

(Model.)

H. HAMMESFAHR.  
Glass Cloth or Fabric.

No. 232,122.

Patented Sept. 14, 1880.

FIG. I.

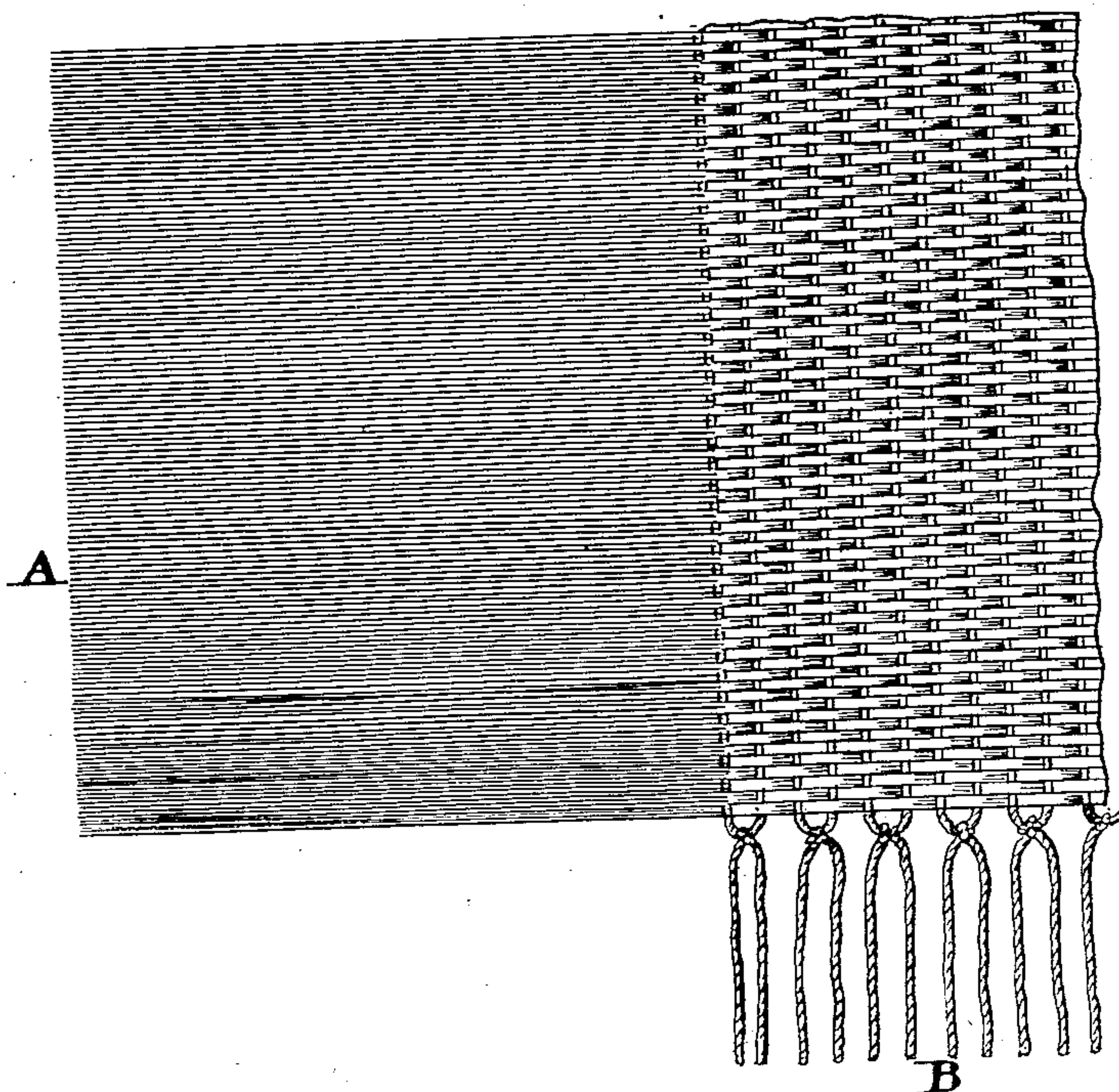
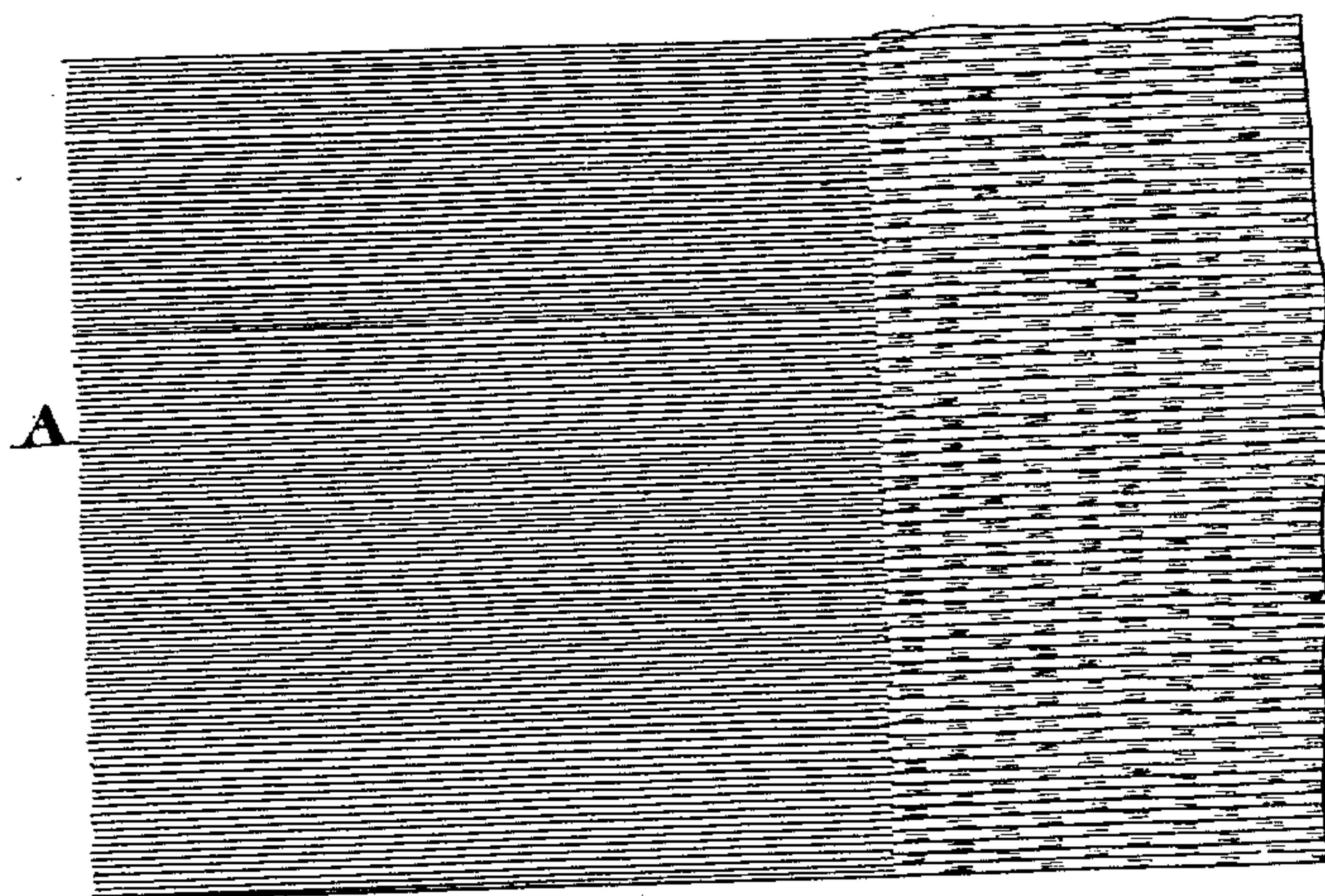


