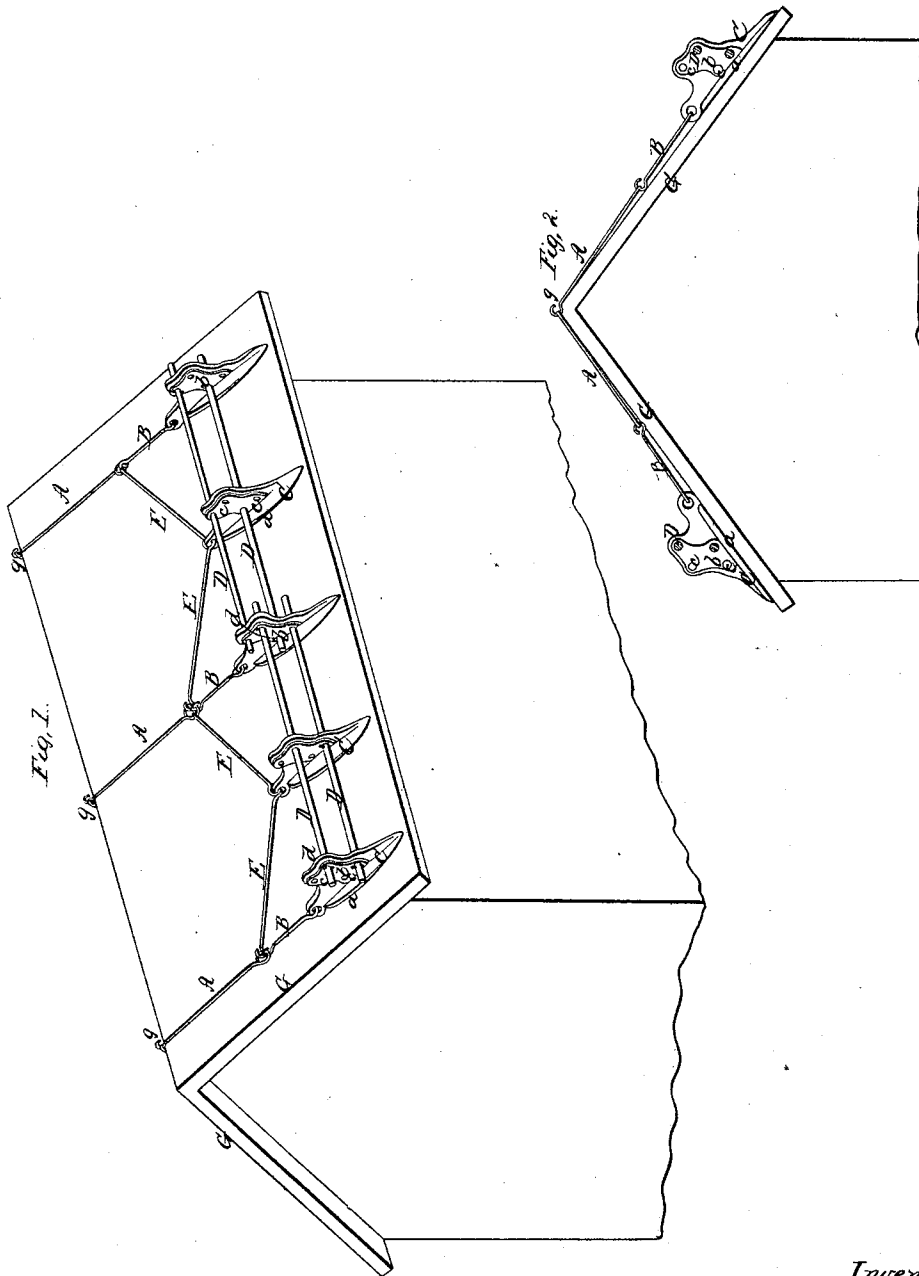


L. Howe

Ice and Snow Pender.

N^o 42,992.

Patented May 31, 1864.



