

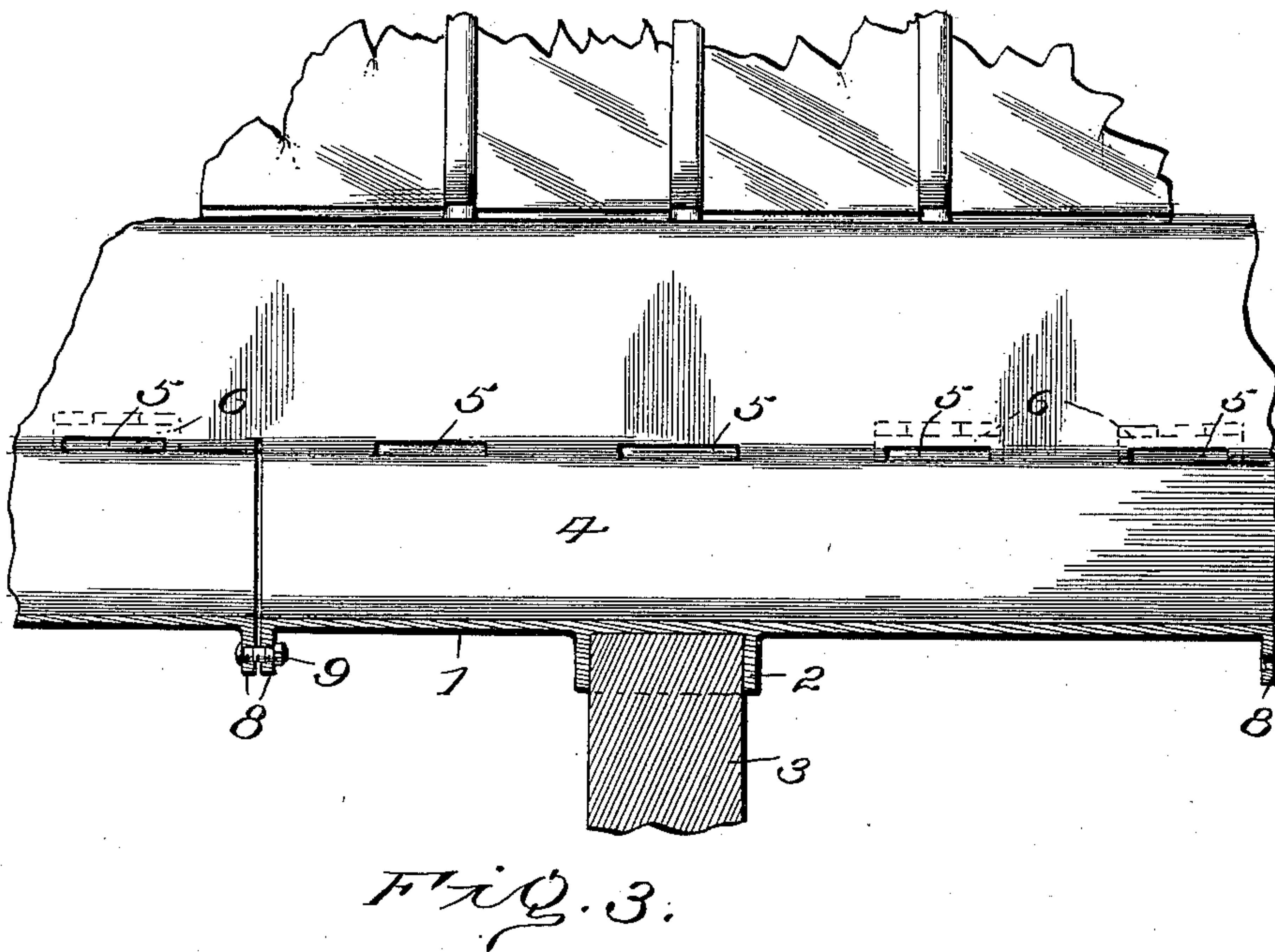
