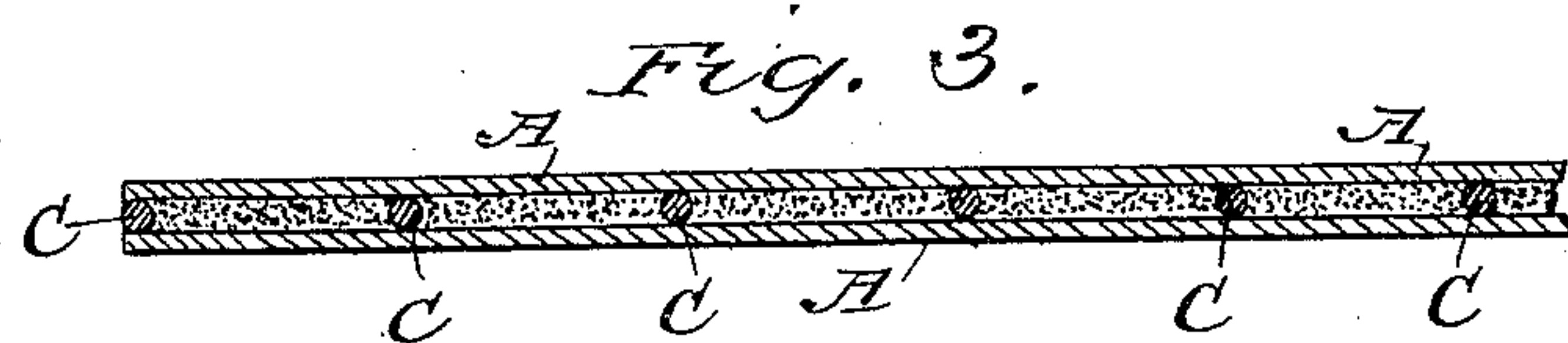
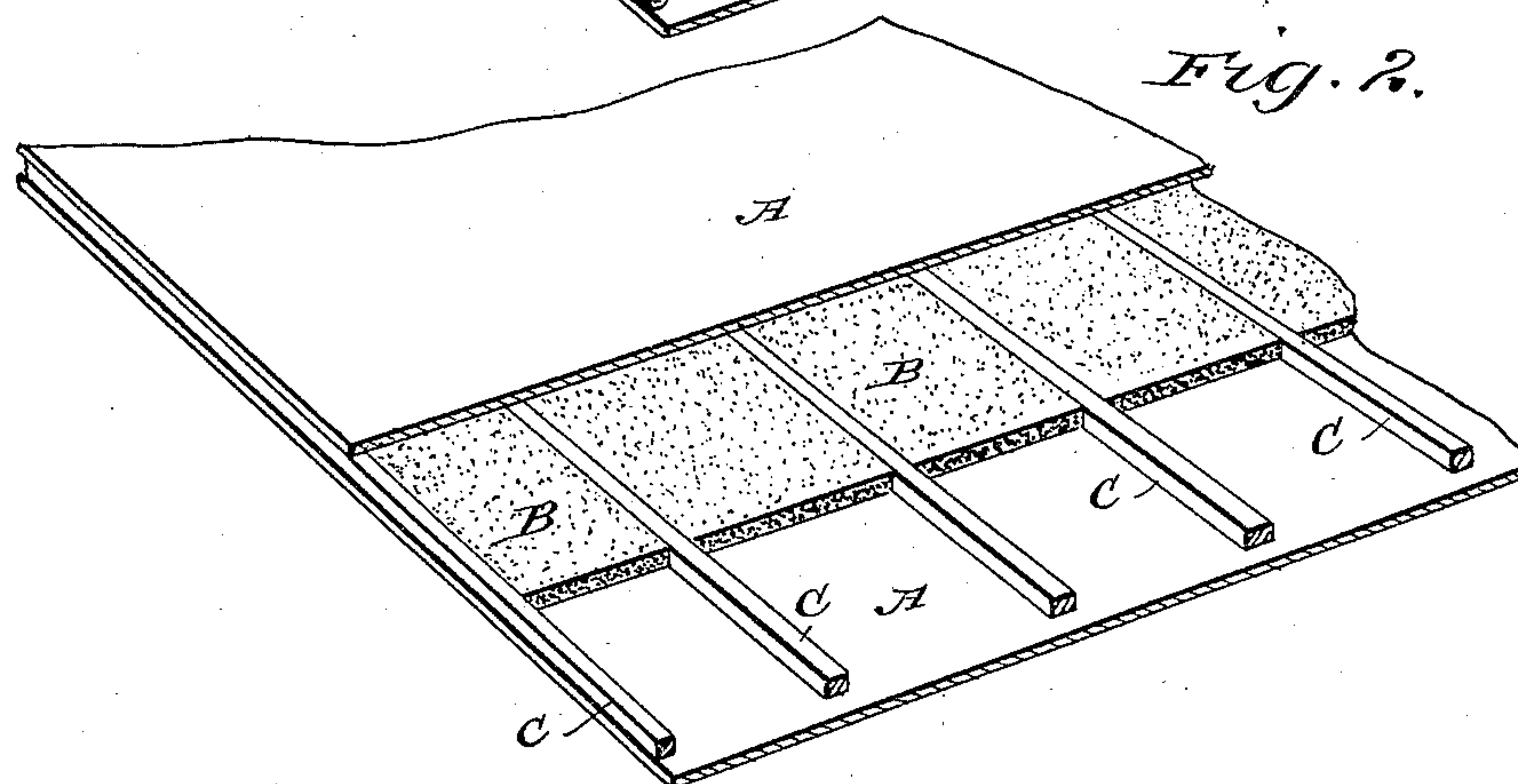
