

E. J. VAN SICKLE.  
Joints for Sheet-Metal Tubing.

No. 214,327.

Patented April 15, 1879.

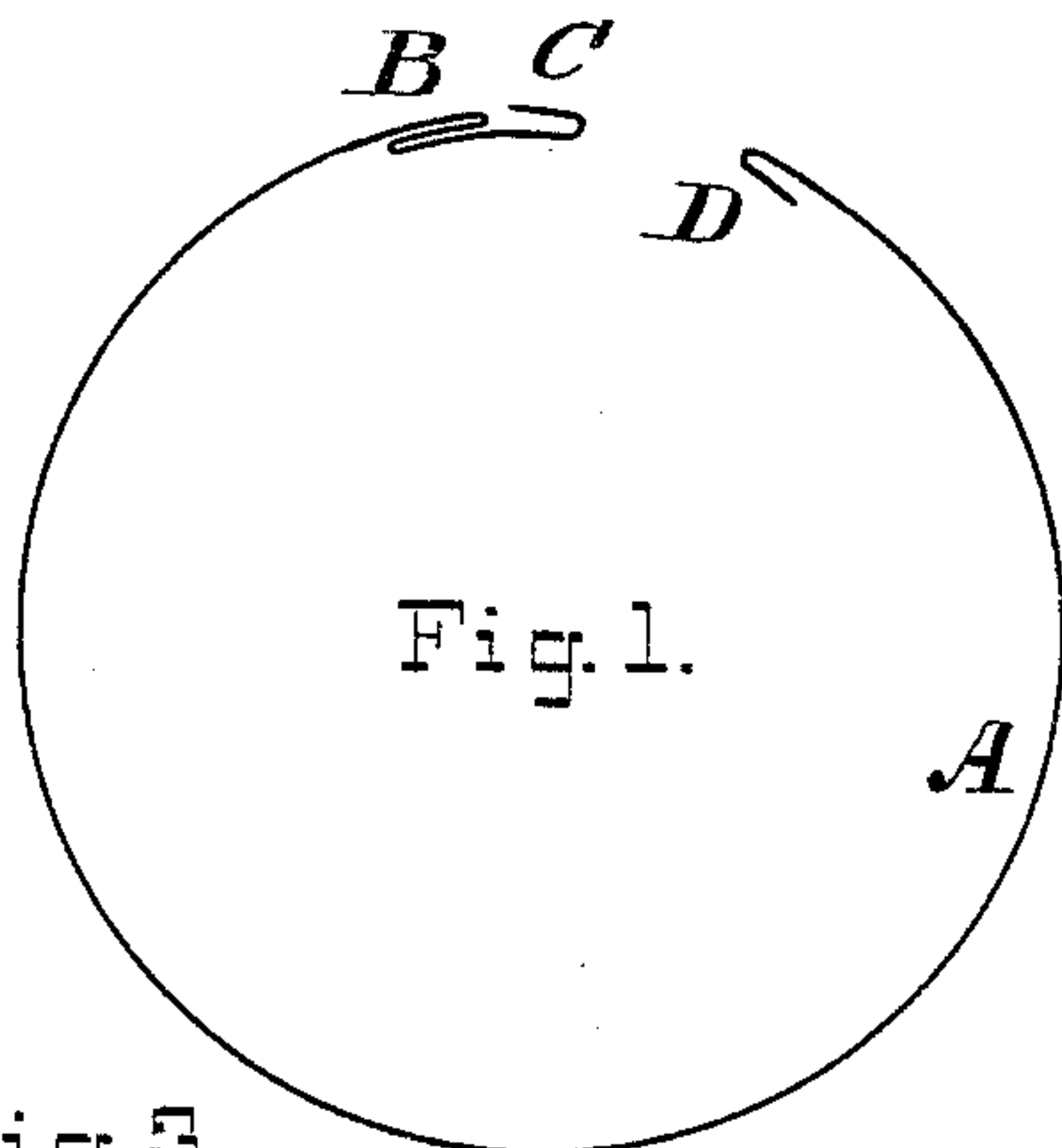


Fig. 1.

