

No. 692,331.

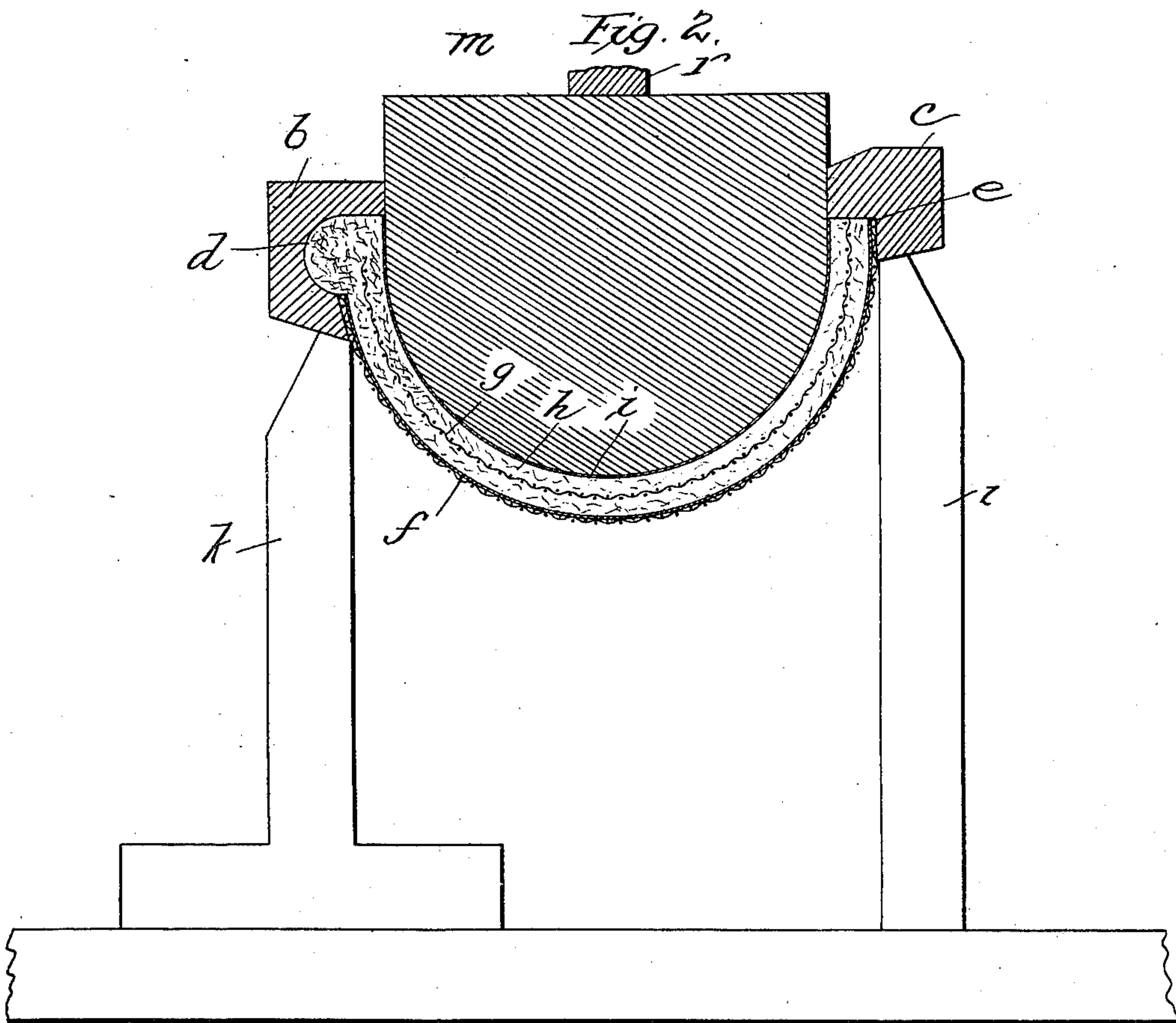
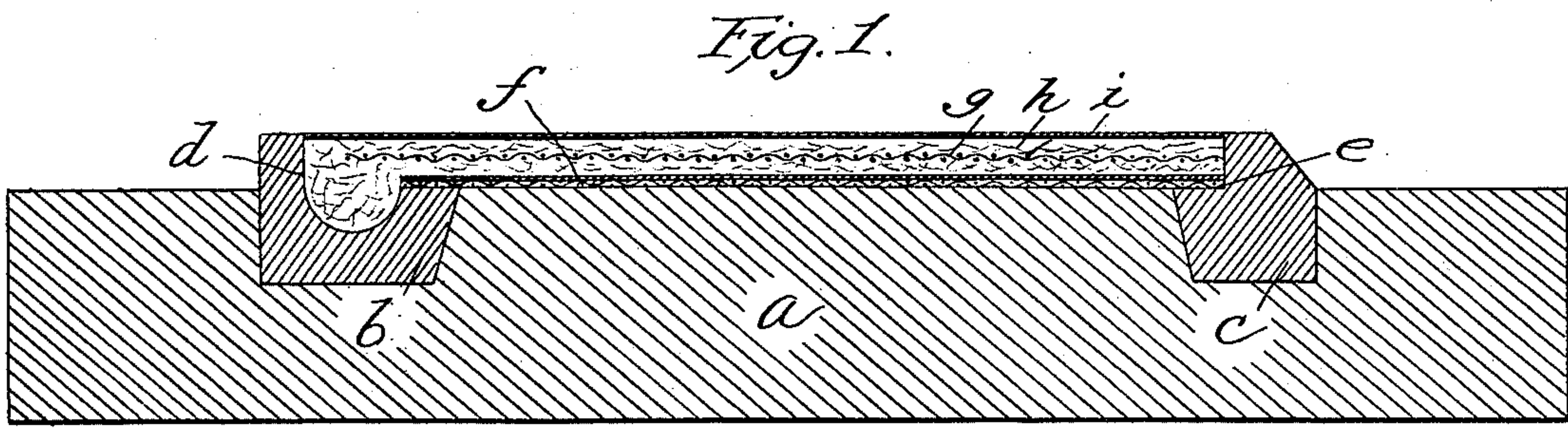
Patented Feb. 4, 1902.

