

(No Model.)

J. B. ROOT.

CONSTRUCTION OF SHEET METAL PIPE SECTIONS.

No. 283,924.

Patented Aug. 28, 1883.

Fig. 1.



Fig. 2.

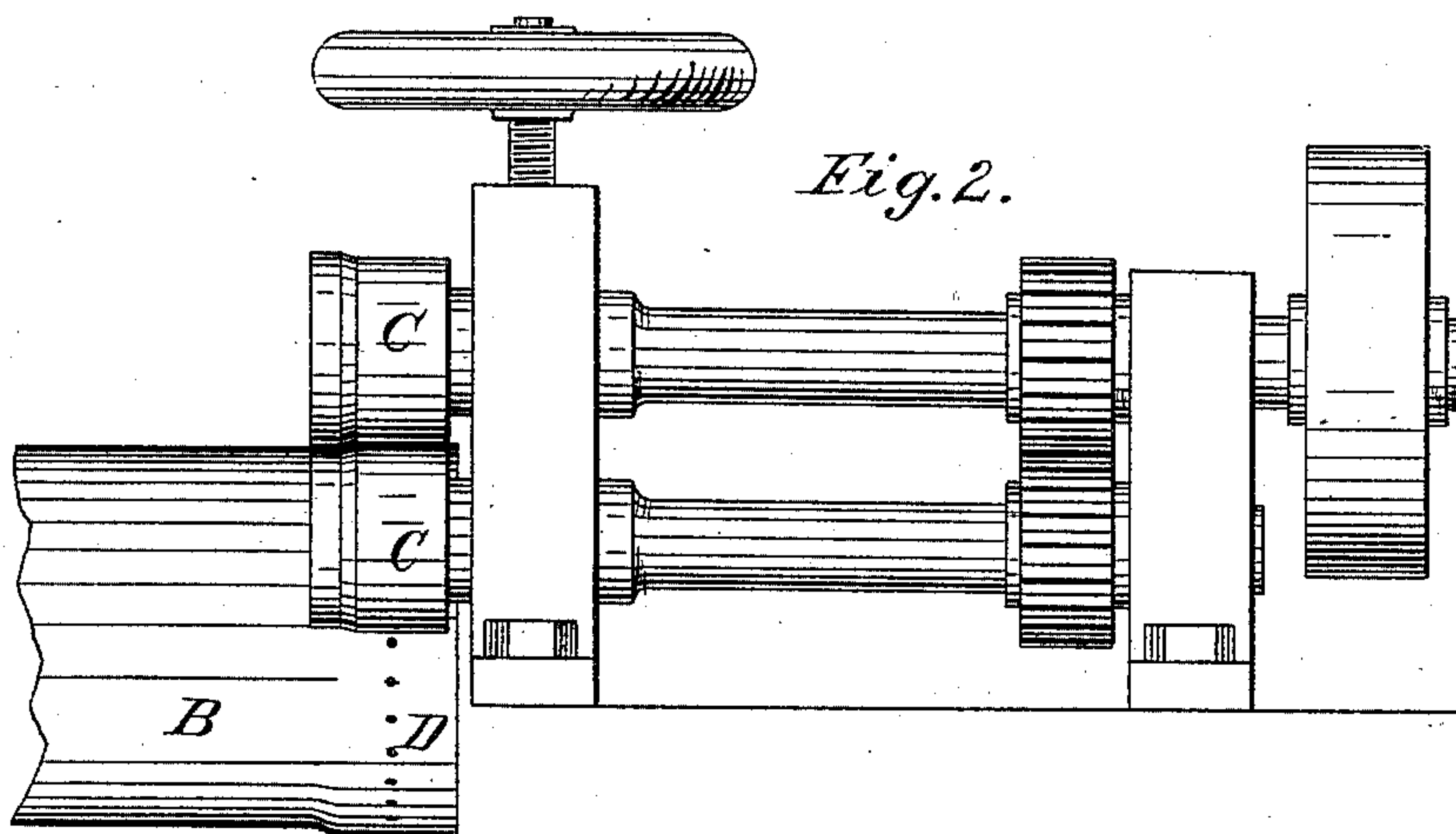


Fig. 3.

