

B. L. D'AUBIGNE.
Tubular-Rivet.

No. 215,889.

Patented May 27, 1879.

fig: 1.



fig: 2.

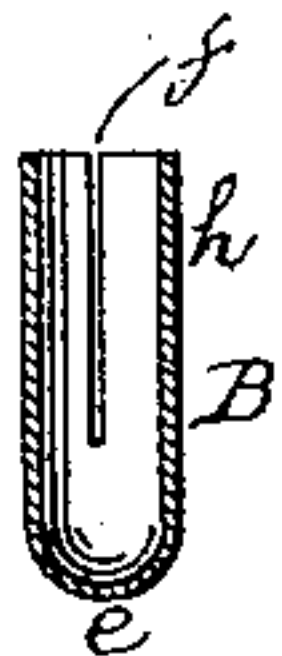


fig: 3.

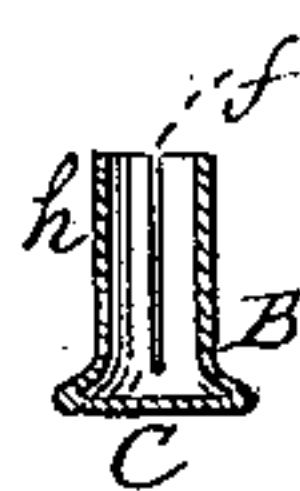


fig: 4.



fig: 5.

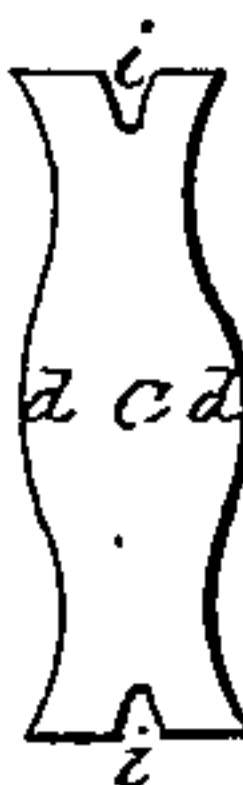


fig: 6.

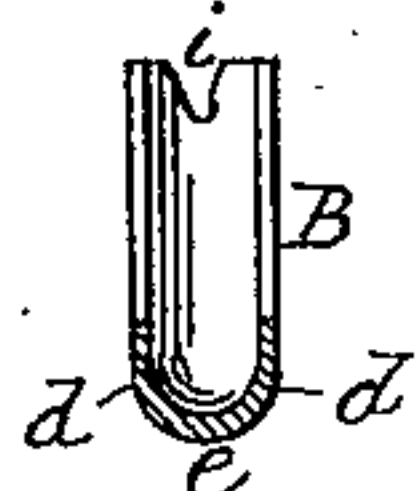


fig: 7.

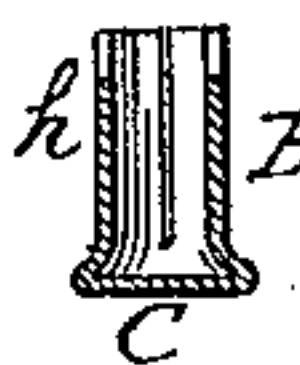


fig: 8.

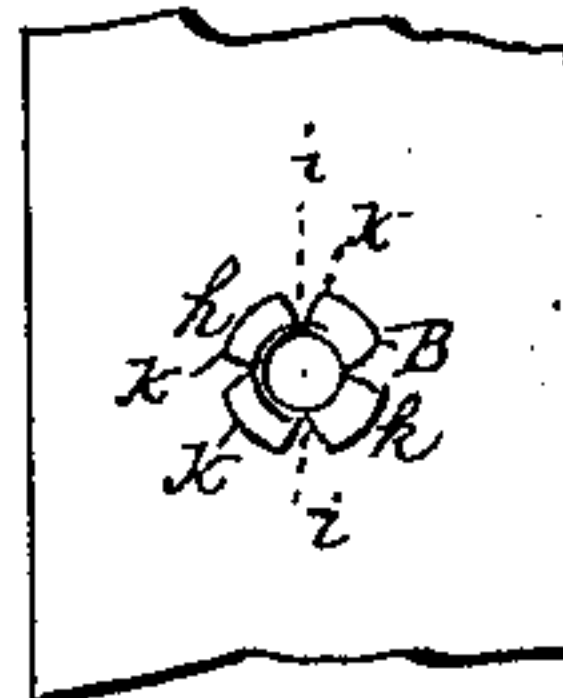


fig: 9.

