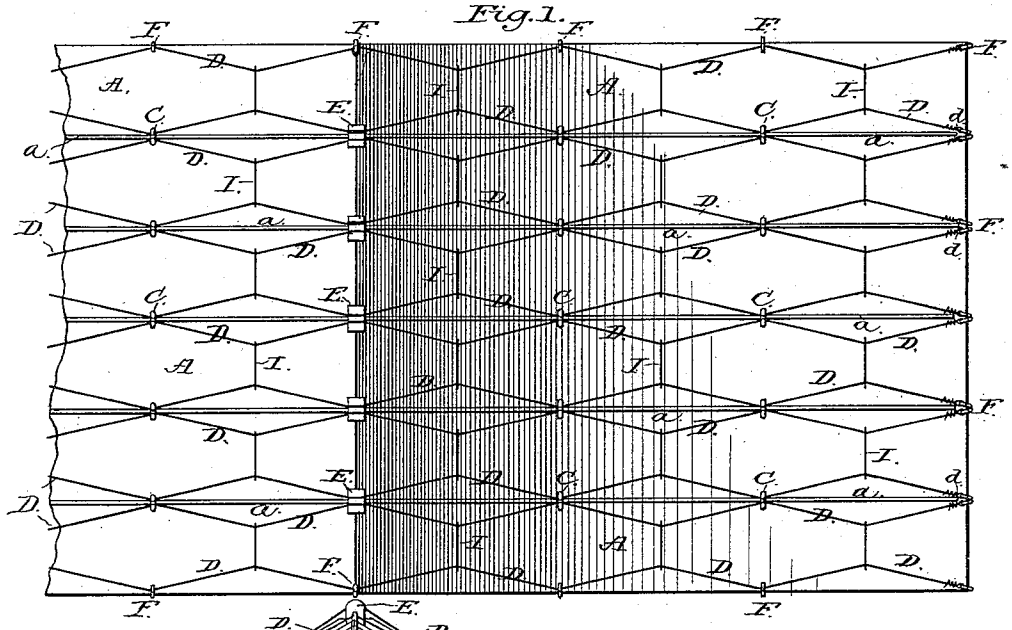
(No Model.)

E. D. OWEN & H. LICHTENBERGER.

ROOFING RETAINER.

No. 352,424. Patented Nov. 9, 1886.

Fig. 1.



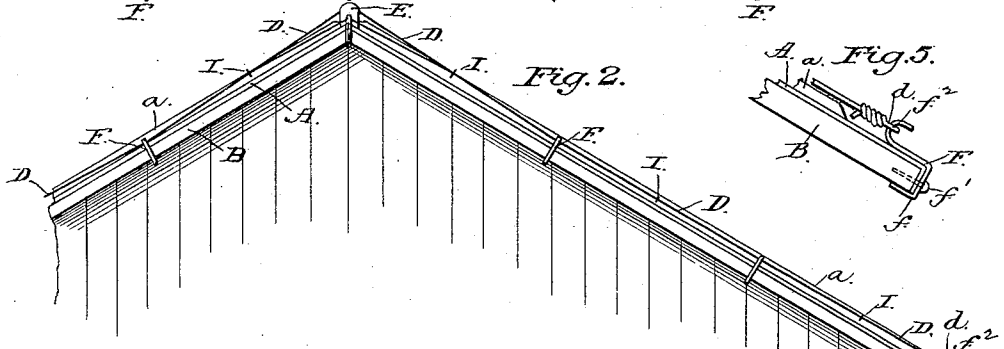


Fig. 2.

Fig. 5.

Fig. 3.

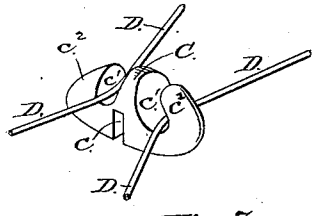


Fig. 4.