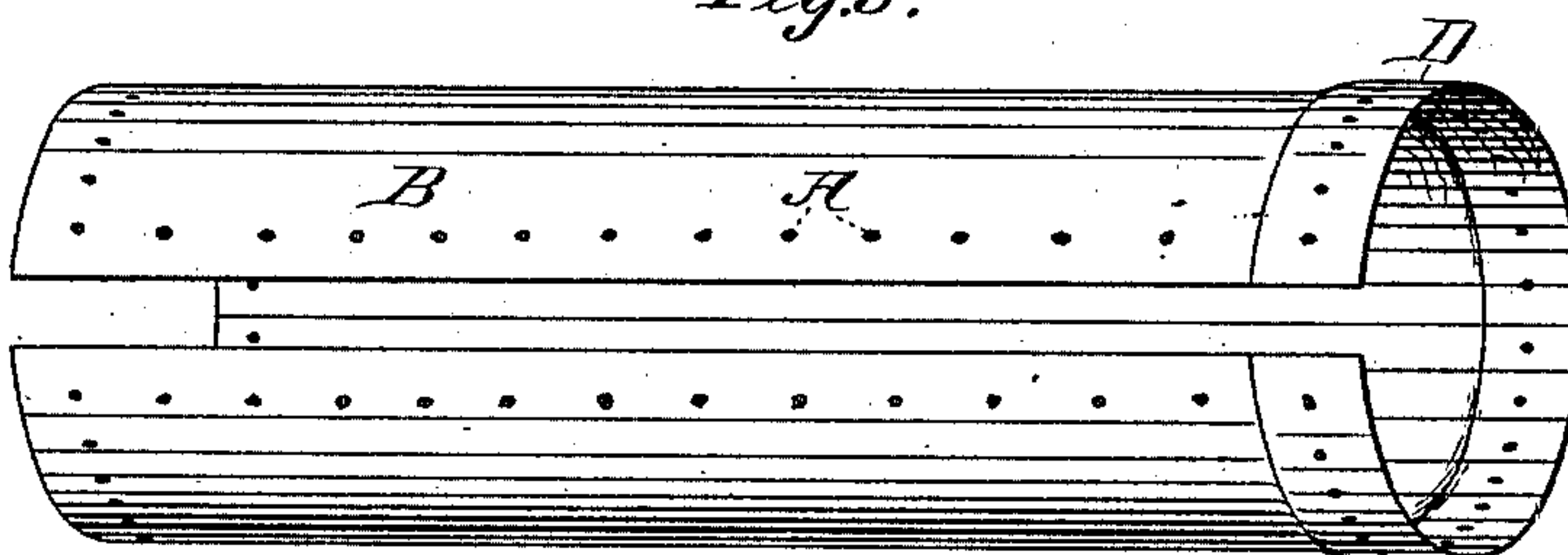
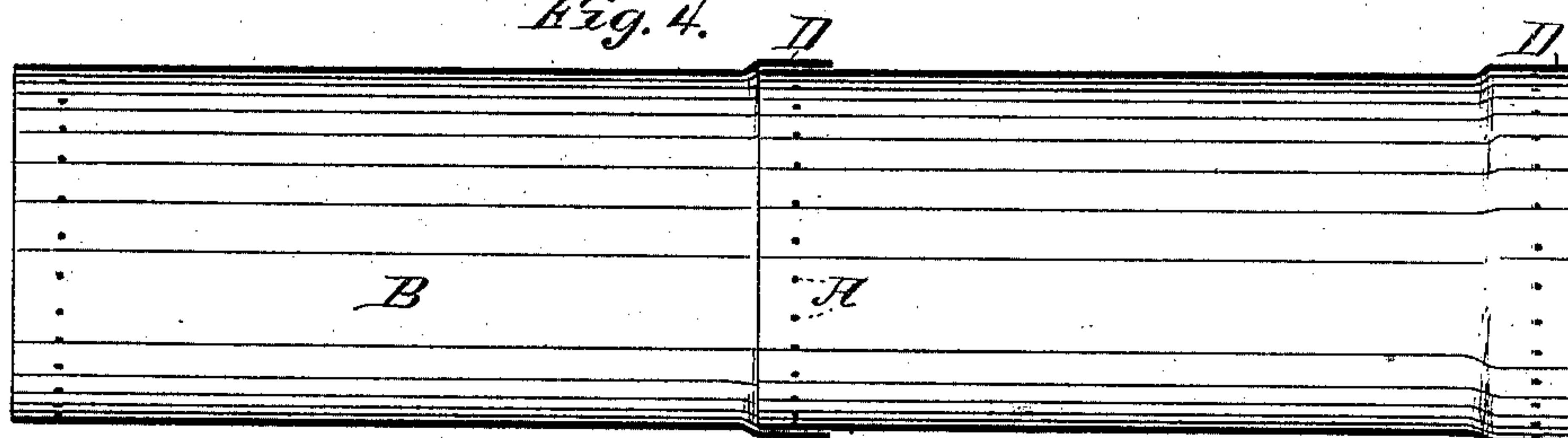


Fig. 4.



