J. O. BOYLAN.

BUILT-UP ROOFING.

APPLICATION FILED MAR. 27, 1920.

1,363,559.

Patented Dec. 28, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

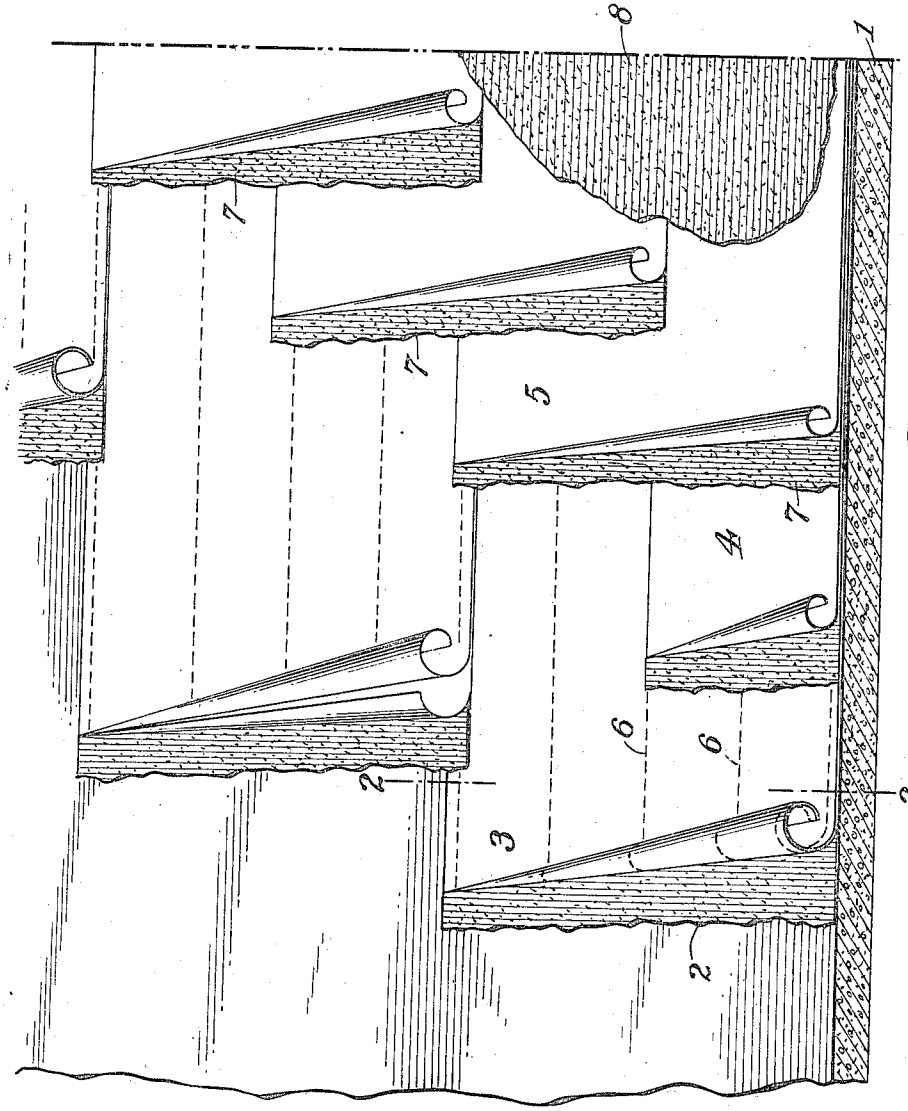
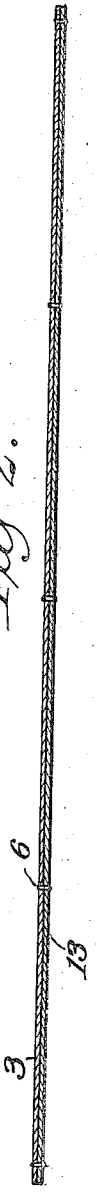


