

(No Model.)

J. BROKENSHERE.

Construction of Composite Roofs.

No. 235,737.

Patented Dec. 21, 1880.

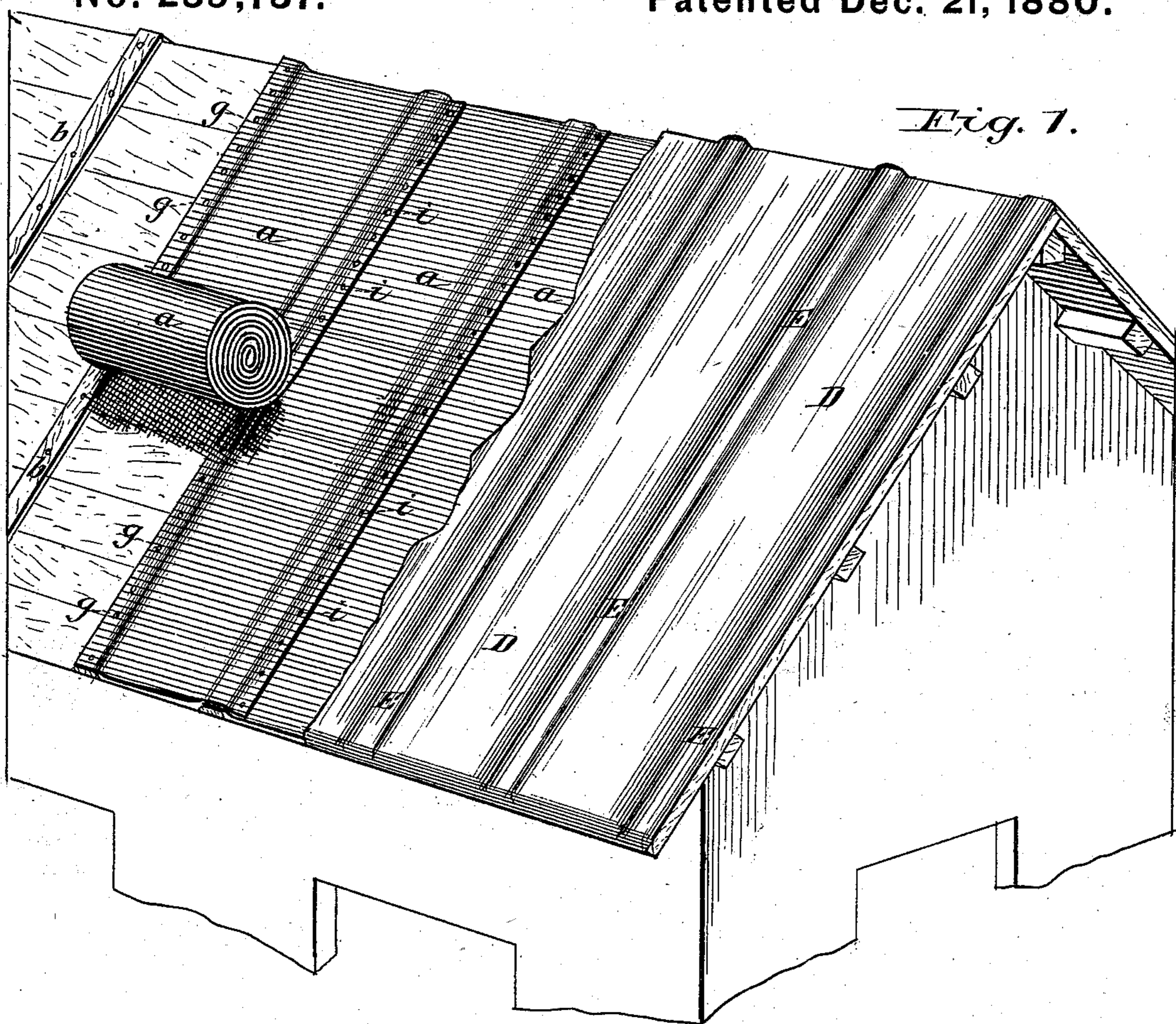


Fig. 2.

