J. R. JACK.

ANGLE PIECE OF LAMINATED MATERIAL.

APPLICATION FILED MAR. 23, 1908.

906,233. Patented Dec. 8, 1908.

Fig. 1.

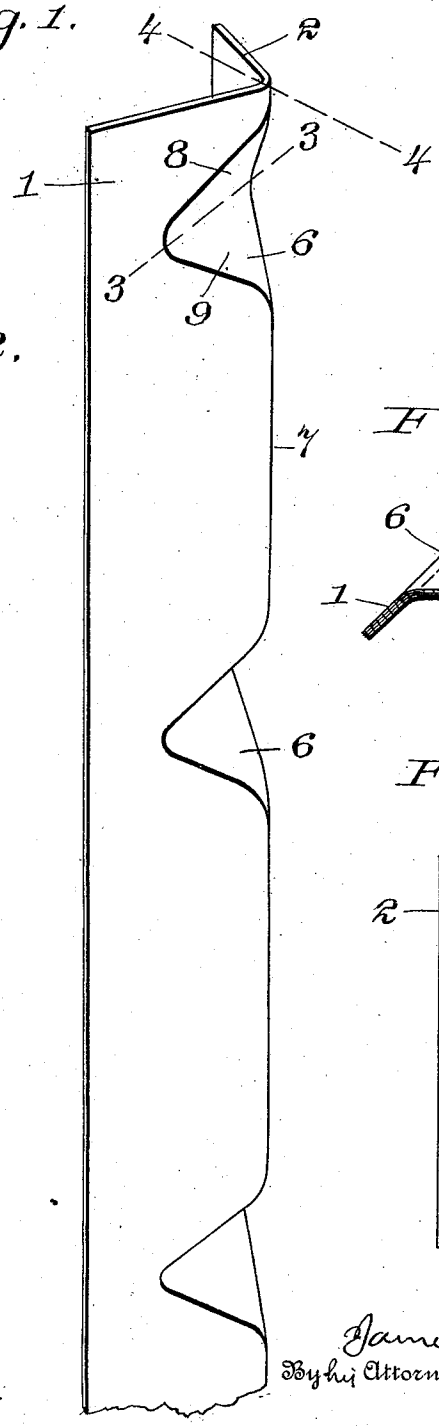


Fig. 2.

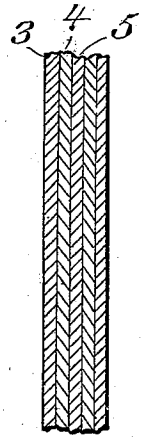


Fig. 3.

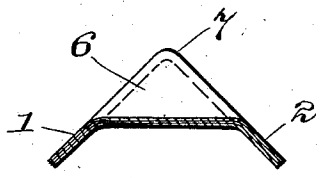
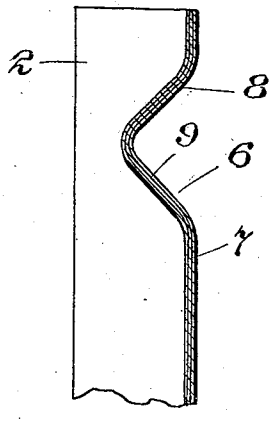


Fig. 4.



Witnesses:

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ANGLE-PIECE OF LAMINATED MATERIAL.

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Application filed March 23, 1908. Serial No. 422,679.

To all whom it may concern:

Be it known that I, JAMES R. JACK, a citizen of the United States of America, and a resident of the borough of Brooklyn, city of New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Angle-Pieces of Laminated Material, of which the following is a specification.

My invention relates to building materials and consists of an improved form of "angle piece" made of laminated non-metallic material, such as the material known as "transite", which is composed of about 80 per cent. hydraulic cement and 20 per cent. asbestos fiber. This material is formed of a series of thin layers of cement and asbestos mixture rolled up in a wet state on the roll of a paper or board making machine, and removed therefrom in the shape of flat plates, flexible, but of small tensile strength, in their wet condition. After the cement has been allowed to set for some weeks the material becomes as hard as stone.

