

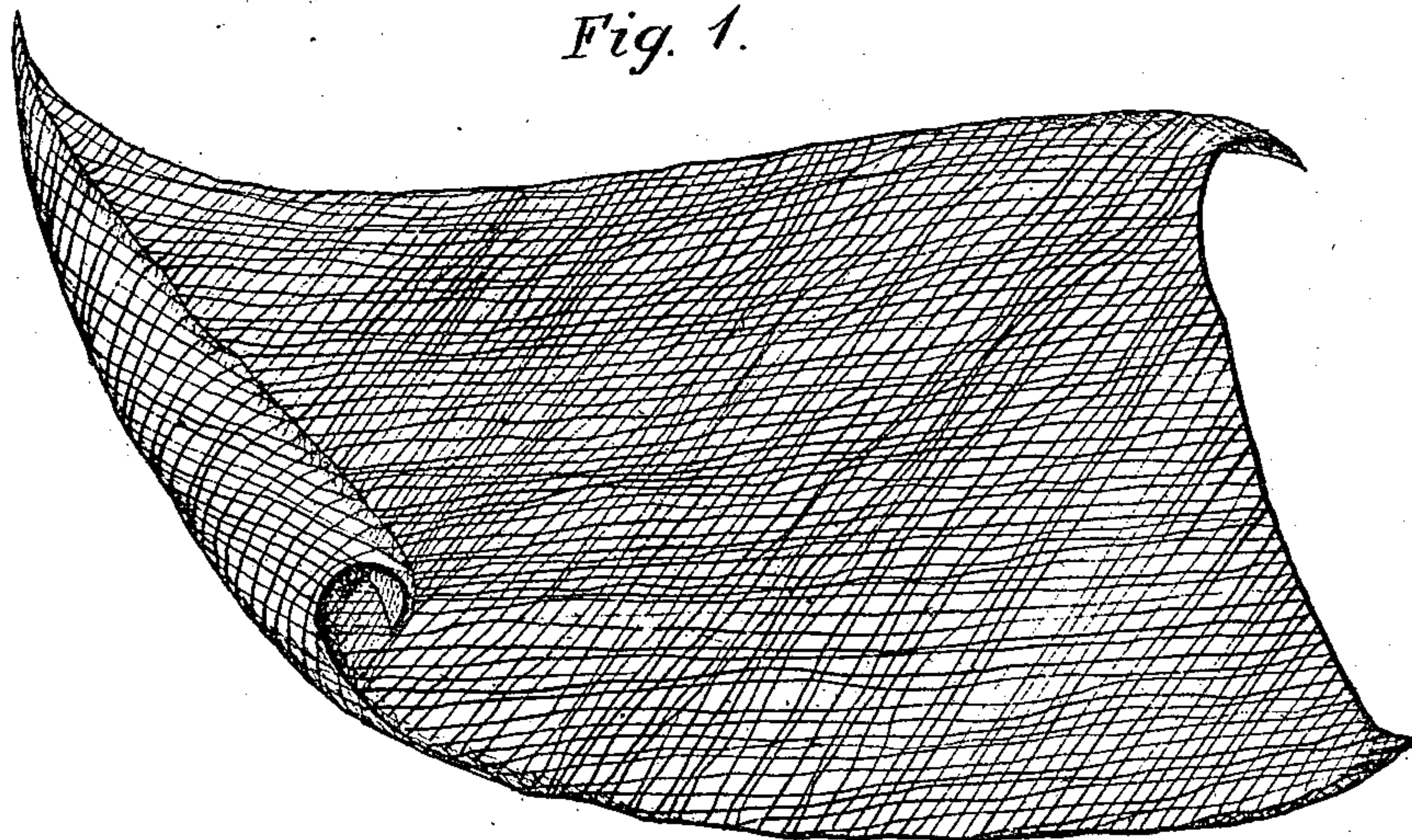
*T. Bracher.*

*Fabric.*

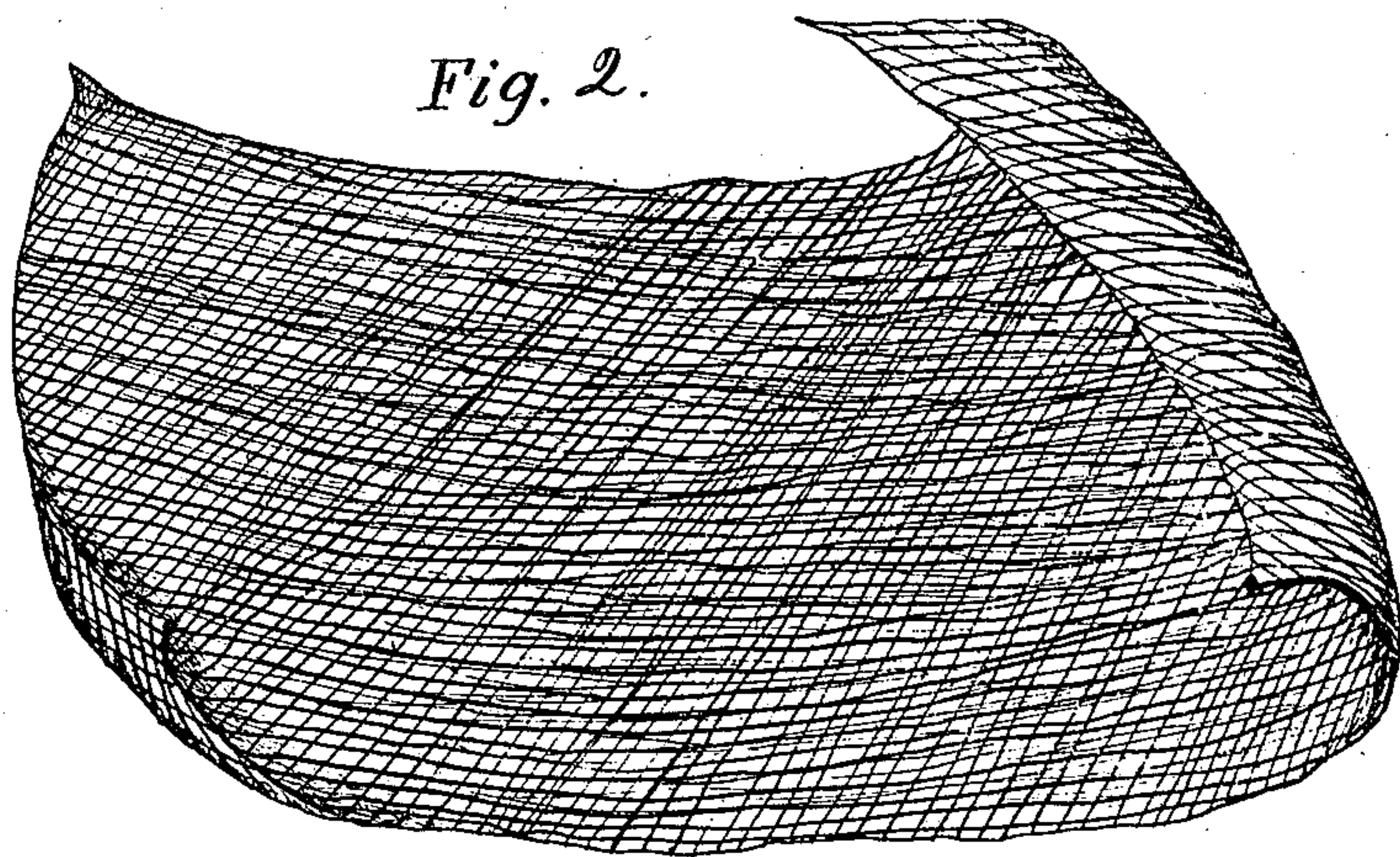
*Patented Mar. 8, 1870.*

*N<sup>o</sup> 100,591.*

*Fig. 1.*



*Fig. 2.*



*Witnesses.*

*Edward E. Osborn.*

*Robert H. Mammey.*

*Inventor.*

*Thomas Bracher*

*By his atty*

*Edw. Emory*



# United States Patent Office.

THOMAS BRACHER, OF RAHWAY, NEW JERSEY.

Letters Patent No. 100,591, dated March 8, 1870; antedated February 26, 1870.

## IMPROVEMENT IN WATER-PROOF FABRIC.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, THOMAS BRACHER, of Rahway, in the county of Union, and State of New Jersey, have invented a new and improved Water-Proof Fabric for the manufacture of hats and other coverings for the head, for ladies' wearing-apparel, and for other uses where a light, elastic, water-proof fabric is desired; and I do hereby declare the following to be a full, clear, and exact description of the construction of the same, reference being had to the accompanying drawings, in which—

Figure 1 represents a piece of fabric woven of cotton and wire threads, the latter indicated by the red lines.

Figure 2 represents a piece of fabric woven of cotton and wire threads, the latter being inserted only one way of the cloth, which may be in either the warp or weft of the same.

My invention consists in coating or treating the wire threads with resinous or elastic gums, in solution, before they are woven, the gum being colored to the desired hue, and subjecting the fabric, after the wire threads have been inserted, to heat, by passing it between heated rollers, to cause the cotton threads to adhere to the wire by the coating of gum, and thus form a firm, elastic cloth. The gums used being insoluble in water, the fabric is rendered proof against atmospheric influences.

To enable others skilled in the art to make my improved fabric, I will describe the process used by me.

