(No Model.)

J. C. ZALLÉE.

ROOF.

No. 438,973. Patented Oct. 21, 1890.

Fig. 1.

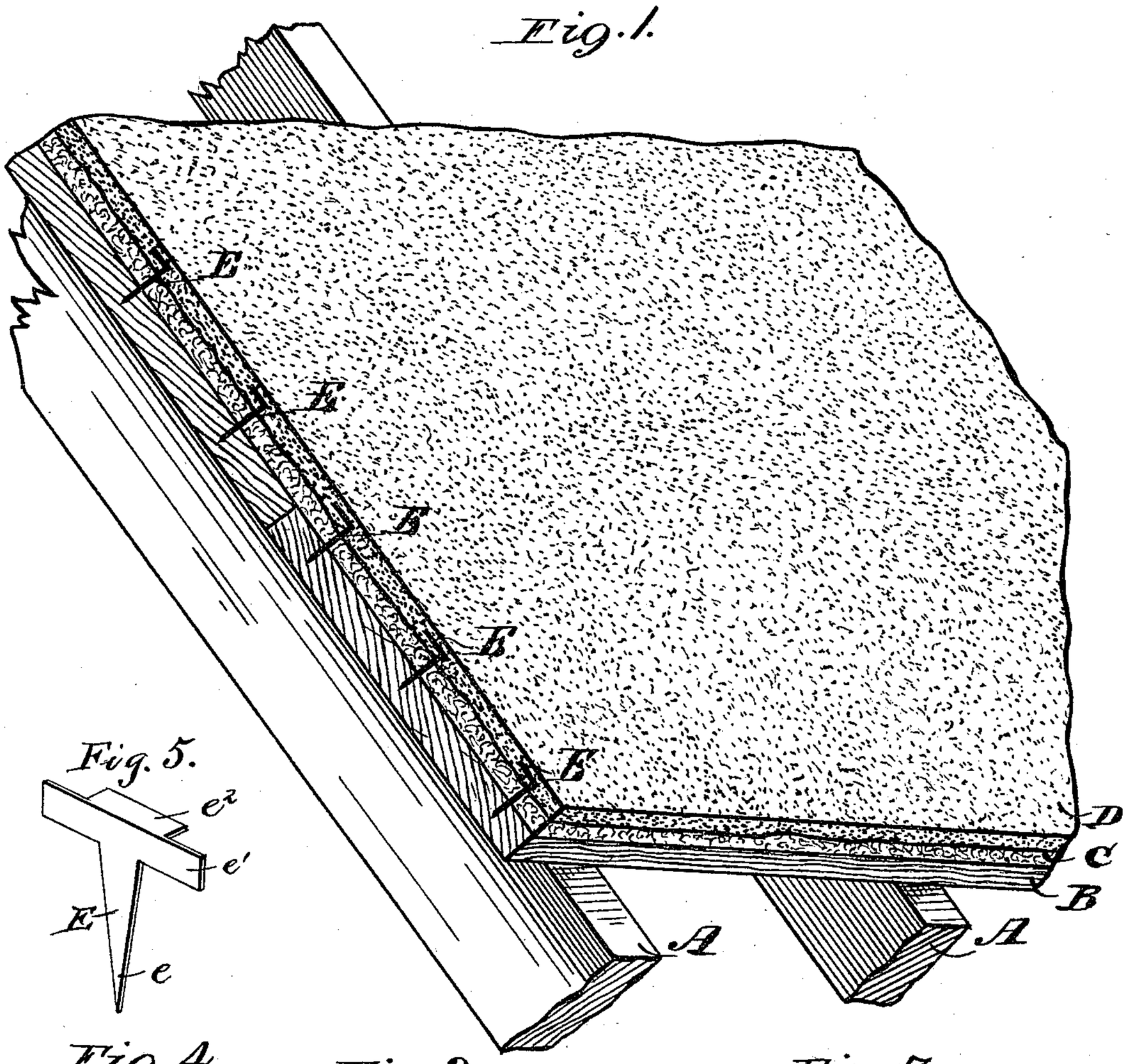


Fig. 5.

