

(No Model.)

E. C. CONVERSE.
COUPLING FOR TUBING.

No. 259,501.

Patented June 13, 1882.

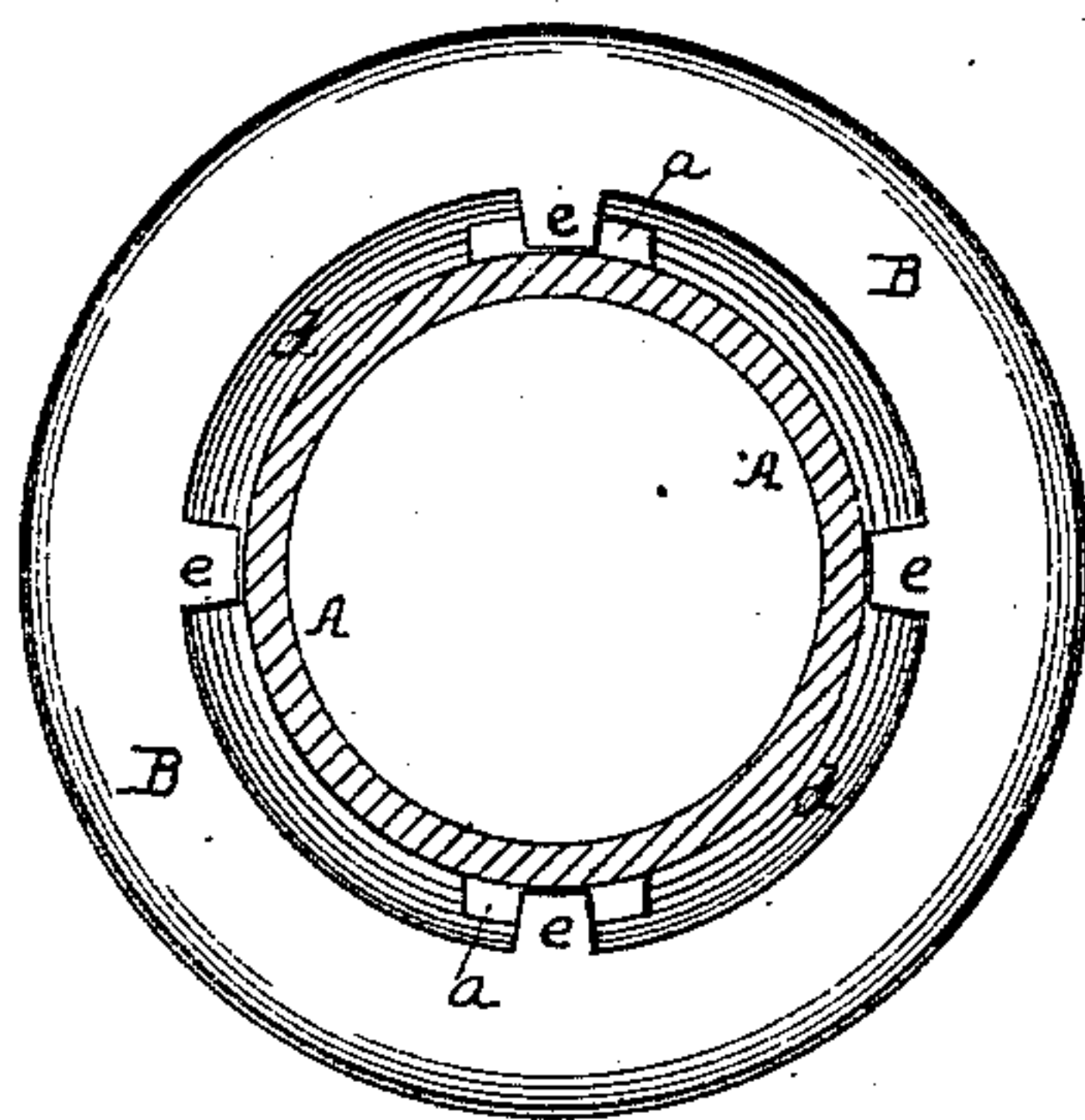


Fig. 2.