A. NERACHER.  
METHOD OF MAKING EAVES TROUGHS.

(Application filed Jan. 30, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Attest  
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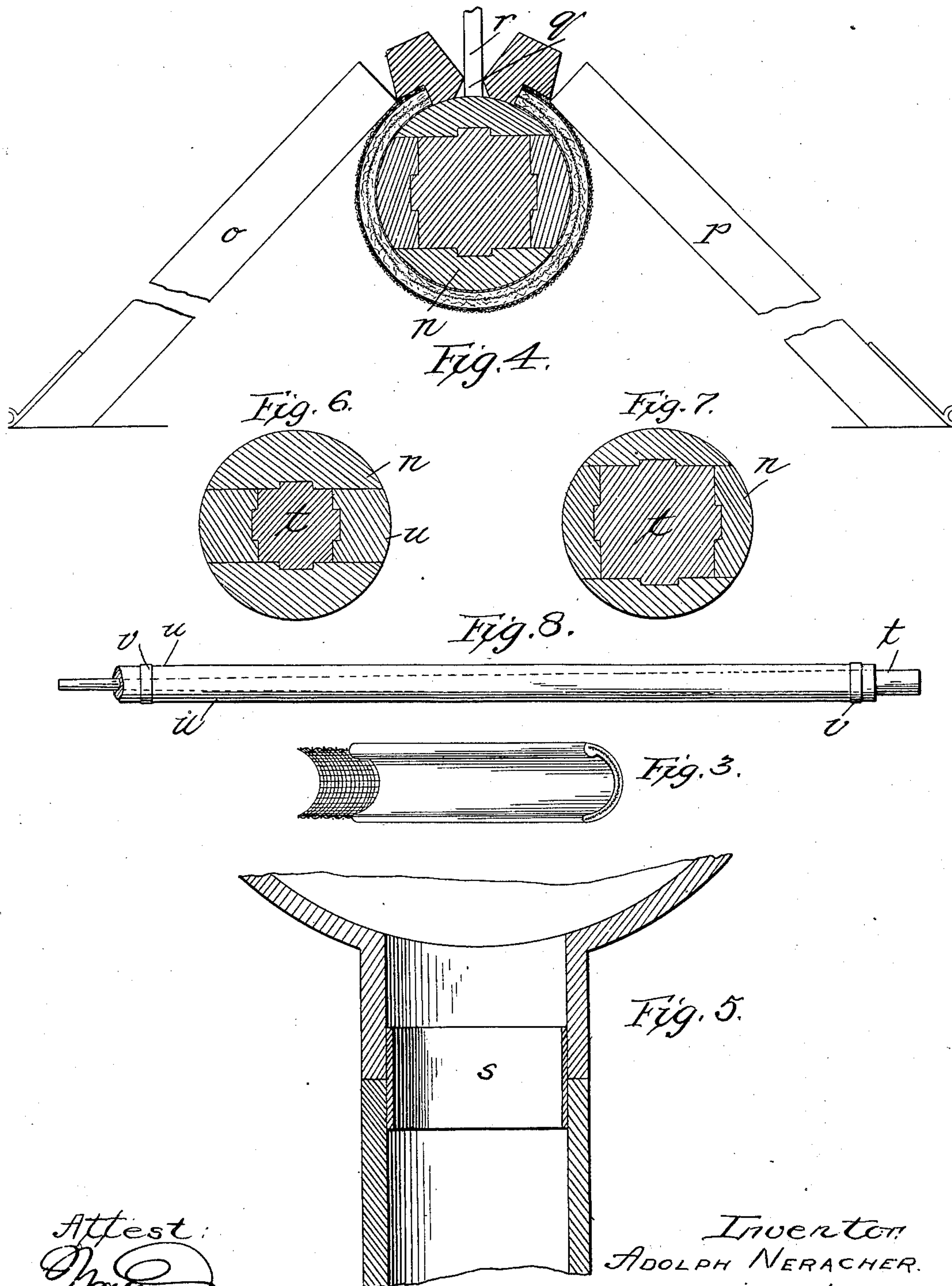
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2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

ADOLPH NERACHER, OF CLEVELAND, OHIO.

## METHOD OF MAKING EAVES-TROUGHS.

SPECIFICATION forming part of Letters Patent No. 692,331, dated February 4, 1902.

Application filed January 30, 1901. Serial No. 45,377. (No model.)

*To all whom it may concern:*

Be it known that I, ADOLPH NERACHER, a citizen of the United States, residing at Cleveland, Ohio, have invented certain new and useful Improvements in Methods of Making Eaves-Troughs and the Like, of which the following is a specification.

My invention relates to the method of making eaves-troughs and like articles from pulp, cement, or like material.

In the accompanying drawings, Figure 1 represents the first step in the manufacture of my invention. Fig. 2 represents the second step as applied to an eaves-trough. Fig. 3 represents a means for securing trough-sections together. Fig. 4 represents the process of manufacture as applied to down spouts or conductors. Fig. 5 is a detail view of the connection between down-spout sections. Figs. 6, 7, and 8 show details relating to a collapsible former.

In the drawings, *a* represents a grooved plank or base-piece adapted to receive mold-strips *b c*. The strip *b* is provided with a groove at *d*, and the strip *c* has a bearing or shoulder *e*. These strips extend parallel with each other and are connected by a wire-screen layer *f*, which lies on the upper surface of the base-piece between the strips and is adapted to be removed from the base-piece together with the mold-strips. With the parts in the position as shown in Fig. 1 a sheet of paper is applied over the wire screen and upon this a layer of pulp is applied. Upon this layer of pulp a wire screen, as shown at *g*, is laid, and over this is applied a second layer of pulp, as shown at *h*, and finally upon this is placed a sheet of paper *i*. The pulp fills the cavity in the mold-strip *b*, and by this means the bead on the eaves-trough is provided. While the pulp is still green, the mold-strips are removed from the grooves in the base-piece, the wire screen *f* being attached thereto and supporting the pulp at all points between the mold-strips. These strips are now placed upon and supported by adjustable boards or standards *k l*, and by moving these adjustable boards toward each other the paper-pulp, with the embedded screen, is made to assume the concave form shown in Fig. 2 in connection with a mold-block *m*, which is moved

