

(No Model.)

R. F. O'BRIEN.

DEVICE FOR USE IN SOLDERING OR MAKING EAVES TROUGHS.

No. 316,813.

Patented Apr. 28, 1885.

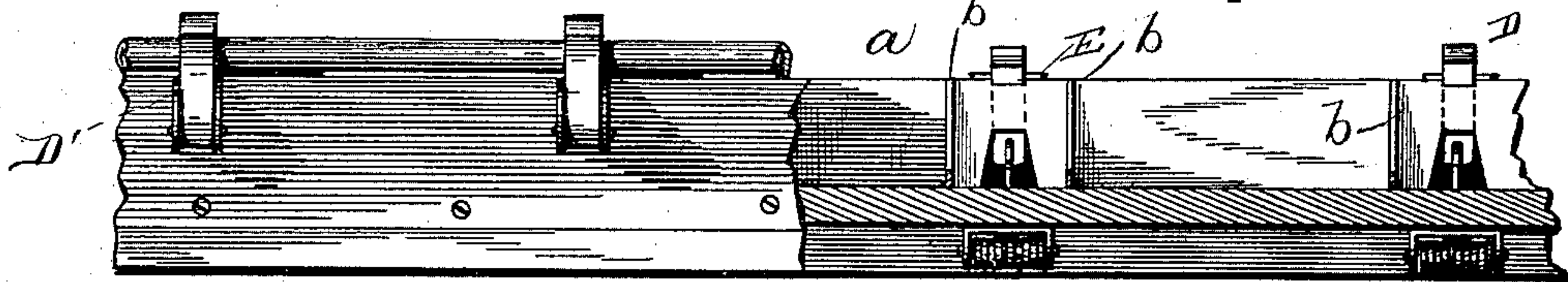


Fig. 1.

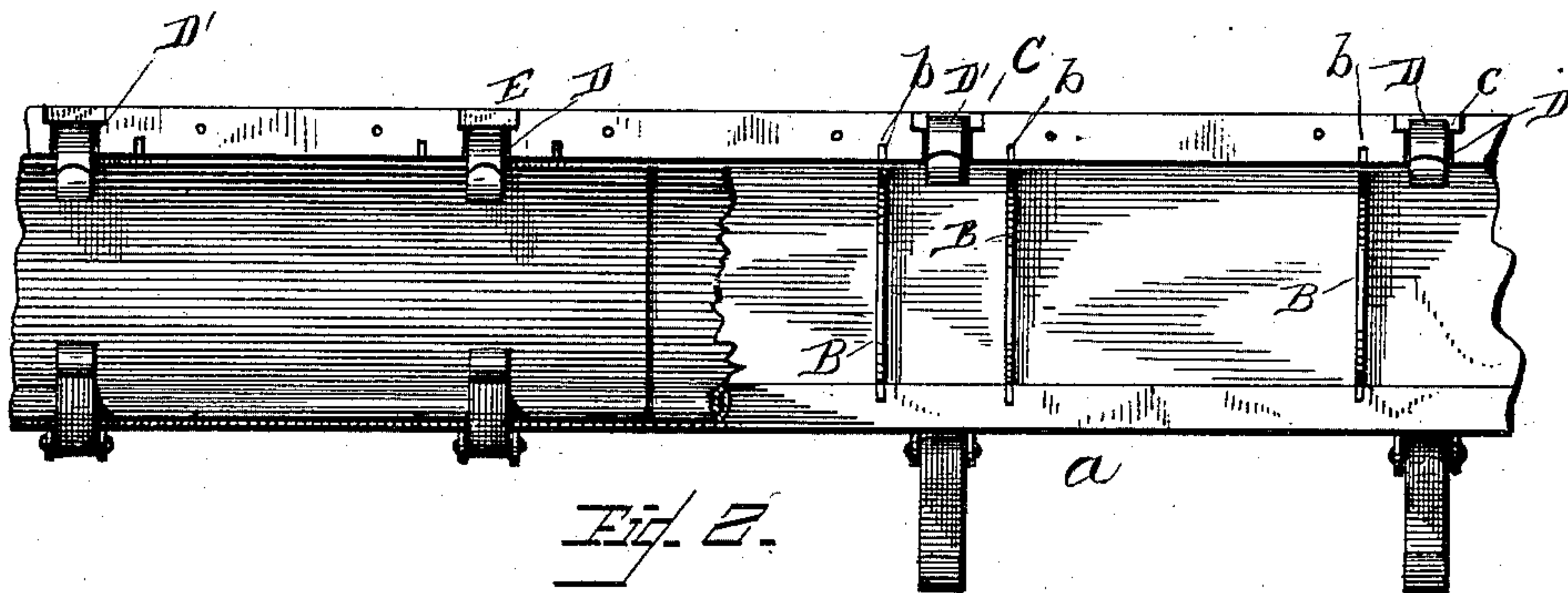


Fig. 2.

