

F. OTTO.  
Eaves-Trough Hangers.

No. 227,702.

Patented May 18, 1880.

Fig. 1.

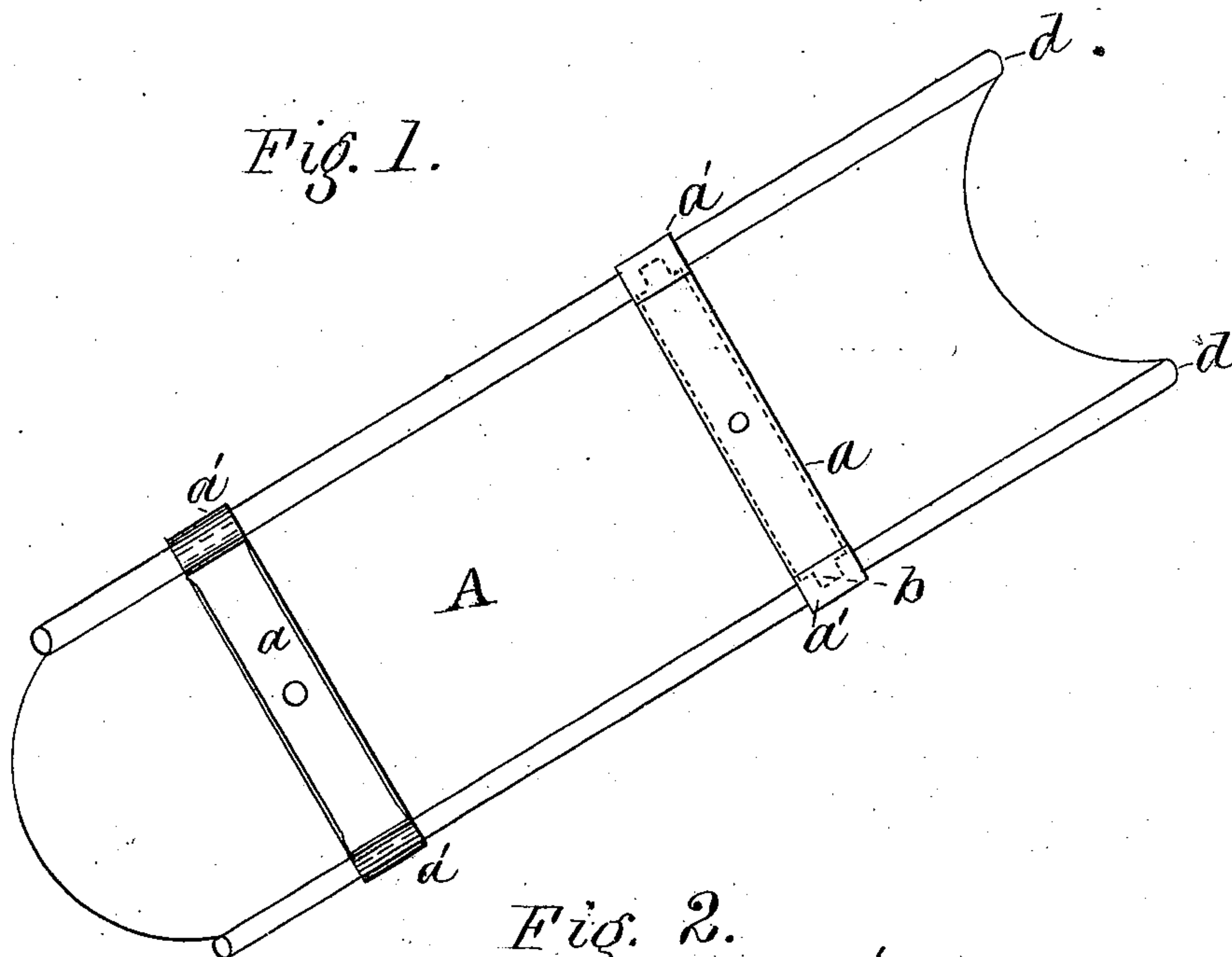


Fig. 2.

