(No Model.)

W. H. BERGER.

EAVES TROUGH HANGER.

No. 345,102. Patented July 6, 1886.

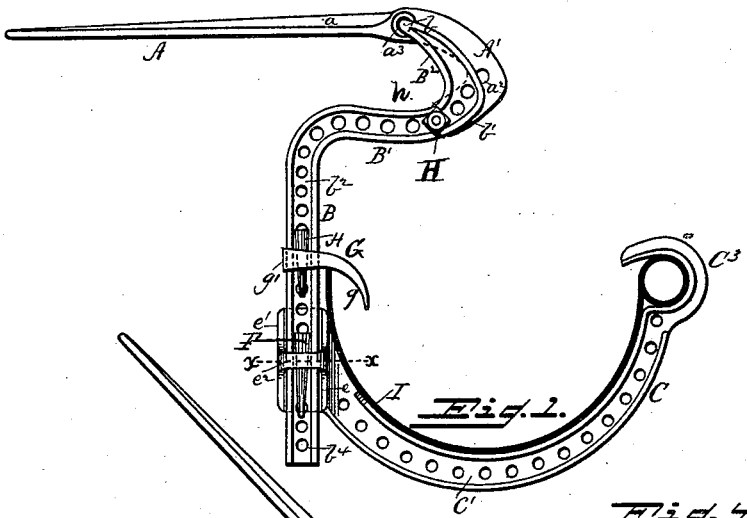

Fig. 1.

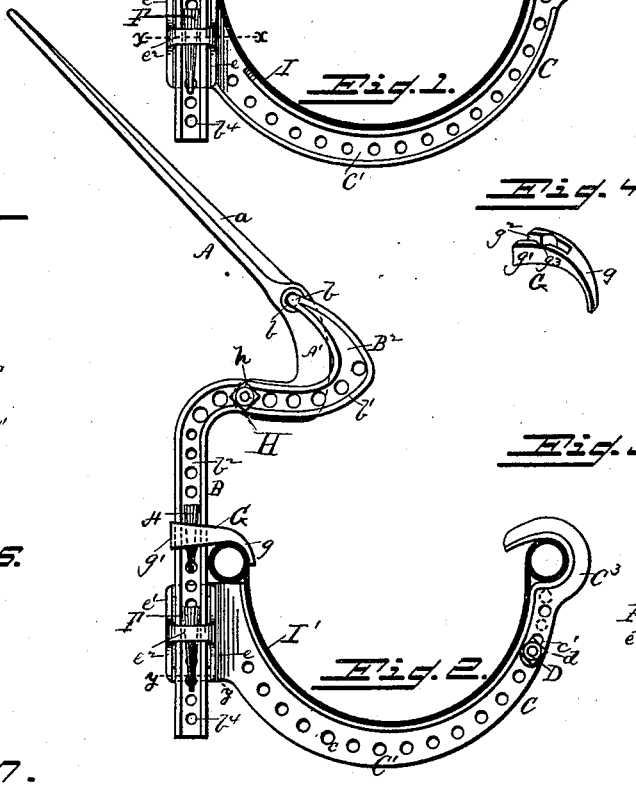

Fig. 2.

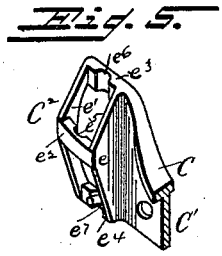

Fig. 5.

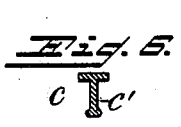

Fig. 6.

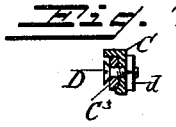

Fig. 7.

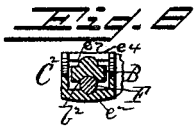

Fig. 8.

Fig. 4.

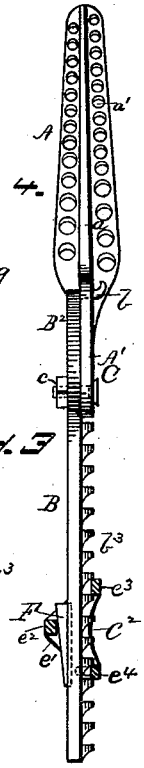

Fig. 3.

Fig. 9.

WITNESSES

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EAVES-TROUGH HANGER.

SPECIFICATION forming part of Letters Patent No. 345,102, dated July 6, 1886.