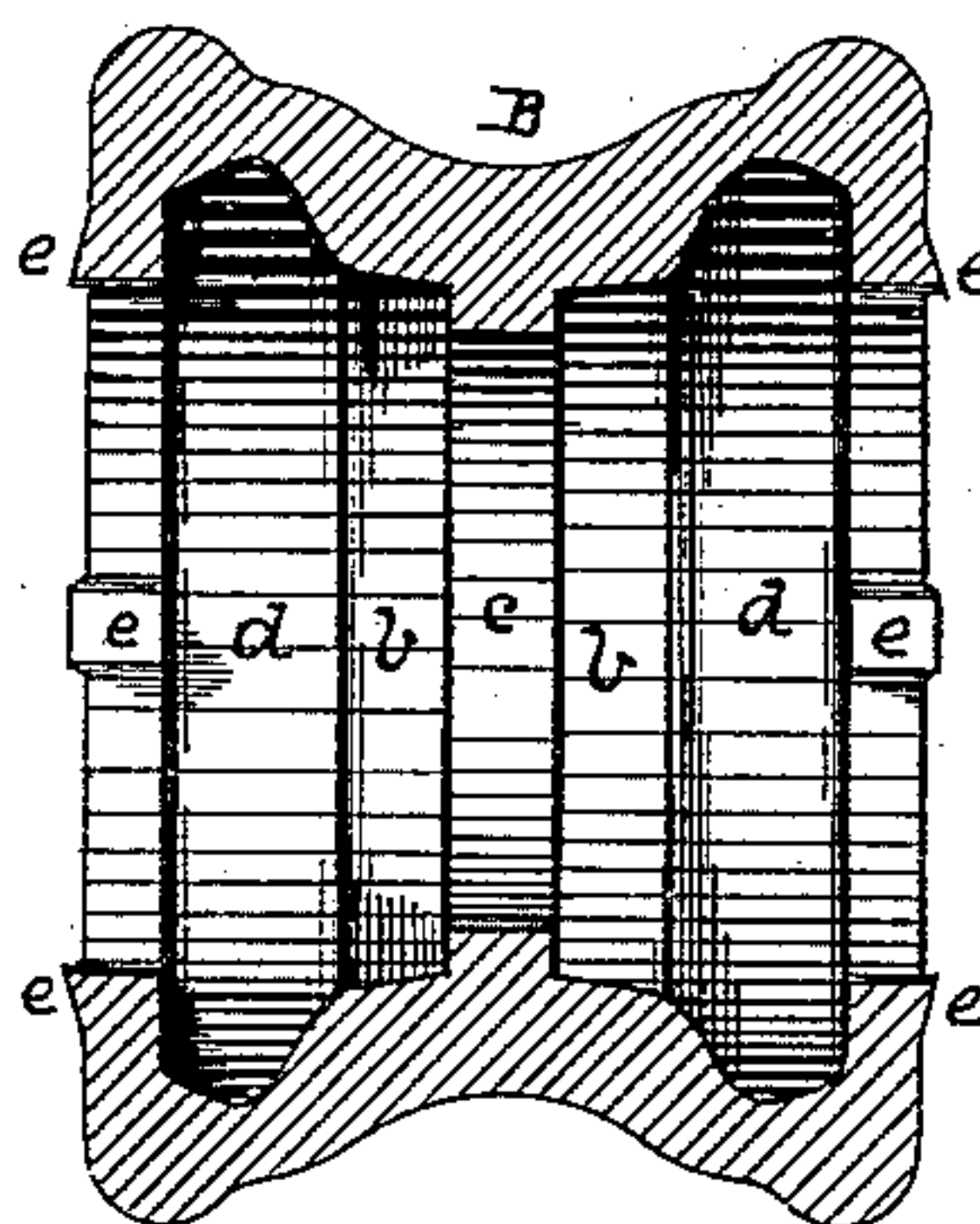


Fig. 3.

