No. 737,751. PATENTED SEPT. 1, 1903.

A. M. LOUGEE.

FABRIC.

APPLICATION FILED MAY 31, 1902.

NO MODEL.

Fig. 1.

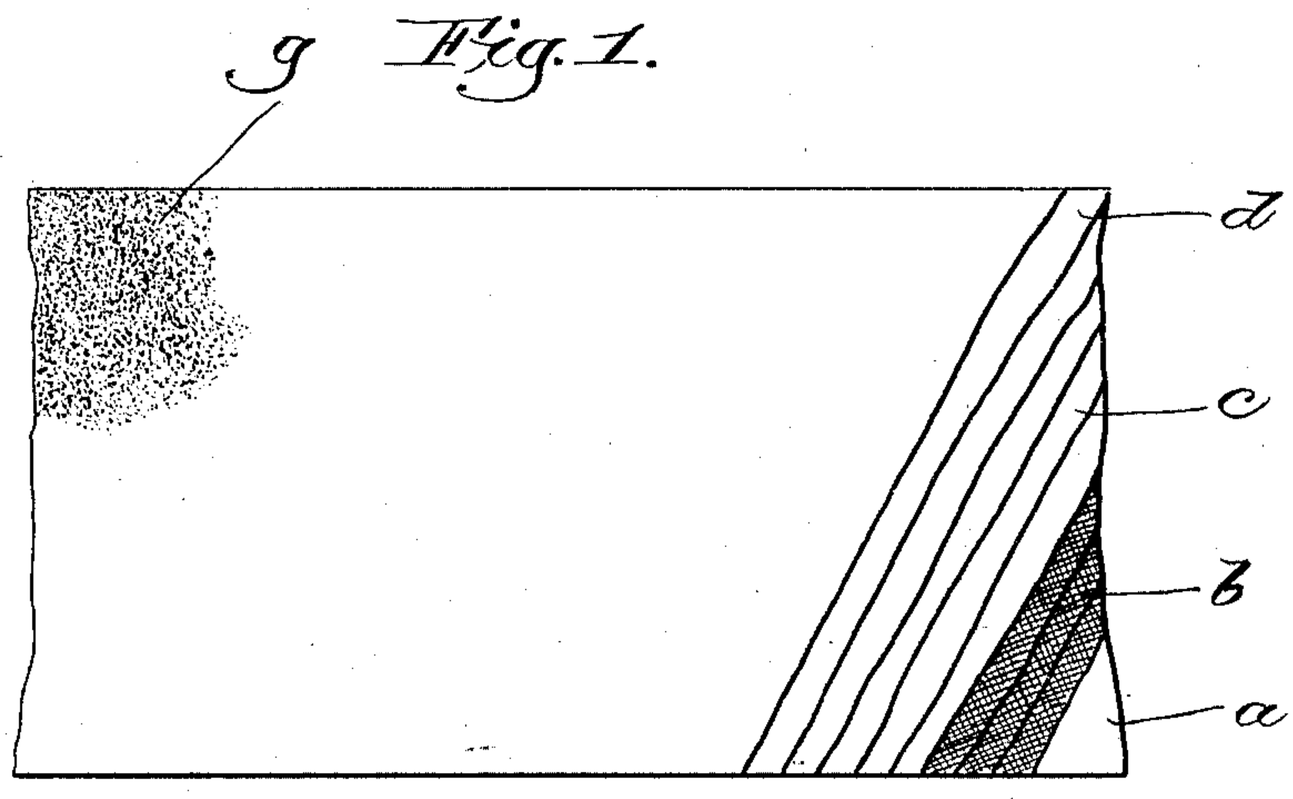
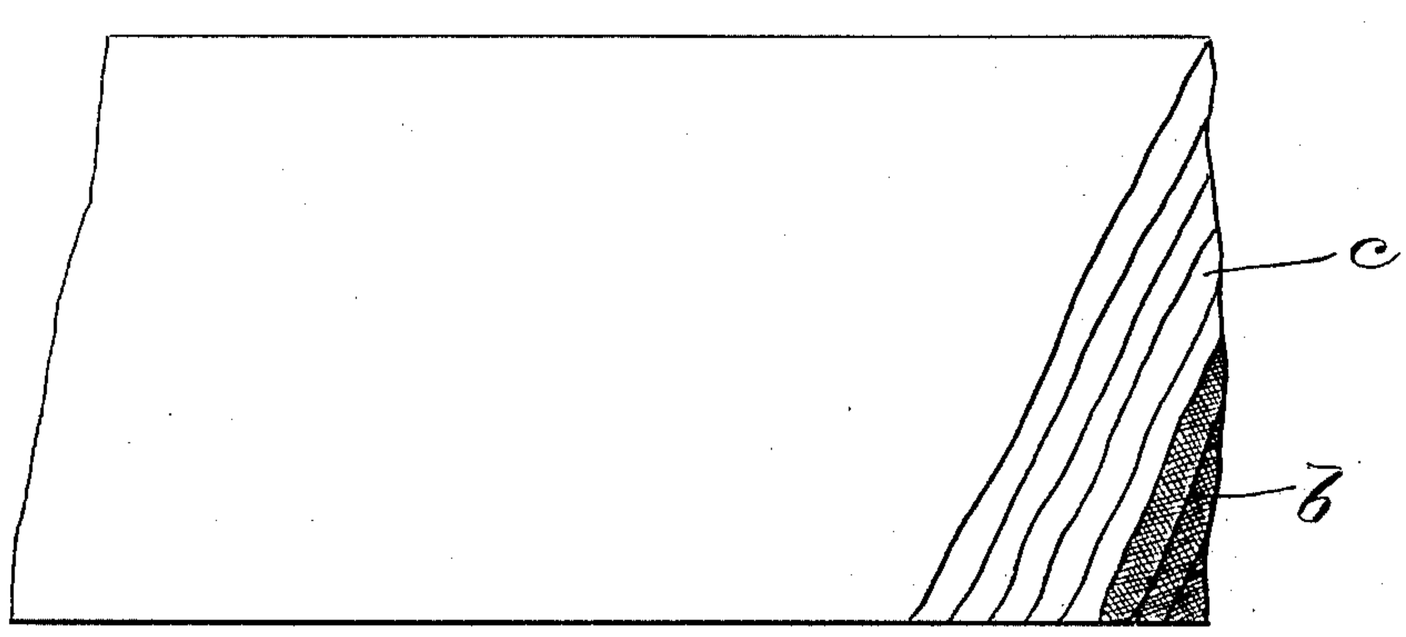


