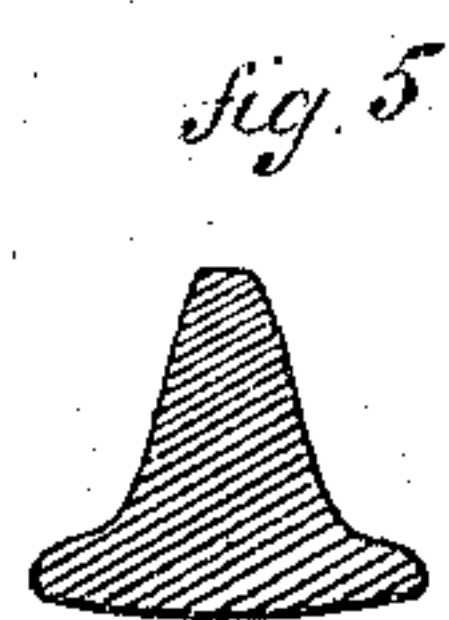
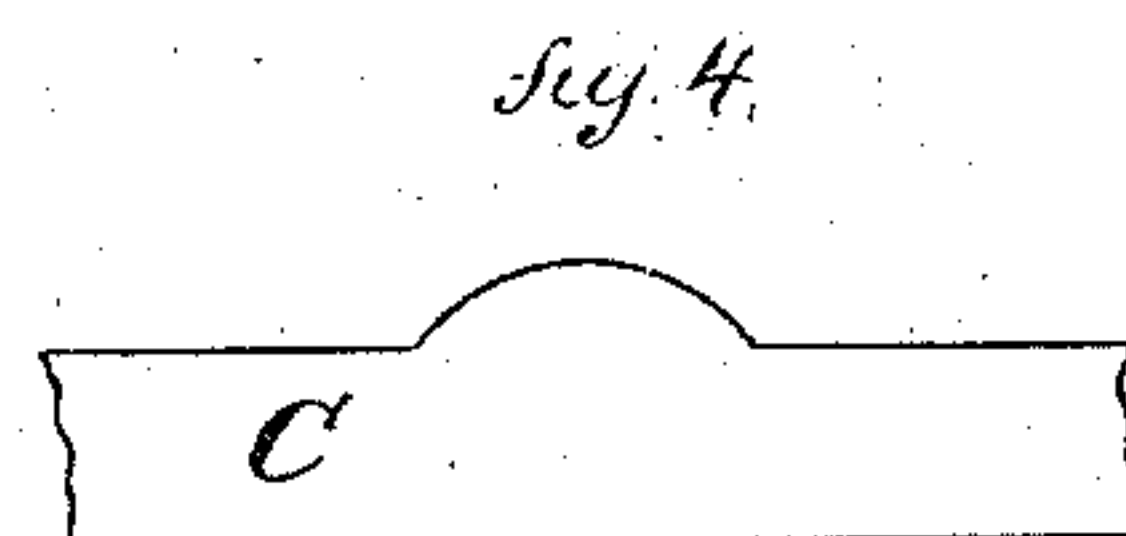
