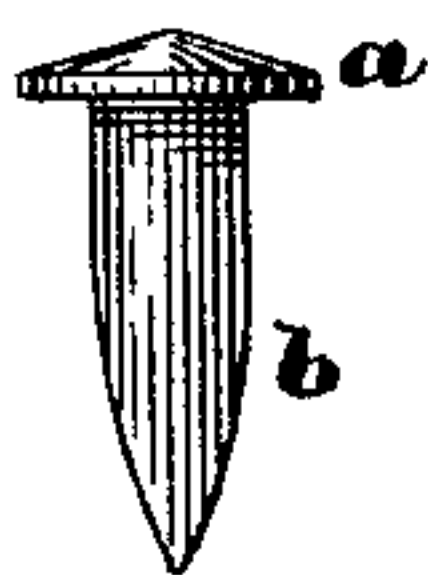


(No Model.)

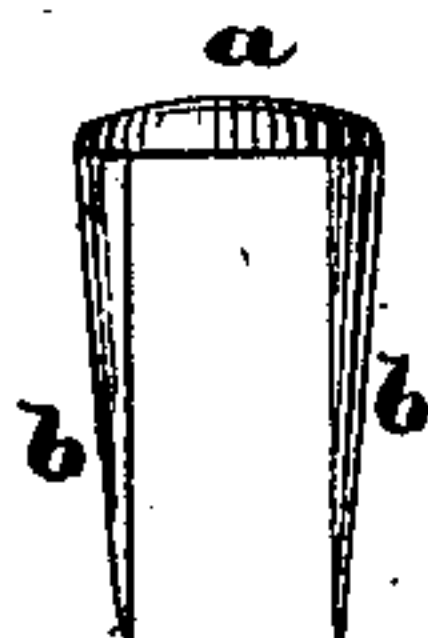
W. C. BRAY.  
RIVET.

No. 428,824.

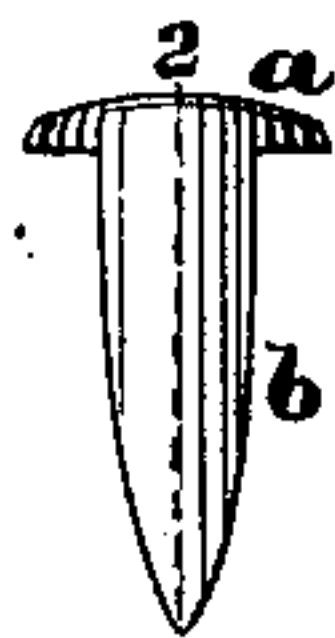
Patented May 27, 1890.



