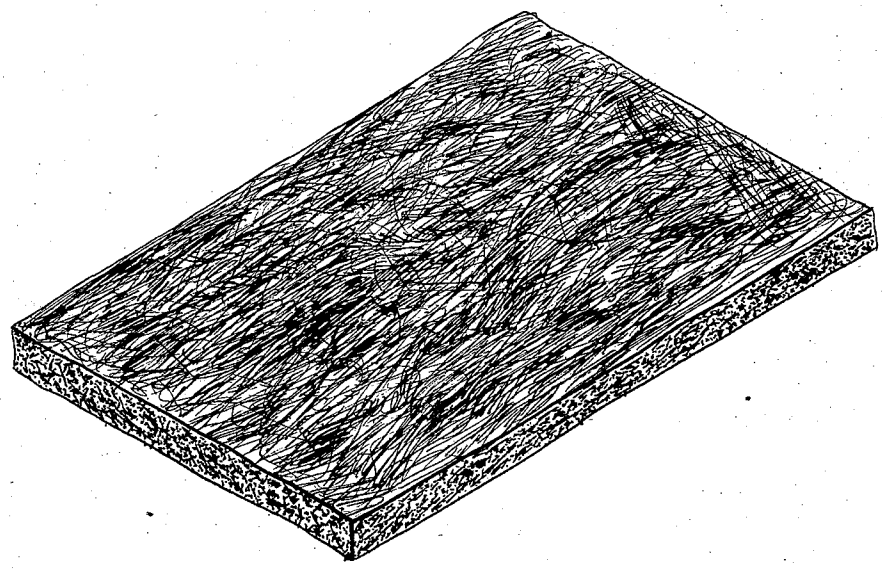
(No Model.)

H. W. MILLER, Jr.

HAIR FELT COVERING.

No. 290,456. Patented Dec. 18, 1883.



Witnesses
James F. Jobin
Harry L. Ashenfelter.

Inventor
Henry W. Miller Jr.
by his Attorneys
Howson & Sons

N. PETERS. Photo-Lithographer. Washington. D. C.

UNITED STATES PATENT OFFICE.

HENRY W. MILLER, JR., OF PHILADELPHIA, PENNSYLVANIA.

HAIR-FELT COVERING.

SPECIFICATION forming part of Letters Patent No. 290,456, dated December 18, 1883.

Application filed August 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. MILLER, Jr., a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Hair-Felt Coverings for Steam-Pipes, &c., of which the following is a specification.

The object of my invention is to make a hair-felt covering for steam-boilers, pipes, &c., of a more durable character than usual; and this object I attain by combining asbestus with the hair prior to felting the two together into one mass. Ordinary hair felt is one of the best non-conducting coverings in use; but it is expensive, as the hair becomes charred and burned and renewal of the covering is demanded.

Attempts have been made to prevent the charring of felted coverings of hair, wool, fur, &c., by cementing layers of asbestus to the felt; but this plan is not effective, as it deprives the covering, in a measure, of its toughness and flexibility and renders it brittle and liable to crack.

The figure of the drawing represents a section of my improved covering.

In carrying out my invention I first break up the asbestus by suitable machinery, so as to destroy the lumps and separate the fibers as thoroughly as possible. The asbestus fibers are then mixed with the hair and fed with the same into the felting-machine, the action of which serves to effectually disseminate the asbestus fibers throughout the felted mass formed by the hair, this intimate admixture of asbestus with the hair serving to prevent the burning or charring of the latter, and thus rendering the felt much more durable than one made of hair only.

I prefer about sixty per cent. of asbestus, by weight, to about forty per cent. of hair.

I am aware that it has been proposed to make a felted sheet composed of asbestus felted in with wool; but, so far as I am aware, it has never been brought into practical use, probably on account of the relatively high price of the wool or the difficulty of felting the wool and asbestus; but by the use of hair I readily felt the materials together, and I produce an economical and practical non-conducting covering.

I claim as my invention—

The herein-described non-conducting covering, consisting of hair felt combined with asbestus fibers distributed throughout the felt, as set forth.

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

HENRY W. MILLER, JR.

Witnesses:

HARRY L. ASHENFELTER,

HARRY SMITH.