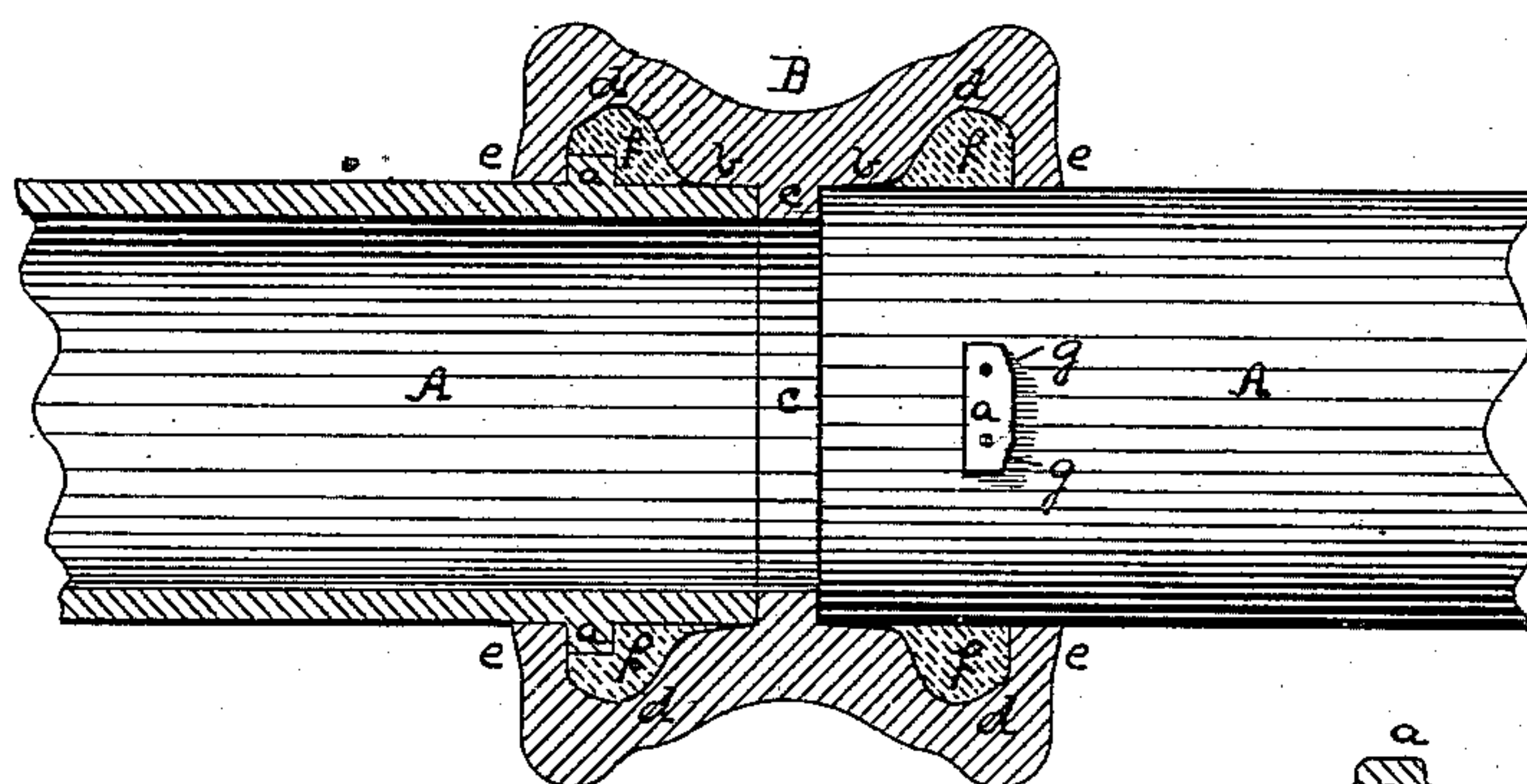


Fig. 4.