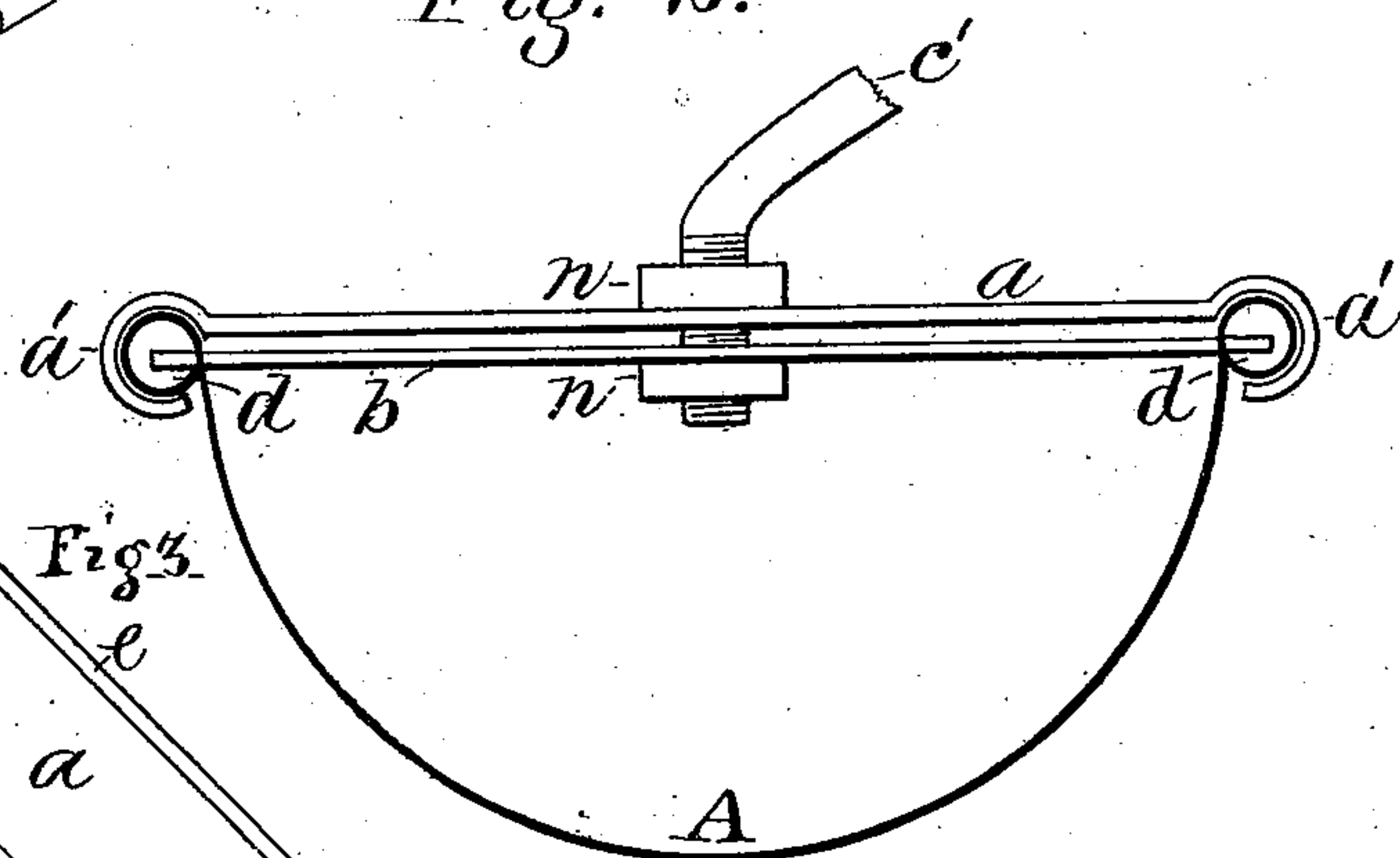


Fig. 3.