Application filed February 26, 1886. Serial No. 193,365. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BERGER, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Eaves-Trough Hangers; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side elevation showing the iron with a single-bead trough on the circle, the tang being represented as in a horizontal position. Fig. 2 is a side elevation of the iron complete with a double-bead trough on the circle, the tang being represented as in an inclined position. Fig. 3 is a front elevation of tang and shank with the butt of the circle shown in vertical section and the fastening-pin in position. Fig. 4 is a perspective of detachable adjustable inside hook. Fig. 5 is a perspective, partly in section, of the circle and its butt. Fig. 6 is a vertical section of the circle. Fig. 7 is a section of circle and detachable outside hook. Fig. 8 is a horizontal transverse section of shank, circle-butt, and fastening-key, taken on the line *x x*, Fig. 1. Fig. 9 is a horizontal transverse section taken on the line *y y* of Fig. 2.

My invention relates to eaves-trough hangers or irons, and has for its object to provide a construction whereby the hangers can be fastened to all kinds of eaves, either on top or under the shingles, and may be regulated to any pitch of the roof, such construction permitting variations of the hanging of the troughs so as to hang the same level or to swing back and forward, as may be desired.

A further object of my invention is to provide an eaves-trough hanger so constructed that it will clamp the shingles or curve round the edge of the crown-molding where the shingles are too short to allow the water running from the roof to drip or drop in the center of the trough, and also adapted to buildings where strength of irons is required, and where the trough must be hung free of all obstruction on the top, in order to allow it to expand or shrink and to keep it clean from rubbish.

A further object of my invention is to provide an eaves-trough iron so shaped that it can be made cheaply without the use of any cores in molding, and without machine-work or fitting being necessary in the manufacture.

A further object of my invention is to provide a construction whereby the shank of the iron may be held very firmly to the tang at the joint or junction of these two parts.

A still further object of my invention is to provide means whereby the circle may be very securely held on the shank and fastened in any adjusted position or at any desired altitude on the latter.

A still further object of my invention is to provide an adjustable hook for the inner edge of the trough, said hook being secured to and adjustable on the shank, and being of such construction that it may be applied to irons of different construction already in the market.

A still further object of my invention is to provide a detachable and adjustable outside hook for the circle, whereby hooks of different sizes or diameters may be applied to a circle of a given size and adjusted on the latter to any required extent, to adapt them to troughs of different sizes or having beads of varying diameters and styles.

A still further object of my invention is to provide a construction of the tang whereby the latter will force its way readily under the shingles of a roof, and will prevent the accumulation of moisture and the rotting of the shingles, if placed on top of the latter.

My improvements consist in the peculiar construction and combinations of parts hereinafter fully described and claimed.

Referring to the accompanying drawings, A represents the tang, which consists of a bar of metal having a central longitudinal beveled rib, *a*, on either side of which are numerous openings, *a' a'*, for the reception of nails, said bar terminating at its lower end in a bend, A', which curves downwardly, and then inwardly, as shown. Said bend has a series of adjusting-holes, a^2, in its lower end for the reception of the fastening-bolt.

B represents a shank, which is a straight bar having at its upper end a curved extension of the peculiar shape shown, said exten-

sion bending outwardly from the shank, as indicated by B′, and then around and inwardly, as at B^2, so as to conform almost exactly or substantially to the curvature of the bend of the tang, said bend B^2 terminating in a hook, *b*, which enters an opening, a^3, in the tang A. The hook *b* forms the fulcrum of the tang, and the latter may be turned thereon to assume any desired angle of inclination with reference to the shank. For example, it may be inclined, as shown in Fig. 2, or it may be in a horizontal plane, as shown in Fig. 1, or at any other desired angle.

In adjusting the tang to the pitch of the roof the bends A′ and B^2 constantly remain in substantially or approximately the same circle, so that no unsightly projection or obstruction of an end of either occurs. When the desired inclination of the tang has been secured, it and the shank are firmly fastened together by a bolt, H, having a nut, *h*, which passes through one of the holes a^2 in the bend A′, and one of a series of matching or corresponding holes, *b*′, in the bend B′. The shank B has a concave groove, b^2, in one of its sides, its opposite side having a rack, b^3, the upper sides of the teeth of said rack being straight or abrupt shoulders and the lower sides of said teeth being inclined, as shown. The web portion or metal between the edges of the shank B has a series of small holes, b^4, which lessen its weight and form adjusting openings for the circle.