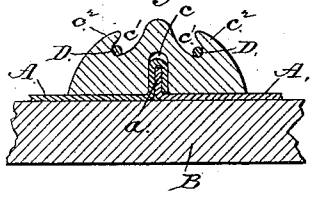


Fig. 6.

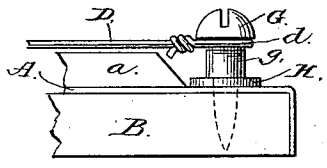
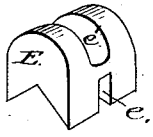


Fig. 7.



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UNITED STATES PATENT OFFICE.

ERNEST DALE OWEN AND HOMER LICHTENBERGER, OF NEW HARMONY, IND.

ROOFING-RETAINER.

SPECIFICATION forming part of Letters Patent No. 352,424, dated November 9, 1886.

Application filed June 26, 1886. Serial No. 206,307. (No model.)

To all whom it may concern:

Be it known that we, ERNEST DALE OWEN and HOMER LICHTENBERGER, both of New Harmony, in the county of Posey and State of Indiana, have invented a new and Improved Roofing-Retainer, of which the following is a full, clear, and exact description.

Our invention relates to devices for holding roofing onto roofs of buildings and preventing it being blown therefrom by wind-storms; and the invention has for its object to provide simple inexpensive retainers of this character which may be quickly and easily applied to flat or gable roofs by persons of ordinary skill, and will be effective in use.

The invention consists in certain novel features of construction and combinations of parts of the roofing-retainer, all as hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of part of a gable roof covered with tin roofing, and to which our improvements are applied. Fig. 2 is an elevation of part of the gable end of a building at the roof and with our improvements applied. Fig. 3 is a perspective view of one of the saddles which fit over the raised seams of the roofing, and shows also portions of the attached wires. Fig. 4 is a vertical sectional view showing the saddle and wires as applied to the roofing. Fig. 5 is a detail view illustrating one method of fastening the wires at the edges of the roof of a building. Fig. 6 illustrates another fastening for similar purpose, and Fig. 7 is a perspective view of a saddle over which the wires are stretched at the peak of the roof.

We will particularly describe our improvements as applied to use in securing tin roofing to a gable roof; but the invention is applicable to other styles of roofs or roofing.

The tin roofing A is laid on the roofing-boards B in the usual manner, and at the joints of the successive courses of tin along the roof ridges *a* are formed by the overlapping of the bent edge of one course upon the upturned edge or flange of the next course, as most clearly shown in Fig. 4 of the drawings.

Saddles C, made of galvanized metal or any other suitable material, are provided at the bottom with a transverse slot, *c*, which fits over the ridge *a* of the roofing-joints, and at its upper part the saddles are each provided with inclined or undercut cross-slots c' c', forming a hook, c^2, at each end of the saddle, to receive the wires D. At the peak of gable roofs we provide saddles E, having an angular bottom formation to fit the peak of the roof and a transverse bottom slot, *e*, to receive the joint-ridges *a* of the roofing, and an upper transverse slot, e', to receive the retaining-wires D. (See Fig. 7.)

At the eaves and at each side edge of the roof the wires D will be held by suitable fastenings, which may be metal plates or rods F, bent to form lower hooks, *f*, which engage the edge of the roof, and may be held thereto by nails or screws f', passed into the edge of the roofing-boards, as in Fig. 5. The upper part of the plate F is bent to form a hook, f^2, with which the wires D will be engaged by slipping the wires into these hooks at the sides of the roof, and by slipping eyes *d*, formed by twisting the ends of the wires, over the hooks at the eaves of the roof.

Instead of the hook-plates F, we may use headed screws G, having a smooth shank or body portion, *g*, below the head to receive the wire D, and a shoulder below the part *g*, which will be drawn tightly to a washer, H, of rubber or other suitable material, which is interposed between the screw-shoulder and the tin roofing A, as the screw is set into the roofing-board B, to prevent leaking of the roof around the screw, and as will be understood from Fig. 6 of the drawings. Tie-wires I are attached to the centers of the deflected parts of the retaining-wires D, to put them in tension for effective downward pressure on the saddles C. The ends of these straining-wires I may be connected to the wires D by twisting them around the latter wires, or by hooks or any other suitable fastenings.