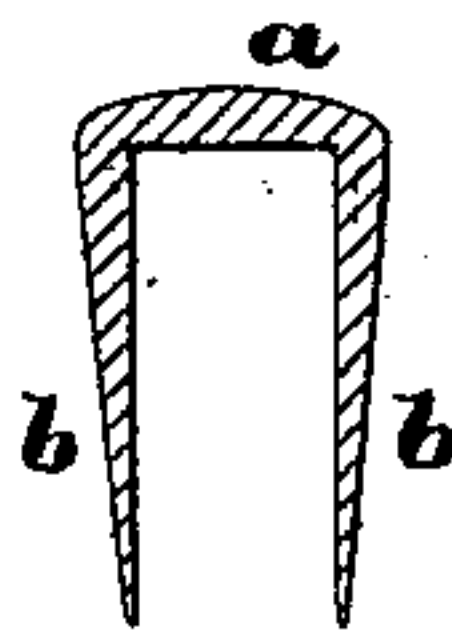
*Fig. 12.*



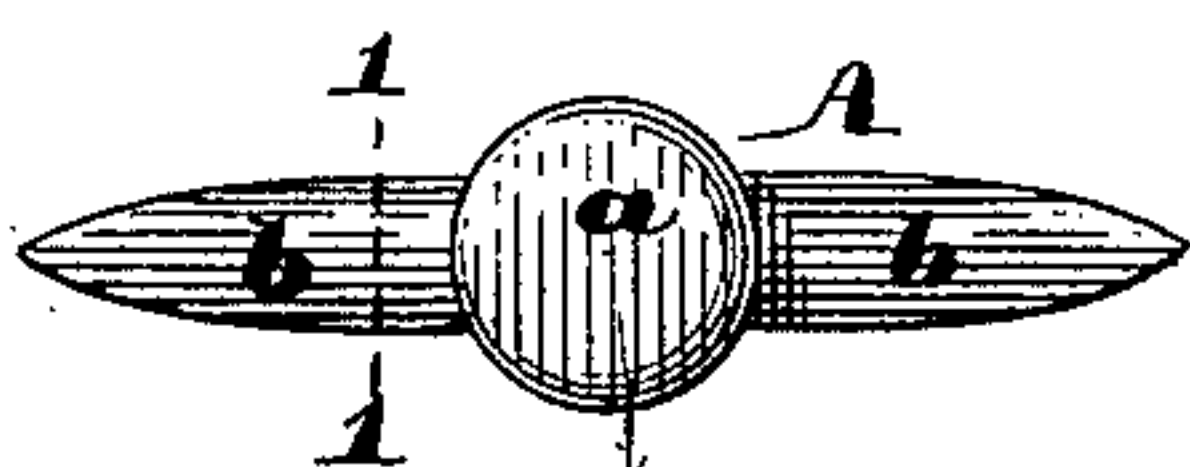
*Fig. 5.*



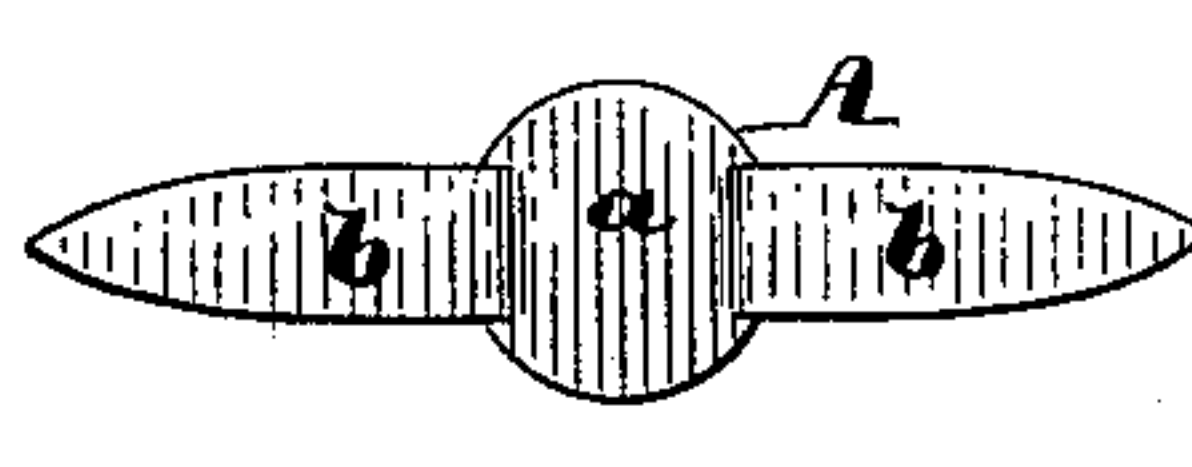
*Fig. 6.*



*Fig. 7.*



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



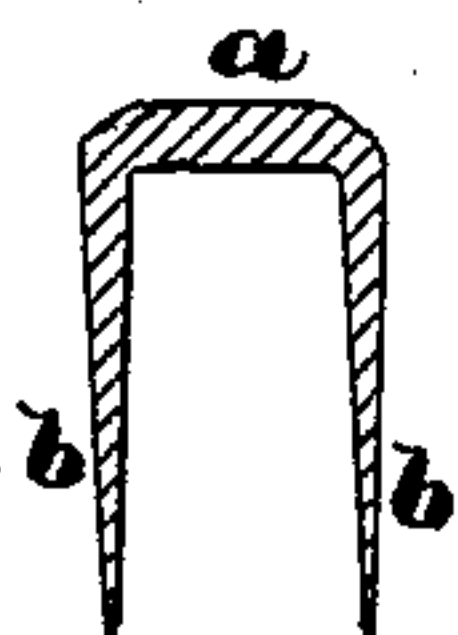
*Fig. 4.*



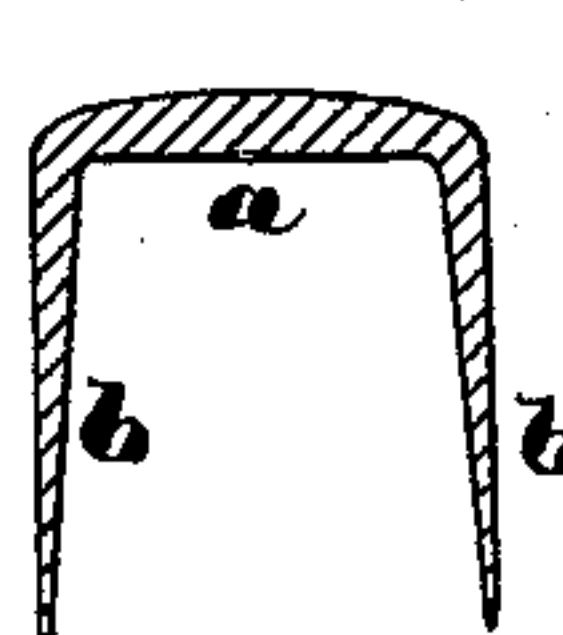
*Fig. 8.*



*Fig. 10.*



*Fig. 9.*



*Fig. 11.*

**Witnesses:**

Walter E. Lombard.  
C. A. McClure

**Inventor:**

William Claxton Bray.

by *N. E. Lombard*  
Attorney.

# UNITED STATES PATENT OFFICE.

WILLIAM C. BRAY, OF NEWTON, MASSACHUSETTS.

## RIVET.

SPECIFICATION forming part of Letters Patent No. 428,824, dated May 27, 1890.

Application filed April 1, 1890. Serial No. 346,152. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM C. BRAY, of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Rivets, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to rivets of the class termed "pronged rivets;" and it consists in certain novel features of construction, arrangement, and combination of parts, which will be readily understood by reference to the description of the drawings and to the claims, hereinafter given, and in which my invention is clearly pointed out.

