

No. 657,775.

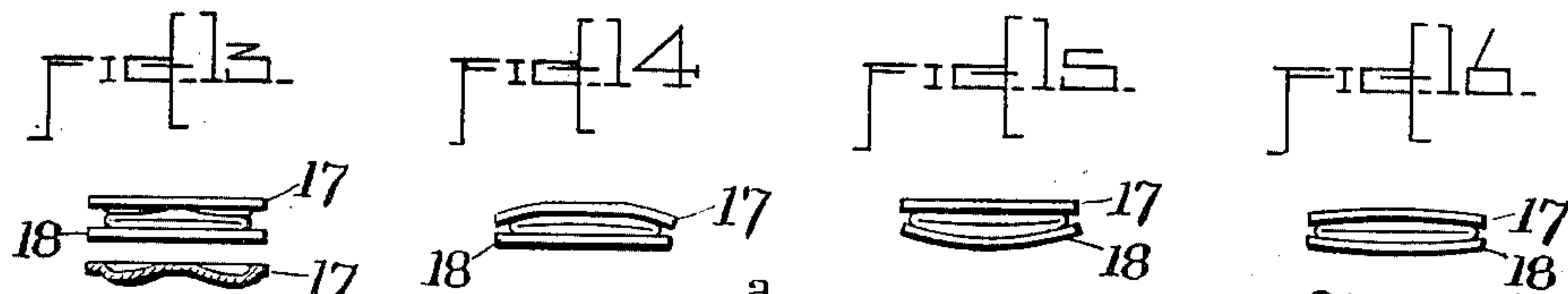
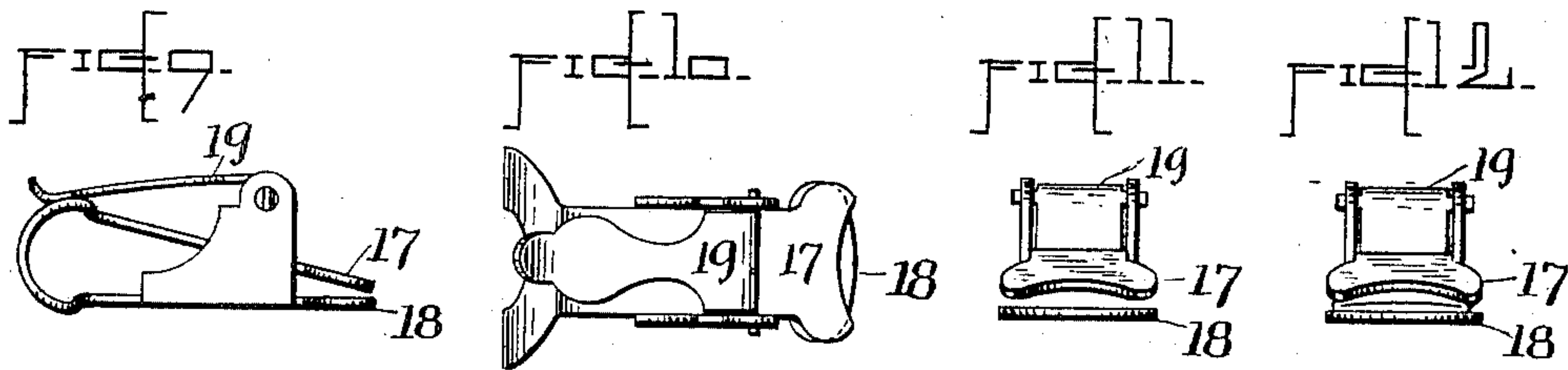