Witnesses:

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CONSTRUCTION OF SHEET-METAL-PIPE SECTIONS.

SPECIFICATION forming part of Letters Patent No. 283,924, dated August 28, 1883.

Application filed April 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. ROOT, of Port Chester, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Riveted Sheet-Metal Pipe and Mode of Preparing the Same; and I hereby declare the following specification to be a full, clear, and exact description thereof, such as will enable others to make and use the same.

In the manufacture of sheet-metal pipe, and more particularly the larger sizes, it has been customary to only punch and shape the blanks of which the pipe-sections are composed at the factory. This is done with a view to economy in transportation, as the disconnected, punched, and shaped blanks can be packed within one another, so as to form nests made up of a number of blanks which occupy no more space than a single finished pipe-section would occupy. Such nests are shipped to the place where the pipe is to be used, when the longitudinal seams of the blanks are closed, and the pipe-sections thus completed are then riveted together end to end. Heretofore pipe of this kind has been made of cone-shaped sections, the larger end of a section being of a size to admit the smaller end of another section to a distance sufficient to make a proper joint. To produce this conical shape, the rivet-holes in the side edges of the flat blanks from which the sections are made must be along lines inclined to each other and to the edges of the sheets if they are rectangular, and in order that the holes in the connecting ends of separate sections shall correspond the distance between the holes in the smaller ends of the sections must be less than the distance between the holes in the larger ends thereof. To properly punch the holes in the flat blank before it is shaped and preserve these variations requires no little care and precision, and is to a great extent necessarily done by hand, the workman being assisted by a pattern or other guide constructed to indicate the correct position of the holes; but the accuracy of hand-work is not constant or reliable, and errors are continually occurring which result in poorly-fitting work.

It is therefore the object of my present invention to produce pipe-blanks analogous to those just described entirely by automatic means and of an improved shape.

In the accompanying drawings, Figure 1 represents a plain punched and partially-shaped pipe-blank. Fig. 2 represents offsetting rolls operating upon one end of such blank. Fig. 3 shows the finished blank, and Fig. 4 illustrates two sections of the pipe riveted together.

In carrying out my invention, the first step consists in submitting the flat rectangular sheet-metal blanks from which the pipe is made to the action of a properly-adjusted gang of punches driven by some appropriate power, and thereby forming along and parallel with the edges and ends of the blanks lines of rivet-holes A, such holes being all the same distance apart, and then bending the flat blank into an open cylinder, B.

The second step consists in passing one of the ends of the cylindrical blanks between rolls C, to expand the stock and form offsets D of a sufficient depth to, in the completed—that is, longitudinally-closed—sections, receive the smaller or unexpanded ends of the sections, and of suitable width to make a tight and strong joint, and in thus enlarging the ends of these blanks the stretching which the metal undergoes separates the rivet-holes proportionately to the increase in the diameter of the blanks, and, accordingly, to the right distance for the holes in the larger ends of the completed sections to coincide with the holes in the smaller end of the sections when such larger and smaller ends are brought together in forming the pipe.

Since the various operations are performed entirely by mechanical means, the completed sections of pipe are practically exact duplicates of one another, and can therefore be joined up into any continuous length without regard to special arrangement or further trimming or fitting. The cylindrical shape of the sections facilitates the forming of stronger and closer joints, and gives to the finished pipe not only a more substantial character in other manifest respects, but offers less resistance to the material flowing through the pipe than is the case with pipe made up of conical sections.

It is plain that other devices than rolls may be used for offsetting the ends of the blanks, and hence I do not confine myself to rolls for this purpose.

Although I have described and shown blanks designed to be closed at a straight longitudi-

nal seam, I do not limit myself to such construction, as the blanks can be closed along a spiral seam, and sections made with such seams are for some purposes preferable and cheaper.

5 What I claim as new is—

1. As a new article of manufacture, a cylindrically-formed sheet-metal-pipe blank one end of which is provided with an offset and both ends with rivet-holes, substantially as
10 shown, and for the purposes set forth.

2. As a new article of manufacture, a cylindrical sheet-metal-pipe section provided with an offset at one end to receive the smaller end

of a connecting section, and with rivet-holes at both ends, arranged substantially as and 15 for the purpose described.

3. The mode of making sheet-metal-pipe blanks, consisting in first punching the edges of the flat blank, then bending such blank into cylindrical form, and then forming an offset 20 at one end, substantially as described.

JOHN B. ROOT.

Witnesses:

ROBT. F. GAYLORD,

ROBT. H. DUNCAN.