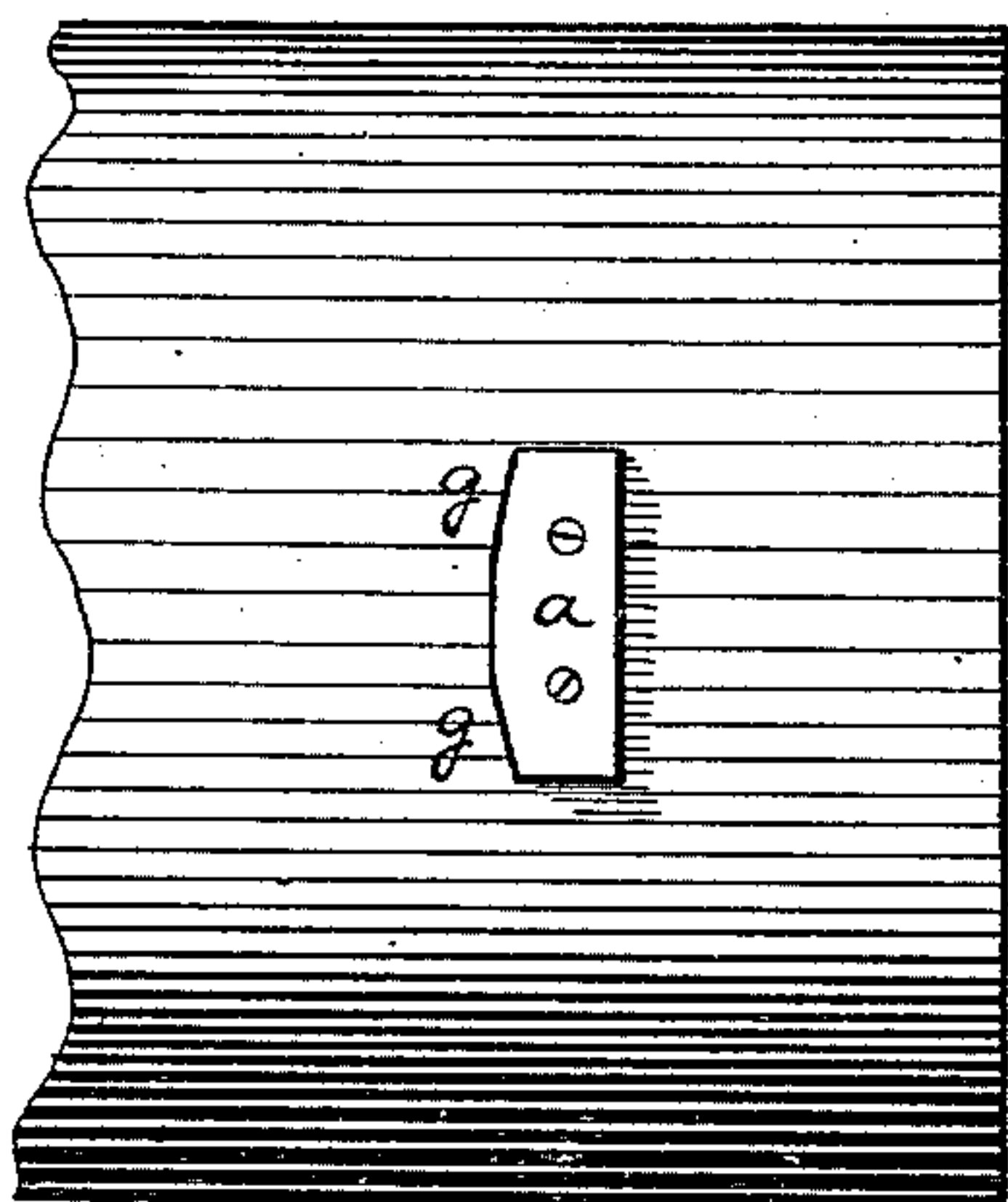


Fig. 5.