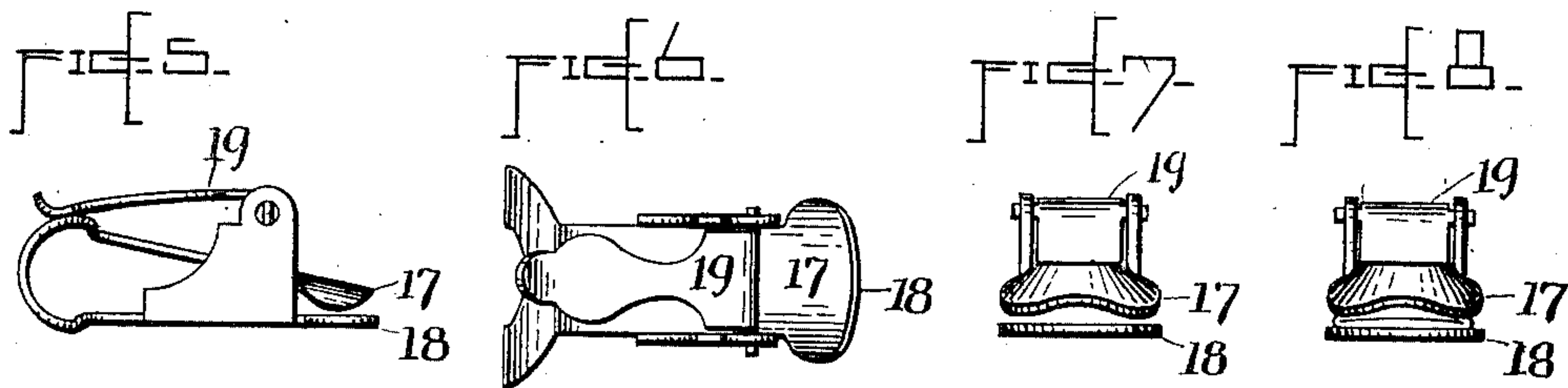
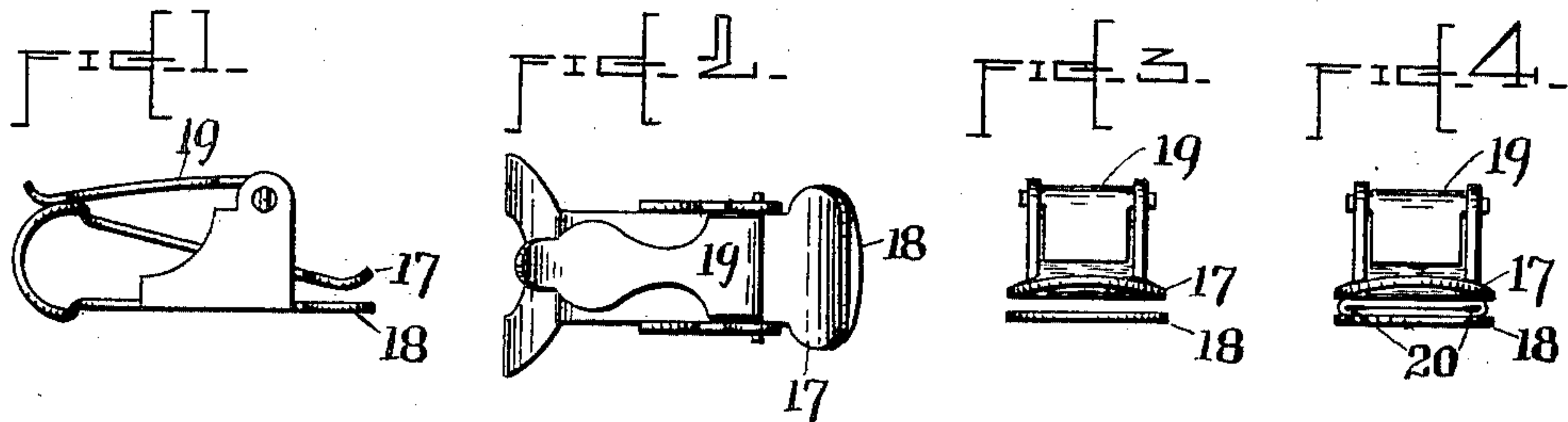
Patented Sept. 11, 1900.

