

No. 717,373.

Patented Dec. 30, 1902.

H. FEDER.
GARMENT STIFFENER.

(Application filed Feb. 28, 1902.)

(No Model.)

Fig. 1.

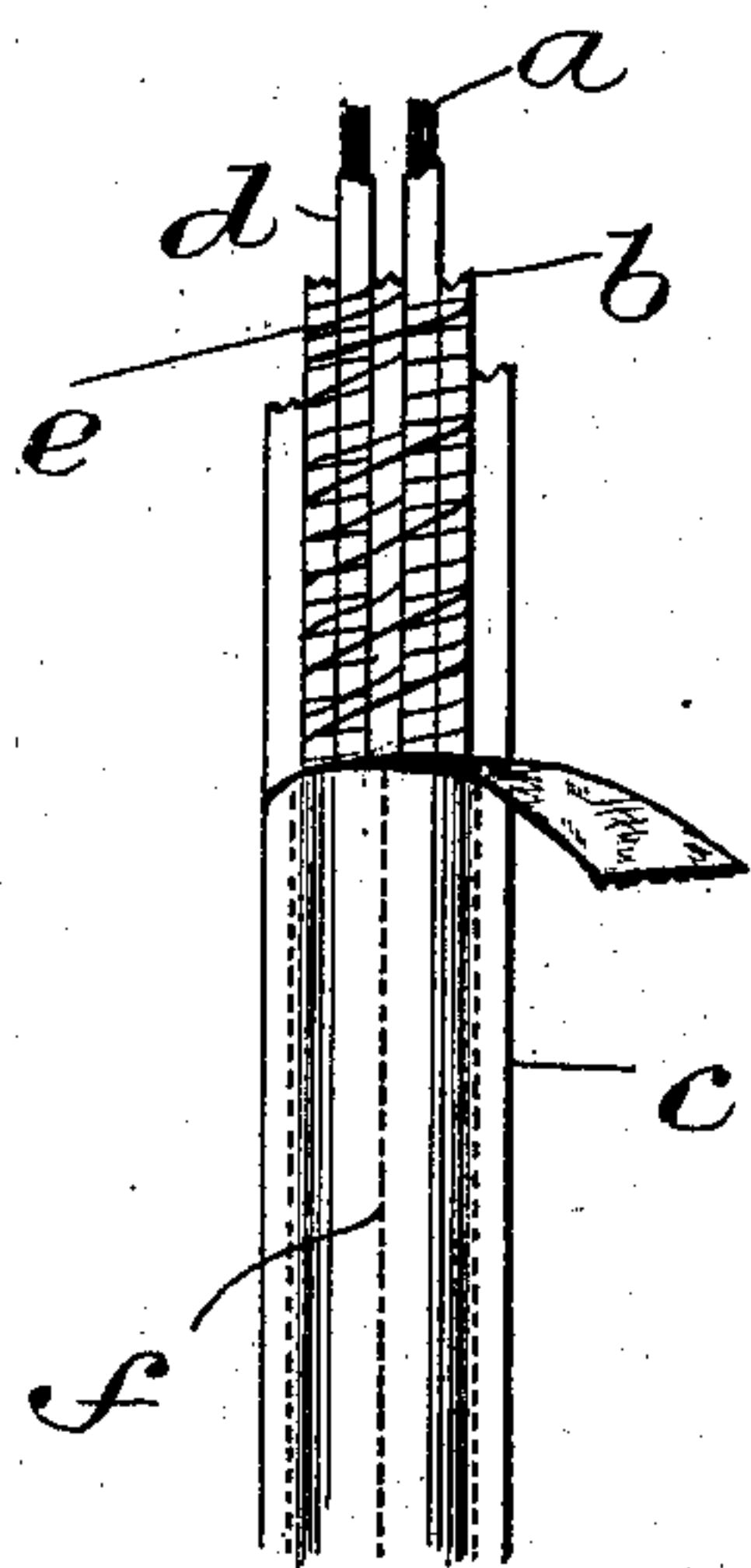


Fig. 2.