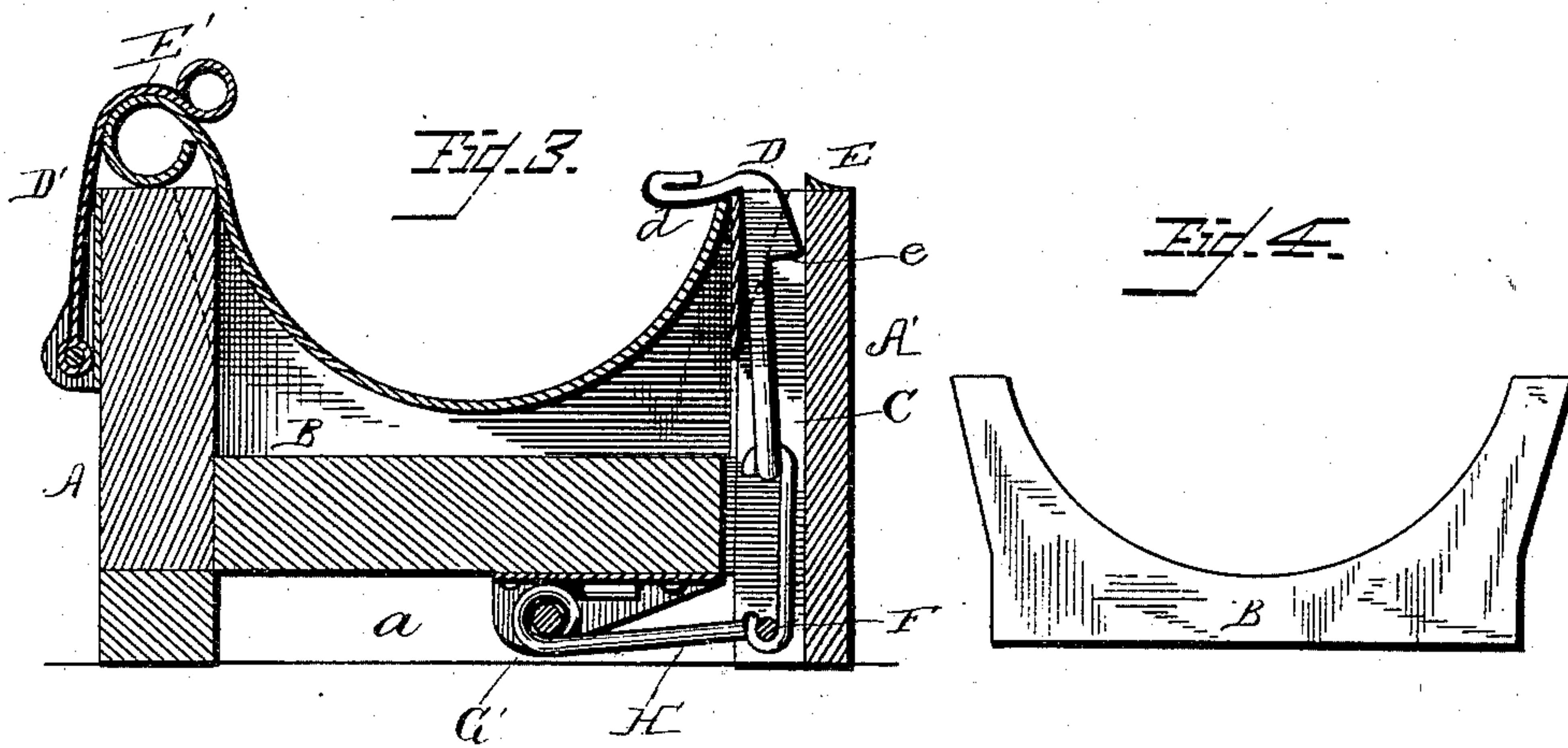


Fig. 3.

Fig. 4.