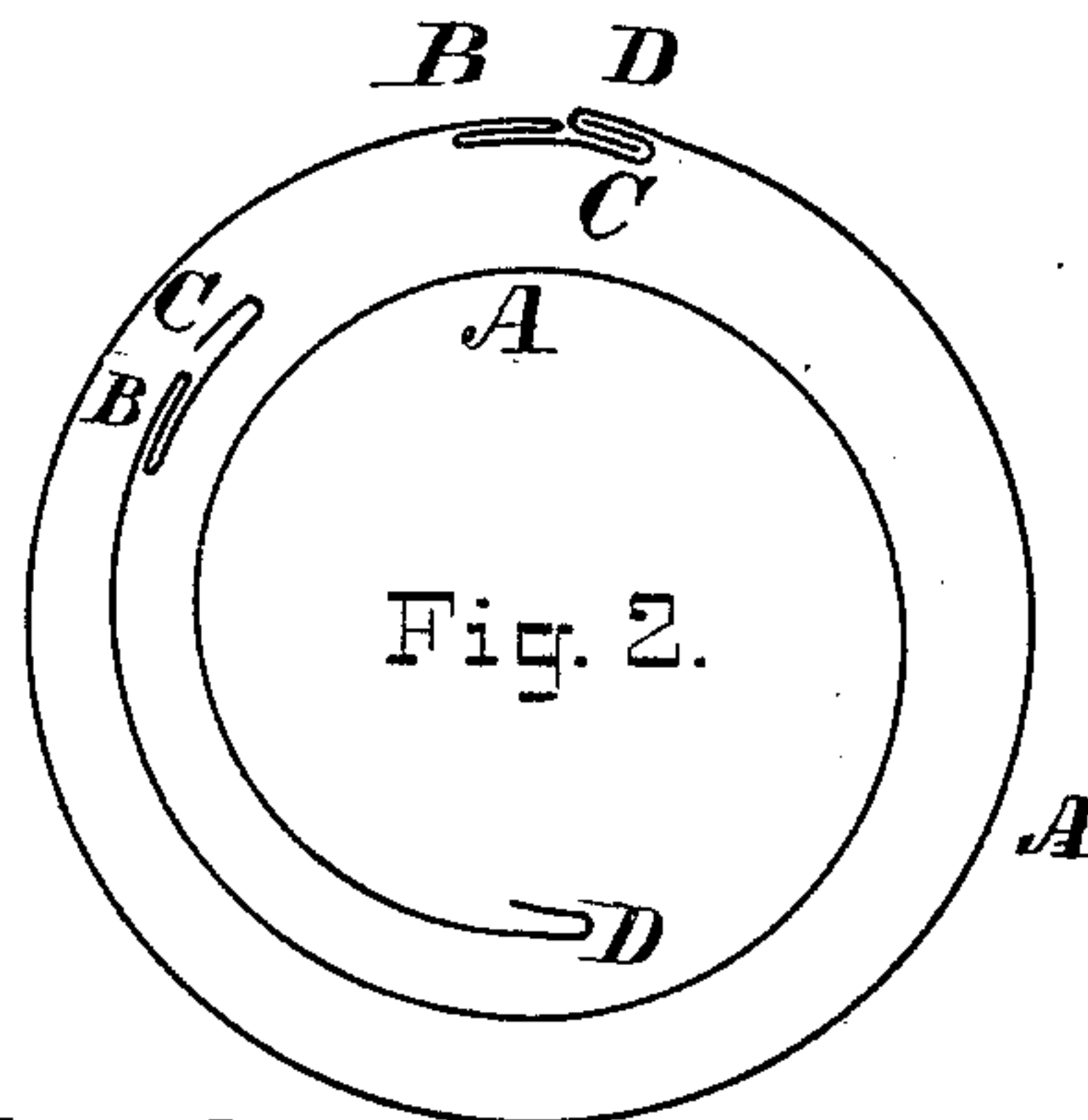


Fig. 2.