C represents the circle, which consists of a curved bar having on its under side a flange, C′, with openings *c*, said circle having a base or butt, C^2, of peculiar construction, and an outer hook, C^3. Said hook C^3 may be formed integral with the circle, as shown in Fig. 1; or it may be separate and detachable therefrom, as shown in Fig. 2. When made detachable, it is secured in position by means of a bolt, D, which passes through one of the openings *c* in the flange C′, and also through one of several openings, *c*′, in the shank C^4 of said hook, and is provided with a nut, *d*. The detachable hook C^3 may be adjusted to any desired extent of projection on the circle C, and by having various sizes of detachable hooks said hooks may be adapted to fit different sizes or diameters of trough-beads. The butt or base C^2 of the circle has two flanges, *e e*′, which embrace or fit against the edges of the shank. Said flanges are connected on one side by a bridge or cross-piece, e^2, and on the opposite side by two other bridges or cross-pieces, e^3 e^4, which form a vertical opening or passage for the shank B. The bridge e^2 has on its inner side a concave groove or notch, e^5, and a pin, F, of conical shape, is passed down into this groove and into the groove b^2 of the shank. By reason of the fact that the grooves a^2 and e^5 are concave and the pin F conical a very tight fit is secured, which would not be possible with square or angular grooves and an angular pin or key. The bridges e^3 e^4 have notches or grooves e^6 e^7, to enable said bridges to ride over or clear the rack b^3 in fitting the circle to the shank. The bridge e^4 has or may have an internal projecting pin, e^8, which enters one of the openings b^4 in the shank B when the butt C^2 of the circle is fitted thereto, thereby further insuring the security of the fastening. By reason of the described construction the circle may be adjusted up and down to any altitude on the shank, and when the desired adjustment is attained the parts are very firmly held together by the insertion of the conical pin or key F.

G represents an adjustable hook for the inner edge of the trough, and which may be adapted to or used in connection with a trough, I, having only one bead, the inner edge being plain, as shown in Fig. 1, or to and with a double-bead trough, I′, as shown in Fig. 2. Said hook consists of a downwardly-curved finger, *g*, projecting from a base or stock, *g*′. Said stock has an open-ended slot, g^2, which receives the shank B, and an offset or notch, g^3, which receives a pin or key, H, of conical form, fitted in said offset and in the groove b^2 of the shank B. By means of this construction the adjustable hook may be securely fastened in any desired position on the shank, and may be readily applied to shanks of different form or cross-section from that illustrated in the drawings.

What I claim as my invention is—

1. In an eaves-trough iron or hanger, a shank, B, having at its upper end a curved extension forming bends B′ B^2, said bends being outwardly from the shank and then rearwardly or in the reverse direction, substantially as shown and described.

2. In an eaves-trough iron or hanger, the combination of a tang, A, having a bend, A′, at its lower end, in combination with the shank B, having bends B′ B^2 at its upper extremity, the bends A′ B^2 being substantially or approximately of the same curvature, substantially as shown and described.

3. In an eaves-trough iron or hanger, the combination, with a tang, A, having a bend, A′, and holes a^2 a^3, of a shank, B, having bends B′ B^2 at its upper end, the bend B′ conforming substantially or approximately to the bend A′, and terminating in a hook, *b*, which fits in an opening, a^3, in the tang, said bends having adjusting-holes *b*′ for the reception of a bolt, C, fitted therein, whereby the tang may be adjusted to any desired inclination, substantially as shown and described.

4. In an eaves-trough iron, the combination, with a shank, B, having a concave groove, b^2, on one of its sides, of a round fastening pin or key, substantially as shown and described.

5. In an eaves-trough iron, a shank, B, having one of its sides grooved and the other side formed with a rack, b^3, substantially as shown and described.

6. In an eaves-trough iron, a shank, B, having a concave groove, *b*, on one side, a rack, b^3, on the other side, and openings b^4, substantially as shown and described.

7. The eaves-trough iron circle C, having a butt, C^2, formed with flanges $e\,e'$, and the cross-pieces e^2 e^3 e^4, substantially as shown and described.

8. The combination, with the shank B, having a groove, b^2, on one side and rack b^3 on the other side, of the circle C, having the butt C^2, with a vertical opening, which receives said shank, and a fastening pin or key, F, substantially as shown and described.

9. The combination of shank B, having concave groove b^2 on one side and rack b^3 on the other side, with circle C, having a butt, C^2, with flanges $e\,e'$, and cross-pieces e^2 e^3 e^4, said cross-pieces having grooves or notches e^5 e^6 e^7, and a conical fastening pin or key, F, substantially as shown and described.

10. The combination, in an eaves-trough iron, of the shank B, having openings b^4, with the circle C, having butt C^2, with bridges e^2 e^3 e^4, the bridge e^4 having an internal projection or pin, e^8, which enters one of the openings b^4 in the shank, substantially as shown and described.

11. The combination, with the shank B on an eaves-trough iron, of a detachable adjustable hook, G, for the inner edge or bead of a trough, said hook having a vertical opening for the passage of said shank, and a fastening-key, H, substantially as shown and described.

12. The combination, with a shank, B, having a concave groove, b^2, of the adjustable hook G, with slot g^2, and fastening pin or key H, substantially as shown and described.

13. The combination, with a circle, C, having flange C', with openings c, of detachable adjustable hook C^3, having openings c^2, and bolt D, with nut d, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 23d day of February, 1886.

WILLIAM H. BERGER.

Witnesses:
WILL H. POWELL,
R. DALE SPARHAWK.