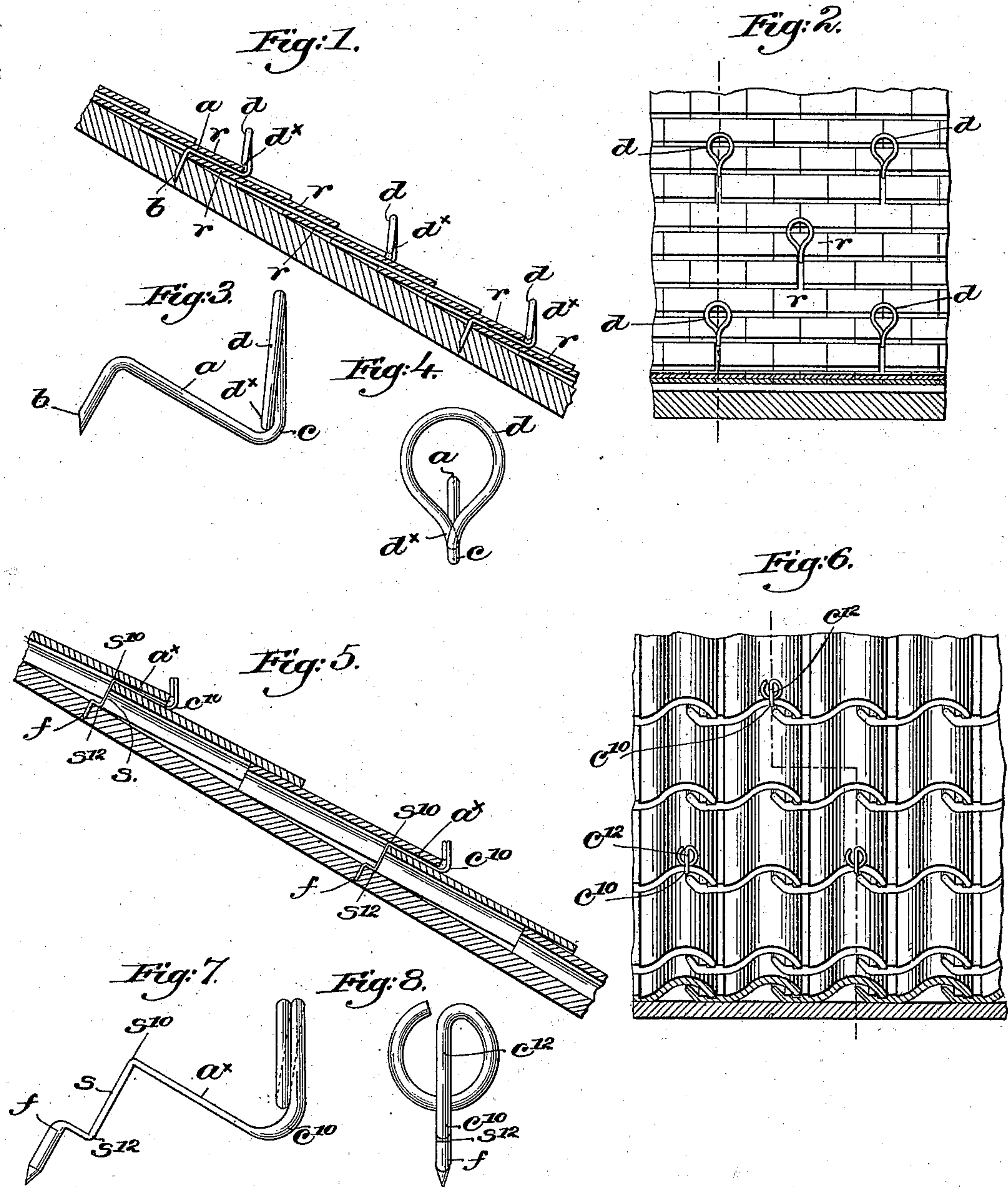


(No Model.)

H. M. ESSELEN.  
SNOW GUARD.

No. 558,678.

Patented Apr. 21, 1896.



Witnesses.

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# UNITED STATES PATENT OFFICE.

HENRY M. ESSELEN, OF BOSTON, MASSACHUSETTS.

## SNOW-GUARD.

SPECIFICATION forming part of Letters Patent No. 558,678, dated April 21, 1896.

