J. E. HYRE.

EAVES TROUGH AND SUPPORT.

APPLICATION FILED JUNE 22, 1920.

1,401,703. Patented Dec. 27, 1921.

Fig. 1.

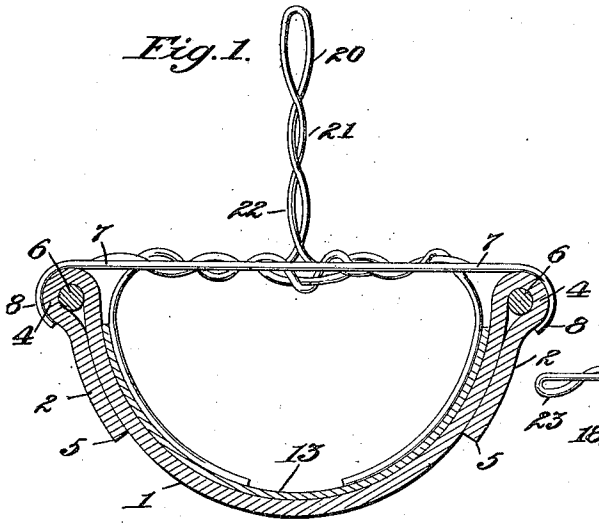


Fig. 6.

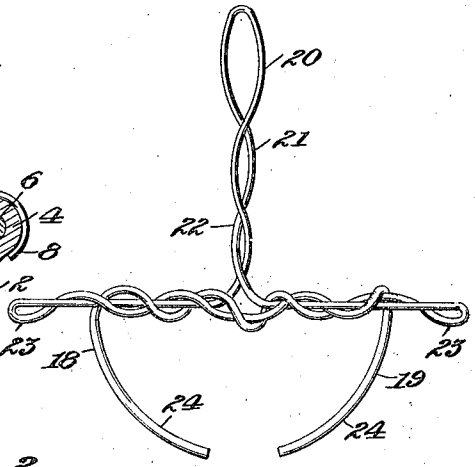


Fig. 2.

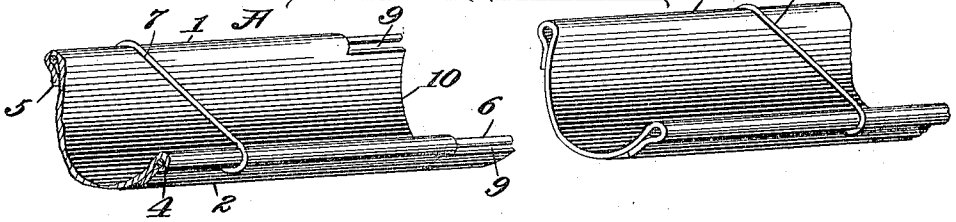


Fig. 3.

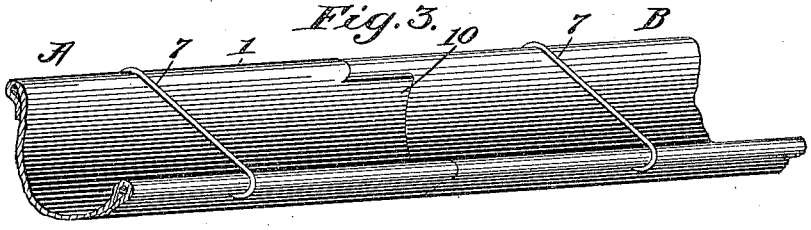


Fig. 4.

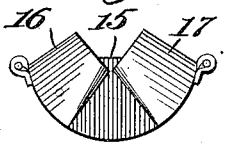
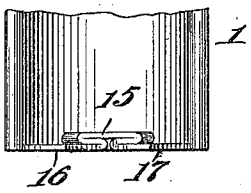


Fig. 5.



Inventor:
J. E. Hyre.

Edmund H. Harris
Atty.

UNITED STATES PATENT OFFICE.

JACOB E. HYRE, OF URBANA, ILLINOIS.

EAVES-TROUGH AND SUPPORT.

1,401,703. Specification of Letters Patent. Patented Dec. 27, 1921.

Application filed June 22, 1920. Serial No. 390,714.

To all whom it may concern:

Be it known that I, JACOB E. HYRE, a citizen of the United States, residing at Urbana, in the county of Champaign and State of Illinois, have invented certain new and useful Improvements in an Eaves-Trough and Support, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in eaves troughs, rain-spouts and the like, and a means for supporting and attaching the same to a roof.

It is contemplated, as one of the objects of the invention, to construct an eaves trough of non-metallic material, preferably of a water-proof composition, such as is known in the trade as "ruberoid," asbestos, and the like.

Another object of the invention is to provide an improved hanger for supporting a trough, the same being preferably formed of a single piece of material, so bent as to provide a plurality of supporting and securing portions.

Still another object is the provision of means for longitudinally strengthening and cross-bracing a trough, to render the same effective when in use.

Other objects and advantages will in part be apparent and in part brought out more fully in the description which follows.

In order that the invention may be clearly comprehended, drawings illustrating some of the possible embodiments and utilizations of the same are hereto appended as a part of this disclosure.

In these drawings:

Figure 1 is a view in cross-section illustrating an embodiment of my invention in an eaves trough, and also showing means for connecting the trough to a roof or the like;

Figs. 2 and 3 are views, in perspective, illustrating one manner of connecting trough sections;

Figs. 4 and 5 are views, in elevation, showing a manner of closing an end of a trough section; and

Fig. 6 is a detailed view of a hanger for supporting a trough in position when in use.