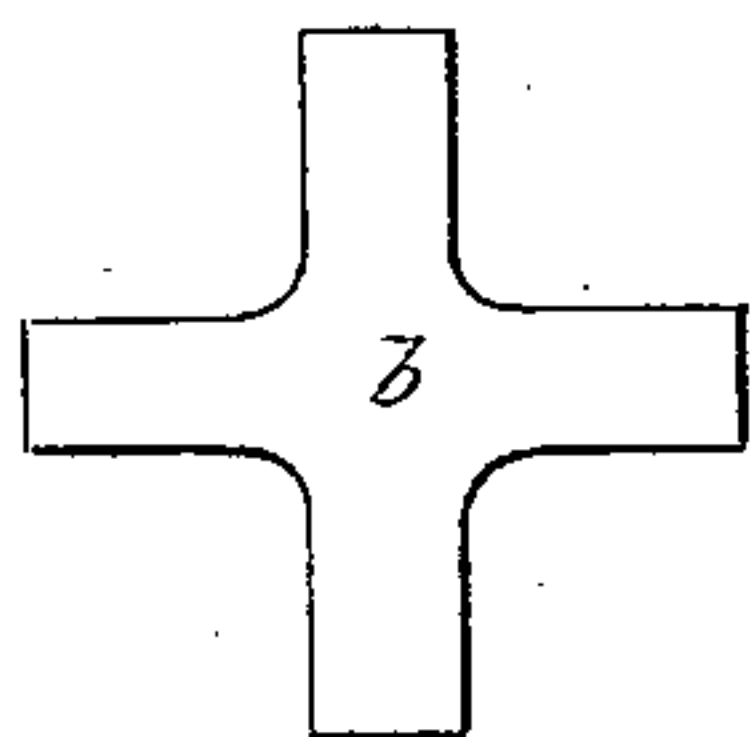


fig: 10.

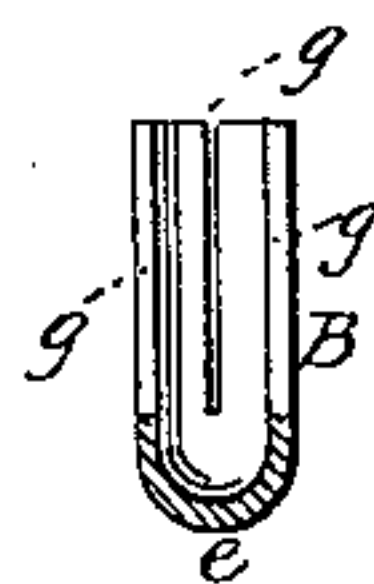


fig: 11.

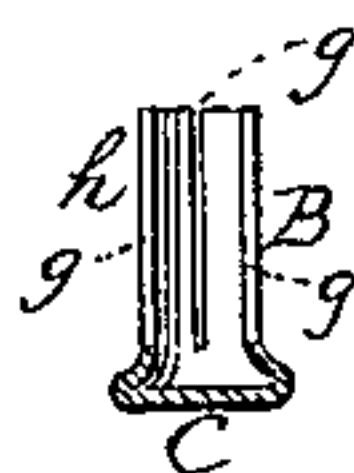
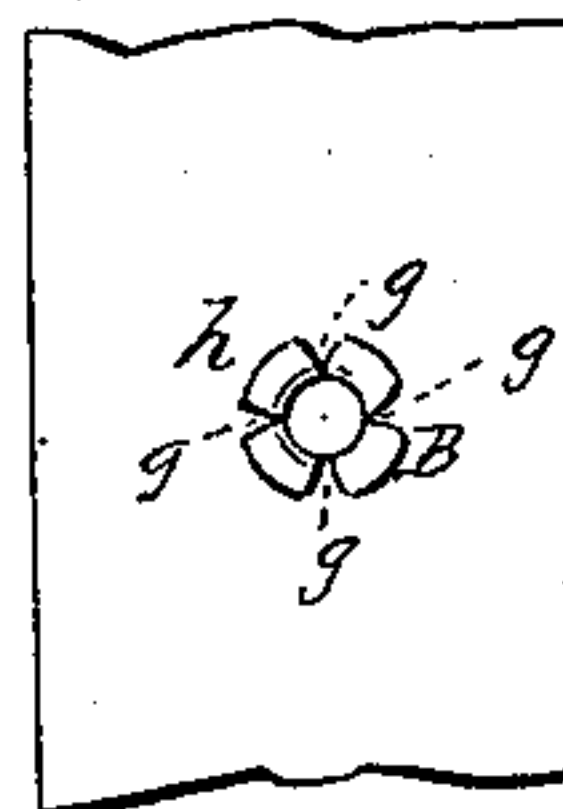


fig: 12.



Witnesses:

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UNITED STATES PATENT OFFICE

BARTOLO L. D'AUBIGNÉ, OF WATERBURY, CONNECTICUT.