J. J. JESSUP & E. K. LEFFINGWELL.

TUBE COMPRESSOR.

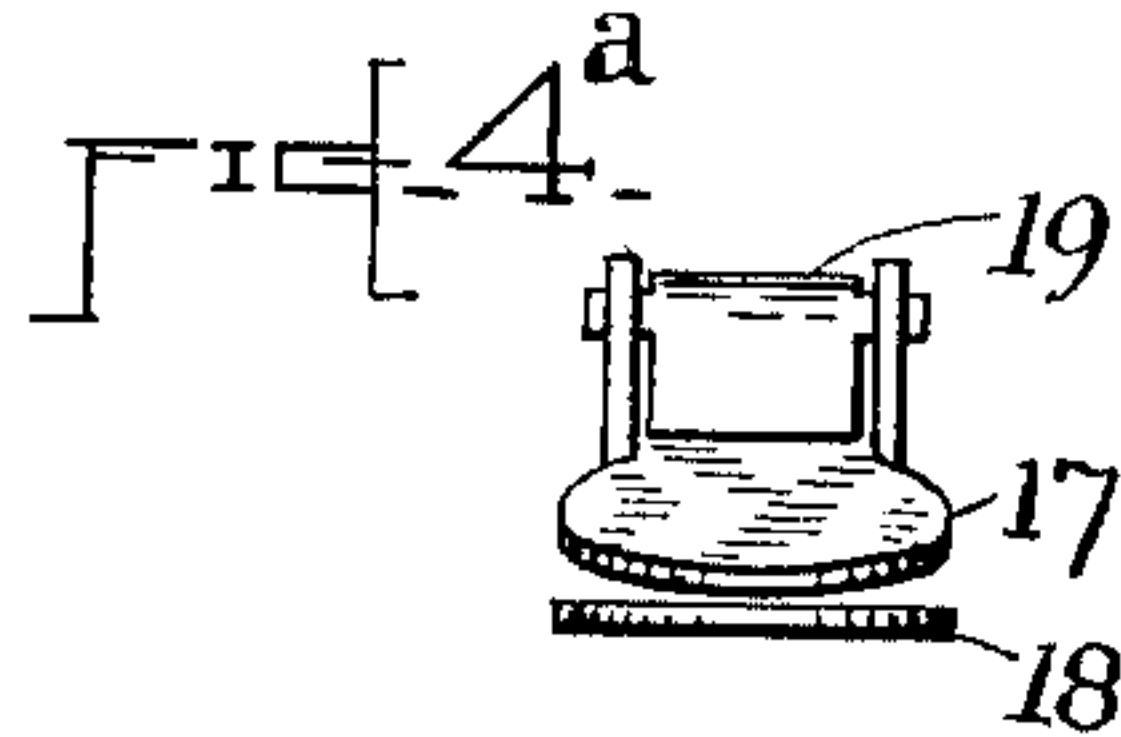
(Application filed June 23, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JAMES J. JESSUP, OF VAN PELT MANOR, NEW YORK, AND EVERETT K. LEFFINGWELL, OF UPPER MONTCLAIR, NEW JERSEY, ASSIGNORS TO THE BRASS GOODS MANUFACTURING COMPANY, OF NEW YORK, N. Y.

TUBE-COMPRESSOR.

SPECIFICATION forming part of Letters Patent No. 657,775, dated September 11, 1900.

Application filed June 23, 1900. Serial No. 21,364. (No model.)

To all whom it may concern:

Be it known that we, JAMES J. JESSUP, a resident of Van Pelt Manor, in the county of Kings and State of New York, and EVERETT K. LEFFINGWELL, a resident of Upper Montclair, in the county of Essex and State of New Jersey, citizens of the United States, have invented a certain new and useful Improvement in Tube-Compressors, of which the following is a specification.

This invention relates to compressors or clamps for use on tubes for the purpose of stopping the passage therethrough.

The object of the invention is to construct a clamp for this purpose which will operate to perfectly close the passage in the tube and will be adapted for use on tubes of various diameters and thicknesses.

The invention consists in the formation and construction of a tube-compressor for performing the function above specified and substantially as hereinafter fully described and claimed.