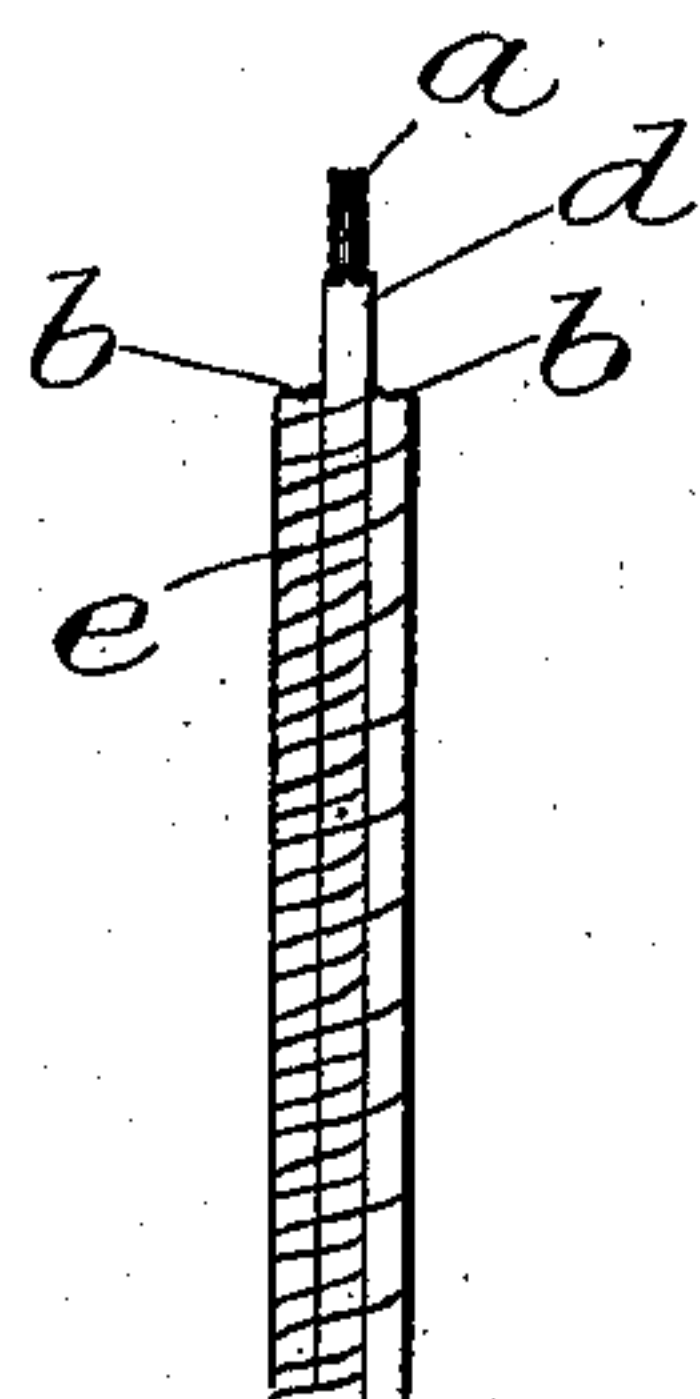


Fig. 3.