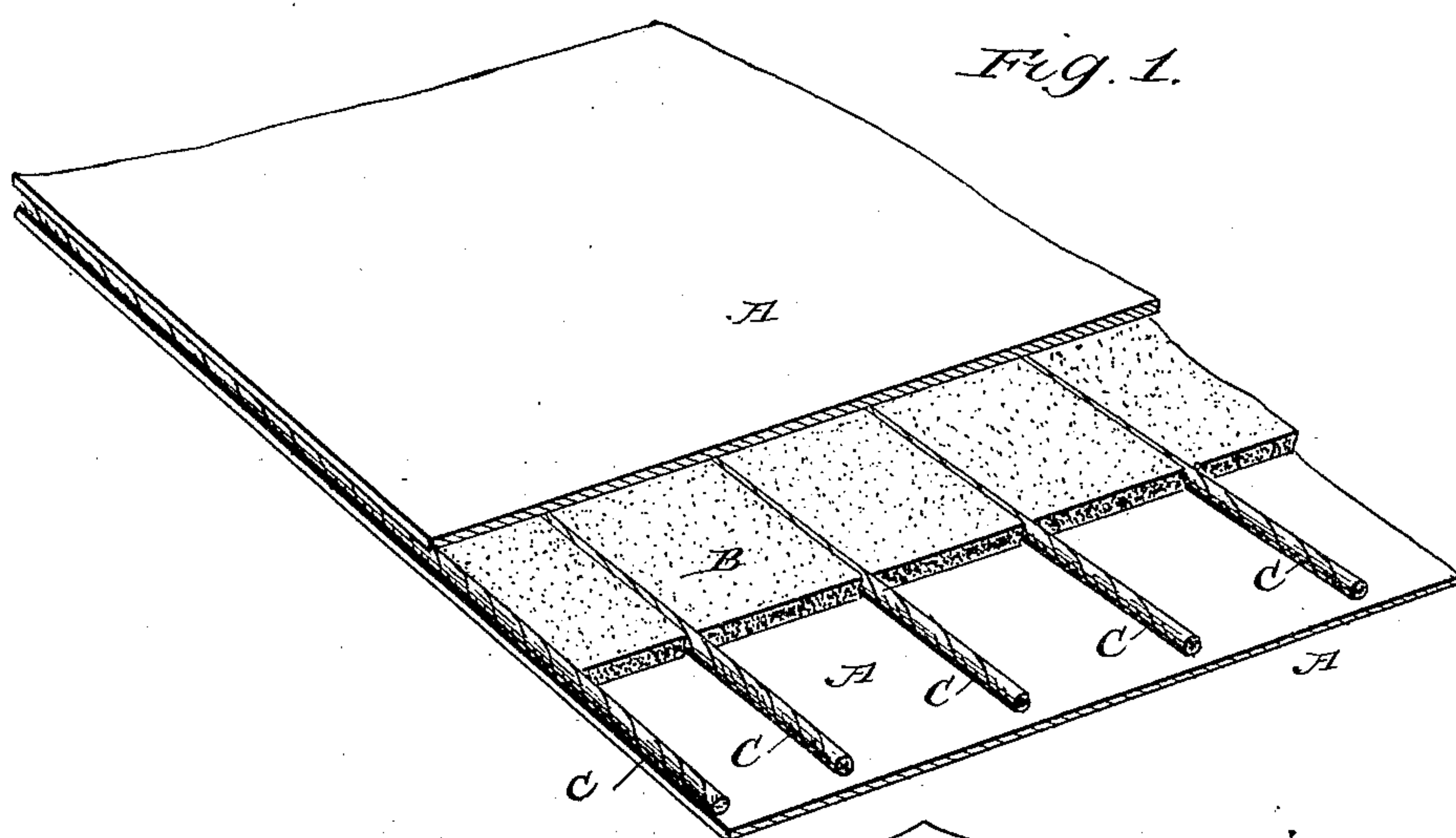


