J. W. SMITH.

Rivet.

No. 46,504. Patented Feb. 21, 1865.

Fig. 1.

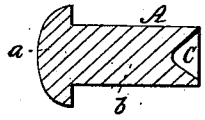


Fig. 4.

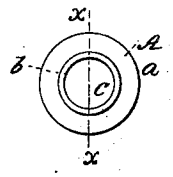


Fig. 2.

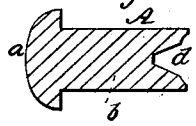


Fig. 5.

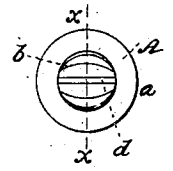


Fig. 3.

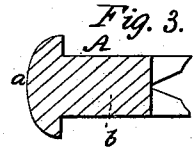
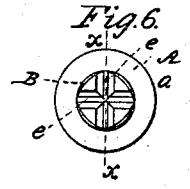


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN W. SMITH, OF BOSTON, MASSACHUSETTS.

IMPROVED RIVET.

Specification forming part of Letters Patent No. **46,504**, dated February 21, 1865.

To all whom it may concern:

Be it known that I, JOHN W. SMITH, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Rivets; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a longitudinal central section of my improved rivet in the line *x x*, Fig. 2. Fig. 2 is an end view of the same.

Similar letters of reference indicate like parts.

This invention relates to a new and useful improvement in rivets.

The invention is designed to facilitate the heading of rivets by obviating their liability to bend over at the end when struck by the hammer, which bending produces a clinch instead of a proper head and fails to draw the parts permanently together.

My improvement consists in forming the end of the rivet which is to be headed with a recess, so that when struck by the hammer it will readily spread or extend to form a head.

A represents a rivet provided at one end with a head, *a*, as usual, the body *b* being of the ordinary form. The end of the rivet opposite the head, as shown in Figs. 1 and 2, has a recess, *c*, of conical or semi-spherical form made in it.

This recess effects the ready expanding or spreading of the end of the rivet to form a head as soon as it is struck by the hammer. Were the body *b* of the rivet solid throughout, it would be liable to bend over and form a clinch instead of a head, and thereby prevent the body being "upset" or compacted so as to draw the parts through which the rivet passes snugly together. This is especially the case in heading small rivets which pass through thin pieces of metal, as the latter do not form any material support for the rivet, which, consequently, if struck in the least degree at one side, or in a direction out of line with its axis, is almost certain to bend and clinch. By the ready spreading of the end of the rivet a head is partially formed with the first two or three blows of the hammer, which prevents the body of the rivet from bending, and therefore insures the upsetting and compacting of the same to draw the parts through which the rivet passes snugly together.

This invention, though simple, is an important one, for the most of work in which small rivets are used is generally very imperfectly riveted, the rivets being simply bent or clinched, presenting a rather unsightly appearance, and not forming a close or secure connection of the parts through which the rivets pass—difficulties, it is believed, which are fully obviated by my improvement.

My invention is applicable to large as well as small rivets, and may also be employed with advantage in rivets which are permanently fixed in one part of the article to be connected.

I claim and desire to secure by Letters Patent, as a new article of manufacture—

A rivet constructed with a recess in its end, substantially as and for the purposes herein specified.

JOHN W. SMITH.

Witnesses:
JAMES SMITH,
JAMES LOUDON.