While the plates are still wet and soft they can be bent or pressed into certain simple shapes, as long as the material is not subjected to any considerable tensile strain in such pressing. One form used extensively in the arts is the plain "angle piece" in which one portion of a plate is bent up at substantially right angles to the remaining portion. These angle pieces are liable to break in use along the line of the bend, as they are often subjected to strains at this point. It is difficult to brace these angle pieces, as ordinary braces or connecting webs of material cannot be formed integral with the rest of the piece in the process of manufacture, as is done in metal constructions and with other materials that can be cast or molded. I have invented an efficient form of such bracing for these transite angles which can be formed in the process of manufacture, without the consumption of extra material and without danger of breaking or tearing the soft wet plate.

The best form of my invention at present known to me is illustrated in the accompanying sheet of drawings in which,

Figure 1 is a perspective view of my improved angle piece. Fig. 2 is an exaggerated detail cross-section of portion of the plate out of which the angle piece is formed, indicating the laminated structure of such plate. Fig. 3 is a cross section on line 3—3 of Fig. 1, and Fig. 4 is a cross section on line 4—4 of Fig. 1.

Throughout the drawings like reference figures indicate like parts.

The angle piece is composed of a plate of transite material of even thickness with the two portions 1 and 2 bent at an angle one to the other, the meeting edges of the two portions of the plate or apex of the angle being at 7. This plate is composed of a series of thin layers or laminæ, 3, 4, 5, indicated in Fig. 2. This laminated structure cannot stand any considerable tension or distortion while wet without tearing or breaking. After the cement has set, the material is hard as stone and cannot be bent or shaped. While the material is still wet and soft, I put it in a press or former which forms the angle, and I so shape the former as to produce the broad depressions 6, 6, 6, in the face of the angle 7. These depressions are usually approximately right angled in cross section, the portion 8 being approximately at right angles to the portion 9, (see Fig. 4). Thus no sharp angles or bends are formed in the plate at any point, and the material of the plate is nowhere stretched in process of manufacture, but on the contrary the material of the cross webs or braces 8 and 9 is slightly compressed and solidified in formation. For this reason no rupture of any of the layers even on the outside of any bend, occurs.

The result is a particularly strong and well braced angle piece which is capable of resisting strains in every direction after the transite material of which it is formed has been allowed to set and harden into its final stone like condition. These angle pieces are useful in forming the corners of various structures made out of transite material, and particularly advantageous in the construction of smoke jacks for locomotive round houses, as metal angle pieces if used in such construction would be rapidly destroyed by the acids contained in the gases from the locomotive smoke stacks.

If the depressed portions 8 and 9 are cut by a plane passing through the line 7 forming the edge of the angle and perpendicular to all portions of the depressed surfaces 8 and 9, the cross section so formed would show the parts 8 and 9 at right angles one to the other, as in Fig. 4. This angle could be made greater or less than a right angle, within lim-

its, but if it be much less than a right angle there is a tendency to stretch and break the laminated plate in its formation, and if it be much more than a right angle the efficiency of the bracing is diminished. I prefer to make this approximately a right angle as shown.

Having, therefore, described my invention, I claim:

1. An angle piece of laminated material of even thickness, having braces consisting of depressed portions of the material located along the apex of the angle at various points.

2. An angle piece of laminated material of even thickness, having braces consisting of depressed portions of the material located along the apex of the angle at various points, the depressed portions being approximately right angled in cross section along a plane perpendicular to all portions of the depressed surfaces.

3. An angled piece formed of a superposed series of thin layers of a composition of hydraulic cement and asbestos fiber, and having braces extending across the angle consisting of depressed integral portions of the material.

Signed at Brooklyn this 20th day of March 1908.

JAMES R. JACK.

Witnesses:
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WILBUR SILLMAN.