(No Model.)

W. H. H. CHILDS.
ROOFING FABRIC.

No. 429,885.

Patented June 10, 1890.



WITNESSES:

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WILLIAM H. H. CHILDS, OF BROOKLYN, NEW YORK.

ROOFING FABRIC.

SPECIFICATION forming part of Letters Patent No. 429,885, dated June 10, 1890.

Application filed August 24, 1889. Serial No. 321,904. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. H. CHILDS, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Roofing Fabric, of which the following is a full, clear, and exact description.

The invention consists of an improved fabric for roofing, covering piles or other subaqueous wooden structures, for sheathing ships and houses, and for other purposes requiring water-proof material.

In the following description reference will be had to the accompanying drawings, forming part of this specification, and in which identical letters refer to corresponding parts.

Hitherto roofing and sheathing paper has been made by placing layers of asphalt, coal-tar, pitch, or other similar substances between two layers of paper, or by impregnating paper therewith. Considerable difficulty attended the use of this class of goods, because the tar, asphalt, or other suitable material tended to liquefy at a high temperature on exposure to the heat of the sun or other source, and to creep and exude between the paper, or where two layers of paper were used one would be liable to slide upon the other. This occurred frequently in transportation, so that the rolls of paper became damaged to such an extent that they could not be used. It also occurred upon inclined roofs and in other similar situations. In order to avoid these difficulties, various means have been adopted. In some cases a marginal portion of the paper is left uncoated in order to allow that much latitude for creeping. In other cases the margins of the paper are pasted together by an aqueous or other kind of paste to pocket the resisting material, and, finally, in some cases, a material distilling at a very high temperature has been used; but this possesses the difficulty that it is brittle and the material lacks pliability.

My invention consists in a fabric of the following structure: Between two layers of paper, felt, or other fabric is introduced a layer of definite thickness of coal-tar, pitch, or other bituminous material of like nature. Simultaneously with the layer are introduced between the sheets of paper or other fabric very narrow strips of the same fabric or cords or wires. These cords, wires, or strips are to

be of precisely the same thickness as the layer, and after they are in place the whole is pressed together, so as to adhere.

If the cords were thicker than the layer, they would cause the surface of the paper to be rough, and would tend to wear through it and show on the outside. If thinner than the layer, they would be embedded in it, and would not act sufficiently to secure it. By having the filaments of exactly the same thickness as the layer between them these difficulties are avoided, and the material between the two layers is securely pocketed thereby. These filaments may be disposed in any desired pattern, longitudinally, transversely, or obliquely.

Referring to the drawings Figure 1 illustrates my new and improved fabric, in which cords or other round filament are employed. Fig. 2 illustrates the same fabric when thin strips of felt or other material of square or rectangular section are used. Fig. 3 illustrates a cross-section of the same.

A A represent the upper and lower sheets of paper or felt, which inclose between themselves the layer B of tar or other bituminous material of definite thickness, as shown. C C represent cords, wires, felt strips, or other filaments, of diameter equal to the thickness of the inclosed bituminous layer, in conjunction with the felt or paper inclosing and pocketing the said layer.

In carrying out my invention I may employ any machine for making sheathing-paper, such as shown in United States Letters Patent No. 361,050, of April 12, 1887, as granted to me. The rollers in such machine would be set at such distance from each other as to admit of the passage of two thicknesses of paper and one of cord or filaments simultaneously. These parts would be fed through it, the filaments lying between the paper sheets, and the bituminous or other composition used would be introduced at the same time; or I may simply roll out my intermediate layer of the determined thickness, cut it into narrow strips, and lay them upon a sheet of paper side by side separated by the filaments of thickness equal to their own. On placing a second sheet of paper above the whole and pressing and heating, if required, the fabric described in this specification would be produced.

In this way a fabric is provided having the following peculiarities: It consists of two protective layers of paper or other fabric, between which a layer of definite thickness of bituminous or like material is placed. The latter material, tending to creep or exude, is pocketed by the use of filaments of a thickness equal to itself.

I am aware that paper has been strengthened by the use of threads that have been embedded in the paper-pulp in various patterns in order to avoid its tearing, and that by a simpler construction threads have been glued or pasted to paper or pasted between two sheets of paper in order to strengthen them. What I claim is different from this and embodies the distinct idea of pocketing

or incasing a film of definite thickness in true receptacles.

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

The fabric above described, consisting of an upper and lower layer of paper or other fabric, between which is interposed a layer of bituminous or other similar material, such material being unwoven, held in place by cords, ribbons, or other filamentous material, of a thickness uniformly equal to that of the central layer, as set forth.

WILLIAM H. H. CHILDS.

Witnesses:

R. R. MABIE,
EVERSLEY CHILDS.