Fig. 3.

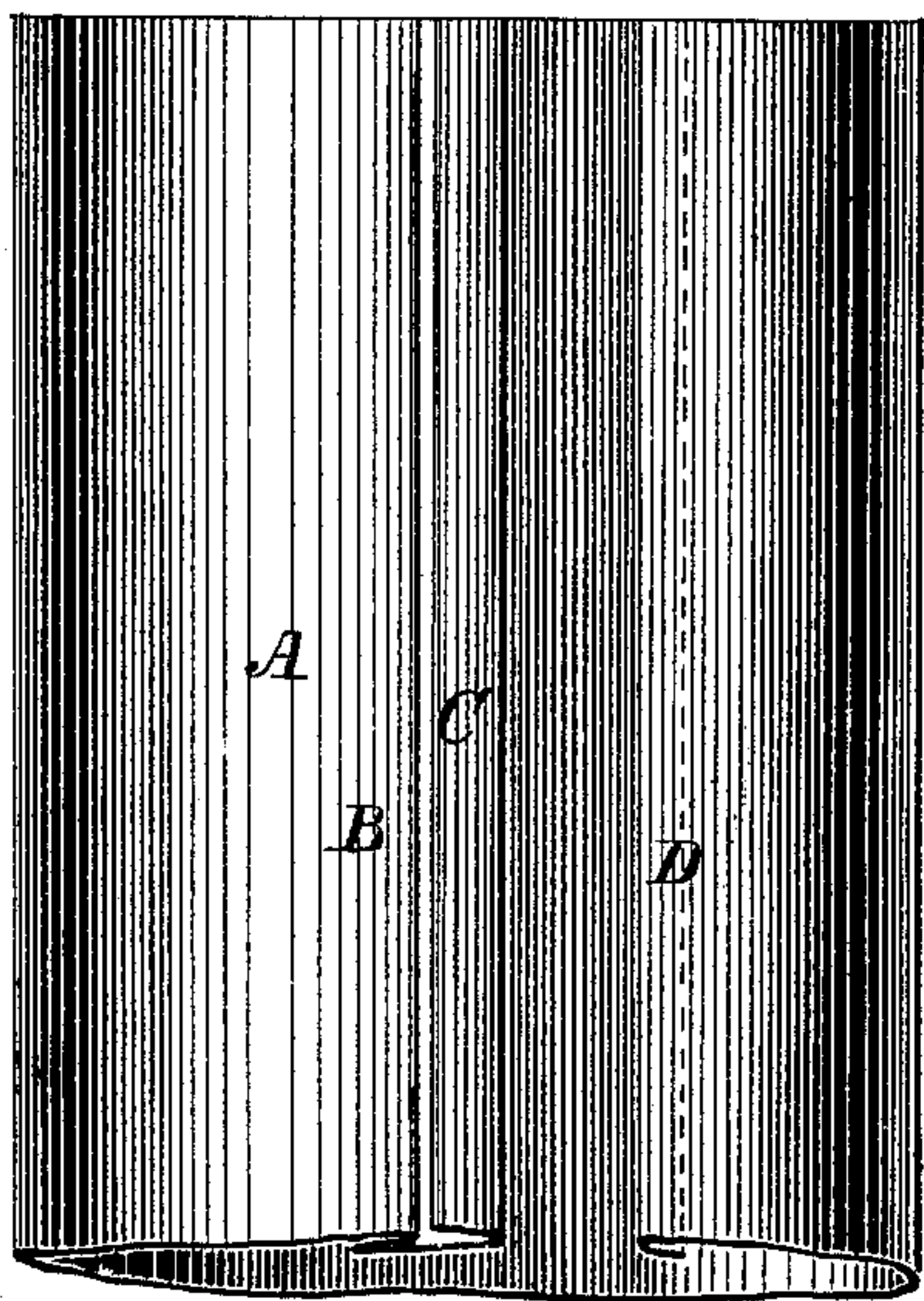


Fig. 4.

