

(No Model.)

E. O. DANIELS.

METHOD OF FORMING JOINTS IN SHEET METAL TUBES.

No. 360,663.

Patented Apr. 5, 1887.

Fig. 1.

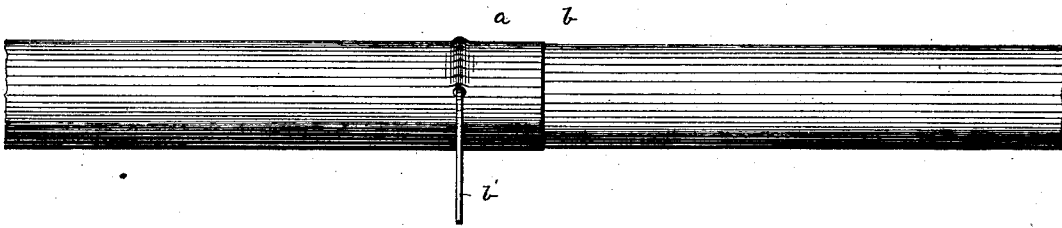


Fig. 2.

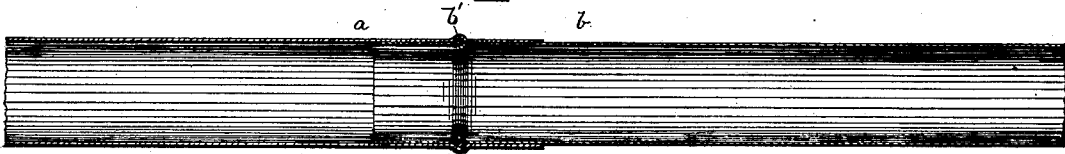


Fig. 3.

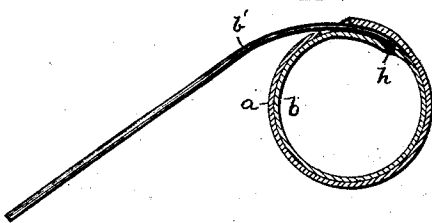
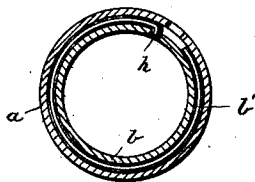


Fig. 4.



WITNESSES

Edwin L. Bradford

J. W. Gainer

INVENTOR

Eugene O. Daniels,

By Pauline H. Femmes,
his Attorneys.

UNITED STATES PATENT OFFICE.

EUGENE O. DANIELS, OF SPRINGFIELD, OHIO.

METHOD OF FORMING JOINTS IN SHEET-METAL TUBES.

SPECIFICATION forming part of Letters Patent No. 360,663, dated April 5, 1887.

Application filed September 28, 1882. Renewed December 3, 1886. Serial No. 220,632. (No model.)

To all whom it may concern:

Be it known that I, EUGENE O. DANIELS, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Methods of Forming Joints in Sheet-Metal Tubes; 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 a new and useful improvement in the manner of coupling tubular lightning-rods and other tubular sections.

In the accompanying drawings, forming a part of this specification, and on which like letters of reference indicate similar or corresponding features, Figure 1 represents a side elevation of a portion of two sections of pipe fitted one within the other and showing the beginning of the insertion of the locking-wire; Fig. 2, a longitudinal diametrical sectional view of the same, showing the locking-wire in transverse section; Fig. 3, an enlarged transverse sectional view of the tubes taken through the joint, showing the locking-wire in elevation and partly inserted, and Fig. 4 a like view showing the joint completed.

The letter *a* designates one end of a section or part of a tubular lightning-rod, and the letter *b* the adjacent end of a succeeding section or part. The former of these sections, as shown in the drawings, is reduced in diameter, so as to readily enter the latter, and both sections or parts are provided with holes which register or coincide with each other, whereby the bent end *h* of the locking or coupling wire *b'* is allowed to enter in the manner hereinafter described.

Before the parts are placed together the parts *a* and *b* are not grooved, but are respectively provided with holes, as above described, which register with each other. The wire *b'* is placed in the holes and slightly bent at *h* to catch upon the inner periphery of the tube *a*. The parts *a* and *b* are then revolved in opposite directions. The wire *b'*, being drawn with the section, makes a groove in both sections of the sheet-metal tubes, as may be seen in Fig. 1. Thus it will be observed that a strong and effective joint is made, and the locking-wire being of about the same length as the circumference of the sections the exterior of the tubes is left smooth.

I am aware that it is not new in these couplings to provide an exterior band having an annular recess formed therein in which is inserted a strip or wire, the strip acting to slightly embed itself into the rubber hose. In this instance, however, an annular groove is previously formed in the band, and is not produced by the bulging effect of the strip.

What I claim as new is—

The herein-described method of forming a joint in sheet-metal tubes, the same consisting in fitting the end of one such tube into the end of another such tube, in attaching a wire to the inner tube, and in revolving both tubes in opposite directions, whereby the wire is drawn between the two tubes and the thin metal bulged so as to form a groove therefor.

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

EUGENE O. DANIELS.

Witnesses:

G. M. GRIDLEY,
B. C. CONVERSE.