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

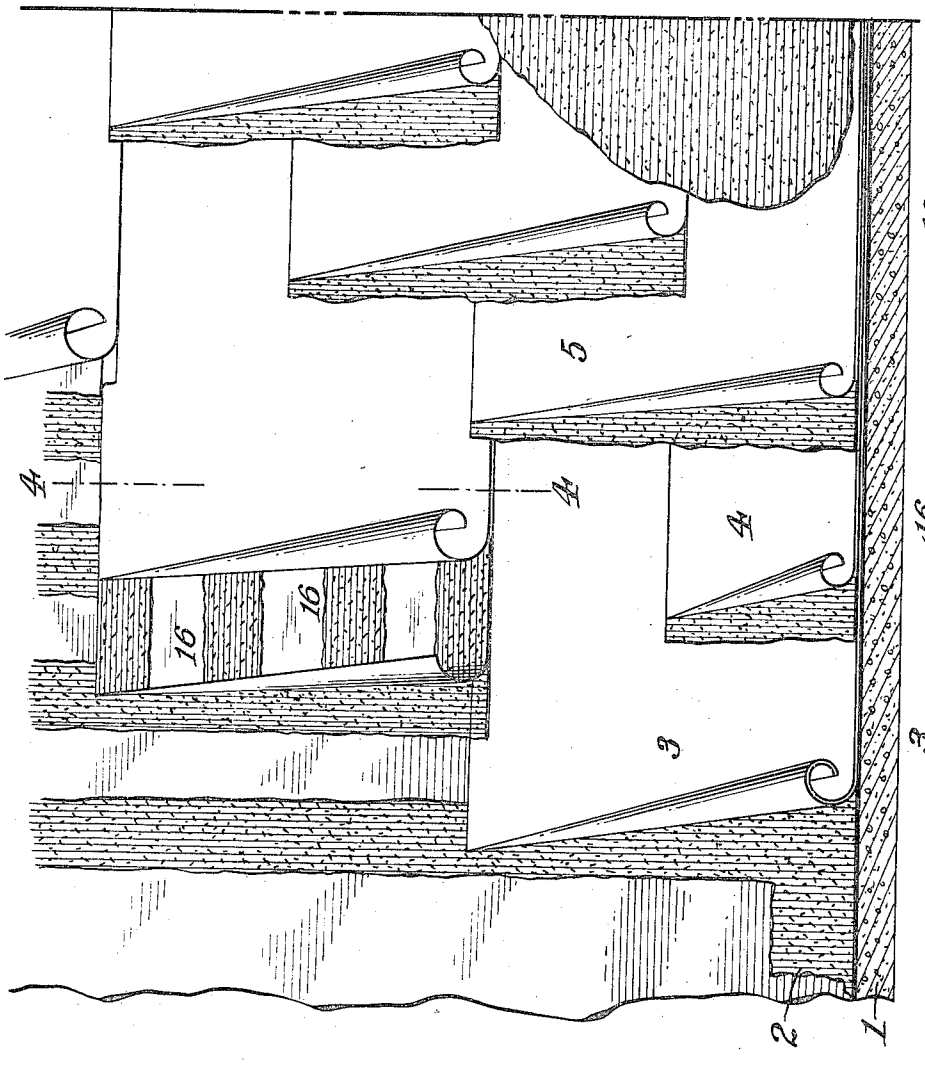
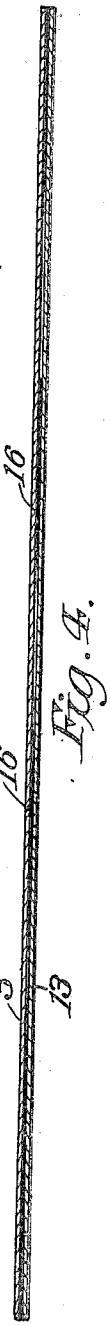


Fig. 4.



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UNITED STATES PATENT OFFICE.