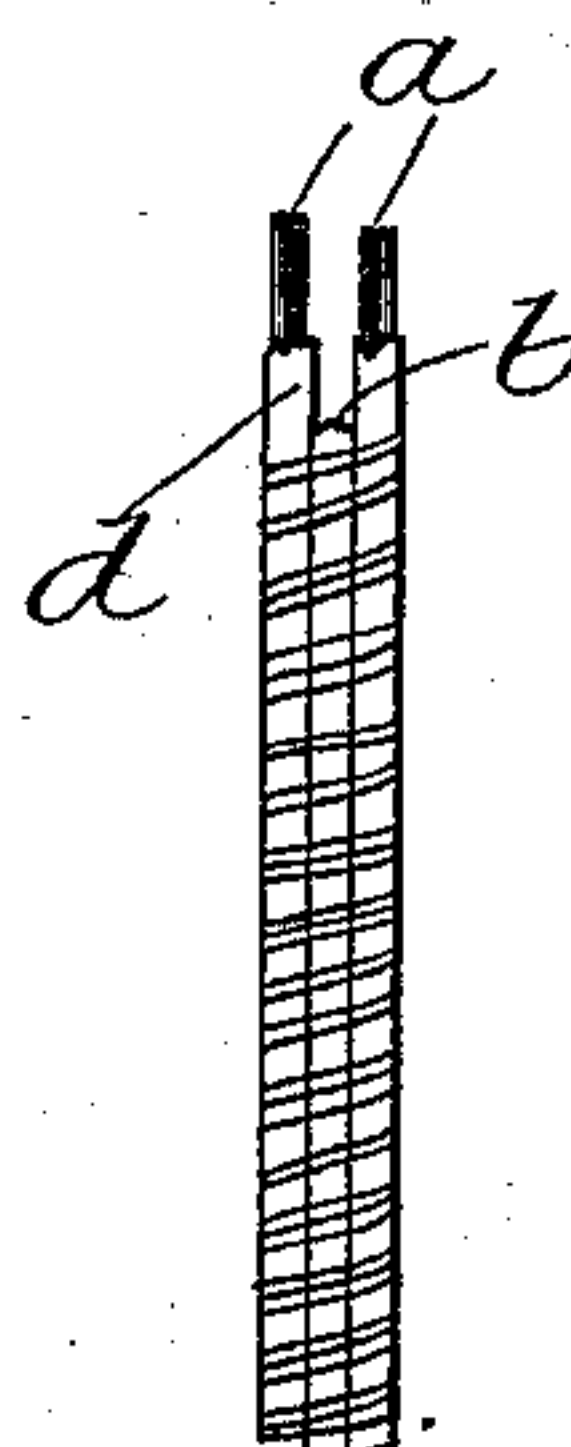


Fig. 4.