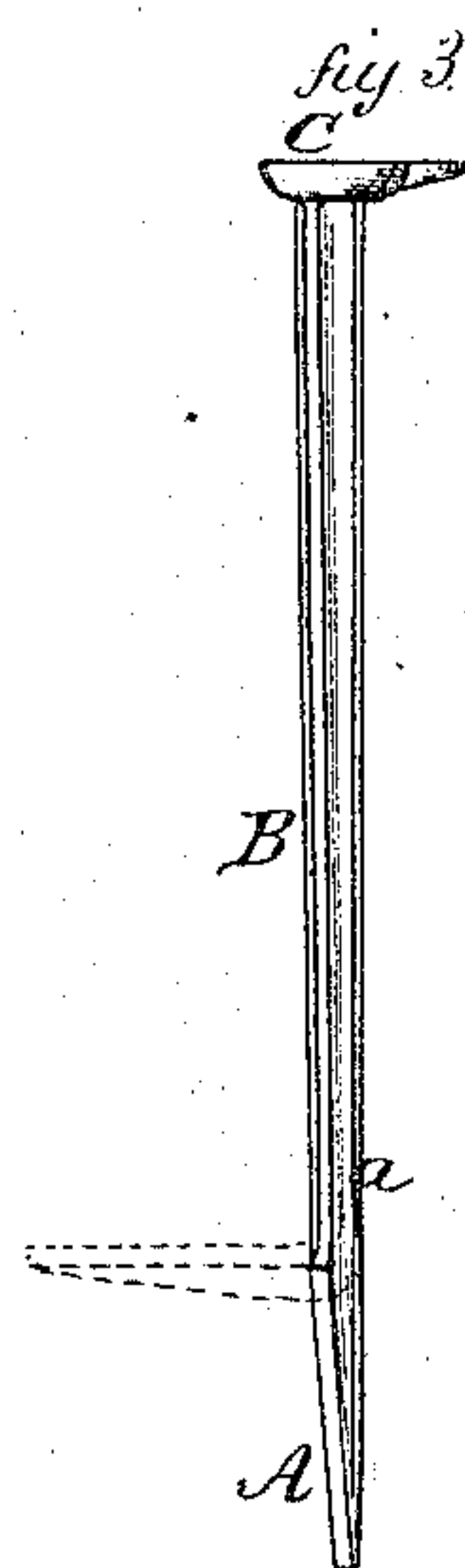