Witnesses;
J. H. H. H.
Edw. D. Dodge

Inventor;
Lyman Howe
by his attorney
Thos. H. Dodge

UNITED STATES PATENT OFFICE.

LYMON HOWE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO HIMSELF
AND R. R. SHEPARD, OF SAME PLACE.

IMPROVEMENT IN ICE AND SNOW FENDERS FOR ROOFS OF BUILDINGS.

Specification forming part of Letters Patent No. 42,392, dated May 31, 1864.

To all whom it may concern:

Be it known that I, LYMON HOWE, of the city and county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Ice and Snow Fenders Applied to the Roofs of Buildings; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective view of my snow-fender as applied to the roof of a building. Fig. 2 represents a side view of the same.

The snow-fenders used heretofore have the disadvantage that they are fastened permanently to the roof, and they cannot, therefore, rise and descend with the freezing and thawing of the snow, and the fastenings thus become loose and the roof is thereby injured so as to render it leaky, and for this reason they have never gone into general use. This disadvantage is remedied by my invention, which relates to the application to roofs of ice and snow fenders which are not permanently fastened to the roof, and which can freely rise and descend with the freezing and thawing of the snow, and which do not injure the roof by their fastenings nor by the contraction or expansion in consequence of the change of temperature.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents the main wires of my fender. They are linked together and are laid astride the double roof G, so that their links will rest on the ridge of the roof. To these wires are secured short links B, to which the fender-shoes C are hung. These fender-shoes rest upon the roof on their base-plates *a*, and they have a vertical ridge, *b*, rising from said base-plate, which is provided with holes through which the fender-rods D are inserted, which prevent the snow or ice from sliding down from the roof of the building. The plate *b* of the shoe C has two additional holes, *c*, through which the fender-rods of the adjoining set of shoes are inserted, and by this peculiar construction of the shoes C, I am enabled to connect the different sets of fender-

rods, thus dispensing with the use of long and unwieldy rods, or other complicated connections or fastenings. The rods D are prevented from moving longitudinally by the pins *d*, which are driven into holes in said rods near the plate *b*. The shoes C may be alternately connected to the main wires A, and the intermediate shoes thus connected with said wires by means of the links E, whereby the device is materially simplified and can be applied with great facility without injuring its efficiency and strength by dispensing with the intermediate main wires. When this fender is applied to a double roof, it is simply laid astride the ridge, the links *g* bearing on the ridge of the roof, and when used thus no fastenings of any description are required; but when the device is applied to one side only of the roof the wires A are hung to bolts or hooks fastened to the side of the roof, but the bolts when used thus are not fastened in such a manner as to hold down the wires or any part of the fender to the roof, but only to support the weight of the fender, and such fastenings are therefore not affected by the change of the temperature; and being applied to the upper ends only of the wires A and at or near the ridge of the roof, the fender is at liberty to rise and descend with the thawing and freezing of the snow.

Upon what is called "French roofs" I dispense with the main wires A and use the short links B only in connection with the fender-shoes, and in that case I also dispense with the cross-wires E and attach a shoe to each wire.

This fender can be applied to and removed from the roof with the greatest facility, and that without injury to the roof or building, while in many instances it may serve as a protection. In repairing the roof or in case of fire it serves as a ladder.

Having thus fully described the nature of my invention, what I claim herein as new, and desire to secure by Letters Patent, is—

1. The application of ice and snow fenders to the roof of a building in such a manner that the fender shall be free to rise and fall with the freezing and thawing of the ice and snow on the roof, substantially in the manner and for the purposes described.

2. The shoes C, in combination with the main wires A and fender-rods D, substantially as herein described.

3. The combination of the shoes C, main wires A, cross-wires E, and fender-rods D, substantially as herein described.

4. The peculiar construction of the shoes C, by which I am enabled to couple the different

sets of fender-rods, and avoid long and unwieldy rods, substantially in the manner herein described.

LYMON HOWE.

Witnesses:

THOMAS H. DODGE,

J. HENRY HILL.