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PATENTED JAN. 2, 1906.

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

FELTED FEATHER FABRIC.

APPLICATION FILED SEPT. 18, 1902.

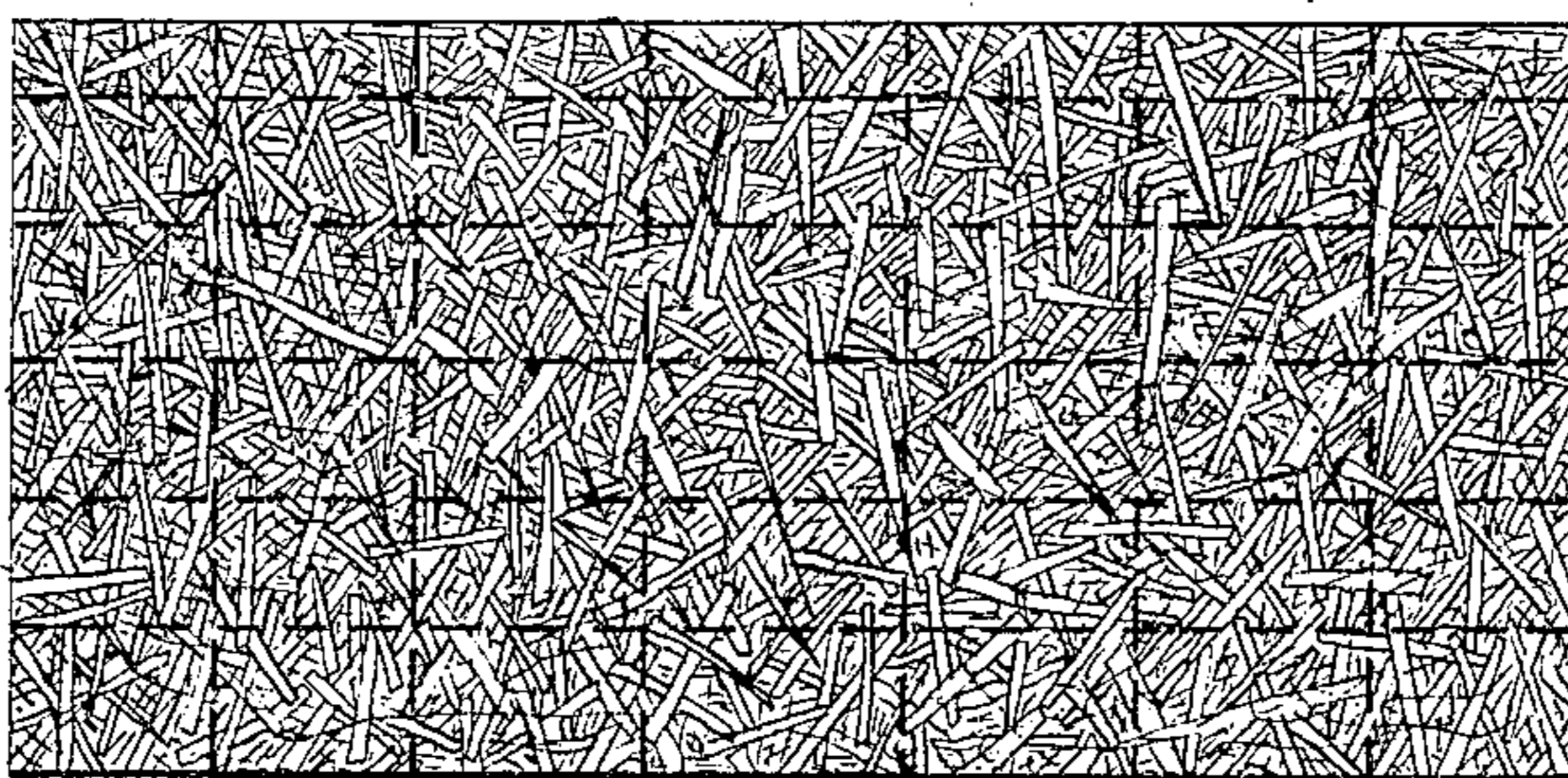


Fig. 1



Fig. 2

Witnesses:

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# UNITED STATES PATENT OFFICE.

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## FELTED FEATHER FABRIC.

No. 808,792.

Specification of Letters Patent.

Patented Jan. 2, 1906.

Application filed September 18, 1902. Serial No. 123,912.

*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 Felted Feather Fabrics, of which the following is a specification.

This invention relates to an improved felt fabric, and particularly to a felt fabric in which feathers are utilized.

The object of this invention is to provide an improved felt fabric in which coarse feather plumage is utilized.

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

The objects of this invention are accomplished by the devices and means pointed out 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 a fabric embodying the features of this invention. Fig. 2 is an edge view of the same.

In the manufacture of this improved fabric where comparatively coarse feathers are used the coarse quills or feathers are first stripped of their plumage, the stems of enamel portion being utilized for stiffeners. The plumage is then subjected to any of the well-known felting processes and felted together so far as possible.

If desired, the fiber may be moistened with a glue solution, and it will be found that the

mass can then be felted to a considerable extent, though only with great difficulty to the extent of securing a durable fabric. The partially-felted material is then passed through a sewing-machine and stitched through in rows and preferably cross-stitched. The stitching thoroughly joins the fibers together and adds very materially to the strength and prevents the roughening by wear. The fabric thus formed is very light and is also substantially waterproof, possessing many advantages over the coarse felt fabric now in use.

When down or plumage of feathers is used, it is not necessary that they should be first fibered.

The fabric is very light and durable and is adapted for use in many relations where only expensive felts are now used. Besides its use as interlining for garments, it can be used as an interlining for any structure requiring a light porous material.

Having thus described this invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A felt fabric consisting of feather plumage felted together, and having rows of stitching through the same.

2. A felt fabric consisting of feathers felted together, having crossed rows of stitching through the same.

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,

MARY A. DAVIDSON.