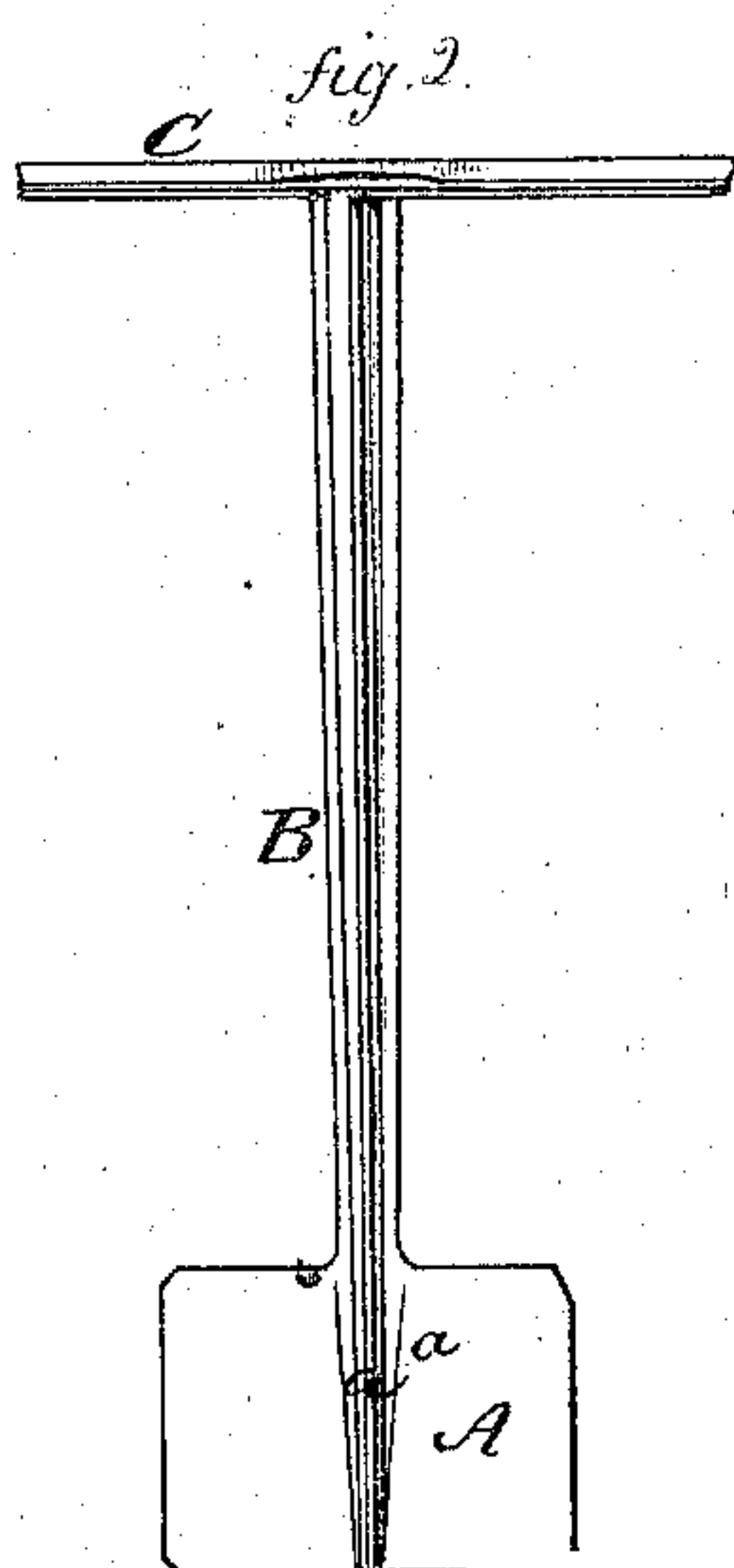
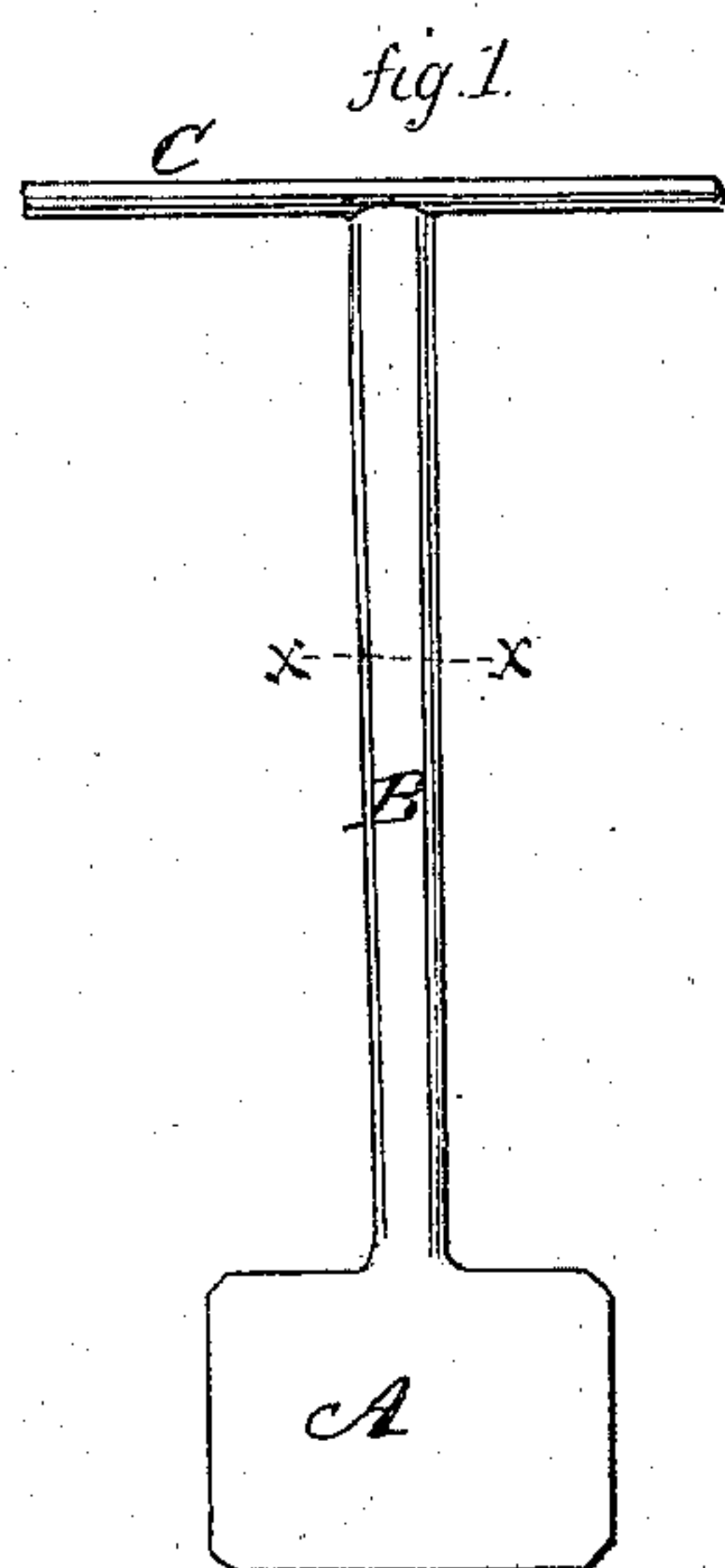


