

No. 714,541.

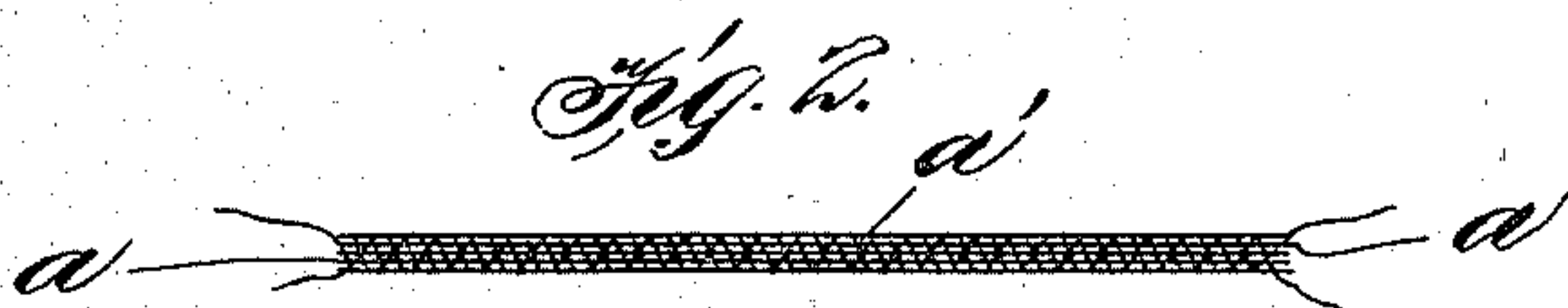
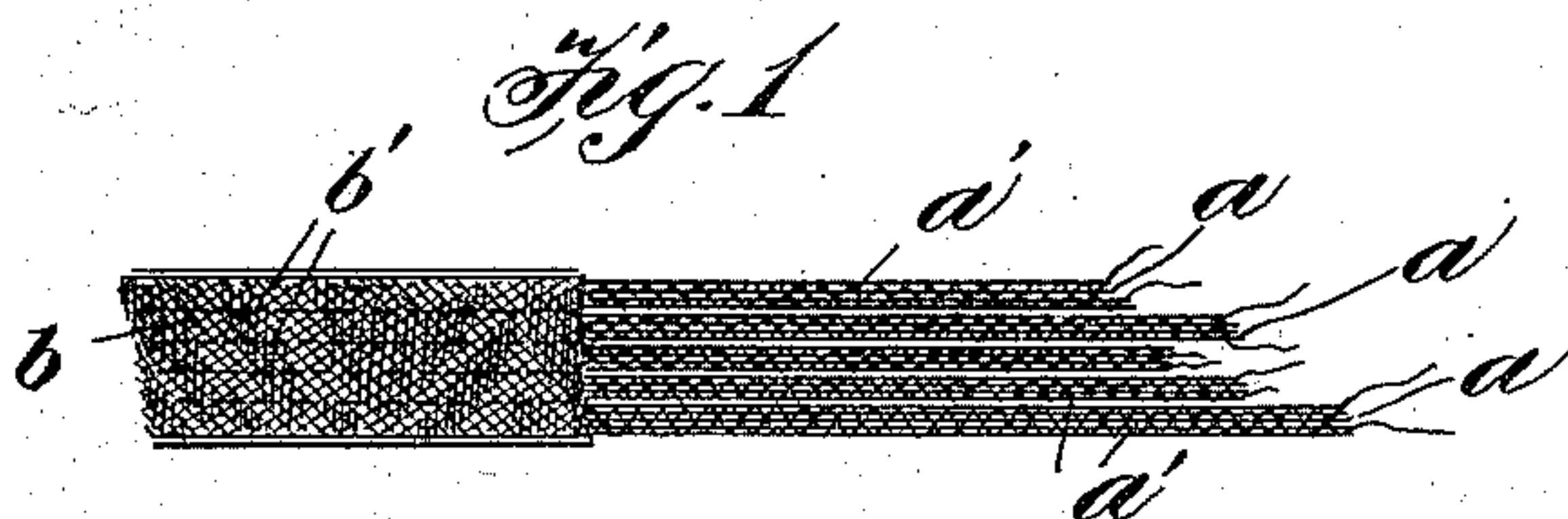
Patented Nov. 25, 1902.