Fig. 4.

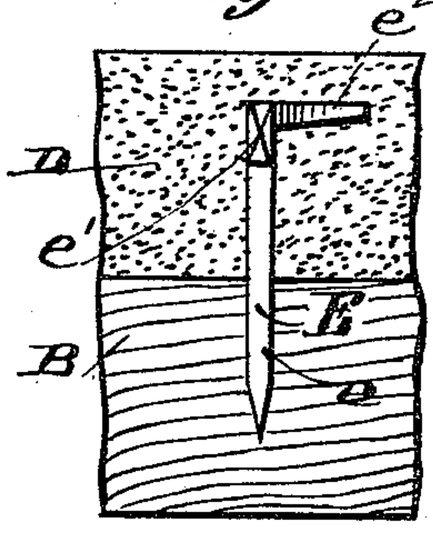


Fig. 2.

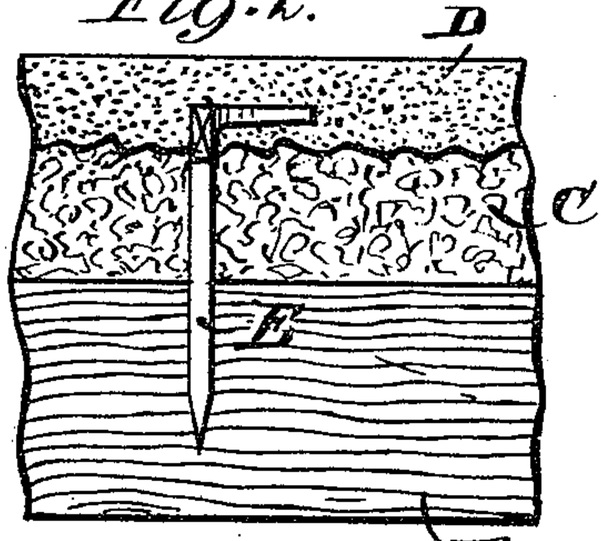


Fig. 3.

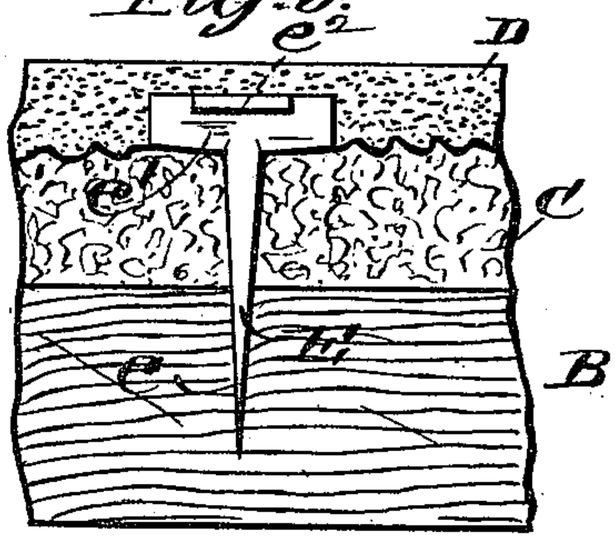
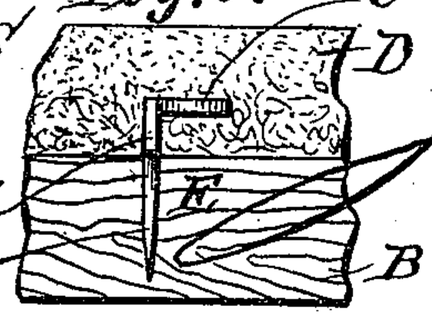


Fig. 6.



WITNESSES

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ROOF.

SPECIFICATION forming part of Letters Patent No. 438,973, dated October 21, 1890.