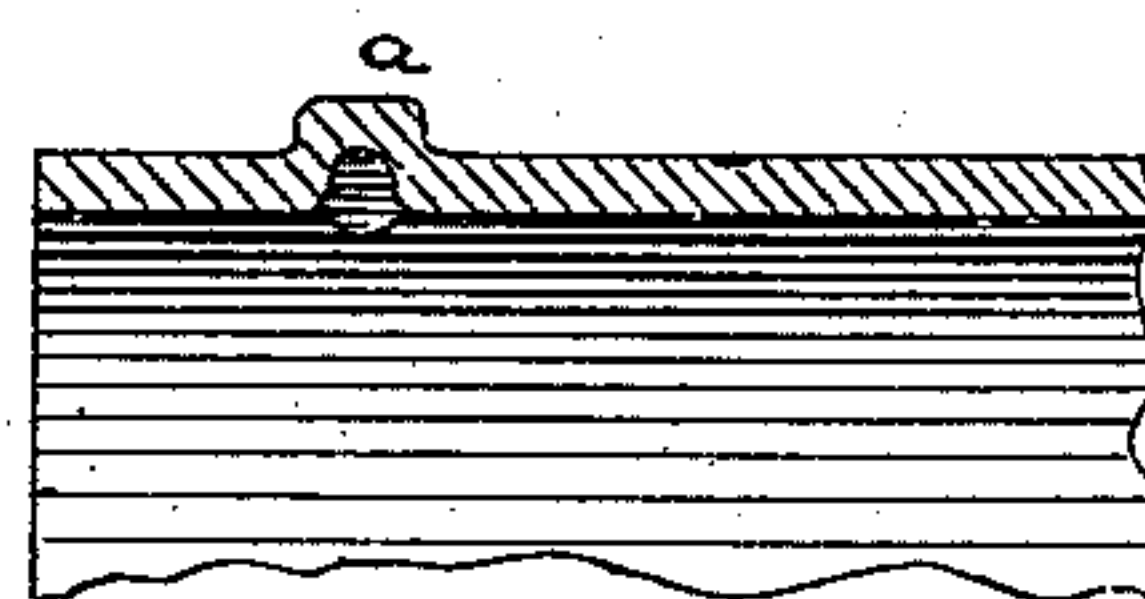


Fig. 6.

