(No Model.)

W. C. BRAY.

RIVET.

No. 428,825. Patented May 27, 1890.

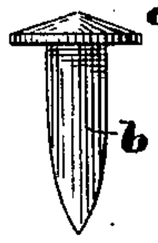

Fig. 10.

Fig. 6.

Fig. 5.

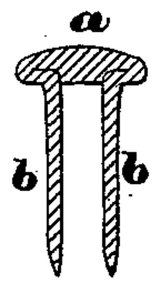

Fig. 7.

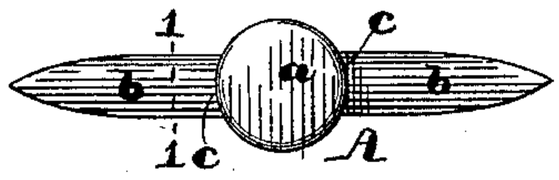

Fig. 1.

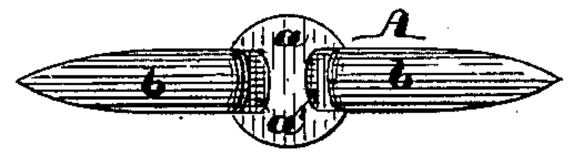

Fig. 2.

Fig. 3

Fig. 4

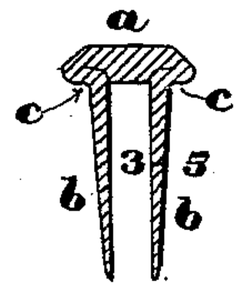

Fig. 8

Fig. 9.

Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM C. BRAY, OF NEWTON, MASSACHUSETTS.

RIVET.

SPECIFICATION forming part of Letters Patent No. 428,825, dated May 27, 1890.

Application filed April 1, 1890. Serial No. 346,153. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CLAXTON 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, forming a part of this specification, and to the claims hereinafter given and in which my invention is clearly pointed out.

Figure 1 of the drawings is a plan, Fig. 2 an inverted plan, and Fig. 3 a longitudinal section, of a swaged blank from which the pronged rivet is to be formed; and 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 the finished rivet looking at the broad side of one of the prongs. Fig. 6 is an elevation viewed at right angles to Fig. 5. Fig. 7 is a longitudinal section on line 2 2 on Fig. 5. Fig. 8 is a longitudinal section of a rivet, illustrating a modification in the form of prongs and the shape of the head as viewed in elevation. Fig. 9 is a transverse section of one of the prongs on line 3 3 on Fig. 8. Fig. 10 is an elevation of a rivet, illustrating another form of head.

In the drawings, A is the blank from which the rivet is to be formed, and comprises the head *a*, made thicker at its center than at its edge and having a flat under surface, in which are sunk two recesses *a' a'*, and two prongs *b b*, projecting from opposite sides of said head and having elliptical cross-sections and their edges and broader sides curved so as to terminate in piercing-points. This blank is formed from a solid wire—either round, oval, or rectangular—by swaging the same between dies of the desired shape. The prongs *b b* are then bent at the offsets *c* into positions at right angles to the under surface of the head and some distance within the circle of the periphery of the head, said offsets *c* being folded under the head and into and filling the recesses *a' a'*, so that the head shall have a bearing upon the material in which the rivet is set all around its prongs, as shown in Figs. 5, 6, 7, and 8.

The prongs *b b* may be made of even thickness from the head to a point near their ends and then be tapered to a point, as shown in Figs. 3, 6, and 7, or they may diminish in thickness from the head to their points, as shown in Fig. 8.

In the making of my improved rivet I use soft iron or soft brass, which is somewhat hardened and condensed by the operation of shaping the blank by pressure, whereby the prongs are rendered sufficiently stiff to maintain their shape while piercing the material in which they are to be set, and no cutting, milling, or drilling is required in the production of the rivet, except to remove the thin fin which will be left on the edge of the blank A in swaging it into shape, which will be done by means of suitable male and female dies.

This rivet can be made very cheaply by the process or mode of operation above described, and which forms the subject-matter of another application of even date herewith, in which the process is claimed. The upper surface of the head *a* may be made conical, as shown in Fig. 10, frusto-conical, as shown in Fig. 8, or convex, as shown in Figs. 5, 6, and 7, 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—

1. A rivet made from solid wire, provided with a head having a flat under surface, and made thicker at its center than at its edges, and having two prongs united to said head at its periphery, and bent under said head, and projecting at right angles, or nearly so, therefrom at points removed from the periphery of said head, as set forth.

2. A rivet made from solid wire, provided with a head having two sunken recesses formed in its under surface, and two prongs connected to the head at its periphery, and folded under said head to fill said recesses, and then bent at right angles, or nearly so, to the under surface of the head at points removed from the periphery of said head.

3. A rivet made from solid wire, provided with a head having a flat under surface, and

made thicker at its center than at its edges, and with two prongs projecting from said head at right angles, or nearly so, to its flat under surface at points removed from the periphery of said head, and each having an elliptical or semi-elliptical cross-section.

4. A rivet provided with a head having a flat under surface, and made thicker at its center than at its periphery, and with two prongs having elliptical or semi-elliptical transverse sections and pointed piercing ends, and projecting at right angles, or nearly so, to the flat under surface of said head at points removed from its periphery, as set forth.

In testimony whereof I have signed my 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.