Application filed February 16, 1895. Serial No. 538,692. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY M. ESSELEN, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Snow-Guards, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve the class of snow-guard represented in United States Patent No. 512,178. The snow-stop shown in the said patent consists of a single piece of wire whose ends are bent substantially at right angles to the body-piece, one downward and pointed to afford means for ready attachment to a roof and the other, or snow-stop proper, bent first upward and then in the form of a loop whose lower portion crosses and bears against the upright adjacent the inner side of the bend joining the upright to the shank or body-piece.

I have aimed in this invention to provide greater resistance to bending strain, to thereby increase the efficiency of the guard and make possible a reduction in the material and cost of the guard.

In accordance therewith my invention consists in details of construction and arrangement hereinafter fully described, and particularly pointed out in the claims.

Figure 1 in section shows part of a slate or shingle roof with several of my improved snow-stops in place, and Fig. 2 is a view in front elevation of the same. Figs. 3 and 4 show on a larger scale, in side and front elevation, respectively, one of the snow-guards detached. Figs. 5, 6, 7, and 8 represent a modified form of snow-guard detached and also in position, to be referred to.

My improved snow-guard, composed, preferably, for ordinary use of round wire, as shown in Figs. 1 to 4, has a shank  $a$ , terminated by an end adapted to be attached to the roof between rows or layers of slate or shingles  $r$ , and preferably for cheapness this end will be bent substantially at right angles to the body and be pointed, as at  $b$ , so that it may be driven into the roof, as represented. The wire is bent at  $c$  upwardly and around in the form of a loop  $d$ , the free end  $d^x$  of the loop being extended across and bearing against the portion of its other end adjacent

the inner surface of the bend  $c$ , so that the loop may be braced and stiffened.

Hitherto in snow-guards of this class, so far as I am aware, the snow-stopping portion of the guard has been bent at substantially a right angle to the shank.

In my improved form of guard the loop  $d$  is formed at an acute angle with the shank of the guard, thereby offering a much more effective resistance to the downward force of the snow without necessitating more material or further manipulation in construction.

For very high-pitched roofs the loop may, if desired, be specially bent at a proportionately smaller angle with the shank to still further augment the resisting power; but for the average pitch of roof an approximation to the vertical has been found sufficient.

By the construction set forth it is possible to make the guards of considerable lighter construction with a consequent saving in material. This may be more clearly seen by a comparison between Figs. 4 and 8, (in which latter the older form of loop is purposely retained for heavier service,) for it is quite apparent that the upright  $c^{12}$  in Fig. 8 is entirely absent in the newer form of loop, and just so much material is thereby saved.

To adapt my invention for use with so-called "Spanish" or other similar tiles (shown in Figs. 5 and 6,) I bend the shank  $a^x$  downward at  $s^{10}$  to form a shoulder  $S$  of sufficient length to extend from the convex surface of the tile to the roof, the lower end of said stop being bent rearwardly at  $s^{12}$  to rest upon the roof and then down to form a preferably-pointed attaching portion  $f$ . By this construction the weight of the snow is divided between the roof-boards or purlins and the tiles and tile-fastenings. I preferably flatten the shank  $a^x$ , the shoulder  $S$ , and the part to rest upon the roof in order to more firmly seat the guard upon the surface and end of the tile, while the attaching prong or point  $f$  is preferably round and of the same diameter as the material forming the loop.

As shown clearly in Fig. 7, the material at the bend  $c^{10}$  connecting the loop and shank is preferably round and of the greater diameter to resist the bending strain at such point.

I claim—

1. A snow-guard composed of wire, bent



downwardly and sharpened at one end to provide a securing-prong to enter the roof, bent upwardly at the other end and formed into a loop to constitute a fender, said loop being  
5 formed by an upward bend at an acute angle to the wire shank in the plane of the shank and prong, a lateral bend obliquely to said plane, a circularly-curved portion constituting the body of the loop, and a lateral oblique  
10 bend terminating in a downturned portion resting snugly against the inner side of said upward bend, substantially as described.

2. A snow-guard for tile roofs composed of wire, having a snow fender or stop formed at  
15 one end, a flattened shank portion adjacent

thereto to rest between two contiguous tiles, a flattened shoulder portion bent to conform to the upper end of the tile, a sharpened prong to enter the roof-board, and a portion intermediate said prong and shoulder, bent to rest  
20 in facial contact against said roof-board, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY M. ESSELEN.

Witnesses:

JOHN C. EDWARDS,

ALEX. C. PROUDFIT.