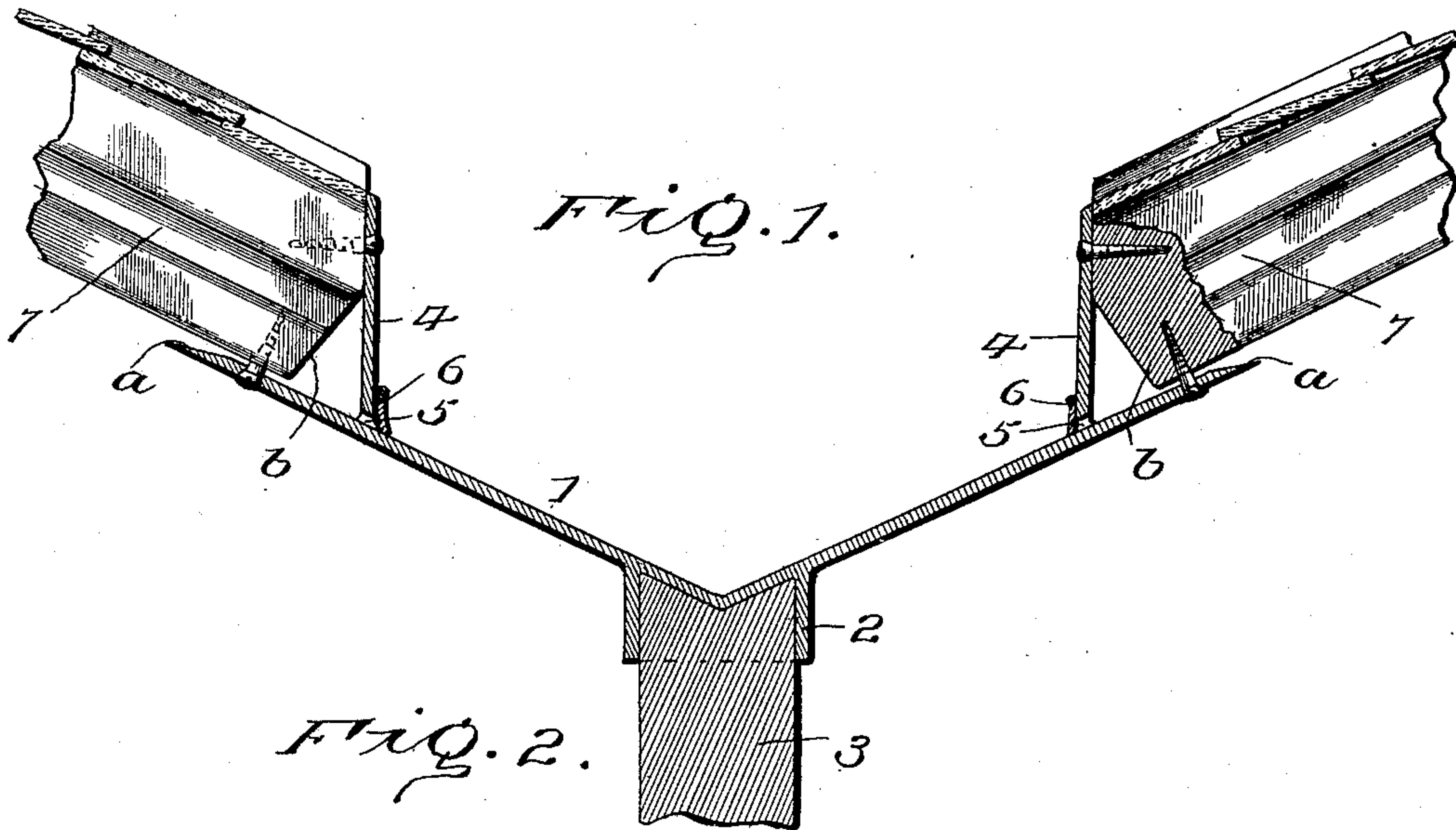
No. 661,870.