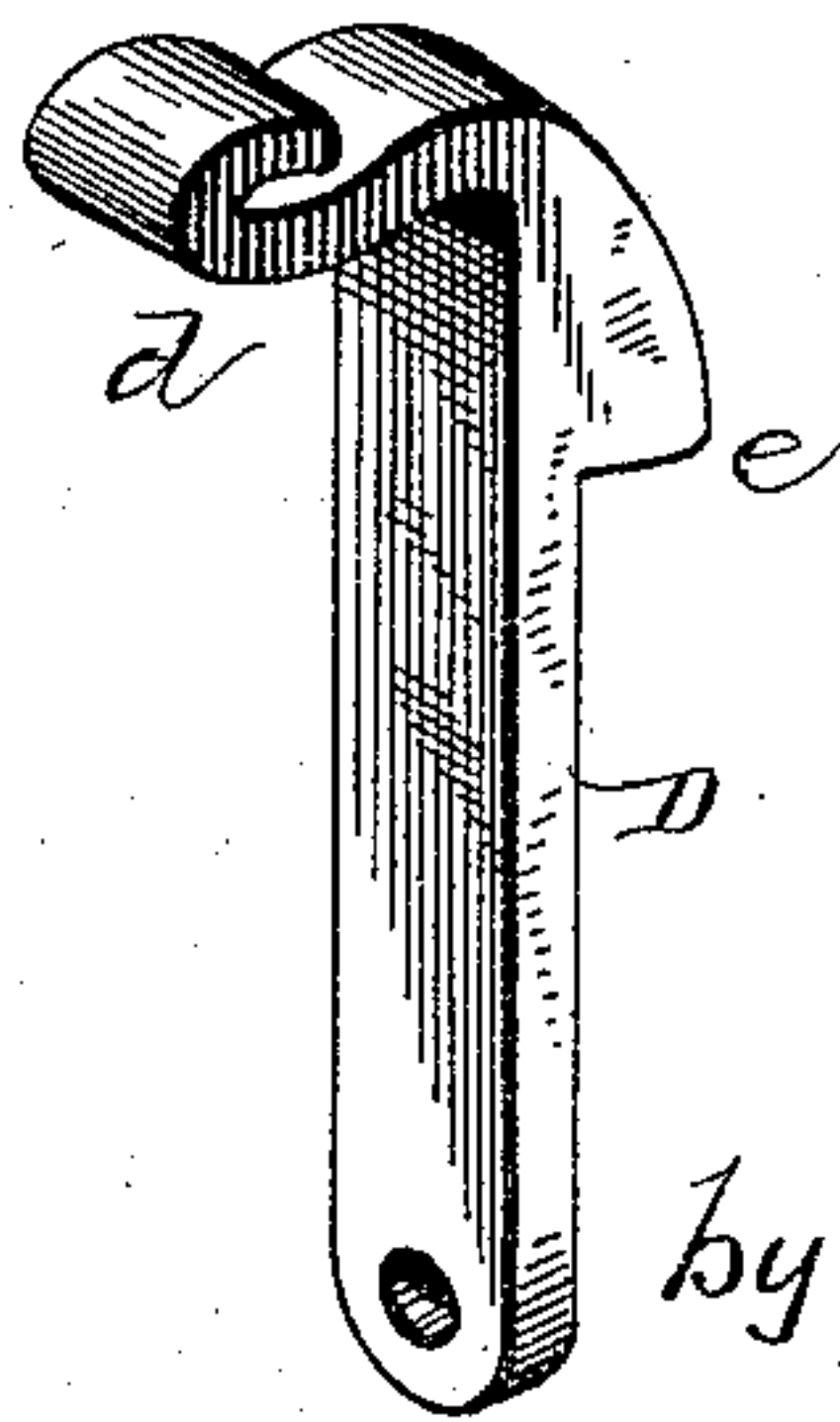


Fig. 5.

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DEVICE FOR USE IN SOLDERING OR MAKING EAVES-TROUGHS.

SPECIFICATION forming part of Letters Patent No. 316,813, dated April 28, 1885.

Application filed December 4, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROBERT F. O'BRIEN, a citizen of the United States, residing at Boonville, in the State of Missouri, have invented certain new and useful Improvements in Devices for Use in Soldering or Making Eaves-Troughs; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention has relation to improvements in troughs for making sheet-metal hanging gutters or eaves-troughs; and it consists in the construction, combination, and novel arrangement of devices, as will be hereinafter more fully set forth and claimed.

