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F. S. HOWARD.

DEVICE FOR ATTACHING FLEXIBLE MATERIALS TO ROOFS AND
SIDES OF BUILDINGS.

APPLICATION FILED OCT. 8, 1903.

NO MODEL.

Fig. 4

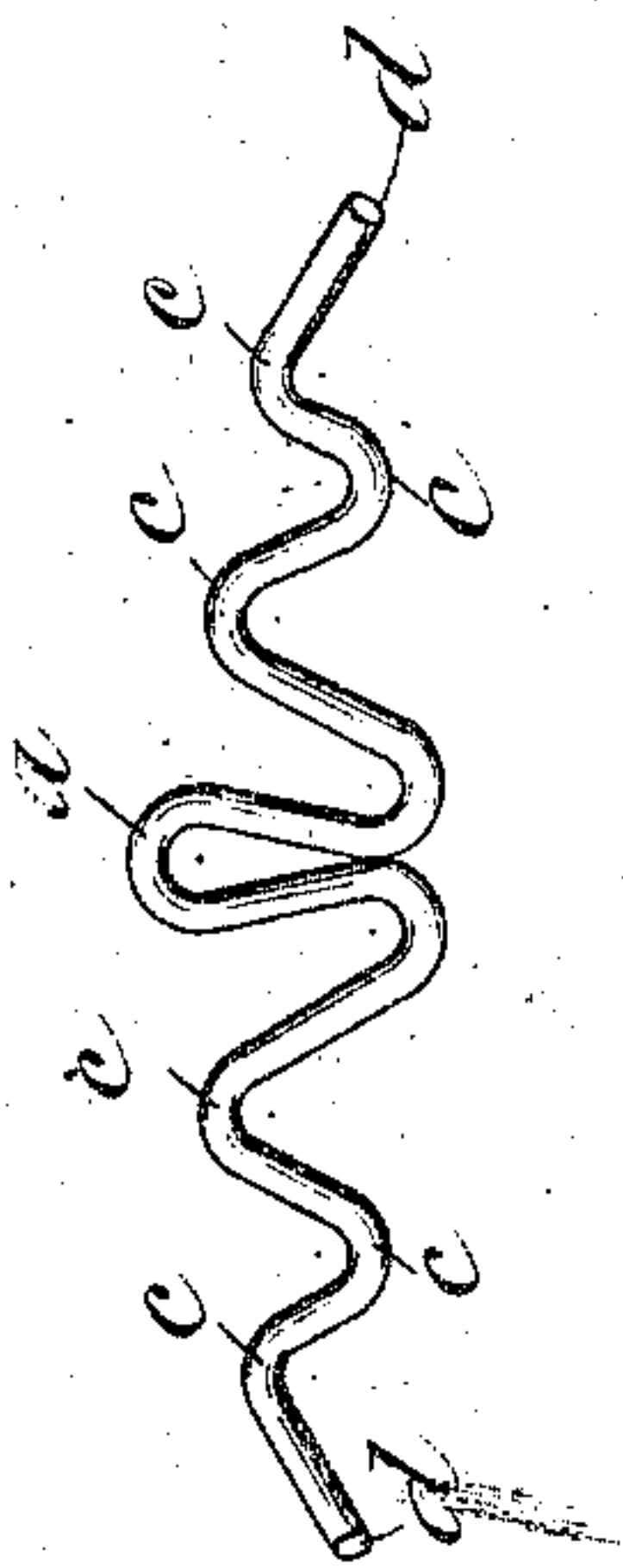


Fig. 3

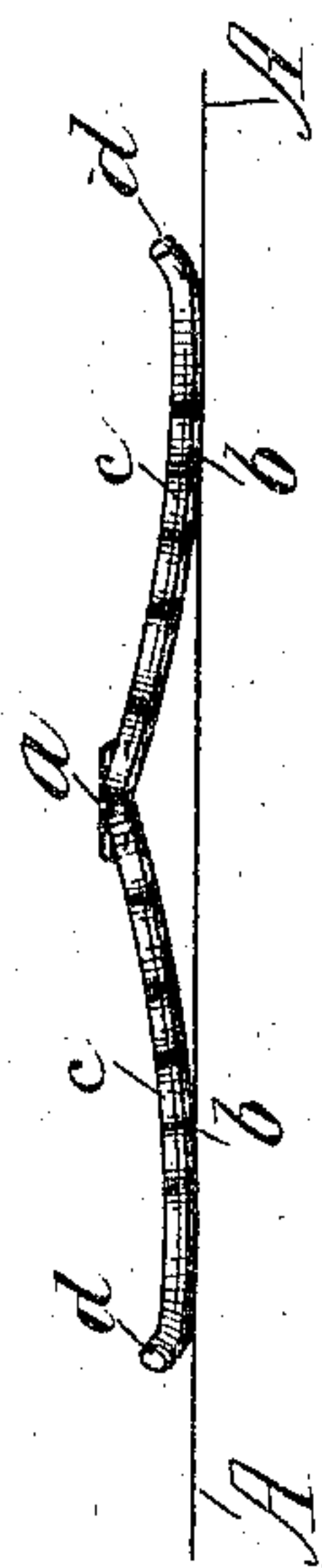


Fig. 1

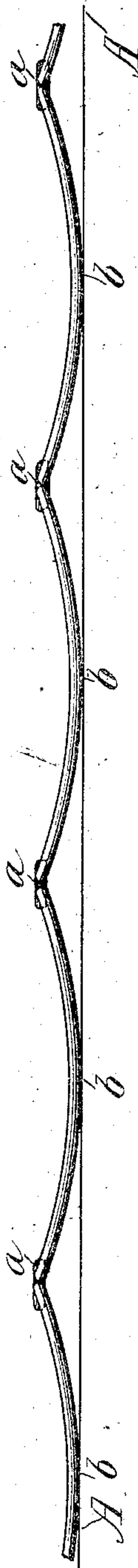


Fig. 2



Witnesses:

Ray White
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By

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UNITED STATES PATENT OFFICE.

FRANK S. HOWARD, OF LOMBARD, ILLINOIS.

DEVICE FOR ATTACHING FLEXIBLE MATERIALS TO ROOFS AND SIDES OF BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 757,193, dated April 12, 1904.

Application filed October 8, 1903. Serial No. 176,242. (No model.)

To all whom it may concern:

Be it known that I, FRANK S. HOWARD, of Lombard, in the county of Dupage and State of Illinois have invented certain new and useful Improvements in Devices for Attaching Flexible Materials to Roofs and Sides of Buildings, of which the following is a full, clear, and exact description.

The purpose of my invention is to provide a device for fastening felt, paper, or other flexible material to the sheathing on roofs and sides of buildings which shall lessen the expense of attaching the same, increase the efficiency of the result, and be more expeditious than the methods heretofore in use, making a joint reliably weather-tight at all points.

In the drawings accompanying this specification and made a part hereof, Figure 1 is a side view of a continuous form of my device, showing the curves perpendicular to the plane of the roof or other surface to which the device may be attached. Fig. 2 is a plan view of the same form of device. Fig. 3 represents a side view of another form of my device, a single section made of wire and bent in convolutions to give greater width and strength. Fig. 4 is a plan view of the same form of device shown in Fig. 3.

In the drawings, *a a a* are loops for nails. *b b b* are points of contact with the material to be held in place before the nails are driven in and the device is drawn down and applied at all points thereby.