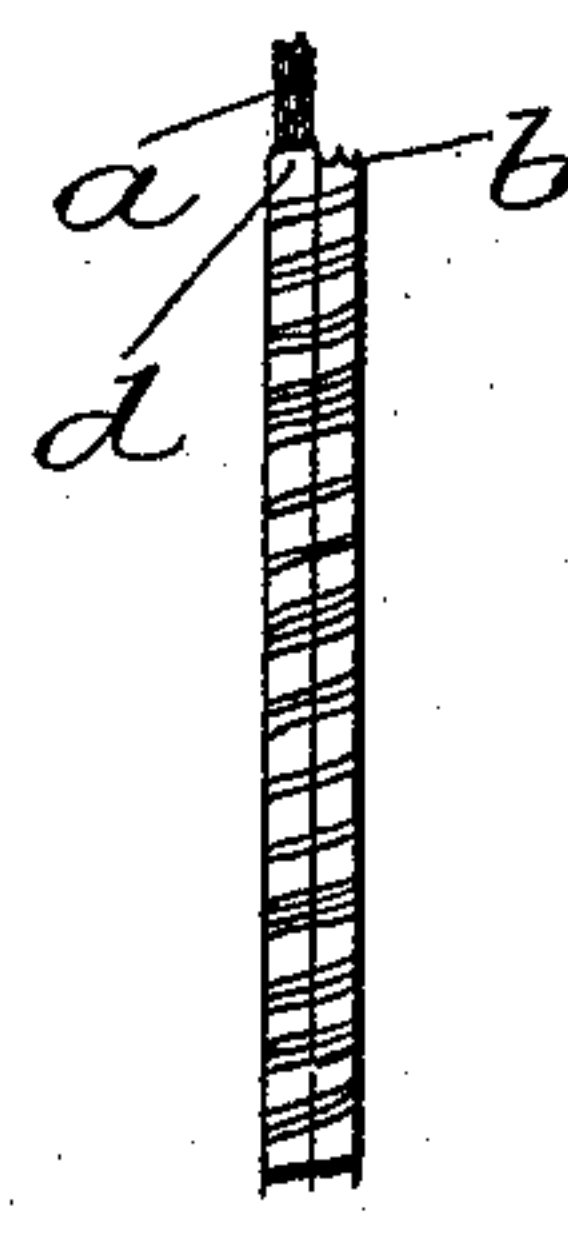


Fig. 1*.

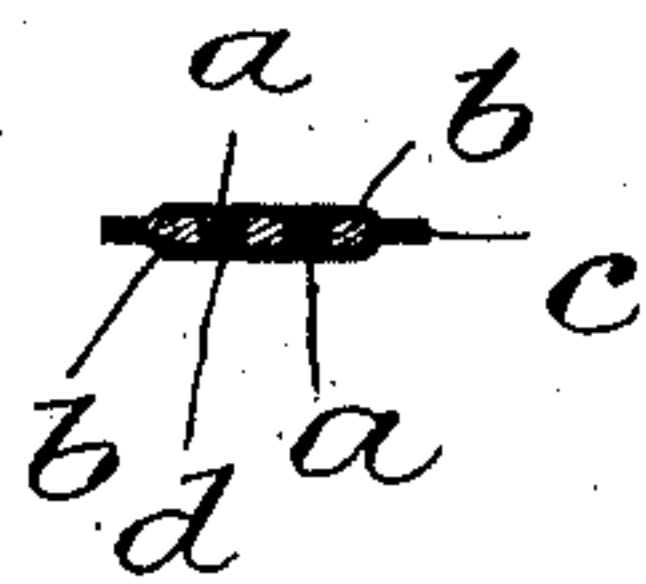


Fig. 2*.

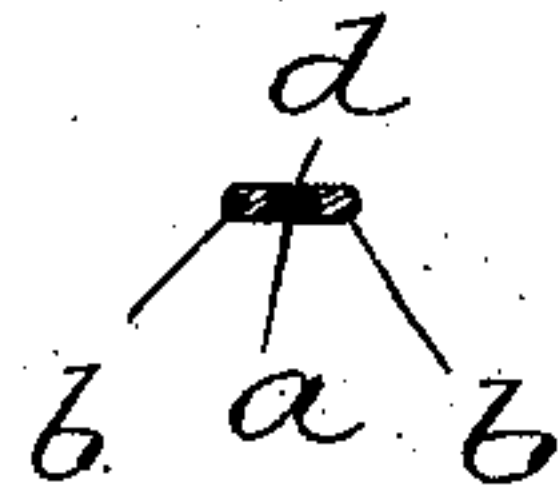


Fig. 3*.

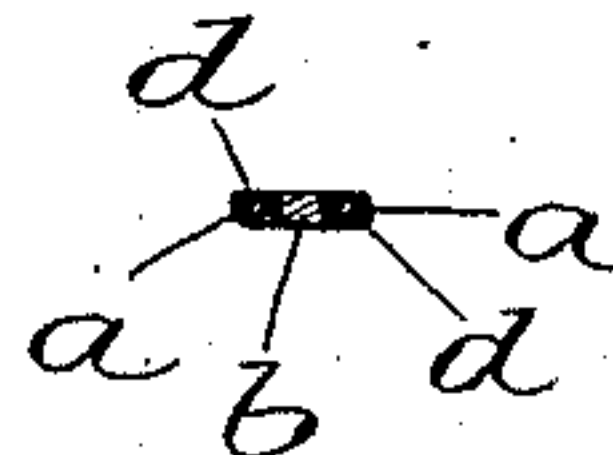


Fig. 4*.



Witnesses:
George Barry Jr.
Henry Thime

Inventor:
Harry Feder
By Brown & Duval
his Attorneys

UNITED STATES PATENT OFFICE.