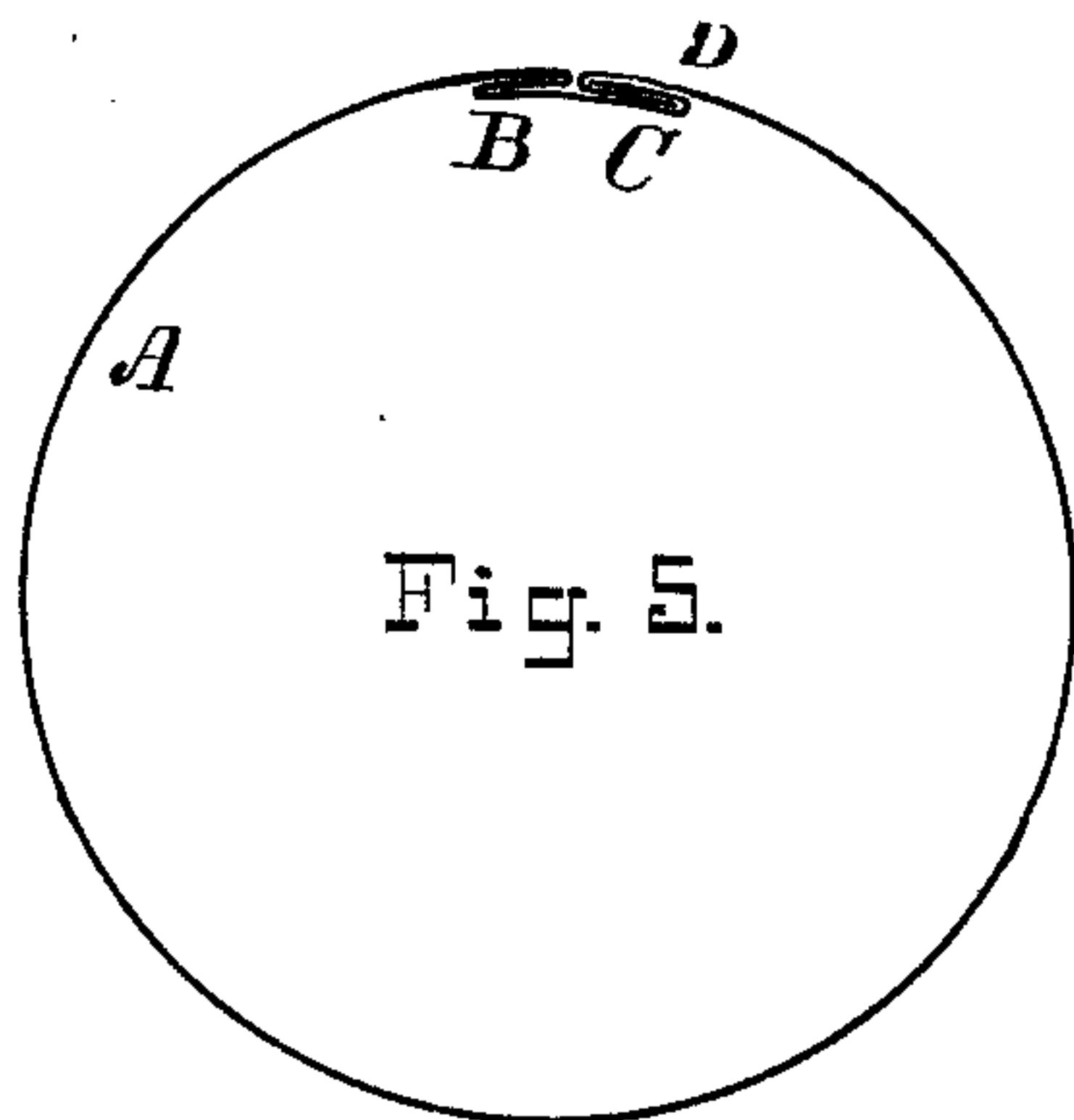
