

# United States Patent Office.

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*Letters Patent No. 81,641, dated September 1, 1868.*

## IMPROVED FABRIC FOR ROOFING AND OTHER PURPOSES.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, HENRY W. JOHNS, of the city, county, and State of New York, have invented a new and improved Felt-Sheeting for Roofing and other Purposes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same.

The object of this invention is to provide a felted sheet of one or more ply, the felt or sheet being either composed of asbestos felted in with wool, or wool pulp rendered fire-proof, or approximately so, by the introduction of the asbestos, or amianthus, a flexible, fibrous mineral found abundantly in nature.

The felt is formed by combining asbestos with the pulp used for the manufacture of coarse felt goods, or other pulps, as paper-pulp and the like, and pressing this pulp into a sheet or web by the process well known to those skilled in the manufacture of felt.

By this process is produced a felted sheet, into which fabric the asbestos enters in any desired proportions, varying according to the particular purpose for which the sheet is designed. When the sheet is intended for roofing purposes, the asbestos should form from one-quarter to one-half of the substance of the fabric.

The felt so prepared is then treated with a water-proofing process, which consists in the saturation of the sheet in any suitable water-proofing liquid, as oils, mixed pigments, resinous or other glutinous or viscid body, precisely as the textile sheetings heretofore prepared for similar purposes are treated, nothing new being claimed in this part of the process.

When the sheeting is designed for the sheathing of vessels, previous to putting on the cappen, I use a pulp similar to that used for manufacturing the ordinary paper felt or sheathing-felt, so called, in combination with either hemp, flax, or manilla, (or the three in combination,) and the asbestos.

The hemp, flax, and manilla are not indispensable constituents, being only used to confer a greater degree of toughness to the sheet, and the proportions, when used, are about three parts in ten, the remaining seven consisting of the proper pulp and the asbestos, in equal proportions.

The sheeting, when designed for fire-proof purposes, is made in several ply or thicknesses of felt or paper, with an interlining of asbestos cement.

The most perfect fire-proof quality is obtained when the felt or paper sheets contain a suitable quantity of asbestos in the fabric, as above described, although this feature is not indispensably necessary to obtain a sheet of considerable fire-proof quality.

The paper or felt sheets are united by a cement, which is largely composed of asbestos. It is mingled with any suitable cement or adhesive material only for the purpose of uniting the proximate sheets, and thus obtaining a complete asbestos-lined sheet.

This last form may be water-proofed with any suitable oil or paint-mixture known to the arts, but to obtain a more perfect article, I use the asbestos roof-casting or cement described in my previous patent.

When designed for covering steam-pipes and boilers, the sheet is composed of two or more ply of asbestos felt, with a very thick interlining or stratum of asbestos, or a plastic compound, composed mainly of asbestos bound together in a thick mat or slab by cement or oleaginous matter.

The bottom ply, or that which is immediately in contact with the boiler, is composed largely of asbestos, with clay or other earthy matter, so as to be less affected by the heat.

I append a schedule of the different modifications of my improved asbestos sheeting.

#### *No. 1. For Roofing, and other Kindred Purposes.*

Two or three ply of tarred paper, or "dry felt," so called, joined by an adhesive composition, composed of asbestos and mineral pitch or asphaltum, or its equivalent.

#### *No. 2. For Sheathing Boilers, Steam-Pipes, and the like.*

A sheeting or webbing, composed of asbestos felted with hemp or manilla, or both, and interposed between two ply of sheathing-paper or dry felt, (so called,) the asbestos sheet being saturated with a solution of India rubber, to cause the adherence of the paper sheathing to it.

*No. 3. For Covering Boilers, Steam-Pipes, or Sheathing Purposes.*

A sheet or web, composed of asbestos felted with a wool flock or pulp, similar to that used in making felt hats.

*No. 4. For Steam-Pipes and Boilers, and other Purposes.*

Asbestos felted with paper-pulp, and formed in sheets, or a continuous roll, by any ordinary paper-mill machinery.

These constituents may be modified by the substitution of other textile material, as flax, oakum, or any suitable vegetable fibre, to supply the place of the analogous constituents set forth.

The preparation of these materials for admixture is set forth in the following:

First. The asbestos is crushed or reduced to a flocculent mass.

Second. The asbestos is thoroughly mixed with wool, or other suitable fibrous equivalent.

Third. The mass is then spread on cloth, and beaten or "whipped," so called, until it forms a light and even sheet.

Fourth. The sheet thus formed is spread on cloth, and steamed while being pressed between two metal surfaces, in the manner common in making felted goods.

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

The combination of asbestos with felted or pulped matter, to form roofing and sheathing-sheets, all substantially as described.

The above specification of my invention signed by me, this 27th day of May, 1868.

HENRY W. JOHNS.

Witnesses:

FRANK BLOCKLEY,  
ALEX. F. ROBERTS.