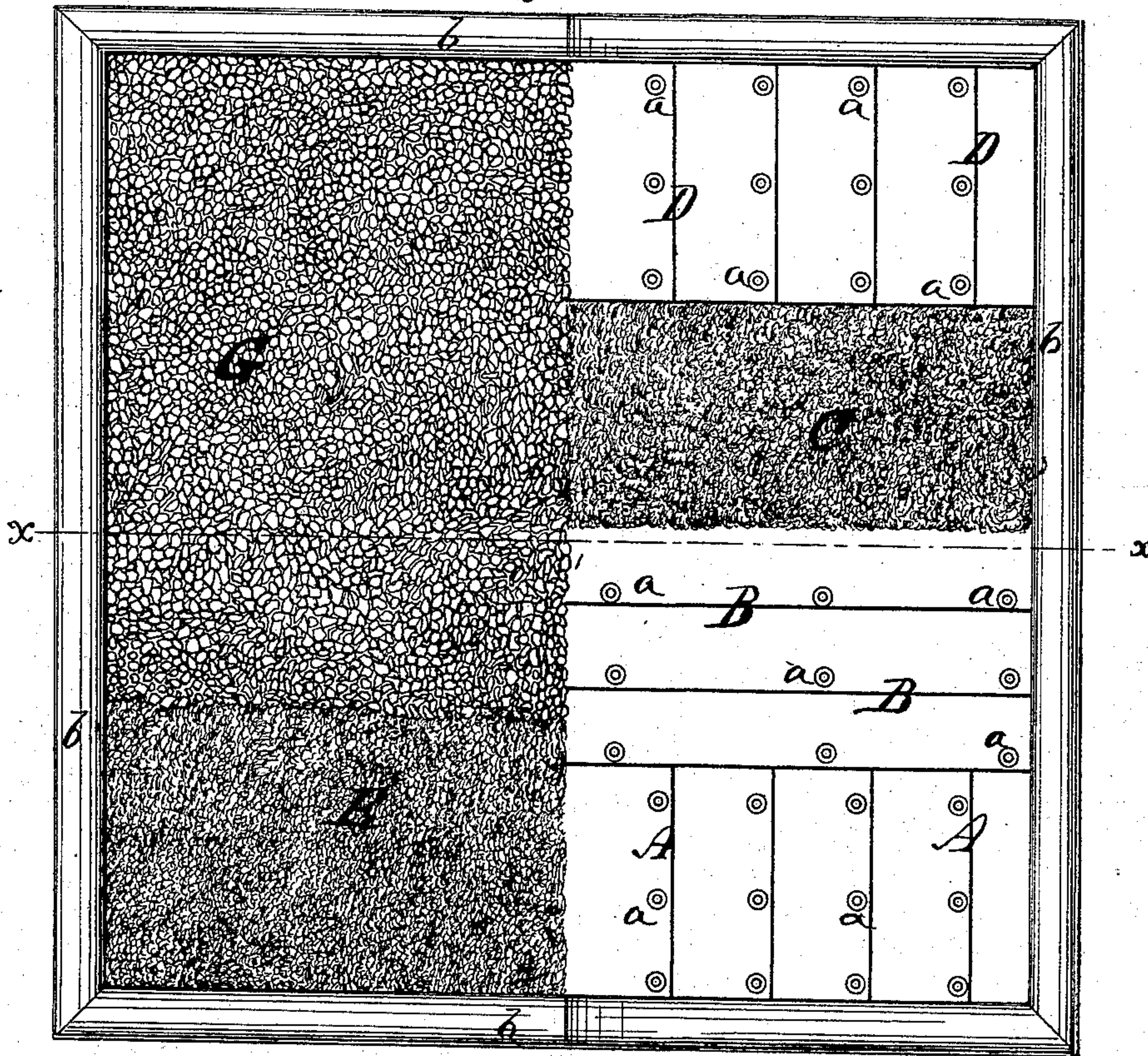


**J. KITTREDGE.**  
**Composition-Roofs.**

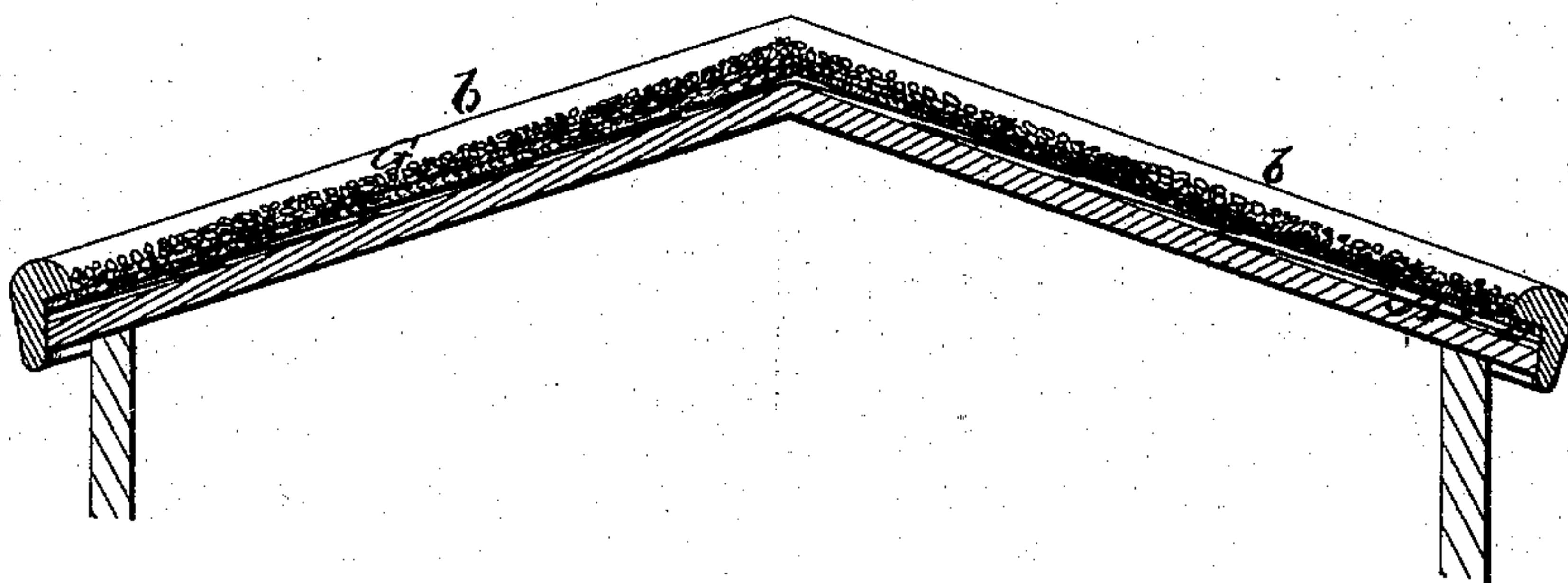
No. 156,639.