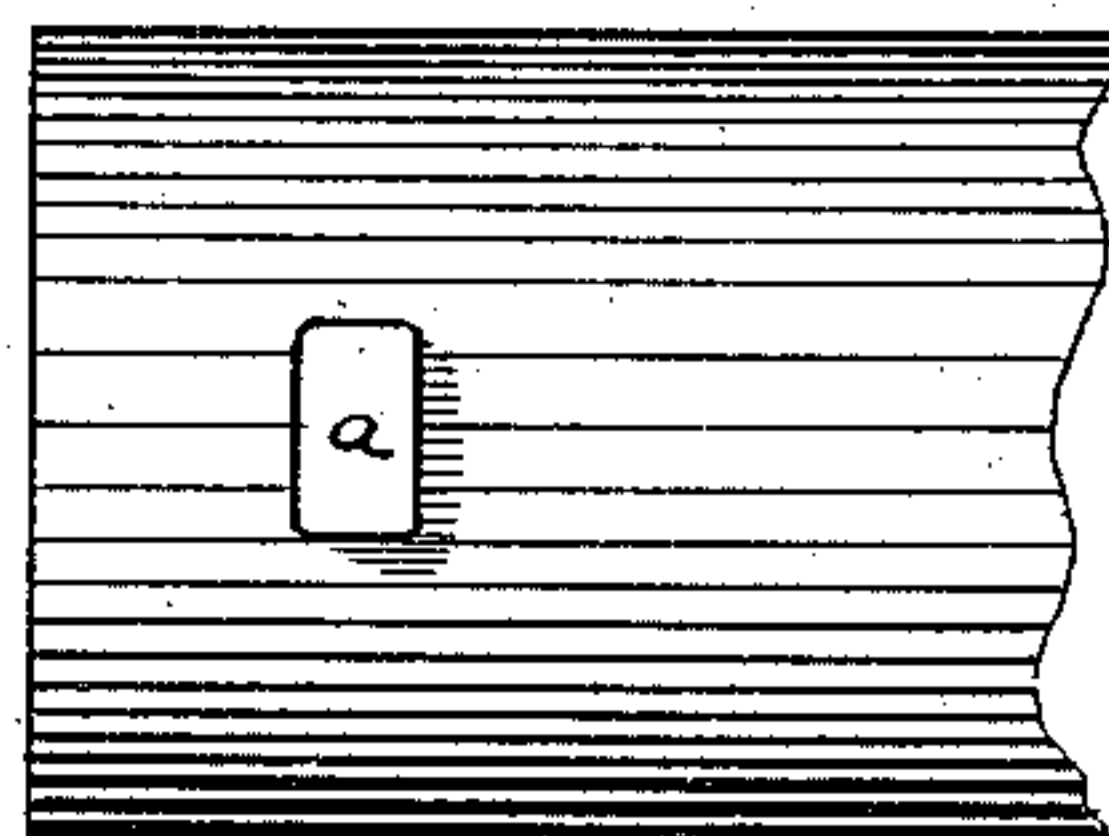


Fig. 7.

Witnesses.

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EDMUND C. CONVERSE, OF PITTSBURG, PENNSYLVANIA.

COUPLING FOR TUBING.

SPECIFICATION forming part of Letters Patent No. 259,501, dated June 13, 1882.

Application filed March 31, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDMUND C. CONVERSE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Couplings for Tubing; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a longitudinal section of my improved coupling, showing one tube-section in full lines. Fig. 2 is a face view of the collar, showing the tube-section therein before the pouring of the calking material. Fig. 3 is a longitudinal section of the coupling-collar. Fig. 4 is an enlarged side view of one end of a tube-section, and Figs. 5 and 6 are views of a tube-section where the lug is expanded from the body of the tubing.

Like letters of reference indicate like parts in each.

My invention relates to couplings for metal tubing, and has special reference to the coupling shown and described in Letters Patent No. 252,020, granted to me January 10, 1882. The invention described in those Letters Patent consisted essentially of a metal sleeve or collar having an inner central ring against which the tube-sections rested, an annular recess at each end for the reception of calking material, and a series of projections or wings extending across each calking-recess for the support of the tubing, the different lengths of tubing being thus coupled without cutting into or weakening it, so that a much lighter tubing could be employed.

The object of my invention is to improve the construction of this coupling in some particulars so as to render it more efficient.

It consists, first, in providing the tubing to be coupled with one or more lugs at each end adapted to catch under the wings extending across the annular calking-recess in the sleeve or collar, and thus adding to the "bind" or hold of the calking material entirely preclude the parting of the coupling by any longitudinal or drawing strain on the tubing; second, in forming the back edge of the lugs inclined, and so enabling them to press the end of the tubing tightly against the central ring of the

sleeve or collar and prevent the fluid from pressing between the ring and the end of the tubing; and, third, in forming the inner faces of the collar next to the central ring slightly tapering, so that as the end of the tubing is pressed against the central ring it is bound around its entire circumference by the collar.

To enable others skilled in the art to make and use my invention, I will describe the same more fully.

In the drawings referred to, A A are the ends of two tube-sections, and B is the sleeve or collar by which they are connected, the collar B having the annular ring *c* in the center, which is generally of a thickness corresponding to that of the tubing to be connected so as to form a shoulder on either side, against which the ends of the tubing press or bear.

