

UNITED STATES PATENT OFFICE.

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COMPOSITE ROOFING.

1,110,330.

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To all whom it may concern:

Be it known that I, FRANKLIN J. McCLASKEY, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Composite Roofing, of which the following is a specification.

My invention relates to composite roofing. The object thereof is to provide a roofing composed of various layers of material which shall render the same moisture and fire-proof.

Another object is to provide such roofing material with moisture and fire-proof joints which permit expansion and contraction without causing the same to crack or warp.

My invention, while devised primarily for roofing, may be used for walls, ceilings, floors, etc.

Referring to the accompanying drawings, Figure 1 is a fragment of a roof provided with my improved roofing, parts being in section to show the internal structure. Fig. 2 is a plan of a roof or the like provided with sections of my roofing connected by my improved joints, parts being broken away to show the internal structure. Fig. 3 is a section on the line III—III, Fig. 2.

On the drawing, 1 represents the ordinary roofing boards or base on which my improved roofing is laid. On the roofing boards, I lay preferably one or more sheets 2 of asbestos or other fire-proof material to protect the superposed material. Several layers of wool-felt, or burlap or canvas, or any two or more of them, saturated with asphalt or other hydro-carbon cement arranged alternately with layers of asphalt, or other hydro-carbon cement are superposed on the asbestos 2. I do not limit myself to any number or arrangement of these superposed layers as their number and arrangement will vary with the purposes and attendant conditions. I have shown the layer 3 of asphalt on the asbestos 2 and a layer 4 of wool-felt or the like saturated with asphalt on the asphalt layer 3. A layer 5 of asphalt or similar material lies on the layer 4 and a layer 6 of wool-felt or equivalent material lies on the layer 5. A layer 7 of asphalt or equivalent lies on the layer 6. The number of these alternate layers may be made greater or less than the number shown. The layers of wool-felt or its equivalent, as

burlap or canvas may follow one another in any order and may have any desired thickness. However, I prefer to use what is known as two-ply wool-felt. On the last or uppermost of the superposed layers, for example on the layer 7 of asphalt, I place a course or layer 8 of broken slag or stone, gravel, or the like, preferably pressed partly into the layer 7 so as to adhere to the same very tightly. The layer 8 is quite rough or uneven as shown on Fig. 1. I place a wire reinforcement 9, preferably a wire mesh or netting, and then I pour on the layer 8 and the netting 9 a course or layer 10 of Portland cement mixed with sand and broken slag or stone, gravel, or the like. This layer 11 runs through the meshes of the netting and firmly binds the layer 8 and the reinforcement 9 together and prevents the access of fire or moisture to asphaltic and other layers beneath. The surface of the layer 10 may, if preferred, be finished with finer material as shown.

The roofing described may be made into blocks or strips 11 which are placed when used side by side with the adjacent edges separated to form spaces. The layer 2 of asbestos may, if desired, to make the bottom entirely fire-proof, be made to extend across the spaces 12, as shown in Fig. 3.

I prefer to place strips 14 of copper or other sheet metal in the spaces 12, the edges of the strips 14 lying between the layers of the strips 11, and the central portion of the strips 14 being arched. As the strips 11 of roofing expand the arch of the metal strip can follow without the edges pulling out of the strips 11. The strips 14 are elastic or flexible water and fire-proof metal connections. Even though the layers of roofing material above the strips 14 should crack, water could not pass below the said strips.

I claim—

1. In a composite roofing, superposed layers of adhesive waterproof material, a layer of coarse material adherent to the top of the adhesive waterproof material, an open metal reinforcement on the coarse material, and a layer of Portland cement combined with coarse material poured on the first named coarse material, and through and over the reinforcement the coarse material containing large fragments firmly anchored in the Portland cement on one side of the reinforcement and extending through the open

metal reinforcement, and anchored in the Portland cement on the other side of the reinforcement.

2. In a composite roofing, superposed layers of adhesive waterproof material, a layer of coarse material adherent to the top of the adhesive waterproof material, an open metal reinforcement on the coarse material, and a layer of Portland cement combined with coarse material poured on the first named coarse material, and through and over the reinforcement, and fire-proof material in contact with the lowest layer of the

adherent waterproof material the coarse material containing large fragments firmly anchored in the Portland cement on one side of the reinforcement and extending through the open metal reinforcement, and anchored in the Portland cement on the other side of the reinforcement.

Signed at Pittsburgh, Pa., this 7th day of November, 1912.

FRANKLIN J. McCLASKEY.

Witnesses:-

ALICE E. DUFF,
F. N. BARBER.