F. B. MORSE.  
Carriage Step.

No. 113,551.

Patented April 11, 1871.



Witnesses

J. H. Shumway  
A. J. Tibbitts

Francis B. Morse  
Inventor

By his Attorney

John S. Earle

# United States Patent Office.

FRANCIS B. MORSE, OF PLANTSVILLE, CONNECTICUT, ASSIGNOR TO H. D. SMITH & CO., OF SAME PLACE.

Letters Patent No. 113,551, dated April 11, 1871.

## IMPROVEMENT IN CARRIAGE-STEPS.

The Schedule referred to in these Letters Patent and making part of the same

*To all whom it may concern:*

Be it known that I, FRANCIS B. MORSE, of Plantsville, in the county of Hartford and State of Connecticut, have invented a new Improvement in Carriage-Steps; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents in—

Figure 1, a front view;  
Figure 2, the reverse side;  
Figure 3, a side view;  
Figure 4, a top view of the securing-bar; and in  
Figure 5, a transverse section on line *x x*.

This invention relates to an improvement in the manufacture of carriage-steps; and

It consists—

First, in forming the pad, shank, and section of the loop all in one and the same piece of metal without welding.

Second, in constructing the shank in a T or similar form, whereby the brace is very greatly strengthened.

A is the pad;

B, the shank; and

C, the section of the loop by which the step is secured to the carriage.

From a piece of suitable metal, and with suitable dies, the pad A is drawn out into the shape required, flat, or nearly so, upon the upper surface, and with a rib, *a*, on the under surface. Then from the pad the shank is drawn out by suitable dies into a T or similar shape, as seen in fig. 5, the rib which commences underneath the pad extending along the shank through its length up to the loop C.

At the point where it is desired to form the loop I split the metal from that point to the end, turning each part to the right and left to form the section of the loop, which completes the invention ready for market.

The consumer bends the step up, as denoted in broken lines, fig. 3, and gives to the shank the desired curvature.

These steps have heretofore been made, the manufacturer furnishing only the pad with a projecting arm, to which the consumer welds the brace or shank and loop; but by this construction I am enabled to produce the step complete the length required, and so that an ordinary blacksmith may bend the pad and shank into the desired form. I thus save considerable expense to carriage manufacturers, and produce the steps, pad, shank, and section of the loop in one and the same piece of metal without welding.

By constructing the brace in a T-shape—that is, with a rib on one side—I am enabled to produce a very much stronger step for the same weight of metal than has heretofore been done.

I claim as my invention—

1. A carriage-step, in which the pad A, shank B, and section of the loop C are produced in one and the same piece without welding, substantially as described.

2. The shank B of a carriage-step, formed of T-shape or with a rib upon one side, substantially in the manner and for the purpose set forth.

F. B. MORSE.

Witnesses:

E. E. PADDOCK,  
ASA L. FOWLER.