Application filed February 13, 1890. Serial No. 340,376. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. ZALLÉE, of St. Louis, Missouri, have made a new and useful Improvement in Roofs, of which the following is a full, clear, and exact description.

This invention for its leading feature has for its object a roof not only strong and durable and capable of being readily constructed, but one, also, which is both water-proof and reasonably fire-proof. The improved roof, furthermore, has a desirable appearance and is readily cleaned.

It consists, mainly, in the following: first, a layer of boards supported upon suitable rafters or other supports; second, a layer of tar and gravel, and, third, a covering of cement, or cement and other earthy elements suitable of being bonded with cement, all substantially as is hereinafter set forth and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is a view in perspective showing a portion of a roof constructed according to the principle of the improvement; Figs. 2, 3, and 4, details upon an enlarged scale, Fig. 2 being a vertical section extending parallel with the rafters; Fig. 3, a vertical section at right angles to that of Fig. 2, and Fig. 4 a section analogous to that of Fig. 2, but showing the boards and cement covering only. Fig. 5 is a perspective view of one of the spikes; Fig. 6, a detail in section, showing the spikes driven down nearly to the rafter or wood.

The same letters of reference denote the same parts.

A A represent ordinary rafters, and B B are the boards attached to the rafters. Upon the boards is laid a coat or layer of tar and gravel, such as is often used in roofing. Upon the tar-and-gravel layer C is applied the layer D of cement, substantially as shown. The tar and gravel are applied to the boards B substantially in the ordinary manner, and when applied they constitute a water-proof covering for the roof, but one not wholly desirable as a protection against fire, especially such as incident to the modern use of electric wires. This difficulty is practically obviated by the application of the cement covering D, the cement, as well as any of the earthy elements—such as sand, ashes, lime, &c.—mixed with the cement being substantially fire-proof.

The cement layer D can, as well as the tar and gravel layer C, be of any suitable thickness. The roughness of the layer C, owing to the gravel present, is utilized for holding the cement layer D in position. To more effectually hold the parts of the roof in place, projections, preferably in the form of the hooked spikes, are used. The spike-points *e* enter the boards B and the spike-heads e^2 are embedded in the cement. The spikes are also preferably widened below the head at *e'*, substantially as shown in Figs. 2 and 3. The broad head of the spike holds the composition from slipping down the incline of the roof, and the flange or widened part anchors the composition from rising off the roof to extend the hold of the spike upon the cement. By this means the cement layer is advantageously held in place upon an inclined roof, and it in turn serves, by reason of its being interlocked, as described, therewith, to confine the tar-and-gravel layer better in place than when a tar-and-gravel layer only is used. The cement layer is also useful in shielding the under layer from the sun's heat.

In some positions the cement layer can be applied directly to the boards B, as shown in Fig. 4. The head e^2 and the widened part *e'* at the top of each spike evidently extend their hold on the cement and aid, therefore, in binding the layers together.

The herein-described cement layer may be applied, also, to wooden cornices as a protection against fire from electric wires and other causes.

I claim—

1. A roof composed of a layer of boards, a layer of mixed tar and gravel, a layer of suitable cement upon the layer of tar and gravel, and spikes driven into the layer of boards through the layer of tar and gravel, with their upper ends embedded in and below the outer surface of the layer of cement, substantially as specified.

2. In a roof, the combination, with the layer of boards B, the layer of mixed tar and gravel C, and the layer of cement D outside the layer of tar and gravel, of the spikes E, driven through the layer of tar and gravel into the

layer of boards and provided at their upper ends with the heads e^2 and widened below the head at e' and embedded in the cement below the outer surface thereof, which nails serve to bind the layer of tar and gravel between the layer of boards and layer of cement, substantially as specified.

3. In a roof, the combination of the boards, the layer of cement, and the spikes E, having heads e^2, widened at e', substantially as and for the purposes set forth.

Witness my hand this 8th day of February, 1890.

JOHN C. ZALLÉE.

Witnesses:
C. D. MOODY,
D. W. A. SANFORD.