Figures 1, 2, and 3 are respectively a plan, an inverted plan, and a longitudinal section, of a pressed blank from which my improved pronged rivet is to be formed. Fig. 4 is a transverse section of one of the prongs on line 1 1 on Figs. 1 and 3. Fig. 5 is an elevation of a finished rivet, looking at the edges of the two prongs. Fig. 6 is an elevation viewed from a position at right angles to that of Fig. 5, and Fig. 7 is a vertical section on line 2 2 on Fig. 6. Figs. 8 and 9 are respectively an inverted plan and a vertical section of a rivet, illustrating a modification in the form of the prongs and head. Figs. 10 and 11 are respectively an inverted plan and a vertical section of a rivet, illustrating a modified form of my improved rivet; and Fig. 12 shows another form of head.

In the drawings, A is the pressed blank, having the head *a* and the prongs *b b* extending from said head in opposite directions, but in a plane below the lower or inner face of the head, as shown in Fig. 3. This blank is formed from a solid wire, either round, oval, or rectangular, by pressure between dies of the desired shape to form the head of the desired shape in plan outline, and having a convex, conical, or frusto-conical upper surface and a flat under surface, and to give to the prongs *b b* the desired curved outline in plan and taper in the direction of their thickness and an elliptical or semi-elliptical cross-section, as shown in Figs. 4 and 8. The prongs *b b* are then bent at right angles to the head, with their outer surfaces substantially in line with the edge or periphery of said head, as shown in Figs. 5, 7, 9, and 11.