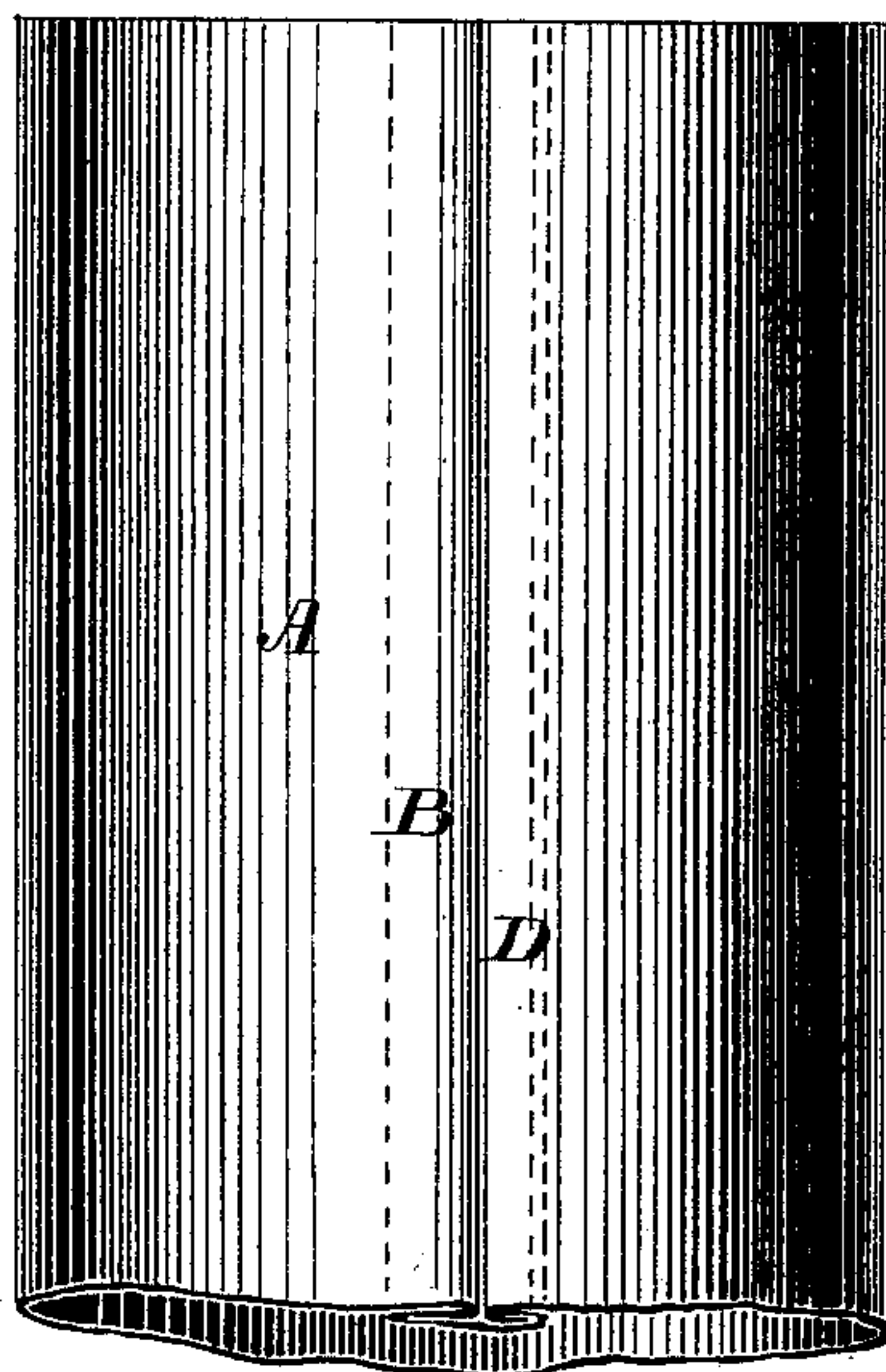