A. M. WEBER.

SUBSTITUTE FOR WHALEBONE STIFFENING STRIPS.

(Application filed Sept. 19, 1902.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## SUBSTITUTE FOR WHALEBONE STIFFENING-STRIPS.

SPECIFICATION forming part of Letters Patent No. 714,541, dated November 25, 1902.

Application filed September 19, 1902. Serial No. 124,026. (No specimens.)

*To all whom it may concern:*

Be it known that I, AARON M. WEBER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have made certain new and useful Improvements in Substitutes for Whalebone Stiffening-Strips, of which the following is a specification.

My invention relates to a new article of manufacture which may be used as a substitute for whalebone stiffening commonly used in stays in women's dresses, and is in the nature of an improvement over similar substitutes heretofore made and used.

The object of my invention is to provide a stiffening material which is more economical in cost of manufacture and effective and is more durable in use than any stiffening material heretofore made.

A further object of my invention is to provide a stiffening material which will not break as readily by undue bending as the substitutes for whalebone heretofore made and used.

My invention provides a material made up principally of a vegetable fiber known as "piassava" or "bast" and obtained from the "*Attalea funifera*," a palm whose leafstock is stiff and wiry, yet flexible. These fibers are long hair-like threads possessing great strength and resiliency and are of a whitish color.

Referring to the drawings, Figure 1 illustrates several strands woven together to form a flat strip and shows a part of the strands uncovered. Fig. 2 is a view of one strand consisting of numerous fibers bound together, and Fig. 3 is a view showing several strands loose.

In the process of manufacture I first boil the grass fibers *a* to extract the gum and other matter naturally in the plant and then put it through a chemical rolling and polishing process, which materially increases its strength and flexibility. When in this condition, I bind a number of the fibers together to form strands *a'*, which I afterward bind and hold together by means of a covering *b*, woven directly upon the strands *a'*. I then stitch the strip between each strand, as at *b'*. The material in this condition may be desirable for use in some cases; but to give it more strength and durability I put the material in a solu-

tion of soluble starch and when dry I may cover the strip with any suitable covering having a projecting end or selvage to provide a means for sewing the material to the dress.

The material may preferably be placed in the starch solution in the course of manufacture and be applied to the fibers in the manner which I will now describe. In applying the soluble starch to the fibers the strands which go to make up the stiffener, each comprising a plurality of individual fibers, are loosely held together by the winding thread or cord. While thus held the strands are immersed and boiled in the starch solution. The surface of each fiber is thus coated with a film of the solution and when dry presents a smooth and firm surface and the several fibers of each strand slip freely upon each other in their contact together. The resiliency and flexibility of the entire strand are thus greatly increased.

I am aware that prior to my invention stiffening-strips have been made of the quill portions of feathers; but while such a filler will make a good substitute for whalebone stays for dresses they will not stand any undue bending without breaking. My invention, however, provides a strip that can stand any amount of degree of bending to which it might be subjected in a dress.

The soluble-starch solution is a composition made from starch converted by the action of ozone into a substance which is thinner than starch in its liquid form and is more penetrating. The solution of soluble starch applied to the fibers stiffens them and adds greatly to their strength.

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

1. In an improved article of manufacture, a stiffening-strip comprising strands made up of piassava or bast fibers, said fibers having each a coating of soluble starch, a plurality of coated fibers making up the strands to form a flattened stiffening-strip, and means for holding the fibers together, substantially as described.

2. In an improved article of manufacture, a stiffening-strip comprising strands made up of piassava or bast fibers, said fibers having each a coating of soluble starch, a plurality

of coated fibers making up the strands to form  
a flattened stiffening-strip, a holder for se-  
curing the fibers together and lines of stitch-  
ing passing through such holder and running  
5 lengthwise of the strip, substantially as de-  
scribed.

3. As an improved article of manufacture,  
a stiffening-strip comprising a strand com-

posed of a number of vegetable fibers, each  
having a coating of soluble starch the several 10  
fibers being bound together into a strand, sub-  
stantially as set forth.

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Witnesses:

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