IMPROVEMENT IN TUBULAR RIVETS.

Specification forming part of Letters Patent No. **215,889**, dated May 27, 1879; application filed February 27, 1879.

To all whom it may concern:

Be it known that I, BARTOLO L. D'AUBIGNÉ, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new and Improved Tubular Rivet; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification.

This invention is in the nature of an improvement in tubular rivets; and the invention consists in, as an improved article of manufacture, a rivet struck up from a suitable metallic blank, having a solid flanged head and a tubular shank divided into vertical sections, as is hereinafter more particularly described.

In the accompanying sheet of drawings, Figure 1 is a plan or top view of rectangular blank for rivet; Fig. 2, cross-section of tube from rectangular blank; Fig. 3, section of completed rivet from rectangular blank; Fig. 4, plan or top view, showing rivet applied to material, and folding over of slit ends; Fig. 5, plan or top view of irregular blank with swells; Figs. 6 and 7, sections of tube and completed rivet from same; Fig. 8, same applied to use, showing folding down of slit and notched ends of shank; Fig. 9, plan or top view of star-shaped blank; Figs. 10 and 11, sections of tube and completed rivet; Fig. 12, same applied to use, showing folded ends of slit shank.

Similar letters of reference indicate like parts in the several figures.

Heretofore tubular rivets or eyelets have been made; but they consisted of a tube open at both ends, and with a flange formed around one end. Tubular rivets have also been made as above described, but with one end of the tube closed by a metal cap secured to the flange by way of a head; but rivets of such construction were not adapted to sustain any great strain, for the reason that the heads of the rivets were not solid, and, therefore, liable to be stripped off when in use and subjected to strain.

To obviate this difficulty, and to construct a rivet with a solid flanged head that shall be substantially as strong as the ordinary rivet with a solid shank, and at the same time be

less expensive and admit of easier application, I construct my rivet from a blank of any suitable metal and desired thickness. This blank may be of the form of a simple rectangle, as at *a*, Fig. 1; or it may be star-shaped, as at *b*, Fig. 9, or of an irregular shape, as at *c*, Fig. 5, with swells *d*, for the purpose hereinafter described.

The blank being cut to any of these forms is drawn up in the shape of a tube, *B*, with a closed end, *e*. If this tube is drawn up from a rectangular blank, *a*, two slits, *f*, will be formed in the sides of the tube, caused by the unclosed edges of the blank, (see Figs. 2, 3, and 4,) and if the tube be drawn up from the star-shaped blank *b* four such slits, as at *g*, Figs. 10, 11, and 12, will be formed in the tube, caused by the unclosed edges of the four radial arms of the star. These slits divide the tube, therefore, into two or more sections. The tube being drawn up, as described, is inserted in a die, open end down and closed end projecting above the surface of the die, when, by a swage or by any suitable means, the closed end of the tube is upset and the solid head *C* formed on it from the substance of the metal at the closed end of the tube.

The amount of metal at the closed end of the tube may be augmented by cutting the blank with the swells *d*, as shown in the blank *c*, so that when the tube is drawn up these swells will surround the closed end of the tube, as shown at Fig. 6, and give more metal for upsetting the head.

Rivets constructed as above described may be applied to any use to which the common solid-shank rivet is now applied, such as fastening leather belting, hose, &c. To do this, it is simply necessary to form a hole, through which the rivet is inserted; or in some substances it is not necessary to punch a hole, since the rivet may at once be forced through, cutting its own hole in its passage. The rivet being in place, by any suitable instrument the end and sides of the shank *h* of the rivet that protrudes are spread, folded over, down, and against the surface of the material through which it is inserted, as shown in Figs. 4, 8, and 12, and in this way uniting the parts of the material to be fastened together. This folding over of the end or sides of the shank in

this way is facilitated, as is obvious, by making the shank *h* in sections or with slits, as before described, and the more slits or sections the more easily will this folding over be accomplished; but a tube may be formed with two sections only, and the ends of the blank be notched out, as shown at *i*, Fig. 5, so that when the tube is struck up from such a blank it will present four points, *h*, which may be turned over to form the opposite head, as shown in Fig. 8.

This form of construction may be advisable when the rivet is designed to be forced through heavy leather, in which case, if the shank is formed of more than two sections, it might not be stiff enough to stand the pressure, for by forming the tube from the notched blank the

shank of the tube is not materially weakened, and yet its end may be turned over in sections to form its opposite head with the same facility as if it were otherwise made.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

As an improved article of manufacture, a rivet struck up from a suitable metallic blank, having a solid flanged head and a tubular shank divided into vertical sections, substantially as shown and described.

BARTOLO L. D'AUBIGNÉ.

Witnesses:

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