FIG. II.



WITNESSES

*Wm. L. Smith*  
*D. S. Salisbury*

INVENTOR

*Hermann Hammesfahr*



# UNITED STATES PATENT OFFICE.

HERMANN HAMMESFAHR, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO  
THOMAS B. ATTERBURY AND JAMES S. ATTERBURY, OF SAME PLACE.

## GLASS CLOTH OR FABRIC.

SPECIFICATION forming part of Letters Patent No. 232,122, dated September 14, 1880.

Application filed August 5, 1880. (Model.)

To all whom it may concern:

Be it known that I, HERMANN HAMMESFAHR, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Glass Cloth or Fabric, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a view, in perspective, of a spun-glass fabric or cloth in which silk, woolen, or other fibrous material or silver or other fine wire is used to strengthen the fabric. Fig. 2 is a view in which the entire fabric is made of the spun glass.

The object of my invention is to furnish an article of manufacture to be used in the various arts for which it may be applicable and useful; and the invention consists in making a fabric or cloth, either in whole or in part, of fine-spun glass.

In the manufacture of so-called glass cloth as heretofore practiced the glass has been introduced only in comparatively small quantities—i. e., in the shape of an ornamental pattern having silk, wool, cotton, or other fibrous material as the basis or ground-work, and in such cases the glass forming such part has of necessity been protected from the action of the reed in weaving by strands of silk or other fibrous material.

Referring to the drawings, A in Fig. 1 designates the filling of glass fibers; and B the weft of silk or other fibrous material, and for some purposes silver galvanized or other suitable fine wire may be used as the weft in lieu of the silk.

As heretofore indicated, Fig. 2 represents a fabric made entirely of glass, spun very fine and woven in any suitable manner.

The glass I use is made of soft and rich materials in order that it may be spun very fine and at the same time possess the requisite degree of toughness to be woven in the loom and to withstand the beating up of the reeds of said loom without breaking into fine particles. It is spun from solid rods of glass about one-half ( $\frac{1}{2}$ ) an inch thick.

The spinning of the glass into threads is accomplished in any well-known manner; but a wheel of large diameter is preferred. The

rod of glass having the end nearest the wheel exposed to a blow-pipe flame, the soft metal is attached to the periphery of the wheel and said wheel set in motion, the quality of the glass threads being regulated by the velocity of the number of revolutions made by the wheel per minute.

Various colors may be spun on the wheel at the same time, or the different colors may be spun separately.

The glass having been spun, it is cut and arranged in a loom of ordinary or suitable construction and woven into cloth either with or without silk, woolen, or cotton strands, or fine wire of any suitable or ornamental character.

The glass I use is made of much finer materials than the glass commonly used, and the color of said glass must be very dark or dense, so that when drawn into fine threads the colors will show. Light colors, when drawn into fine threads, do not show except in reflecting the light.

This fabric is capable of being used for shawls, table-covers, neckties, bonnets, and in fact all articles of fancy clothing. It can also be used to good advantage for filtering purposes, also woven or wrapped around telegraph-wires for insulating purposes.

I am aware that it is not new to spin glass into fibers.

I am also aware that fabrics have been made in which glass fibers have been used to form ornamental portions; but in all such previously-made cloth the main parts have been composed of silk, satin, woolen, cotton, or other similar fibrous material.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A woven fabric or cloth composed wholly of or the principal parts of which are composed of spun glass, as set forth.

2. As a new article of manufacture, a fabric or cloth composed wholly of or the principal parts of which are composed of spun glass woven.

HERMANN HAMMESFAHR.

Witnesses:

D. WENKE,

DANL. P. BERG.