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BUILT-UP ROOFING.

1,363,559. Specification of Letters Patent. Patented Dec. 28, 1920.

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To all whom it may concern:

Be it known that I, JAMES OWEN BOYLAN, a citizen of the United States of America, residing at Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Built-Up Roofing, of which the following is a specification.

My invention relates to roofing built up with several layers of some water-proofed felt, or similar fabric which is usually supplied in rolls and cemented to the roof structure. The invention is particularly applicable to such roofs as have a cement or other monolithic base liable to crack under varying conditions of dryness, and temperature producing expansion and contraction. In such cases it is the practice to cement the layers of felt to the base and to one another, and then, if the base cracks, the superposed felt layers are usually torn apart and a leak in the roof results. My invention overcomes this difficulty by having among the felt layers one member which is composed of two layers, not cemented together over the greater portion of their opposing faces, but otherwise held together sufficiently by some elastic fastening means to prevent the upper layers from being stripped off by the wind or other force.

The best form of structure embodying my invention at present known to me is illustrated in the accompanying two sheets of drawings, in which—

Figure 1 is a perspective view of a section of roofing constructed in accordance with one form of my invention, with parts broken away, or partly separated;

Fig. 2 is a cross section of one member of the combination shown in Fig. 1 on line 2—2, of Fig. 1;

Fig. 3 is a view similar to Fig. 1 showing a modification; and

Fig. 4 is a cross section on the line 4—4 of Fig. 3.

Throughout the drawings like reference characters indicate like parts.

1, is the base of the roofing which is usually the deck of the roof structure of a building formed of concrete or similar monolithic material. 2, represents a layer of cold asphaltic priming material applied to the roof base 1, to serve primarily in producing a cementing surface. Upon this layer are unrolled double members composed of sheets of fabric 3 and 13, which have been fastened together preferably in the factory where they were manufactured by the rows of stitching 6, 6, in the preferred construction shown in Figs. 1 and 2. These double expansion elements of the roof structure are slightly overlapped at their edges in the usual manner and then are usually covered by several additional layers of ordinary roofing felt as indicated at 4 and 5, the sheets 3, 4 and 5, being cemented together over their entire opposing surfaces by the usual layers of hot asphalt 7, 7, and the usual top surfacing of hot or cold asphalt is finally applied as indicated at 8.

In use, any cracking of the monolithic base 1, will evidently result, when my invention is employed, in merely tearing apart the lower sheet 13, of the expansion member, leaving the upper sheet 3, and the superposed sheets 4 and 5 intact, as the elasticity of the stitching permits considerable relative movement of the lower sheet 13, without transmission of the same to the upper sheet 3.

In the modified construction shown in Figs. 3 and 4, stitching 6, is replaced by relatively narrow lines of cement 16, 16. In this case, cracks in the lower sheet 13, between the cementing lines 16, 16, will certainly not be reproduced in the upper sheet 3, and cracks produced in the lower sheet 13, under the narrow lines of cement 16, may not be transmitted to the upper sheet by reason of the slight elasticity of the narrow films of cement.

The two sheets 3 and 13, assembled with their inner faces practically free from cementing material and held together by some partially elastic connecting means, may be inserted to advangtage in any form of built-up roofing structure, as, wherever placed, they will serve to limit the cracking or tearing action produced by the base on the lower sheet of the expansion member and leave the upper sheet and any superposed sheets of water-proof fabric whole and water-tight.

Having described my invention, I claim:

1. In a built-up roofing the combination, with a suitable foundation, of a series of superposed sheet members some of which are cemented together over practically their en-

tire adjacent surfaces, the two lower sheets fastened together only at points of relatively small area and considerable distances apart.

2. In a built-up roofing designed to be cemented to a concrete base, the combination of several sheet members of water-proofed felt arranged in layers superposed one upon another and some of which are cemented together at all points of contact, the lowermost of said sheet members being connected together only by stitching along separate lines.

JAMES OWEN BOYLAN.