Patented Nov. 13, 1900.

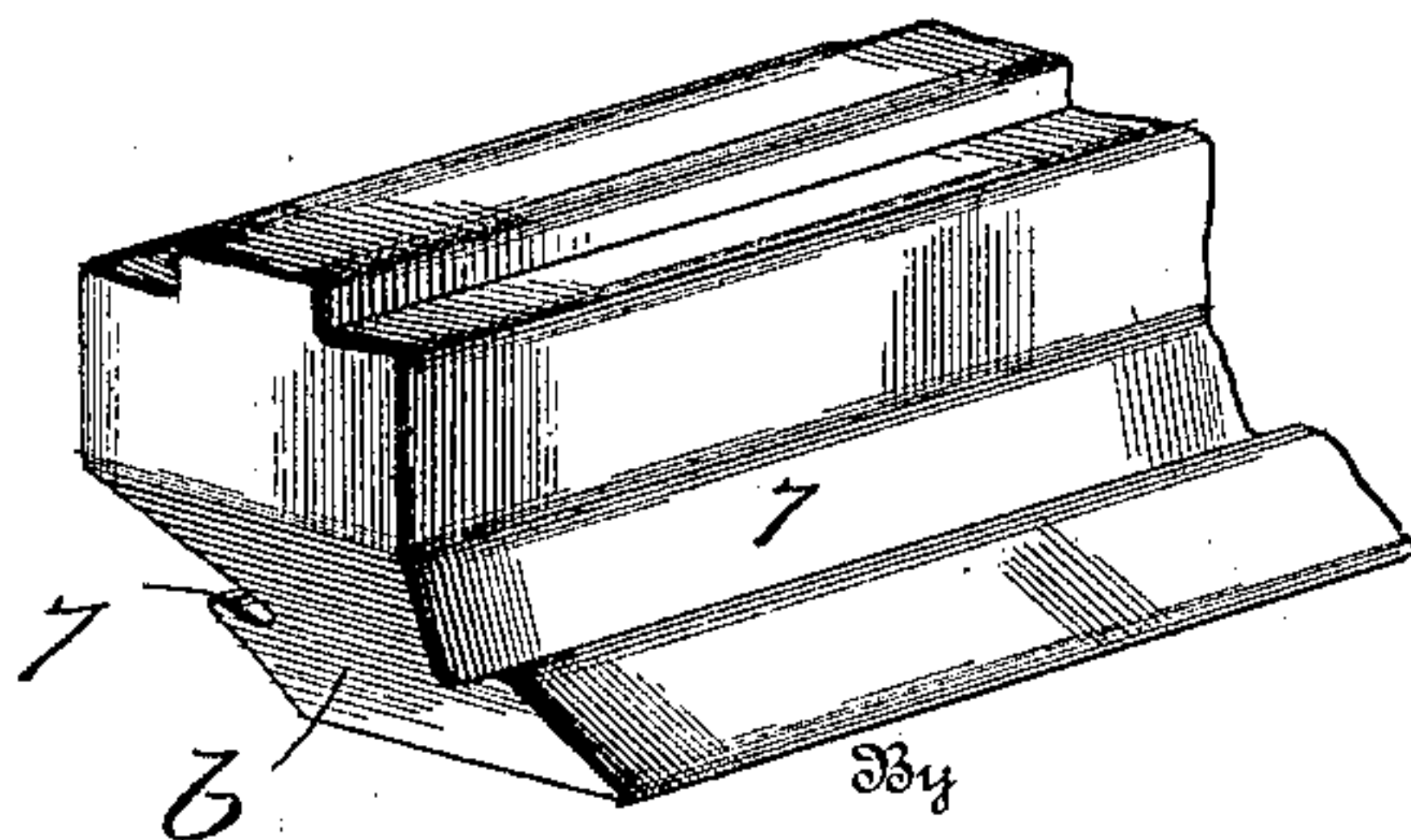
E. HIPPARD.
VALLEY GUTTER.

