(No Model.)

T. O'GARA.

SNOW GUARD.

No. 401,202. Patented Apr. 9, 1889.

Fig. 1.

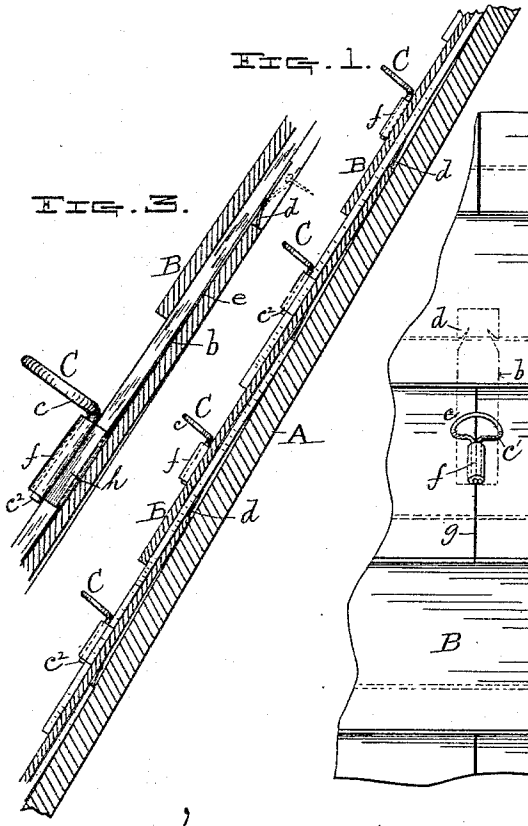


Fig. 2.

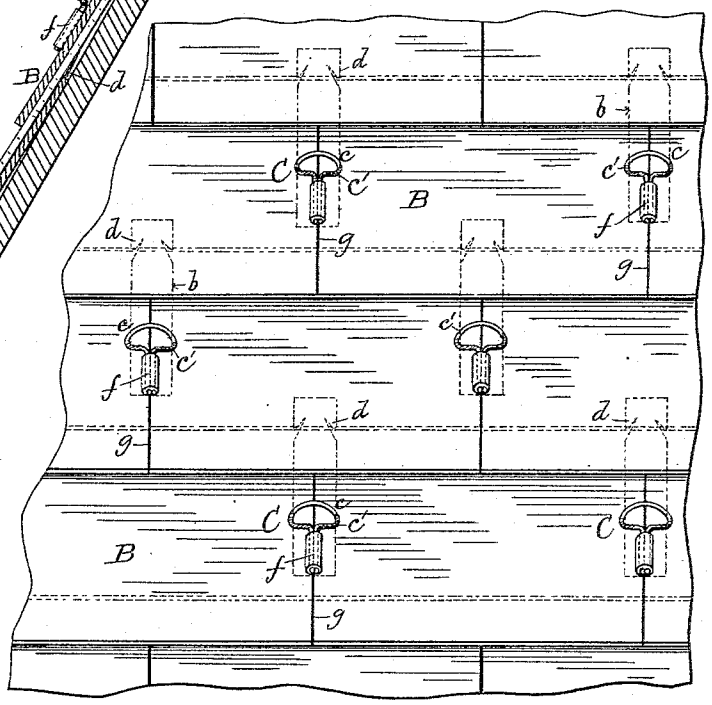


Fig. 3.

Fig. 4.

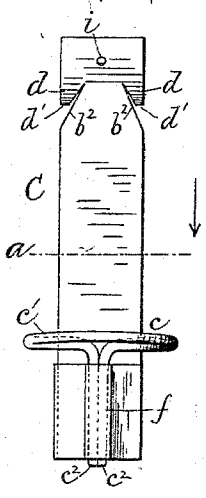


Fig. 5.

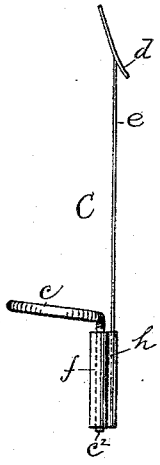


Fig. 6.

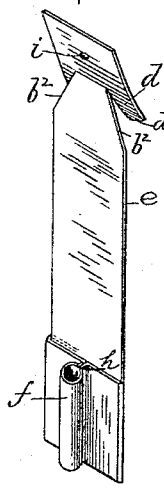


Fig. 7.