A indicates the surface of the roofing to which the device is about to be applied.

c c c are convolutions, one-half inch, more or less, in length, to increase the width and strength of the separate sections when wire is used.

d d d are short upward bends or turns at the extreme end of the detached sections to avoid puncturing the material to which the device is applied.

The ordinary method of securing felt or other flexible roofings to the roofing or sheathing boards is by making a flat lap of two inches, more or less, using a cement or paint between the layers forming the laps and then nailing the laps to the sheathing, using tin

disks or caps, through which the nails are driven. By this method there is left between the edges of the caps a part of the lap that is not pressed tightly together. Roofing laid in this manner often has buckles or wrinkles between the edges of the caps, the laps often separating and allowing the water to run in easily if the seams or laps are made longitudinally with the pitch of the roof or allowing the water to beat or creep in when the seams or laps are made transversely to the pitch of the roof. My device presses and pinches the two or more layers of roofing or other material forming the laps or seams continuously throughout the entire length, so that no water can run, creep, or beat in. When nails and caps are used, it frequently occurs also that nails are driven into the cracks between the sheathing-boards, making holes through the roofing or siding. This has caused a great deal of trouble and is one of the great faults, particularly in the present manner of securing roofing to buildings. By my device this trouble may be practically obviated. Roofing-boards are usually of widths in an even number of inches—that is to say, they are generally either six inches, eight inches, or ten inches in width or some other number of inches divisible by two. In my device the distances between the nails can be so fixed that by starting at a certain distance from a crack between the boards no nails will be driven into any of the cracks.