On either side of the central ring, *c*, is the inner face, *b*, which is approximately of proper diameter to fit neatly around the exterior of the tubes to be joined, and which is preferably made with a slight taper, so that the end of the tubing enters easily within this annular inner face, and as it is pressed tightly against the central ring it is also compressed or bound entirely around the entire circumference at its end by the inner face or body of the collar. This tapering inner face of the collar, by so binding around the end of the tubing, serves to "round" it up to proper shape, if its edges have become bent in transportation or handling, thus insuring a full cylindrical passage entirely through the coupling, and at the same time by its own body fully supports the extreme end of the tubing from internal-pressure strain.

At either end of the collar is the usual annular calking-recess, *d*, which is made inwardly flaring to hold the calking material securely in place, and extending across each calking-recess are the projections or wings *e*, which rest against and center the tubing while the lead or other calking material, *f*, is poured in and calked, and support the tubing from lateral or side strain when in use. Four of these wings are shown around each calking-recess.

Secured to each section to be coupled, at such a distance from the end thereof as to catch under the inner face of the wings *e*, are one or more lugs, *a*, which pass through the openings in the collar between the wings and catch un-

der the wing or wings on the turning of the tubing or of the collar. I find for general purposes that where the wings on the collar are opposite each other two lugs adapted to catch under opposite wings are sufficient, though more may be employed, if desired. The back edges of the lugs are formed slightly inclined, as at *g*, so that when they are turned under the wings they will press the end of the tubing tightly against the shoulder of the central ring, and at the same time cause the tapering inner face, *b*, to bind tightly around the end of the tubing for the purposes above set forth.

This inclined surface on the lugs may be made in both directions, as shown, if desired.

The lugs *a* are preferably secured to the tubing by riveting, as this does not require the reheating of the tubing. They may, however, be welded thereto, or may be expanded from the body of the pipe, as shown in Figs. 5 and 6, this latter course not causing an injurious weakening of the tubing, as it is afterward fully supported at the points expanded by the wings and calking material.

My improved tube-coupling is connected in the following manner: The ends of the tubing are inserted in the collar, the lugs *a* thereon passing between the wings *e*. The tubing is then turned slightly, so that the lugs catch under the wings, thereby locking the tubing in the collar and rendering it secure against longitudinal or drawing strain. By means of their inclined edges *g* the lugs *a* press the ends of the tubing against the central ring, *c*, and within the tapering inner face, *b*, so that the entrance of fluid between the ring and end of the tubing is precluded, and the end of the tubing is tightly compressed and fully protected and supported against internal-pressure strain, by the sleeve or collar, as well as rounded up, if it has been bent out of shape in transportation. The melted lead or other calking

material is then poured into the calking-recesses *d* and calked in the usual manner, and the coupling is made. This calking material serves to secure the lugs *a* under the wings so that they cannot work out of position. The coupling is thus supported against lateral or side strain by the wings of the collar bearing against the body of the tubing, and locked against longitudinal or drawing strain by the lugs firmly held under the wings, while the calking material, by locking the parts in place, prevents the leaking of the fluid and supplements the support of the lugs and wings.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In couplings for tubing, the combination of a coupling-collar having an annular recess at each end for the reception of calking material, and a series of wings extending across the mouth of each annular recess, with tubing having one or more lugs or projections at the end adapted to catch under the wings on the collar, substantially as and for the purposes set forth.

2. In couplings for tubing, the combination of the collar *B*, having central ring, *c*, annular calking-recesses *d*, and wings *e*, with the tubing *A*, provided with lugs *a*, having inclined edges *g*, substantially as and for the purposes set forth.

3. In a sleeve or collar for coupling tubing, having an inner central ring, *c*, and annular calking-recesses *d* at each end, the tapering inner faces, *b*, substantially as and for the purposes set forth.

In testimony whereof I, the said EDMUND C. CONVERSE, have hereunto set my hand.

EDMUND C. CONVERSE.

Witnesses:

PETER PATTERSON,
JAMES I. KAY.