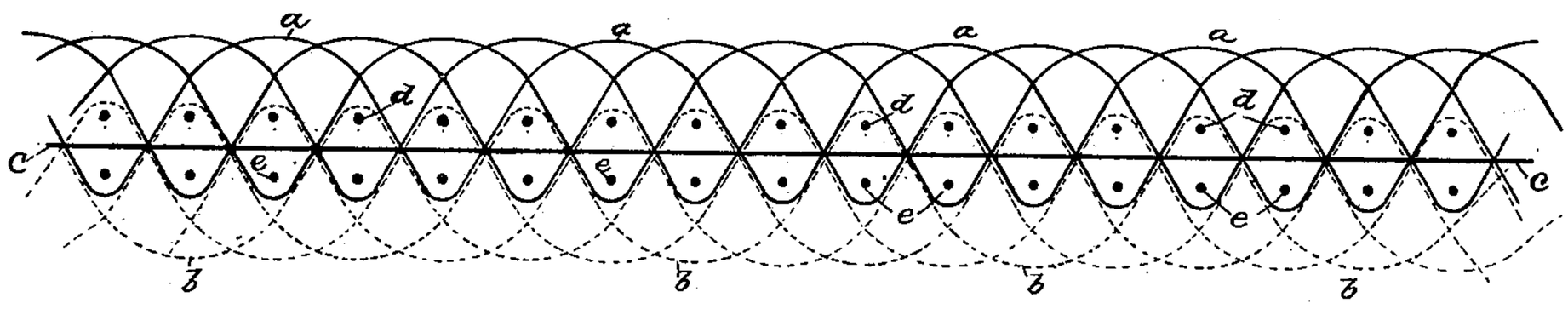
(Specimens.)

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

ELASTIC FABRIC.

No. 368,229. Patented Aug. 16, 1887.



Witnesses
T. G. Connolly, Jr.
G. C. Hunting.

Inventors:
Geo. C. Moore and J. W. Green, Jr.
By their Attorney
Henry Taber.

UNITED STATES PATENT OFFICE.

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

ELASTIC FABRIC.

SPECIFICATION forming part of Letters Patent No. 368,229, dated August 16, 1887.

Application filed March 16, 1887. Serial No. 231,142. (Specimens.)

To all whom it may concern:

Be it known that we, GEORGE C. MOORE and JOSEPH W. GREEN, Jr., citizens of the United States, residing at East Hampton, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Elastic Fabrics, of which the following is a specification, reference being had therein to the accompanying drawing.

Our invention relates to that class of elastic fabrics in which the face and back warps are so interwoven with the wefts that no binder-warps are required, the object of our invention being to produce a fabric of the class referred to which will have a clear, deep, and handsome twill, and which may also have a black or other colored face and an unmixed white back.

Our improved twilled web is made in a double-shuttle loom, the warps being so disposed as to form a shed through which the shuttles, one above the other, will pass simultaneously in opposite directions, one shuttle above and the other below the rubber warps. Nine harnesses are required for the warps, four for the face warps, four for the back warps, and one for the rubber warps, there being thus eight fibrous warps and a rubber warp in each dent of the reed. One of the back warps of each series is carried above (or on the face side) of the face or top weft at each pick, and one of the face warps of each series is carried below (or to the back of) the back or lower weft at each pick, the order of change of these wefts preferably being such that each face warp will be up for three picks and down one pick, and each back warp down three picks and up one. This disposition of the fibrous threads of the fabric will balance the said threads evenly on both sides of the rubber warps in the center of the fabric, so that the latter will be flat and smooth, without the tendency to curl which some similar fabrics have, and the twill, being unbroken by binder-warps, will be deep and fine. Moreover, the face and back of the fabric will be strongly interwoven and the rubber warps will be bound in, while the white back warps will be effectively covered by the black face warps and the wefts, which latter are also black, so that the white will not show through on the face of the fabric between the twills, and the back of the fabric will present a clear white appearance.

The accompanying drawing is a diagrammatic view representing a longitudinal section of our fabric, and showing the number of warp-threads in one dent of the reed.

In the drawing, *a* denotes the face warps; *b*, the back warps, (indicated by dotted lines;) *c*, a rubber warp; *d*, the face or top weft, and *e* the back weft, the said wefts being indicated by dots. The face warps are each shown as being up for three picks and down one, and the back warps down for three picks and up one, the face warps when down passing below the lower or back weft, and the back warps when up passing above the face weft. In producing this fabric the face harnesses are three up and one down, and the back harnesses three down and one up. The rubber is stationary, the top shuttle going through the shed above the rubber and the bottom shuttle going through the shed below the rubber.

From the foregoing it will be clear that our fabric, which contains an equal number of face and back warps, is equally balanced on both sides of the rubber, three-fourths of the yarn of the face warps being on the face side of the rubber and one-fourth thereof on the back, and one-fourth of the yarn of the back warps being on the face side of the fabric and three-fourths thereof on the back, thus having with a given-sized yarn the same weight of material in the face and back of the fabric. From this it results that a smooth and flat fabric, having no tendency to curl, will be produced.

It will be apparent that the face and back of the fabric will be strongly interwoven without the use of binder-warps.

We are aware of the fabric covered by the Jefferson Patent No. 216,328. In the production of the said fabric, however, eleven harnesses are required, (two for the binder-warps,) while ours requires but nine, and the Jefferson fabric is not equally balanced on both sides, in that one-fourth of the stock of the face warps and all of the stock of the back warps is on the back of the rubber. Moreover, the twill of the Jefferson fabric being marred or partly filled up by the binders is not deep

and clear, as is the twill of our fabric, the attractive appearance of which renders it very marketable.

We claim—

A balanced elastic fabric consisting of series of face warps, series of back warps, rubber warps, and two wefts, one of the latter being above and the other below the rubber warps, the number of the back warps being equal to the number of the face warps, and one of the face warps of each series being below or on the back of the back weft at each pick, and one of the back warps of each series being above or on the face side of the face weft at each pick, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

GEO. C. MOORE. [L. S.]
JOS. W. GREEN, JR. [L. S.]

Witnesses:
FRED W. GREEN,
ROLLIN C. WILSON.