

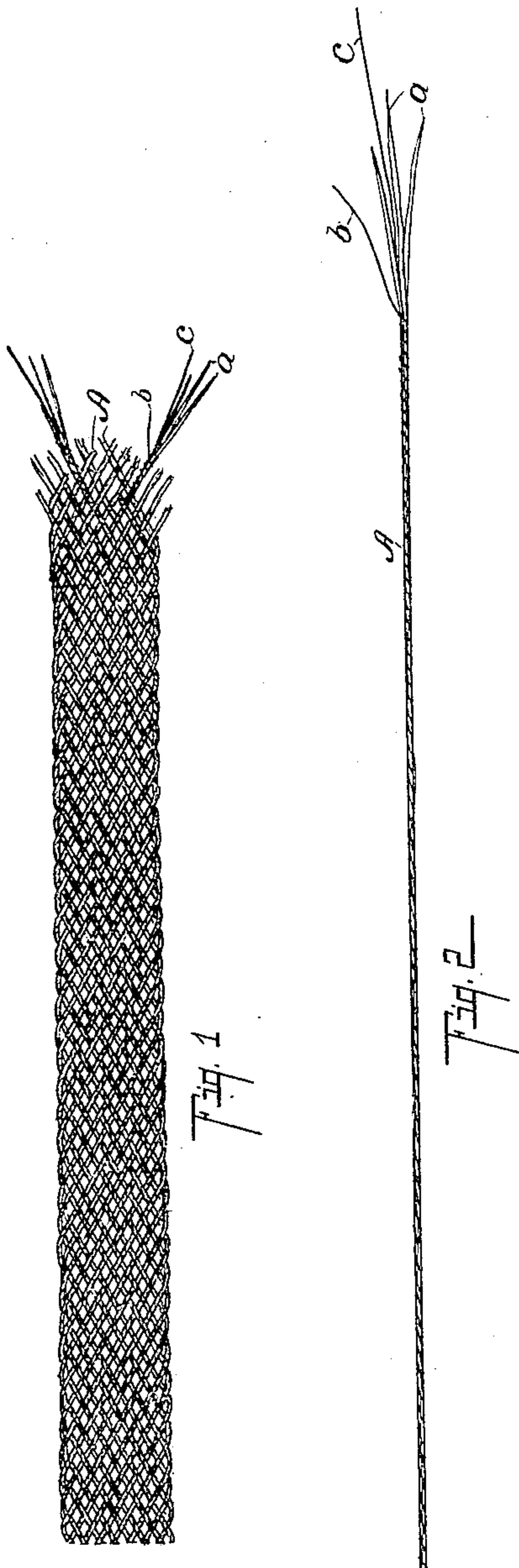
No. 801,422.

PATENTED OCT. 10, 1905.

E. K. WARREN & J. H. HOLDEN.

STIFFENING MATERIAL.

APPLICATION FILED DEC. 8, 1902.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD K. WARREN AND JONAS H. HOLDEN, OF THREEOAKS, MICHIGAN,
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OAKS, MICHIGAN.

STIFFENING MATERIAL.

No. 801,422.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed December 8, 1902. Serial No. 134,344.

To all whom it may concern.

Be it known that we, EDWARD K. WARREN and JONAS H. HOLDEN, citizens of the United States, residing at the village of Threeoaks, in the county of Berrien and State of Michigan, have invented certain new and useful Improvements in Stiffening Material, of which the following is a specification.

This invention relates to improvements in stiffening material for garments.

The objects of this invention are to provide an improved stiffening material for garments which is light and strong and durable and which possesses resiliency in all directions and which can be readily flexed in all directions.

Another object is to provide an improved stiffening material which may be a comparatively wide braid or tape and will be very resilient and durable.

Further objects will definitely appear in the detailed description to follow.

We accomplish the objects of our invention by the devices and means described in the following specification.

The invention is clearly defined, and pointed out in the claims.

A structure embodying the features of our invention is fully illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan view of our improved stiffening material. Fig. 2 is a plan view of one of the strands A of which it is composed.

In the drawings similar letters of reference refer to similar parts throughout both views.

Referring to the drawings, the stiffening-tape is made up of a plurality of stiff resilient strands A braided together. The strands A are composed of fibers *a*, made, preferably, from the quills of feathers, which are bound together into a continuous strand by a wrapping-thread *b* substantially in the manner described in Patent No. 286,749, dated October 8, 1883. A continuous thread *c*, in the best form, is combined with the fiber and

bound together with the same to give the strands longitudinal strength, and this also greatly facilitates the handling of the strands in braiding them together. The stiffening tape or braid thus made can be formed of very light strands and is therefore very light and strong and can be made comparatively wide with a minimum of material.

Our improved stiffening material possesses resiliency both in the direction of its width and laterally and can be secured in a garment in a laterally-curved position without twisting and bulging the same, so that it is adapted for numerous uses where stiffening-tapes of ordinary weight are not desirable. It is particularly desirable for use in stiffening the edges of garments, as it readily conforms thereto and holds the same smooth, as it practically possesses resiliency in all directions and is at the same time light and not affected by the heat or moisture to which it is subjected in ordinary use. The tapes may be varied in width as desired for the uses to which they are to be put.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A stiffening material consisting of a plurality of stiffening-strands braided together, said strands consisting of the fibered quill portions of feathers bound together by a wrapping-thread about a central longitudinal thread.

2. A stiffening material consisting of a plurality of stiffening-strands braided together, said strands consisting of resilient fibers bound together by a wrapping-thread about a longitudinal thread.

In witness whereof we have hereunto set our hands and seals in the presence of two witnesses.

EDWARD K. WARREN. [L. s.]

JONAS H. HOLDEN. [L. s.]

Witnesses:

MORRIS G. MCGAWN,

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