L. BRANDT.

Slate-Roof.

No. 160,078. Patented Feb. 23, 1875

Fig: 2

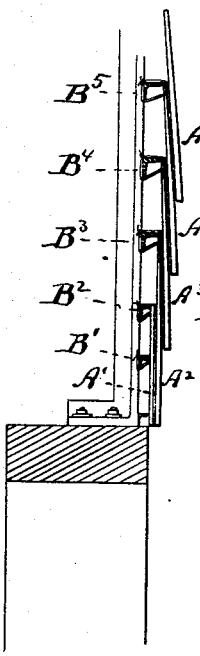


Fig: 1

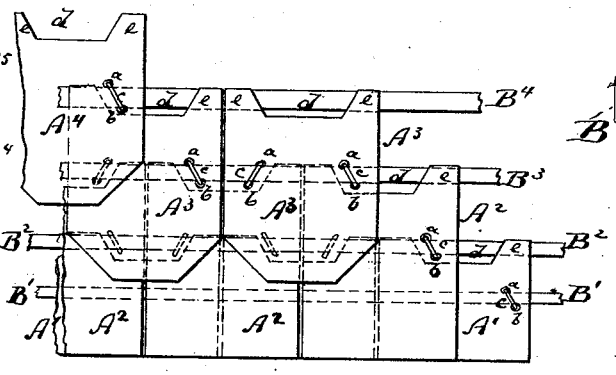
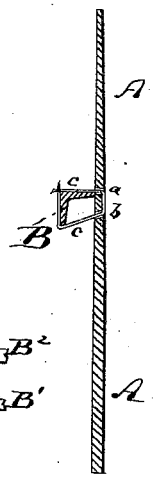


Fig: 3



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THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

LOUIS BRANDT, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO ADAM BRANDT, OF SAME PLACE.

IMPROVEMENT IN SLATE ROOFS.

Specification forming part of Letters Patent No. **160,078**, dated February 23, 1875; application filed January 30, 1875.

To all whom it may concern:

Be it known that I, LOUIS BRANDT, of the city, county, and State of New York, have invented a new and Improved Roofing-Slate, and mode of hanging the same, of which the following is a specification:

Figure 1 is a face view of a series of my improved roofing-slates, showing them attached to the beams. Fig. 2 is a vertical transverse section of the same. Fig. 3 is a vertical section of one of the slates, showing the same on an enlarged scale.

Similar letters of reference indicate corresponding parts in all the figures.

The object of this invention is to simplify the mode of attaching slates to the horizontal beams of a Mansard or other roof; and the invention consists in perforating each slate at four places to allow it to be fastened to the beams by two copper wires, as hereinafter more fully described.

In the drawing, the letter A represents my improved slate. The same is made of suitable length, breadth, and thickness, and at its lower end and sides of suitable design. At that height at which the slate is to be secured to the supporting-beam B, it is perforated four times, two holes, *a b*, being near each edge, and one hole, *a*, of each pair being higher than the other hole, *b*, of the same pair. The two upper holes *a a* are in line with each other horizontally, and the two lower holes *b b* are also in line with each other horizontally, as shown in Fig. 1. Through the two holes *a b*, which are near one edge of the slate, is drawn a wire, *c*, of copper or equivalent material, which wire is, behind the slate, tied around the supporting-beam B, in manner indicated in Fig. 3.

It is well known that slates for roofing are laid by starting with the lowest course, securing that in place, then proceeding upward, causing the slates of every upper course to overlap those of the course next below, and to break vertical joints with them, all as indicated in Fig. 1. It is, of course, desirable that the overlapping slates should rest flush on the lower slates, as otherwise air-passages would be created between the slates, which it is the object of a good roof to prevent. But if the wire *c* were merely drawn through the holes *a b*, the thickness of wire *c*, if resting upon the surface of the slate, would prevent the upper course of slates from resting flush on the slates of the lower course, to avoid which I cut a groove in the face of the slate, said groove extending from the hole *a* to the hole *b* of each pair of holes, allowing the wire *c* to sink below the surface of the slate far enough to permit the upper course to lie flush on the lower course of slates. Instead of the groove in the slate, the wire may be hammered quite flat on the slate, or the holes *a b* may be countersunk to receive knots or heads on the wires that pass through them, and fasten the slate to the beam. Usually, in laying slates, the slates of one course extend up above the beam, to which they are fastened far enough to rest on the next beam above. Thus, with reference to Figs. 1 and 2, the slates A^1 of the lowermost course, which are all fastened to the beam B^1, extend up far enough to cover the beam B^2, to which the next higher course A^2 of slates is tied; and the slates A^2 in turn extend up far enough to cover the beam B^3, to which the next higher course A^3 of slates is fastened, and so on. Now the fastening-wires *c* of the course A^2 could not be brought around the beam B^2 if the slates A^1 were in their way; and still it is desirable for securing a firmer support to cause the lower slates to rest on the upper beam, as stated. To retain this advantage, and at the same time overcome the above-mentioned objection, I have cut a recess, *d*, into the upper end of each slate, excepting the uppermost course of the roof, leaving upwardly-projecting ears *e e* at each side, as shown in Fig. 1. The ears *e e* support the lower slate A^1 on the upper beam B^2, A^2 on B^3, &c., and still there is between said two ears of each slate an open space, *d*, through which the fastening-wires *c* of the overlapping slates may be drawn to be conveniently tied to their respective beams, in manner indicated in Fig. 1.

It is evident that for cheaper roofs, where the slates are not caused to reach to the upper beams, the necessity for cutting the recess *d*, and forming the ears *e*, no longer exists. Still by their use a very superior roof to one

not having the ears *e e* and recess *d* in the slates is produced.

I claim as my invention—

1. A slate perforated at *a b* near its opposite sides to receive wires *c*, whereby it is secured to the beam B, substantially as specified.

2. The slate A, having the holes *a b* for receiving fastening-wires *c*, and made with the recess *d* and ears *e e* at its upper end, substantially as set forth.

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Witnesses:

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