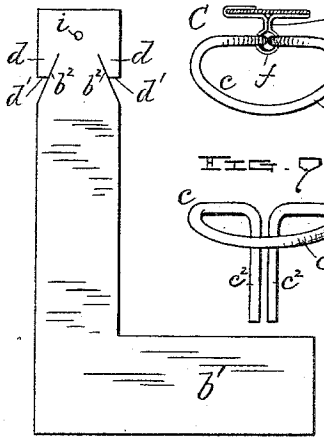


Fig. 8.

Fig. 9.

Witnesses;

Lucius W. Briggs.

Forrest C. Wesson.

Inventor;

Thomas O'Gara.

By A. A. Barker. Att'y.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

THOMAS O'GARA, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO ORLANDO W. NORCROSS, OF SAME PLACE.

SNOW-GUARD.

SPECIFICATION forming part of Letters Patent No. 401,202, dated April 9, 1889.

Application filed December 1, 1888. Serial No. 292,389. (No model.)

To all whom it may concern:

Be it known that I, THOMAS O'GARA, of the city and county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Snow-Guards; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a vertical section through the boarding and slates of part of an ordinary roof with my improved snow-guards applied thereto. Fig. 2 is a plan of part of the roof, also having said snow-guards thereon. The following figures are all upon an enlarged scale. Fig. 3 is a central vertical longitudinal section through one of the guards and enough of the slating to show the manner of holding said guard from slipping down or being withdrawn from the slating. Figs. 4 and 5 are a front and side view, respectively, of the guard. Fig. 6 is a perspective view of the sheet-metal holding part of said guard. Fig. 7 represents said sheet-metal part in blank form preparatory to being bent into the shape shown in Fig. 6. Fig. 8 is a transverse section through the sheet-metal part, taken on line *a*, Fig. 4, looking down, as indicated by the arrow; and Fig. 9 is a detached view of the wire part of the device.

My invention relates to snow-guards adapted to be fastened upon the roof between the various courses of slates or shingles thereon. Heretofore snow-guards of this class have been made wholly of sheet metal or of wire or similar material, and have been fastened by securing their upper ends to the roof-boarding or by simply slipping them under the slate between the edges thereof and held therein by frictional contact only. Those adapted to be fastened to the boarding are effective in use, but possess the disadvantage of not being susceptible of application to the roof after the slates or shingles are laid, and the others referred to are objectionable from the fact that they are not held sufficiently secure to withstand the pressure of snow ordinarily coming against the same, especially on steep roofs. Consequently many of the latter are pulled partially or wholly out during each winter season, as many will attest who have used the same.

To obviate the above objections is the main purpose of my invention, which consists in making the snow-guard preferably in two parts, one of sheet metal and the other of wire, the sheet-metal part being adapted to hook over the upper edge of the bottom slate to hold the guard from slipping down, and also to hold the wire part in a suitable socket formed therein, said wire part being detachable from said holding-socket, and the snow-guard, owing to said construction, also being adapted to be applied to the roof either while the roofing is being done or subsequent thereto, all as hereinafter more fully set forth.

To enable those skilled in the art to which my invention appertains to better understand the nature and purpose thereof, I will now proceed to describe it more in detail.

In the drawings, A represents the roof-boarding, B the slates or shingles, and C my improved snow-guard. Said snow-guard is constructed and applied to the roof in the following manner: It is composed of two separate and detachable parts, *b* and *c*, the part *b* being made from sheet metal, preferably tin or zinc, and the part *c* of wire, preferably galvanized or otherwise coated to protect it from the weather. In making the sheet-metal part *b* it is first cut out by means of suitable dies into substantially the shape shown in Fig. 7, with a lateral projection, *b'*, at what constitutes its lower or base end, and the inclined cuts b^2 b^2 at the upper end to form the ears *d d* upon each side, having the lower ends thereof preferably clipped off to form square shoulders *d' d'*. Said ears *d d* are curved or bent back so as to project beyond the under surface, *e*, of the plate, as is shown in Figs. 5 and 6, for the purpose of forming holding-hooks to catch over the upper edge of the slate.

