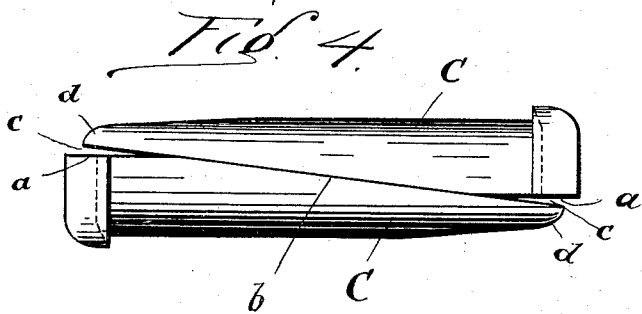
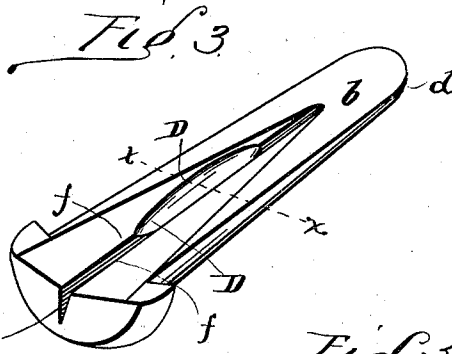
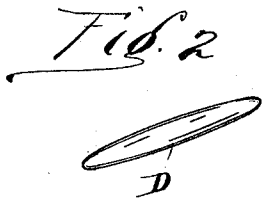
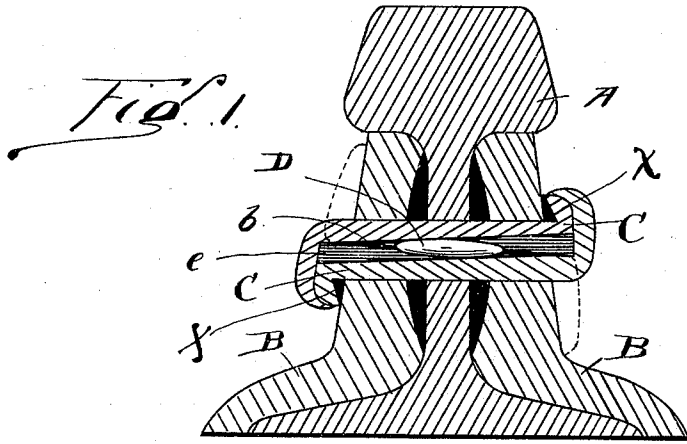


(No Model.)

G. F. LEMMON.  
BOLT OR RIVET.

No. 545,961.

Patented Sept. 10, 1895.



WITNESSES.  
S. P. ROSS.  
*[Signature]*

INVENTOR.  
George H. Lemmon  
By Fred W. Bond  
Attorney.

# UNITED STATES PATENT OFFICE.

GEORGE F. LEMMON, OF CANTON, OHIO.

## BOLT OR RIVET.

SPECIFICATION forming part of Letters Patent No. 545,961, dated September 10, 1895.

Application filed February 25, 1895. Serial No. 539,534. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE F. LEMMON, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful improvements in Bolts or Rivets; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a transverse section of the railway-rail and splice-plates, showing a longitudinal section of the bolt-sections and illustrating the position of the expanding-bar. Fig. 2 is a detached view of the expanding-bar. Fig. 3 is a detached view of one of the bolt-sections, showing the expanding-bar placed in proper position with reference to the section. Fig. 4 is a view showing the bolt-sections placed in proper position with reference to each other. Fig. 5 is a transverse section through line X X, Fig. 3.

The present invention has relation to bolts or rivets; and it consists in the different parts and combination of parts hereinafter described, and particularly pointed out in the claims.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, A represents a railway-rail which is constructed in the ordinary manner, and B illustrates the connecting-bars, which are of the usual form, and are provided with the ordinary apertures to receive the bolt-sections, apertures being formed in the webs of the railway-rails, all of the apertures, both in the rails and splice-bars, being arranged in the ordinary manner.

The bolt or rivet sections C are substantially of the form shown in Figs. 3 and 4, and, as shown, they are tapered from head to point, and are so tapered for the purpose of increasing the size of the rivet or bolt proper as the heads of the sections approach each other, or, in other words, as the sections are slid upon their faces so as to bring or cause the heads to approach each other. The head ends of each of the sections are provided with the straight faces *a*, which faces may be of any desired length. The balance of the faced sides

of the sections C are provided with the inclined faces *b*, thereby providing or forming upon the faced sides of the sections C faces *a* and *b*, located at an angle to each other. The object and purpose of providing the faces *a* is to leave a space, such as *c*, between the pointed ends of the sections, and the head ends of said sections, so that the pointed ends of the sections can spring toward the faces of the head ends, thereby allowing the points to pass or enter the apertures.

For the purpose of preventing a dead stop against the faces of the spliced bars B or the webs of the rails A the backs of the pointed ends of the sections C are beveled or rounded, as illustrated at *d*.

The faced sides of the sections C are each provided with the groove *e*, which groove extends to within a short distance of the pointed ends of the sections, as illustrated in Fig. 3. The grooves formed in the sections are for the purpose of receiving the expanding-bar D, as illustrated in Figs. 1, 3, and 5, and also for allowing or permitting the sections C to expand or spread by the opening of the grooves *e*.

For the purpose of reducing the depth of the grooves *e* and at the same time making it easier to place the expanding-bar D in proper position the inclined faces *f* are provided. In use the sections are placed face to face, and before the upper section has been slid or placed in proper position the expanding-bar D is placed in the grooves *e*, after which the sections C are driven head to head, and as the heads approach each other the bolt or rivet proper will be increased in size vertically with reference to Fig. 4, and by means of the expanding-bar D the grooves *e* will be forced open, thereby expanding the sections horizontally with reference to Fig. 4. After the sections have been placed in proper position, or, in other words, brought home, the pointed ends of the section are bent over their head ends, thereby securely holding the bolts proper in proper position to bind or clamp the various parts designed to be secured together.

The heads of the sections C are beveled or cut under, as illustrated at *z*, Fig. 1, so as to reduce the amount of metal, thereby making it easier to expand the heads when the

grooves *e* are opened and at the same time allowing the flanges of the heads to be bent or forced backward, thereby providing better adjustment for various thicknesses or irregularities of the parts designed to be clamped. 5 It will be understood that by providing the inclined faces *f*, the bolt-sections will press or bear upon their outer edges when they are crowded together, thereby assisting in expanding the sections. 10

The object and purpose of providing a bolt or rivet that will expand in two directions is to provide for entirely filling the apertures through which the bolts are passed or placed, 15 and especially the apertures in the splice or connecting bars B.

I have described the present invention as applied to securing the ends of railway-rails together; but it will be understood that my 20 improved bolt or rivet can be applied in many ways and for the securing of various kinds and forms of metal or material together. If desired, the pointed ends of the sections may be turned away from the heads, as illustrated 25 in the dotted lines, Fig. 1.

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

1. The combination of the bolt or rivet sections C, formed tapering from head to point 30 and provided with faces located at an angle to each other longitudinally with the sections, and having beveled portions at their pointed ends, substantially as and for the purpose set forth. 35

2. The combination of the sections C, provided with the grooves *e*, and the inclined faces *f*, and the expanding bar D, substantially as and for the purpose specified.

3. In a bolt or rivet the combination of the 40 sections C, provided with grooves and inclined faces *f* extending outward from the grooves, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence 45 of two witnesses.

GEORGE F. LEMMON.

Witnesses:

F. W. BOND,

E. A. C. SMITH.