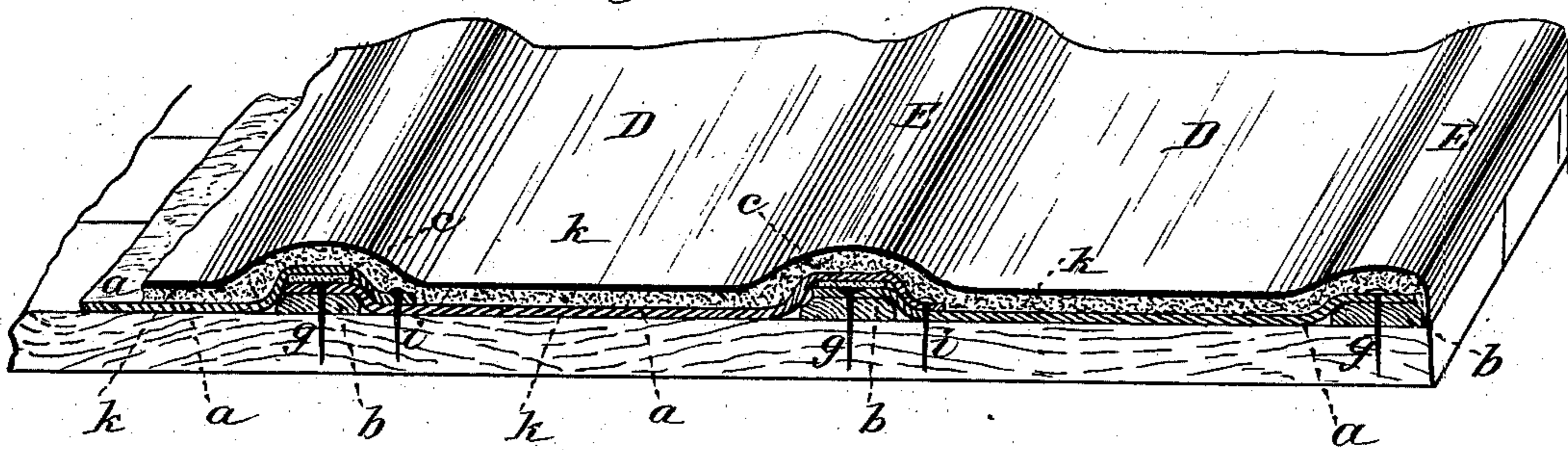
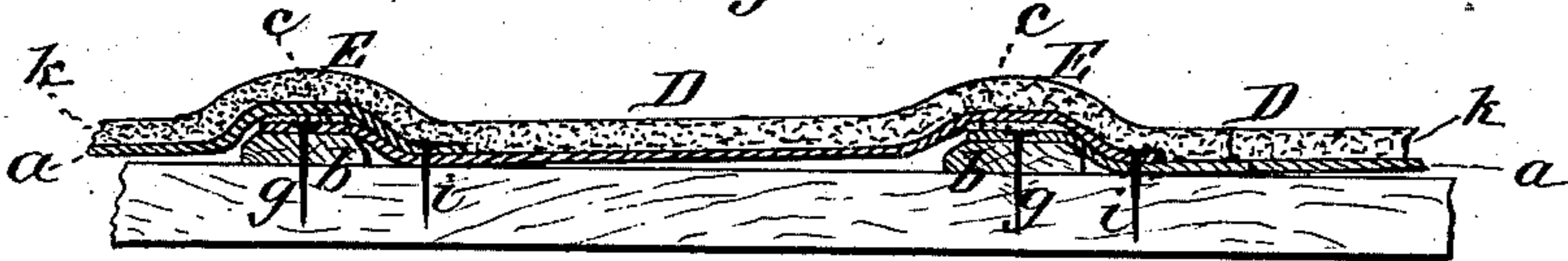


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN BROKENSHIRE, OF KINGSTON, ONTARIO, CANADA.

CONSTRUCTION OF COMPOSITE ROOFS.

SPECIFICATION forming part of Letters Patent No. 235,737, dated December 21, 1880.