HARRY FEDER, OF NEW YORK, N. Y.

GARMENT-STIFFENER.

SPECIFICATION forming part of Letters Patent No. 717,373, dated December 30, 1902.

Application filed February 28, 1902. Serial No. 96,050. (No model.)

To all whom it may concern:

Be it known that I, HARRY FEDER, a citizen of the United States, and a resident of the borough of Manhattan, in the city and State of New York, have invented a new and useful Garment-Stiffener, of which the following is a specification.

My invention relates to a garment-stiffener with the object in view of providing an inexpensive durable stiffener of any desired degree of resiliency and capable of receiving with great freedom a needle for stitching a casing thereon.

In the accompanying drawings, Figure 1 is a view of the stiffener with a part of the casing turned down to show the arrangement of the parts composing the body of the stiffener. Fig. 1* represents a transverse section of the same. Figs. 2, 3, and 4 represent stiffener-bodies composed of different members and arrangements of parts, and Figs. 2*, 3*, and 4* represent transverse sections of the same.

The body of the stiffener is composed of one or more strands or parts of horn or bone, preferably horn, and one or more strands or parts of paper. The strands of horn and paper are intimately connected, so that each will be modified in its movement by the other, the horn furnishing the greater amount of stiffness and elasticity and the paper serving to prevent the horn from bending at a sharp angle sufficient to cause it to become set or broken, lessening the weight of the stiffener, and furnishing means for stitching the casing to the stiffener without requiring the needle to pass through the horn or bone.

The horn or bone strands are denoted by *a*, the paper strands by *b*, and the casing of some suitable fabric by *c*.

The horn strands are each preferably protected, as shown, by a paper envelop *d*, wound tightly thereon and so treated with gum or shellac as to effectively protect the strands from the influence of the atmosphere.

The paper strands *b* are formed by winding or twisting a thin sheet or strip of paper into a tight coil, like a cord, and then treating the strand with some suitable waterproofing sub-

stance—such, for example, as rubber solution or shellac.

The stiffener is formed by placing the horn and paper strands side by side and winding them with thread *e* to hold them in position and subsequently covering them with a casing *c*, stitched thereon, the lines of stitching *f* passing along the outer edges of the assembled group of strands and through the intermediate paper strands, one or more of them, as may be found expedient.

In Fig. 1 the stiffener is represented as composed of two horn and three paper strands, in Fig. 2 of one horn and two paper strands, in Fig. 3 of two horn and one paper strand, and in Fig. 4 of one horn and one paper strand.

It is obvious that the relative number of horn and paper strands may be changed at pleasure to secure the required stiffness and elasticity.

It is intended to make the stiffener in a continuous piece and cut it off in lengths to suit.

The continuous paper strand serves to reinforce any possible weak spot in the horn, causing it to bend in a rounded curve instead of a sharp angle, as the tendency is when a weak point chances to come at the point where the bend naturally takes place.

The stiffener is light, supple, and guarded from the influences of the atmosphere and from the moisture of the body and may be furnished at a low cost.

What I claim is—

1. A garment-stiffener composed of horn or bone and resilient paper strands intimately connected to move together.

2. A garment-stiffener composed of horn or bone and resilient paper strands bound together and provided with a fabric casing stitched thereon, a line of stitches passing along a paper strand.

3. A garment-stiffener composed of horn or bone and resilient paper strands, the paper strands being waterproof, and intimately bound to the horn or bone strands to move together therewith.

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4. A garment-stiffener composed of horn or bone and resilient paper strands, the horn or bone strands being each provided with an envelop of paper to protect them from the atmosphere and the paper strands being waterproof and bound to the horn or bone strands to move together therewith.

In testimony that I claim the foregoing as

my invention I have signed my name, in presence of two witnesses, this 26th day of February, 1902. 10

HARRY FEDER.

Witnesses:

FREDK. HAYNES,
HENRY THIEME.