Fig. 5.

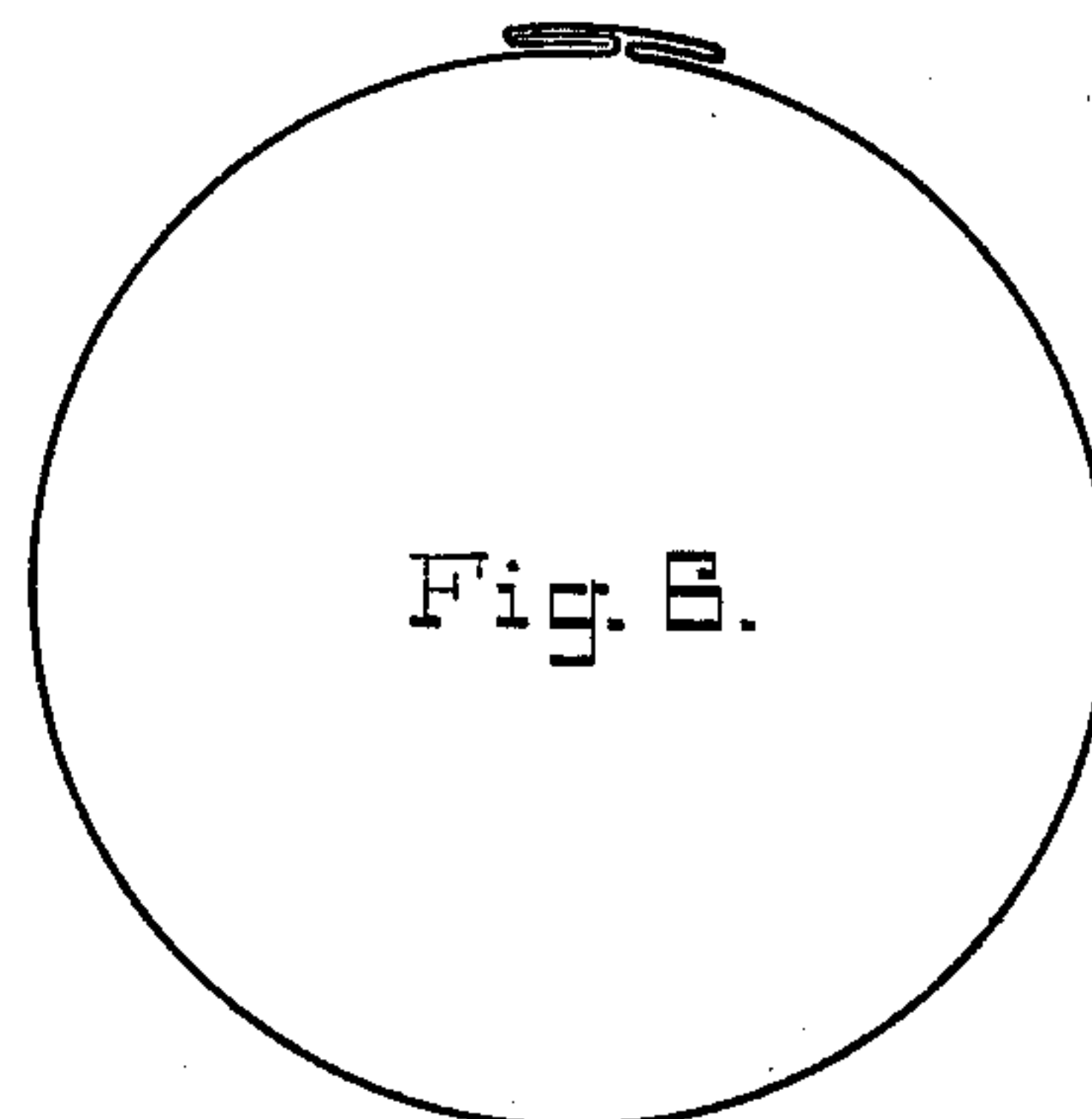


Fig. 6.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN JOINTS FOR SHEET-METAL TUBING.

Specification forming part of Letters Patent No. **214,327**, dated April 15, 1879; application filed January 28, 1878.

*To all whom it may concern:*

Be it known that I, EDWARD J. VAN SICKLE, of the city, county, and State of New York, have invented certain Improvements in Sheet-Metal Tubes, of which the following is a specification.

While adapted to any kind of sheet-metal tubing, my invention is especially suited to stove-pipes; the object being to produce a pipe that can be put up compactly for shipment, and which may be readily and smoothly joined at the edges without the aid of rivets or special machinery and skill.

It is well known that all kinds of sheet-metal tubing, including stove-pipes, are very bulky and liable to receive injury in transportation unless especially well protected. It is desirable, however, that the metal should be put in shape at the manufacturing centers to form pipe, after it has reached its destination, without the help of special tools, and such metal has been manufactured. It is to this class that my present invention belongs, which I will now describe, reference being had to the accompanying drawings, wherein—

Figure 1 is a section of a sheet-metal tube constructed according to my invention, showing the edges disengaged. Fig. 2 is a sectional view, showing one tube with its edges engaged and one rolled up inside the same. Figs. 3 and 4 are elevations which show, respectively, tubes with the joints open and closed. Fig. 5 shows, in section, a pipe or tube with the joint closed and hammered down; and Fig. 6 is a modification of the same.

Let A represent a sheet of metal of any suitable length, and wide enough to make a pipe or tube of the proper diameter. One edge of this sheet is crimped by proper machinery to form a double fold, B.