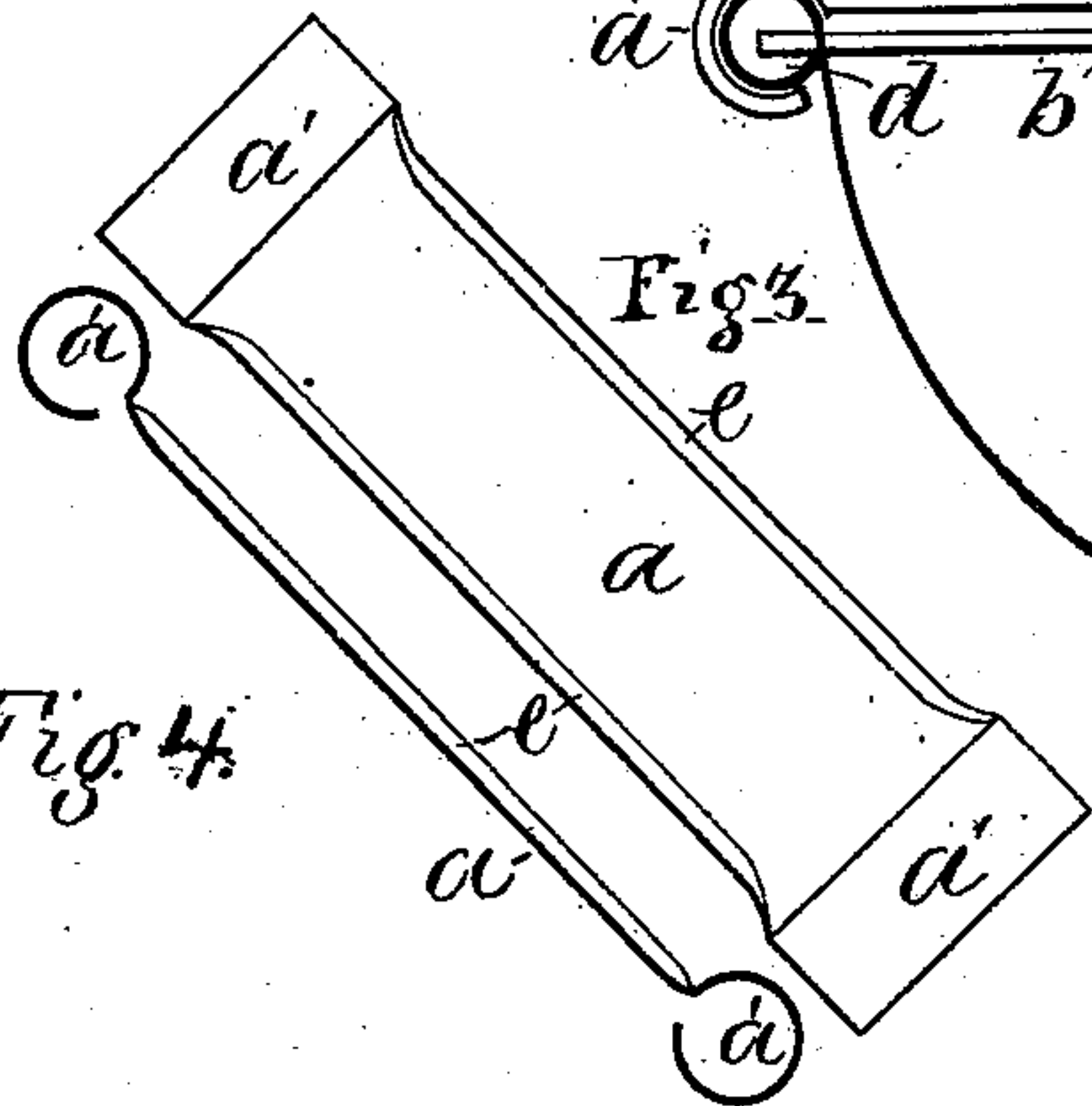


Fig. 4.

Attest.  
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# UNITED STATES PATENT OFFICE.

FERDINAND OTTO, OF SPRINGFIELD, OHIO.