The upper end of the part *b*, or metal strip proper, is also preferably bent forward, as is indicated in said Figs. 5 and 6, so as to form a spring to assist in holding the guard in place under the slate, as well as to facilitate the operation of slipping it into position, as hereinafter more fully specified.

The lower end of the strip *b* is provided

with a longitudinal holding-socket, *f*, made by bending the laterally-projecting flange *b'* around against the face of said strip and curving it to produce the socket, with the end passed around against the back of the strip to hold said socket part in position. In practice said holding-strip *b* is designed to be made automatically, as is also the wire part *c*, by means of machinery especially designed for the purpose. They may therefore be made expeditiously and at small cost. Said part *c* is made from a single piece of wire bent to form the loop *c'* and the straight ends or shanks c^2 c^2 at or about right angles to said loop, so that when the part is fitted to the strip *b* the loop will come at about right angles thereto and to the roof when the guard is applied to said roof, as is shown in Figs. 1, 2, and 3. The wire part is held by the sheet-metal strip *b* by slipping the ends c^2 c^2 down into the socket thereof, previously described, and to facilitate holding said wire part in position it is made with its ends a little apart, as is shown in Fig. 9, so as to bind in the socket when sprung together and inserted therein.

My improved snow-guard may be applied with equal facility to either a new roof while the slating is being done or to an old roof already slated.

In fitting the guard to a roof already slated the upper bent end of the strip is passed under the ends of two slates at their abutting edges and pushed up until the ears *d d* come above the upper edge of the bottom slate and snaps down, so as to hold upon said upper edge, the straight part or base *h* of the loop which forms the socket *f* passing up in the joint *g* between the two slates in performing said operation, said straight part being extended out at right angles a sufficient distance to receive the slate between the face of the strip and loop, so that said loop may pass up outside of the slate. This and the loop of the wire part *c* are the only parts of the guard appearing to view after said guard is applied to the roof, and therefore does not materially detract from or affect the general appearance thereof. When the snow-guards are applied at the same time that the slates are laid, it is preferable to fasten the upper ends of said snow-guards to the roof-boarding, in addition to holding the same, as previously described. Said fastening is not necessary, however, and I therefore do not limit myself thereto. They may be thus fastened by means of suitable nails passed through openings *i* therein and driven into the boarding.

It will at once be apparent to those skilled in the art that snow-guards made as hereinbefore described, and shown in the drawings, may be easily applied before or after the slates are laid, and also made cheaply, as previously stated, while at the same time being strong, durable, and effective in use.

If desired, only the ears *d d* of the sheet-metal strip *b* may be curved back, with the body of said strip straight, and an equivalent of the loop of the wire part *c* may be formed of the sheet-metal integral with the strip without departing from the principle of my invention, the main or essential feature thereof being the production of a snow-guard which may be fastened by hooking it over the upper edge of the bottom slate and susceptible of being applied in the manner herein set forth.

What I claim as new, and desire to secure by Letters Patent, is—

1. A snow-guard consisting of a strip of sheet metal having holding-ears at its upper end projecting back of its under surface, adapted to catch and hold over the upper edge of the bottom slate, and also provided with a suitable bracket or snow-stop at its lower end, the sheet-metal strip being adapted to be passed up under the edges of two abutting slates, with the aforesaid snow-stop projecting up through the joint between them above the surface thereof, substantially as set forth.

2. A snow-guard comprising, in combination, the sheet-metal strip *b*, having its upper end cut to produce the ears *d d*, projecting back to form hooks adapted to catch and hold over the upper edge of the bottom slate, and said upper end of the main strip bent forward for the purpose specified, said strip also being provided at its lower end with a longitudinal socket, and the wire part *c* bent to form a holding-loop or snow-stop, and straight ends at about right angles thereto adapted to be inserted into the aforesaid socket to hold said wire part in position, substantially as set forth.

3. The sheet-metal strip *b*, having the ears *d d*, projecting back from its upper end, and a longitudinal holding-socket upon the face of its lower end, in combination with the wire part *c*, bent in such manner as to form a snow-stop and to be inserted into the holding-socket aforesaid, substantially as and for the purpose set forth.

THOMAS O'GARA.

Witnesses:
A. A. BARKER,
L. W. BRIGGS.