The surplus metal of the edge is crimped or bent to form an open single fold, C. The other edge of the sheet is bent to form an open fold, D, which should correspond in depth to the fold C, but be turned in the opposite di-

rection. Tubes or pipes prepared in this way may be rolled up or nested, one within another, as indicated in Fig. 2, so as to occupy very little space in transportation. I prefer to roll them; but they may be shipped flat.

After reaching their destination it is only necessary to hook the open folds C D together, as shown in Fig. 2, and hammer them close down on a mandrel, or other suitable resistance, to form a close, smooth, flush joint, as shown in Fig. 5. If the joint is properly made it will be flush, and the fold D will abut against the shoulder formed by the fold B in such a way as to prevent the former from slipping or disengaging itself. In ordinary cases the rib formed at the joint will be thrown on the inside of the tube; but it may as well be thrown on the outside, as in Fig. 6, if it were desired that the tube be perfectly smooth inside.

I am aware that forming simple folds on opposite edges of a sheet engaging them, and then closing them down, is not new; but

What I do claim as new is—

1. The pipe or tube A, of sheet metal, having a double fold, B, of triple thickness at one edge to form a shoulder, the surplus metal beyond the shoulder being bent upward to form an open fold, C, as shown, and having a single open fold, D, turned downward on its other edge, prepared to engage the fold C and form a flush joint, substantially as set forth.

2. A joint for a pipe or tube of sheet metal, consisting of single folds on each edge turned in opposite ways, and a shoulder or offset of triple thickness, to make the joint flush and prevent the separation of the engaged folds, formed by bending a fold of the metal back upon itself, substantially as shown.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EDWARD J. VAN SICKLE.

Witnesses:

HENRY CONNETT,

ARTHUR C. FRASER.