Referring specifically to these drawings, the numeral 1 designates, generally, my improved trough, the same being formed of water-proof paper, "ruberoid," asbestos, or other non-metallic material. In the construction of this device, an elongated, rectangular blank or strip of material is bent for its entire length to form a trough or channel of approximately semi-circular cross-section. Edges 2 of the material are again curved outwardly in spaced relation to the blank to form housings 4. Extended lips 5 formed by the edges are brought into engagement with an outer surface of the trough and suitablly secured thereto, as by pitch or some other adhesive.

Means are provided for strengthening each cross-section, and this may include a rod, wire or any other suitable device. For the purpose of this description, I have shown the same as comprising a wire 6, snugly disposed in the housing 4 and serving to support and stiffen the trough longitudinally. This wire extends approximately the entire length of a trough section.

Means are provided for cross-bracing and reinforcing trough sections and preventing the same from sagging and losing their shape. As here shown, these cross-braces comprise short wires or metal strips 7 which extend across the trough and are bent over the curved portion thereof forming the housing 4. The ends 8 of the cross-brace are brought over and around the curved portions of the trough and bent to securely engage them. These braces may be inserted at such points along the length of the trough as are desirable and, by inserting them through the two thicknesses of material formed by the body and lip, additional means are provided for maintaining the bracing rods in fixed and definite relation and further bracing the trough.

In Figs. 2 and 3 there is disclosed one manner of connecting sections of the trough. As here shown, a piece of each housing 4 of trough section A is cut away, as at 9, leaving a portion of the trough protruding to form a tongue 10 and the ends of the eaves exposed. In joining the sections, the tongue

10 preferably rests in the bottom of an adjoining section B, as shown in Fig. 3, and may be secured to the same by coating with a suitable adhesive. The exposed ends of the wires 6 are inserted in the housings 4 of the adjoining section B and, in order to provide a tight joint, the ends of the wires may be pointed to facilitate their insertion in the housings and enable them to be brought in close contact with the wire in the adjoining section.

Means are also provided for further reinforcing and preventing leakage between the sections. This means comprises an interlining blank or strip 13 placed in the bottom of the trough and extending approximately the entire length thereof. This strip is preferably of a width sufficient to cover the bottom and sides of the trough, and is suitably secured in place by coating the same with pitch or other adhesive.

In Figs. 4 and 5 there is revealed one manner of closing the end of a section. As here shown, this consists in folding the bottom of the trough upwardly and inwardly so as to form a central flap 15 and two corner flaps or ears 16 and 17. These corner flaps are then folded over on the central flap, and all three portions are compactly secured together in any suitable manner, such as by coating with pitch or the like, so as to form a water-tight joint.

Means are also provided for securing the trough to a roof or the like and, as here shown, the same consists in providing a hanger, preferably made of a single piece of wire so twisted as to provide a plurality of portions for supporting and engaging an eaves trough. In constructing the hanger, a piece of wire is bent to form two strands 18 and 19, of approximately equal length. To provide means for attaching the hanger in position when in use, a loop 20, formed by bending the wire in the manner just specified, is adapted to be fastened to the roof in any desired way, such as by nails or the like. The strands are then twisted, as at 21, to form a shank 22, and each strand is then extended outwardly at an angle to the shank and bent back upon itself to form a loop 23 which is adapted to be curved into close engagement with the housing 4, and constitute a support for the trough. The end 24 of each strand is then carried to the opposite side of the hanger and bent downwardly to about the center of the bottom of the trough to constitute a curved engaging portion for the inside of the trough. In this way, the ends 24 serve as additional means for retaining the trough in shape, by bearing with a spring-like action against the inner curved sides of the trough channel.

From the foregoing, it will be observed that I have devised an exceedingly simple, yet practical, construction, the same being easy and cheap to manufacture and requiring little skill to apply. The fact that a trough made in the manner above pointed out does not rust makes it desirable over the present type of metal trough, as the same can be replaced at a smaller cost and with less labor.

While I have shown my invention in the embodiment illustrated, it is to be understood that many changes may be made in the same without departing from the spirit thereof or its scope, as set forth in the claims.

What I claim is:

1. A non-metallic eaves trough comprising a blank bent along its length to form a channel, certain portions of the blank being shaped to constitute housings extending longitudinally of the channel, a lip portion on each housing extending to a point approximately midway of the trough and secured to a portion of the blank, a longitudinal strengthening member disposed in each housing, and means for cross-bracing the structure and maintaining the longitudinal strengthening members in predetermined relation.

2. A non-metallic eaves trough comprising a blank bent along its length to form a channel, certain portions of the blank being shaped to constitute housings extending longitudinally of the channel, lip portions on the housings extending to a point approximately midway of the trough and secured to a portion of the blank, a longitudinal strengthening member disposed in each housing, means for cross-bracing the structure and maintaining the longitudinal strengthening members in predetermined relation, and an interlining blank extending longitudinally of the trough and forming an unbroken support across the joint of the trough sections.

3. A non-metallic eaves trough comprising a blank bent along its length to form a channel certain portions of the blank being shaped to constitute housings extending longitudinally of the channel, a lip portion on the housings secured to a portion of the blank and extending to a point approximately midway of the trough, a longitudinal strengthening member disposed in each housing, means for cross-bracing the structure and maintaining the longitudinal strengthening members in predetermined relation, and a portion of the blank bent upwardly and inwardly to form flap members, said members being folded one upon another and joined to constitute an end closure for the channel.

4. In combination, a hanger for an eaves trough constructed of a single piece of wire and bent to form a loop for attaching to a

roof, strands of said wire being twisted to form a shank, each strand extending outwardly at an angle to the shank and bent back upon itself to form a trough supporting loop, and a continuation of each strand being then bent back upon itself and extended downwardly to constitute an engaging portion adapted to be disposed on the inside of a trough and extending to a point approximately below the center thereof.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB E. HYRE.

Witnesses:
ORVILLE B. LINDLEY,
WILLIAM J. SCHRADER.