I form the warp of cotton, linen, or other threads, and wire, the latter being placed at such distances apart as may be required to obtain the desired elasticity of the fabric; but when I wish to obtain still greater elasticity than the wire in the warp alone will give, I insert the wire in the weft also, at such distances apart as may be required. The wire used is tempered when being drawn, and both it and the fibrous thread are woven together in a loom in the usual manner.

To prevent the wire from being affected by water or the atmosphere, I subject it, in the first place, to a coating of resinous or elastic gums, in solution, by drawing it through a bath prepared of the same. The gums which I use are chiefly gutta-percha, India rubber, or shellac, in about the proportions of two (2) pounds of shellac to one (1) gallon of spirits, and of two pounds of gutta-percha to one and a half gallon of spirits.

The gum used is first cut by the naphtha, ether, or other spirits, and when dissolved, the solution is made about the consistency of flowing varnish, so that the wire in passing through will retain a sufficient quantity to properly coat it. The wire is then allowed to dry. I also color the coating for the wire to harmonize with the color of the fabric.

The fabric when woven is taken from the loom and subjected to pressure between heated rollers, to melt the gum sufficiently to cause the fibers of the threads to adhere to the wires, and thus a firm, light, elastic, and water-proof fabric is produced, capable of being cleaned by washing without injury.

Having thus fully described my invention, I do not claim, broadly, a fabric woven with wire in the warp or weft, or in both, as such a fabric, in itself, is not new.

I claim the fabric herein described as a new article of manufacture, it being made of spring wire and fibrous material, either in warp or weft, the wire before being woven being coated with resinous or elastic gums, colored to correspond with the color of the fibrous yarns, and the fabric when woven being subjected to the action of heated pressure-rollers, to cause the fibrous threads to adhere to the wire, and thus form a light, elastic water-proof cloth.

THOS. BRACHER.

Witnesses:

C. A. DURGIN,  
EDWARD E. OSBORN.