Patented Nov. 10, 1874.

*Fig. 1.*



*Fig. 2.*



*Witnesses:*  
*R. D. Smith*  
*J. B. Townsend*

*Inventor,*  
*Jeduthan Kittredge,*  
*By his atty.,*  
*Jas. Brown.*



# UNITED STATES PATENT OFFICE.

JEDUTHAN KITTREDGE, OF LOWELL, MASSACHUSETTS.

## IMPROVEMENT IN COMPOSITION ROOFS.

Specification forming part of Letters Patent No. **156,639**, dated November 10, 1874; application filed June 20, 1873.

*To all whom it may concern:*

Be it known that I, JEDUTHAN KITTREDGE, of Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain Improvements in Covering Roofs, of which the following is a specification:

My invention relates to an improved method of covering roofs, in the manner hereinafter described, whereby the roof is perfectly fire-proof, not liable to crack, and perfectly impervious to water. It consists in the peculiar arrangement or application of the materials herein named, in the manner herein specified.

In the first place, I lay two thicknesses of dry tarred paper upon the roof, one thickness being at right angles to the other. These lap over each other about two inches, and are kept in their places on the roof by means of tin washers about one inch in diameter, having in their centers a small hole for the reception of the tacks, or by equivalent means. This paper laps upon the molding C. A molding is, or may be, placed around the edge of the roof, thereby preventing the tar from escaping from the roof and running down upon the outside of the house; while, by not having the surface of the paper tarred at its connection with the roof, all of the trouble heretofore arising when the roof is first tarred, and then tarred paper applied, is avoided, for the paper not adhering by its entire surface to the roofing-boards, as it would do if tarred, said roofing-boards do not, in shrinking, cause the covering to tear asunder and render the roof leaky. I then cover the paper with a mixture of plastic slate, tar, and wool-waste. I then cover this mixture with another layer of tarred paper in strips placed at right angles to those previously laid. I then apply another quantity of the mixture of plastic slate, tar, and wool-waste, after which I cover the whole with a coating of gravel or coarse sand.

In the accompanying drawing, Figure 1 represents a top view of a roof covered according to my invention, one side being partly uncovered, to show the different layers of tarred paper and composition, and the other side with a part of the top gravel removed; Fig. 2, a transverse vertical section of the same in the line *xx*, Fig. 1.

The first layer of tarred paper is represent-

ed at A; the second at B; the intermediate layer of wool-waste, with plastic slate and tar, at C; the upper layer of tarred paper at D; the upper layer of wool-waste, plastic slate, and tar at E; and the layer of gravel covering all at G. The tin washers and nails are shown at *a a*, and the edge molding at *b*.

I have found by experience that roofs covered as hereinbefore stated will not crack on their covering; and in consequence of the large quantity of plastic slate mixed with the tar, the composition is non-combustible after "setting hard," which takes place in a short time. If, in the meantime, before the composition becomes hard, fire should come in contact with it, the wood molding would prevent the tar, while in a semi-fluid condition, from flowing down the sides of the house and thereby being a fertile source of communication for the flame to adjoining buildings, as is frequently the case when roofs are covered in the ordinary manner.

The two surfaces of tarred paper, by being laid at right angles to each other, allow of the contraction and expansion of the roof and composition covering without the slightest danger of "cracking," which has been the greatest objection heretofore to composition roofs.

I have also found that wool-waste, by being fibrous, allows the covering to expand and contract, consequent upon changes in the temperature, without the slightest tendency to cracking.

I do not claim a composition of tar, gravel, sand, and tarred paper; neither do I claim a composition of tar with wool-waste, or the manner of applying the same to roofs; but

What I do claim is—

A roof-covering composed of two transversely-crossing under layers of dry tarred paper, then a coating of a composition of wool-waste with plastic slate and tar, then another layer of tarred paper, transverse to the previous paper layer, then another coating of wool-waste in composition with plastic slating and tar, and a top coating of gravel, all substantially as herein specified.

JEDUTHAN KITTREDGE.

Witnesses:

ABEL T. ATHERTON,  
W. E. WHITEHEAD.