Application filed June 16, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN BROKENSHIRE, a subject of the Queen of Great Britain and Ireland, residing at Kingston, in the county of Frontenac, Province of Ontario, Dominion of Canada, have invented new and useful Improvements in Construction of Composite Roofs, of which the following is a specification.

My invention relates to that class of roofs for buildings known popularly as "felt roofs;" but my said invention differs essentially from the usual construction, and looks to covering the felt with a composition of my own invention, but may be used with any approved roofing composition.

My improvement consists in the method of constructing a roof of this class by a peculiar joining of the felt-rolls laid lengthwise from ridge to eaves; and its object is, primarily, to compensate for the contraction and expansion caused by cold or heat; and, secondarily, to form water-courses between the joints, and to thoroughly cover said joints, substantially as hereinafter described, and as illustrated in the accompanying drawings, in which—

Figure 1 represents a view, in perspective, of a roof embracing my invention; Fig. 2, a section, showing the steps of the construction, and Fig. 3 a diagram indicating the lines of contraction and expansion.

I have observed that in the common application of felt on the roof horizontally or lengthwise of the roof a great difficulty is found, caused by the contraction and expansion of the roof-coating by the change of temperature from hot to cold, and vice versa, thus causing the roofing composition to crack and leak. In order to remedy this difficulty I take No. 1 felt—the thickest and best procurable—and use preferably only one thickness, laying the felt up and down the roof from ridge to eaves. After laying the first roll, *a*, I put laths or thin strips of wood *b* underneath the edge, thus causing a raise in the joint. Then, after securing the felt to the lath and sheathing by small nails, *g*, I put on a coat of my cement over the edge of the felt thus laid, as at *c*, before laying the next roll. I then overlap the edge of the next roll about four inches over

said raised joint, and then secure the same by a row of tacks, *i*, and repeat this process until the felt is all laid. I then spread the finishing-coat of my cement, *k*, over all, from a quarter to three-eighths of an inch thick, as may be deemed necessary, and then throw over the whole a good coat of clean sharp sand, to absorb tar and form a crust, which, when dry, becomes hard. I thus prevent water from lying on the joints, because, meeting no obstruction, it must run off in the intervening courses *D*, formed by the raised joints *E*, as shown.

It must be observed that the felt sags down between the joints sufficiently to make up for the expansion and contraction. For instance, if the coating contracts, the felt, being wider than the space between the joints, straightens up from the roof, and when the coating expands the felt settles down in its former position, and the composition coating, being of a flexible nature, rises or falls with the felt without the least sign of cracking.

It will be seen that the felt-rolls are fastened partially upon the laths and partially upon the sheathing to the side of the laths, as the drawings show, so as to leave a free overlap to enhance the capacity of the felt which carries the composition to rise and fall freely from contraction and expansion caused by changes of temperature.

The coating which I prefer to use is of my own invention, and is composed of slag or dross of iron, coal, clinkers, ashes, and tar, compounded in about the following manner, viz: Take any given quantity of slag and clinkers as they come from the furnace and grind to a powder. Then take about three parts of the ground product and two parts of clean ashes, adding a little sand to make it spread easy, using proper judgment as to the quality of ingredients.

This composition has only one inflammable ingredient—the tar—and that is neutralized when mixed with the others.

I claim—

1. A roof constructed by laying the felt from ridge to eaves and tacking it to strips or laths, covering the joint so made with roofing-cement, then lapping said joint with the edge of the

next felt-roll, tacking the same, and covering the whole with composition, thereby leaving intervening water-courses between raised covered joints, substantially as described.

- 5 2. In a roof constructed by laying the felt from ridge to eaves and tacking it to strips or laths, covering the joint so made with roofing-cement, then lapping said joint with the edge of the next felt-roll, tacking the same, and covering the whole with composition or cement,
10 as set forth, the said felt-rolls tacked at one side to the lath and at the other side to the

side of the lath on the sheathing, thereby permitting of freedom of movement caused by contraction and expansion in thermal changes, 15 substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN BROKENSHIRE.

Witnesses:

A. E. H. JOHNSON,

J. W. HAMILTON JOHNSON.