## EAVES-TROUGH HANGER.

SPECIFICATION forming part of Letters Patent No. 227,702, dated May 18, 1880.

Application filed September 22, 1879.

*To all whom it may concern:*

Be it known that I, FERDINAND OTTO, of the city of Springfield, in the county of Clarke and State of Ohio, have invented certain Improvements in Eaves-Troughs, of which the following is a clear, full, and exact specification.

My invention relates more particularly to the stays or cross-bars which connect the sides of the trough together, the object being to dispense entirely with solder in fastening them in, and also to increase the strength and durability of the trough without increasing the cost of manufacture.

Heretofore stays or cross-bars have been made with the ends square and soldered to the inside edges of the trough; also, with their ends turned at an angle and inserted under the edges of the "tin", (which has been turned inside;) and others still have been made with tenons on their ends, which are inserted in slots cut in the trough sides below or into the bead. All of these, to insure permanency, require to be soldered in, as the trough is liable to spread from the water freezing in it.

My improved stay can be used not only for the blind stays, but also for the hanger-stays of the trough, and it can also be used in connection with any inserted stay, and is particularly applicable to the trough as a hanger-stay in connection with my improvement patented July 22, 1879, and for all troughs having beads on both sides.

Figure 1 is a perspective view of a section of a trough with my improvement applied thereto. Fig. 2 is an enlarged cross-section of an eaves-trough with an inserted stay with tenon ends, (similar to my improvement of July 22, 1879,) and my improved clasp-stay shown with it. Fig. 3 is a plan view of the clasp-stay, and Fig. 4 an edge view of the same.

A is the eaves-trough, which has a circular bead, *d*, on each edge. *a* is my improved clasp-stay, which is made of hoop or sheet iron, and extends across the top of the trough on a line with its top edges, and has a circular ring, *a'*, turned on each end to encircle

and clasp the bead *d*. To place it in position it is slipped on over the end of the trough, the circular ends *a'* slipping over the beads *d*.

On the left of Fig. 1 my improved clasp-stay *a* is shown applied singly as a hanger-stay. On the right it is seen in same figure applied in connection with a tenoned stay, *b*, similar to that used in my former patent before mentioned.

In Fig. 2 a section of a hanger, *c'*, is shown, of usual construction, applied to the double stays *a* and *b*, and adjustably held in position by nuts *n n*. It will be seen by reference to this figure, and to the details, Figs. 3 and 4, that the circular ends *a' a'* of the clasp-stay *a* encircle the beads of the trough sufficiently to give it strength to sustain all the weight of the trough (when filled with water) without injury, the form of the stay being such that even when applied singly it is strong enough for all the purposes required. In this case the edges *e* are bent downward to strengthen it.

In whichever way my improved stay may be applied no solder is needed to secure it, the ring ends *a'* being made to clasp the beads *d* firmly, and whether it be employed as a hanger or a blind stay, it will retain its position on the trough, as the circular ends *a'* completely clasp and hold firmly the turned edges or beads of the trough on each side.

In shipping, the stays are left off and the sections nested, occupying but little space.

I am aware that eaves-troughs have been made with curved stays completely encircling the trough and having their ends curved over the edges of the trough.

I am also aware that such stays have been made with one edge turned over the bead on one side and the opposite edge terminating in a pin projecting through the inner edge of the trough; but such forms of construction I do not claim.

What I claim is—

1. In reversible eaves-troughs, the cross-stay *a*, consisting of a single straight bar extending across the top of the trough, and having open rings *a'* at each end adapted to slip



over and clasp the circular edges of the trough, substantially as described, and for the purpose set forth.

2. The combination of the trough A, having the equal-size circular beads *d* at each side, and a tenon-stay, *b*, inserted in the beads from the inside of the trough, with a cross-stay, *a*, having curved edges *a'*, so constructed that

either end of the trough may be slipped under and be held by the curved edges *a'* of cross-stay *a*, substantially as described, and for the purpose set forth.

FERDINAND OTTO.

Attest:

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C. C. RAHN.