Fig. 2.



Witnesses.
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No. 737,751. Patented September 1, 1903.

UNITED STATES PATENT OFFICE.

AMANDA M. LOUGEE, OF BOSTON, MASSACHUSETTS.

FABRIC.

SPECIFICATION forming part of Letters Patent No. 737,751, dated September 1, 1903.

Original application filed December 2, 1901, Serial No. 84,345. Divided and this application filed May 31, 1902. Serial No. 109,652. (No model.)

To all whom it may concern:

Be it known that I, AMANDA M. LOUGEE, a citizen of the United States, residing at Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Fabric, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention is a sheet material or fabric of peculiar composition or organization having fireproof qualities, marked durability, flexibility, &c., and is adapted to a great variety of uses, the present application being a division of my original application, Serial No. 84,345, filed December 2, 1901.

In the drawings, where I have illustrated one embodiment of my invention, Figure 1 represents in plan view one manner of making the material, and Fig. 2 similarly represents the material or fabric itself.

One purpose of my invention, aside from those already mentioned, is to make the fabric homogeneous throughout, but of different degrees of hardness, so that while the outer surface will be hard and durable the fabric will yet be extremely pliable and flexible because of the intermediate softer layers. Preferably, also, the fabric is waterproof or non-absorbent, as well as fire-resisting, and has a sleek hard outer finish and is therefore well adapted for insulation purposes. It is capable of being made very thin.