My device is preferably made of wire of suitable thickness, and if the wire is of sufficiently large diameter it may be used to advantage by merely bending the wire at suitable intervals into loops, as shown at *a a a*, to receive the nails by which it is to be held in place. A smaller wire may be used and the efficiency of the device increased by causing the wire to be bent or formed in curves that will be both longitudinal and latitudinal with the roofing-boards, with loops at regular intervals for the nails to be driven through. Between each of the loops there is a drop curve, so that when the nails are driven the wire, being drawn down thereby, brings a positive pressure to bear at every point on top of the laps in its line, forcing the layers

together, forming a water-tight lap or seam continuously. It is proposed to make the device in lengths of three feet, more or less, or it can be put up in rolls and cut off at the end of a seam or lap as used, or it may be used in single separated sections, as shown. When single sections or three-foot lengths are used, the ends of each section or length are butt-jointed—that is to say, the end of one section is placed against the end of the section already in place—thus forming continuous pressure the entire length of the seam or lap.

The device is economical in cost and will also save labor, as when ordinary caps are used each cap must be placed in the right position before being nailed, whereas with my device when the first nail is driven the places for all the remaining nails are determined, the loops being in place to receive the nails. Also the distance between nails may be increased and both nails and labor saved thereby.

The device may be, if so desired, used in individual sections by being cut midway between the loops. To avoid possibility of puncturing the material to which the device may be applied, each end of every section, whatever its length, is bent upward, one-eighth of an inch being sufficient for this purpose.

My device may be made in a variety of forms and from divers materials, and it is not my intention to limit this patent to the particular forms and materials specified. It may be used in single sections, as shown in Figs. 3 and 4, of any desired length and with a great variety of modification in detail. The convolutions may be multiplied to any desired number or may be limited to a single convolution on each side of the middle loop *a*, (see Figs. 3 and 4,) leaving the remainder of the section straight. When used in single section, one form of which is shown in Figs. 3 and 4, additional loops for nails may be substituted for the short upward turns *d d*, and this is preferable should sections about a foot long be used. Other similar modifications of form will readily suggest themselves in the application of this device.

I am aware that continuous strips have been used in various forms to fasten down carpets and other flexible material, and I make no claim upon the use of a continuous strip. In all such cases as heretofore applied, the strip has been without any device by which it was made especially to press or bind at any point except those at which the nails were driven, the strip in the intervals being itself subject to slack, buckle, or warp and permit wrinkles and folds in the material beneath. In laying

carpets such result, unless exaggerated, would not attract attention; but in the roofing or siding of buildings such irregularities, too slight to be detected even by careful inspection, admit moisture in sufficient quantities to entail serious and expensive consequences.

My device provides by the peculiar formation of the strip a scientific and reliable means for effectually closing the joints at every point and is thus an improvement upon the devices now and heretofore in use.

Straight wire also has been used as a continuous binder, being fastened in place by double-pointed tacks or staples; but such an application to roofing or siding purposes is not admissible for the reason that each double-pointed tack or staple so driven perforates the roofing material twice and makes two openings, which are left uncovered, and each staple becomes a conductor to lead water through the roofing or siding in two places. All such openings must be covered. My device avoids this serious fault by having loops in the wire through which a nail having a broad head may be driven, closing the opening in the loops and shedding all the water, which would otherwise follow the nail through.

I claim—

1. A continuous binder, of wire or other suitable material, curved in a plane perpendicular to the plane of the roof or other surface to which it may be applied, with loops or enlargements in a plane parallel to the surface to which it may be applied at suitable intervals to receive nails, substantially as, and for the purpose shown and described.

2. A continuous binder of wire or other suitable material, formed on curves in a plane parallel to the plane of the roof, when in place, and also formed on curves perpendicular to the plane of the roof when in place, with loops at suitable intervals to receive nails, substantially as and for the purpose shown and described.

3. A binder of wire formed in convolutions in a plane parallel with the plane of the roof when in place, having a loop in the middle to receive a nail, and curved perpendicularly to the plane of the roof, and having each extreme end bent and turned upward from the roof, substantially as, and for the purposes shown and described.

In testimony that I claim the foregoing as my invention I hereby affix my signature this 3d day of October, A. D. 1903.

FRANK S. HOWARD.

In presence of—

SAMUEL J. LUMBARD,
GERTRUDE L. NEFF.