In applying our improvements to a roof, the retaining-wires D will be stretched along the roof at each side of the ridges *a* of the roofing and next the extreme side edges of the roof, and if it be a gable roof, as shown, the wires will be laid in the grooves e' of saddles E, laid on the peak of the roof. The opposite ends of

the wires D will be connected to fastenings, as at F or G, at the eaves of the roof. The saddles C will now be set over the ridges *a* of the roofing and will be spaced apart along the ridges, and fastenings, as at F or G, will be placed at the side edges of the roof in line with the saddles. The wires D will now be slipped into the slots *c'*, or beneath the hooks c^2 of the saddles C, and the side wires, D, will be engaged with the fastenings F or G at the side edges of the roof. At points midway between the eaves-fastenings F and the saddles C next above them, and also between every next higher pair of saddles C, ranging along the roofing-ridges *a*, and between the upper saddles C and the peak-saddles E, the wires D will be drawn toward the centers of the courses of roofing, or away from the side edges of the roof and the roofing-ridges *a*, where they will be connected by the cross or tie wires I, which will hold the wires D tightly strained up, and thereby the saddles C E will be pressed tightly onto the tin roofing A, to prevent it being stripped off by heavy winds.

When the building stands between or next to one or two higher buildings, the fastenings for the side wires, D, next the higher walls may be connected to said walls, and if it is desired to run the wires D crosswise of the roof, instead of lengthwise, flat-bottomed saddles having wire-receiving hooks c^2 c^2, ranging at right angles to the ridge-receiving slots *c*, will be used, as will readily be understood.

The retaining-wires may be used to hold roofing consisting of slates, shingles, tiles, or other material, and the retainers D I may be metallic wires or cords made of any other suitable substance.

We do not limit ourselves to the precise means herein shown for holding the roofing-retaining wires D to a roof, as other means may be employed for this purpose within the scope of our invention.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with laid roofing, of retaining-wires stretched over the roofing and fastened at the ends, and saddles or bearers resting on the roofing, and over which the wires pass, to cause pressure on the roofing, substantially as described, for the purposes set forth.

2. The combination, with laid roofing and wires, as at D, stretched across the roofing and retained by end fastenings, and saddles or bearers spaced along the wires, substantially as specified, of tie or straining wires, as at I, connected to two adjacent wires D between their fastenings and saddles, substantially as described, for the purposes set forth.

3. The combination, with roofing having ridged joints, as at *a*, of wires D, stretched over the roofing and secured at opposite ends, saddles, as at C, having slots *c*, fitting on ridges *a*, and also provided with hooks c^2, within which the wires D are passed, and straining-wires I, fixed to wires D between their end fastenings and the saddles C, substantially as described, for the purposes set forth.

4. The combination, in retainers for roofing of gable roofs, of saddles E, placed at the peak of the roof and provided with upper slots, *e'*, wires D, stretched over the roof and entered in said slots, and secured at opposite ends to the eaves of the roof, and edge wires fastened at the sides of the roof, saddles, as at C, having hooks c^2 c^2, receiving wires D, and placed between the end fastenings of the wires D and the peak-saddles E, and straining-wires I, secured to the wires D between their end fastenings and the saddles C E, substantially as described, for the purposes set forth.

5. As an improved article of manufacture, the roofing-saddle C, provided with a bottom slot, *c*, to receive a joint-ridge of roofing, and with upper hooks, c^2 c^2, to receive the retaining-wires, substantially as shown and described.

ERNEST DALE OWEN.
HOMER LICHTENBERGER.

Witnesses:
HORACE P. OWEN,
WILLIAM H. OWEN.