downwardly between the adjustable boards when they are brought together. The pressure exerted between the mold-strips, the wire screen *f*, and the former *m* is such as to give the eaves-trough its proper cross-sectional shape. After the paper-pulp has set the adjustable boards are separated, and then the mold-strips *b c* are removed, together with the wire screen *f*, and these may be replaced on the base for the formation of another section. The eaves-trough may now be coated on its concave side with pitch to render it impervious, and it may be suitably painted on its outer side. In order that the sections may be joined together, I allow, as shown in Fig. 3, a portion of the wire screen which is embedded in the pulp to project therefrom, and when this is lapped upon a similarly-projecting portion of the adjacent section these two sections may be secured together by cement or by pulp similar to that of which the sections are formed.

The same process of manufacture is carried out in forming the down spouts or conductors. In this case, however, the adjustable boards or standards are pivotally supported and are arranged to swing with their upper ends approaching each other, while their lower ends are divergent and a cylindrical former *n* is used instead of the former shown in Fig. 1. The adjustable boards are here marked *o p*, as shown in Fig. 4. By this construction the wire screen, with the pulp thereon, nearly encircles the former, the two molding-strips reaching inwardly over the upper surface of the former. When the spout has set and is removed from between the boards and molding-strips, the gap left at *q*, formerly occupied by the molding-strips, is filled in by a segment suitably formed. This jointed side of the spout may be set against the building and does not detract in any way from either the appearance or usefulness of the article. In order to connect sections of this conductor with each other or with the eaves-trough, I employ, as shown in Fig. 5, a collar *s*, of copper or other suitable material, which is cemented within the end of one section or within the end of a collar projecting from the eaves-trough, and the projecting end of this copper band is adapted to receive the next section.



The flexible connection between the mold-strips must be of material which will not stretch, and for this purpose I employ the wire screen.

5 The paper layer on the wire prevents the pulp from entering the meshes of the wire and which would render the removal of the wire from the pulp impossible, and the inner layer of paper also prevents the pulp from sticking  
10 to the mold.

The former for the down-spout is made up of collapsible sections, and thus the cylindrical down-spout may be very readily removed.

15 During the molding process the molding-strips are securely supported on the adjustable boards, and while so supported the desired amount of downward pressure may be exerted on the former by the plunger *r* in  
20 Figs. 2 and 4, operated in any suitable way. This plunger may be a board as long as the section to be made or as long as the mold.

The collapsible former comprises a central tapered part *t* and sections *w u* to be operated  
25 thereby by the longitudinal movement of the said tapered part. The expansible sections are held together by rings *v* at the ends of the former outside of where the gutter is formed. This ring fits in grooves in the sections.

30 I have used the term "pulp" in a generic sense as meaning any substance of a plastic or pulpy nature. The invention may be carried out with cement as well as with pulp.

I claim as my invention—

1. The herein-described method consisting 35  
in placing a layer of pulp on a flexible foundation-piece, a layer of wire screen on the pulp, a second layer of pulp on the screen then molding the layers to the required shape, and finally separating the flexible foundation-piece from the layer, substantially as described. 40

2. The herein-described method consisting in spreading the material capable of being molded upon a flexible foundation-piece, 45  
moving the two ends of said foundation with the material thereon toward each other to assume a trough-like form, and then separating the flexible foundation-piece from the said shaped material, substantially as described. 50

3. The herein-described method consisting in placing a layer of paper on a wire screen, placing a layer of pulp on the paper, a layer of wire screen on the pulp and a second layer of pulp on the wire screen and then a layer 55  
of paper on the second layer of pulp, molding the layers to the required shape and removing the first layer of screen material, substantially as described.

In testimony whereof I affix my signature 60  
in presence of two witnesses.

ADOLPH NERACHER.

Witnesses:

HENRY E. COOPER,  
WM. F. HALL.