In the accompanying drawings, in which similar letters of references indicate corresponding parts in the several figures, Figure 1 is a representation of a side elevation of my invention, showing the frame partly in longitudinal section and partly broken away, with a section of an eaves-trough in position. Fig. 2 is a plan view of the same. Fig. 3 is a cross-sectional view of the frame, showing a section of a trough in position. Fig. 4 is a view of one of the transverse bridges for supporting the sections of trough while being connected, and Fig. 5 is a perspective view of one of the spring-actuated clamps.

Referring to the said drawings by letter, *a* indicates a trough-shaped frame, which may be of any suitable length, having a fixed bottom and longitudinal vertically-fixed side walls, *A A'*. This frame is preferably formed of wood, and the bottom thereof is provided at suitable intervals on its upper side with transverse grooves, which communicate, respectively, with diametrically-arranged vertical grooves *b* in the inner side walls of the said trough-frame for the reception of removable metallic bridge-pieces *B*, adapted to engage the sections of the hanger-trough while it is being soldered or otherwise connected. The inner or upper edge of these bridge-pieces are

semicircular or of a contour to snugly engage the under or convex side of an eaves-trough when pressure is brought upon the latter, as will be presently explained. The construction of the bridge-pieces are more fully shown in Fig. 4 of the drawings.

To the outer side of the vertical lateral wall *A* of the frame are successively hinged hook-clamps *D'*, which are designed to extend above the upper horizontal edge of the said wall, and their curved portions *E'* clamp over the tubular flanged edge of the eaves-trough when placed in the said frame, the said tubular flange engaging the upper edge of the said wall. The opposite wall, *A'*, of the frame *a* is provided at suitable intervals with vertical apertures or recesses *C*, for the passage of the spring-actuated clamps *D*. The hooks or horizontal arms *d* of these clamps *D* extend inwardly to engage one edge of the eaves-trough, the hinged hooks engaging the opposite or tubular edge thereof, as more fully shown in Fig. 3.

The spring-actuated hook-clamps are provided on their outer sides, near their upper ends, with offset shoulders *e*, which are designed to engage the upper edge of the said side wall of the trough-frame when they are not in use. The said walls may be provided with outwardly-inclined lugs *E*, or other suitable devices for receiving the shoulder of the said hook.

In the present illustration of my invention I have shown spiral springs *G'* arranged horizontally beneath the bottom of the trough-frame, and having loops *H*, connecting with the hook bolts or clamps *D* by means of a link, *F*; but I do not wish to confine myself to this form of spring, as various kinds of springs may be used without departing from the spirit of my invention.

It will be readily understood that this device does not form the sections of the trough, but is designed to hold these sections while they are being united.

The operation is as follows: The hinged hooks being thrown down from the upper edge of the wall to which they are attached, and the spring-actuated clamp-hooks raised so as to

have their outer shoulders engage the lugs or upper edges of the vertical wall adjacent to the said spring-clamps, the sections of eaves-trough to be connected are made to slightly overlap each other at their meeting ends, after which they are placed in the trough *a* with their convex sides engaging the semicircular edges of the bridge-pieces. The hinged clamps are then turned up over the tubular-flanged edge of the eaves-trough sections, which engage the upper edge of one of the side walls, as shown, and the spring-actuated clamps disengaged from the upper edge of the opposite wall of the said frame *a*, when the connecting-joints of the sections will be firmly pressed together to be soldered or otherwise united. The operation is both rapid and effective, and sections of eaves-trough may be connected with but little experience on the part of the operator.

Having described this invention, what I claim is—

1. The combination, with the main frame, of the hook-clamps hinged to one of the side walls thereof and the spring-actuated vertical clamps arranged in the opposite side wall of the said frame, substantially as specified.

2. In a device for forming eaves-troughs, the

combination, with the main frame, having one of its side walls provided with recesses *C*, of the springs *G'*, having the loops *H*, the clamps *D*, and links connecting the clamp with the spring, substantially as specified.

3. In a device for forming eaves-troughs, the combination, with the main frame, of the spring-actuated clamps having a shoulder, *e*, adapted to engage the upper edge of one of the side walls of the trough or frame and hold the same when not in use, substantially as specified.

4. The described device for clamping eaves-troughs while being united, consisting of the frame *A*, having its inner bottom and side walls grooved to receive the bridge-pieces *B*, the hook-clamps hinged to one of the side walls and adapted to be turned up over the horizontal edge thereof, and the spring-actuated clamps arranged in the opposite side wall and adapted to engage the upper edge of the said wall to hold the said clamps when not in use, substantially as specified.

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

ROBERT FULTON O'BRIEN.

Witnesses:

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