The most usual way of preparing my improved fabric is to spread the compound which is to form the same out on a suitable foundation or support *a* of cotton fabric or other convenient material.

In the drawings I have indicated a layer *b*, preferably deposited in a plurality of coats, three being herein shown, said layer consisting of fire-resisting material in powdered form, such as asbestos, or asbestos and mica, magnesium, lime, slate, talc, infusorial earth, or any earthy substance, or any prepared mass or mixture of fireproof material, mixed with suitable vulcanizable material, such as rubber or equivalent oxidized oils, as commonly practiced in the rubber art, together with a drier and vulcanizing agent—as, for example, litharge and sulfur. On the layer *b* are also placed, preferably in successive coats, layers *c* of relatively soft material, such as rubber. Preferably the coatings from the bottommost coating next the foundation *a* to the last coating applied contain sulfur or other well-known vulcanizing agent in diminishing quantities, so that when the entire sheet is vulcanized the mica-containing layer will have next to it a backing of relatively soft or more pliable waterproof and resilient material.

The fabric may be applied directly to an object by placing on top of said intermediate and softer layer *c* a coat *d* of cementitious substance, preferably of vulcanizable naphtha solution of rubber, and dusting over this coating a layer of dry antimony or other vulcanizing powder *g*, to which may be added a quantity of bisulfid of carbon, which I have found to be superior, because of its ability to dissolve rubber, sulfur, and partly the litharge of the rubber solution.

Having prepared the material as set forth, the whole is vulcanized, thereby melting the layer *g*, so that it no longer appears as such, and at the same time directly vulcanizing the lining and in case it is being applied to an object uniting it thereto.

As already intimated, I do not limit myself to all these features, as useful and advantageous results are obtained when a part only thereof are employed, whether alone or in connection with features now known in the art.

I do not intend to limit myself as to the binding agent necessary to bring about the required homogeneous mass by vulcanization, as described, as this can be accomplished with any of the well-known vulcanizing agencies.

Having prepared the material, the foundation *a* is stripped off, leaving a sleek hard finish consisting of the outer or bottommost coating *b*, which being composed of mica and asbestos or similar substances offers good fire protection and affords good insulation.

The surface coating *b* is relatively hard, and hence not liable to abrasion, while the layers *c* are pliable and tough or resilient, affording extreme pliability and strength or absence of tendency to rupture.

The layers are in no sense distinct from each other, as would be the case were suc-

cessive sheets stuck or cemented together; but they are integral with each other, being entirely homogeneous, excepting that the degree or extent of vulcanization diminishes from the hard surface *a* toward the interior of the fabric.

The degree of vulcanization and extent or proportion of other features employed may be varied. Different layers of flexible insulating material may be employed, each varying from the other either in fire-resisting or insulating and pliability-giving qualities.

Having described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The herein-described material, comprising a plurality of layers of pliable vulcanized material containing fire-resisting ingredients in a portion of said layers, said layers being of varying degrees of hardness.

2. The herein-described material, comprising a plurality of layers of pliable vulcanized material containing fire-resisting ingredients in a portion of said layers, said layers being of varying degrees of hardness, and having an outer hard surface and an intermediate softer layer.

3. The herein-described material, comprising a plurality of layers of pliable vulcanized material containing fire-resisting ingredients in a portion of said layers, said layers being of varying degrees of hardness, and having an outer surface composed of comminuted asbestos embodied in a vulcanized compound.

4. The herein-described material, comprising a plurality of layers of pliable vulcanized material containing fire-resisting ingredients in a portion of said layers, said layers being of varying degrees of hardness, and having an outer surface composed of comminuted asbestos and mica embodied in a vulcanized compound.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AMANDA M. LOUGEE.

Witnesses:
GEO. H. MAXWELL,
WILHELMINA C. HEUSER.