(Application filed Mar. 23, 1900.)

(No Model.)



Witnesses
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Lula Noel



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UNITED STATES PATENT OFFICE.

EMANUEL HIPPARD, OF YOUNGSTOWN, OHIO.

VALLEY-GUTTER.

SPECIFICATION forming part of Letters Patent No. 661,870, dated November 13, 1900.

Application filed March 23, 1900. Serial No. 9,938. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL HIPPARD, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Valley-Gutters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to valley-gutters for greenhouses; and the improvements consist generally of the novel construction and arrangement of the various parts, as will be hereinafter more fully described, and particularly set forth in the claims.

The principal object of the invention is to provide an efficient means for gathering the water of condensation which accumulates upon the inner surface of the sashes forming the roofs of greenhouses and similar structures and conducting it to the gutter.

Other objects will become apparent upon further description of the invention.

In the drawings, Figure 1 is a transverse section through the gutter and eaves of two greenhouses to which it is attached; Fig. 2, a vertical longitudinal section through the center of the gutter, showing two sections of gutter joined together; and Fig. 3, a perspective view of a portion of a sash-bar.

Referring to the several views, the numeral 1 indicates my improved gutter, preferably V-shaped in cross-section, provided with tubular extensions 2 for the reception of the ends of center pillars 3, said tubular extensions being preferably integral with the gutter. The gutter is provided longitudinally near each outside edge with a vertical flange or facing 4, by means of which and the outer side edges the gutter is attached to the adjacent eaves of the greenhouses, the flanges being secured at their upper edges to the ends of the sash-bars and the outside edges to the under edges of said bars, with a slight space therebetween, as shown in Fig. 1. The outer side edges are beveled, as shown at *a*, for the purpose of catching the water of condensation

and conveying it to the gutter, thereby preventing it from running down the under surface of the gutter, as would be the case if the edges were at right angles with the surfaces or sides and the gutter secured tightly to the sash-bars. Each sash-bar has its end cut away, as shown at *b*, to provide a free passage for the water of condensation, as will be more fully explained hereinafter. The glass is secured in the rabbeted upper edges of the sash-bars in the usual overlapped or abutted position, and the lower panes of glass are retained in position by the upper edge of the flange or facing 4, abutting against the edge of the glass panes, the upper edge of the flange or facing being beveled and flush with the upper surface of the panes. The flange or facing is provided with a series of openings 5, normally closed by flap-valves 6, which serve to keep out the air when there is no accumulation of water of condensation. By cutting away the lower portion of the end of each sash-bar a drip-gutter is formed between said ends and the flange or facing 4, in which the water of condensation gathers and from thence is permitted to flow freely through the openings 5 to the gutter proper. The sides of each sash-bar are provided longitudinally with grooves 7 7 for the purpose of catching the water of condensation and conveying it to the drip-gutter.

The gutter and its flanges are made of metal and when of unusual length are preferably made in sections, the sections being joined together in any well-known manner. In the present instance the respective ends of each section are formed with a flange 8, and the sections are connected together by means of bolts 9, as shown in Fig. 2.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A valley-gutter provided with upwardly-extending longitudinal securing facings or flanges, and having its sides extended to form, with the facings or flanges, drip-gutters.

2. A valley-gutter provided with upwardly-extending longitudinal securing facings or flanges, and having its sides extended to form,

with the facings or flanges, drip-gutters, said gutters communicating with the valley-gutter.

3. A valley-gutter provided with upwardly-
extending longitudinal securing facings or
5 flanges, and having its sides extended to form,
with the facings or flanges, drip-gutters, said
facings or flanges having openings therein to
permit the water from the drip-gutters to flow

into the valley-gutter, said openings being
provided with flap-valves. 10

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

EMANUEL HIPPARD.

Witnesses:

VOLNEY ROGERS,
L. B. TOWNLEY.