

(No Model.)

H. W. JOHNS.  
FIRE PROOF FABRIC.

No. 298,757.

Patented May 20, 1884.

*Fig. 1.*

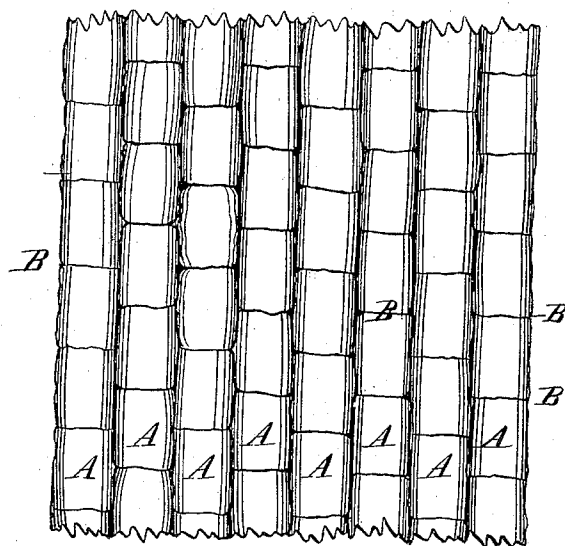


*Fig. 4.*



*Fig. 2.*

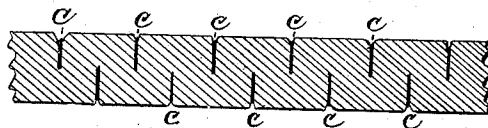
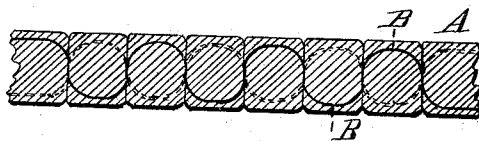


*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRY W. JOHNS, OF NEW YORK, N. Y.

## FIRE-PROOF FABRIC.

SPECIFICATION forming part of Letters Patent No. 298,757, dated May 20, 1884.

Application filed May 10, 1881. (No model.)

### *To all whom it may concern:*

Be it known that I, HENRY W. JOHNS, of New York city, in the county and State of New York, have invented a new and Improved Fire-Proof Fabric, of which the following is such full, clear, and exact description as will enable others skilled in the art to make and use the same, when taken in connection with the accompanying drawings, in which—

Figure 1 is a plan view of the fabric. Fig. 2 is a section through the fabric at right angles to the wires or threads forming the warp. Fig. 3 is a cross-section through the asbestos cords or ropes forming the weft. Fig. 4 is a face view of one of the loose cords or ropes.

My invention consists in so combining asbestos fiber in the form of loose asbestos cord or rope with wire or threads as to get the strength of the wire or fine warp and the fire-proof qualities of the cords or masses of asbestos and the other combinations hereinafter more fully set forth and claimed.

Fibrous asbestos, chrysolite, or like material is formed into a roll, or twisted into loose cords or ropes preferably, so that the cord is soft and porous and capable of being compressed into a much smaller compass. Cords or rolls of fibrous asbestos so made are woven with wire or other strong strands, the wire forming the warp and the loose rolls or ropes of asbestos the weft of the fabric thus made. The asbestos strands being compressible, the wire or other strands are pressed into the asbestos weft on either side alternately thereon, and the weft is thereby indented and bent or curved slightly around the wire, the wires being thus embedded in the asbestos rolls or ropes, the rolls or ropes forming the face of the fabric on either side, in which are indentations or air-spaces formed by the wires crossing the roll or rope and compressing and bending them.

The form of the fabric is shown in the drawings, where A A represent the asbestos rolls or ropes, and B B the wires. Air-spaces are formed at the crossings, and are represented by c c. The fabric thus made has in one direction the strength of the wire or cord forming the warp, and in the other the strength of the rolls or ropes forming the weft, the normal strength of which latter is very much increased by the close binding and holding of the warp, as they are woven together.

This fabric has the fire-proof and non-conducting qualities of asbestos, and contains many air-spaces, owing to the loose and compressible nature of the roll or rope, which add very much to the non-conducting qualities of the fabric. The quality of the fiber of asbestos makes it particularly adapted to this form of fabric, as the fiber retains its springy quality and prevents the air-spaces from becoming permanently closed. Either or both of the faces of the fabric may be coated with sizing, glue, or similar material, if desired, to give a close finish to the surface and inclose air-spaces.

The fabric thus made is well adapted to be used as a non-conducting covering for steam-boilers and other heated surfaces, and as a screen or shield from blast-furnaces; also, for fireproof lining for floors, partitions, carpets, &c.

The lightness, pliability, and fire-proof quality of the fabric made as herein described adapts it for many other useful purposes.

Heretofore and before this my invention fabrics have been made of fibrous asbestos yarn or threads woven together into a fabric, and fabrics have also been made of rolls or ropes of cotton knitted together by a finer cord or thread of the same material, but never before this my invention have loose and compressible asbestos cords or ropes of asbestos been woven with a warp of small strands into a fabric, and made so that the faces of the fabric are substantially pure asbestos.

What I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a woven fabric consisting of a loose and compressible asbestos cord or rope and a warp of small strands, substantially as specified.

2. The fabric herein described, consisting of the warp and loose and compressible asbestos cord or rope weft, combined as set forth, whereby the faces of the fabric are substantially formed of asbestos and the weft is embedded in the asbestos cord, as specified.

3. The combination of loose and compressible rolls or ropes of asbestos with small strands, as specified, forming a woven fabric, and a coating of sizing, as set forth.

HENRY W. JOHNS.

Witnesses:

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