In the form shown in Figs. 5, 6, and 7 the prongs are semi-elliptical in cross-section and have their edges curved, so as to meet at the point and their broader sides tapered to a point, as shown, and said prongs are the same distance apart at their points that they are at their junction with the head.

The rivet shown in Figs. 8 and 9 has prongs that are elliptical or oval in cross-section and have their outer and inner broad faces inclined toward each other, so as to meet at points at a distance apart equal to the distance between the centers of said prongs at their junction with its head, said prongs, when viewed from a standpoint at right angles to that of Fig. 9, having the same outline as shown in Fig. 6.

The rivet shown in Figs. 10 and 11 has an oval or oblong head and prongs having an elliptical cross-section and tapered to a point at a distance apart equal to the length of the head, as shown.

The prongs of the rivets may be semi-elliptical, with the convex side outward or inward, just according as to how the rivet is to be clinched.

In some cases it is desirable to have the prongs of the rivet turned inward toward each other in clinching, and in other cases it is preferable to have said prongs turned outward or away from each other in clinching; but in whichever way the prongs are turned in clinching it is very desirable that the rounded or convex side of the prong should appear on the exterior of the clinching-bend, so that no sharp corners shall be presented to come in contact with the person or another article to chafe or injure it, and hence in some cases I propose to make the prongs with flat inner faces and convex outer faces, as shown in Fig. 5. In other cases I make the inner faces convex transversely and the outer faces flat, as shown and described in another application of mine, filed January 24, 1890, Serial No. 338,006, and in other cases I make the prongs convex transversely on both their inner and outer surfaces, as shown in Figs. 8 and 10. These several forms of rivets are very useful in cases where it is desirable to secure together two pieces of leather, textile fabric, or other material at points somewhat widely separated and at one operation.



The process by which this rivet is made is described and claimed in another application of mine of even date herewith. The upper surface of the head may be made convex, 5 conical, or frusto-conical, as shown in the different views, without departing from the principles of my invention.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

10 1. A rivet provided with a head having a raised center and a flat under surface, and two prongs projecting from said head at right angles, or nearly so, to the flat under side of said head, with their outer surfaces tangent 15 to the curved or rounded edge of said head.

2. A rivet provided with a head having a raised center and a flat under surface, two prongs projecting from the extreme outer portion of said head at right angles, or nearly 20 so, to the flat side of said head, and each having one of its sides curved transversely and tapered from the head to its end.

3. A rivet provided with a head having a raised center and a flat under surface, two 25 prongs projecting from the extreme outer portion of said head at right angles, or nearly so, to its flat under surface, and having their edges curved longitudinally and terminating in a piercing-point.

4. A rivet provided with a head having a 30 raised center and a flat under surface, two prongs projecting from the extreme outer portion of said head at right angles, or nearly so, to its flat under surface, and tapered in the direction of their thickness from the head to 35 their ends, and curved in the direction of their widths, so as to form sharp piercing-points at their ends, and each of said prongs having an elliptical or semi-elliptical cross-section, substantially as and for the purpose 40 described.

5. A rivet made from solid wire and comprising a head and two prongs having elliptical or semi-elliptical transverse sections and 45 their sides and edges curved to form sharp piercing-points, and projecting from said head at right angles, or nearly so, thereto, with their outer surfaces in line with the periphery of said head.

In testimony whereof I have signed my 50 name to this specification, in the presence of two subscribing witnesses, on this 28th day of March, A. D. 1890.

WILLIAM C. BRAY.

Witnesses:

N. C. LOMBARD,

WALTER E. LOMBARD.