In the accompanying drawings, which form a part of this specification, Figures 1 to 4 illustrate an old and well-known form of tube-compressor in side, plan, and end views. Fig. 4^a illustrates another old form of compressor. Figs. 5, 6, 7, and 8 are like views of our improved compressor in one of its forms. Figs. 9, 10, 11, and 12 are similar views of our improved compressor in a modification of the previous form. Fig. 13 shows in end and sectional views a further modification of the jaws of the clamp or compressor. Figs. 14, 15, and 16 show still further modifications and illustrate the effect of the improved clamp upon different tubes.

In a tube-compressor as heretofore constructed the jaws at the point of engagement with the tube have been made parallel to one another, as indicated in Figs. 3 and 4, or closer together at the middle than at the sides, as seen in Fig. 4^a. 17 represents the upper jaw, and 18 the lower jaw, 19 indicating the clamping-lever, by which the jaws are forced together. The greatest resistance to the closure of the clamp, as is obvious, occurs at the sides of the tube where the walls re-

turn upon one another, and it is a difficult matter in applying a compressor to a tube of rather stiff material to sufficiently compress said tube at its edges to make a complete closure therein, and if a clamp of the old form is accurately adjusted to make a complete closure in a tube having a certain thickness of wall and flexibility of material it will not operate successfully on a tube whose walls are of greater thickness or of which the material is of less flexibility. The closure will under those circumstances be incomplete, as illustrated in Fig. 4, where said incomplete closure is indicated at the points 20. By our improvement a clamp is produced which will completely close the openings indicated at 20. This is accomplished by so forming the jaws of the compressor that they will exert a greater pressure at the edges of the flattened tube than at the middle, and at the same time tend to force the substance of the tube toward the middle of the jaws, and thereby produce a tight joint from side to side in the passage of the tube. This action of the jaws upon the tube may be produced by so shaping the jaws that they shall be nearer together at the sides than at the middle. This relationship between the jaws may be produced in various ways, as by arching the upper jaw, substantially as indicated in Figs. 7 and 8, or by arching the lower jaw, as in Fig. 15, or by arching both of them, as shown in Fig. 16. The arch of the jaw may be in the arc of a circle or it may be formed substantially as shown in Fig. 14, where a straight portion exists at the middle of the jaw and an inclined portion at either side thereof. A similar effect may be produced by depressing, as by means of a die, portions of one or both of the jaws, substantially as indicated in Fig. 13. The same effect may also be produced by cutting back one or the other of the jaws, substantially as indicated in Figs. 10, 11, and 12, the jaws being inclined toward one another. The cutting back of the jaw will carry the middle portion thereof to a greater distance from the opposing jaw than are the sides of the jaw in which said cut-back occurs, as is clearly seen in Fig. 11.

Compressors embodying our invention are adapted for tubes of various sizes and having walls of various thicknesses, and will effect a complete closure of any of these various tubes in the manner illustrated in Figs. 8, 12, 14, 15, and 16.

We do not desire to limit ourselves to any particular form of either or both of the jaws of a tube clamp or compressor, nor to the application of our special form of jaws to any particular construction of tube-compressor, since our invention resides simply in the construction of the jaws of a tube-compressor in a manner such that the distance between the jaws shall decrease toward the sides of the jaw, so that a greater pressure may be exerted upon the tube near its sides and the tube itself forced toward the middle of the jaw, whereby a complete closure entirely across the tube may be effected.

We claim as our invention—

A clamp or compressor for tubes consisting of a pair of spring-plate jaws adapted to be sustained upon a tube and having means for forcing them together, said jaws being so formed that the distance between them, measured transversely of the tube, gradually decreases toward the sides of the tube, so that the tube may be forced toward the middle of the jaws and complete closure thereof effected, substantially as and for the purpose set forth.

Signed at New York, in the county of New York and State of New York, this 21st day of June, A. D. 1900.

JAMES J. JESSUP.

EVERETT K. LEFFINGWELL.

Witnesses:

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