

(No Model.)

G. A. BADGER.
Bow.

No. 237,232.

Patented Feb. 1, 1881.

Fig. 3.

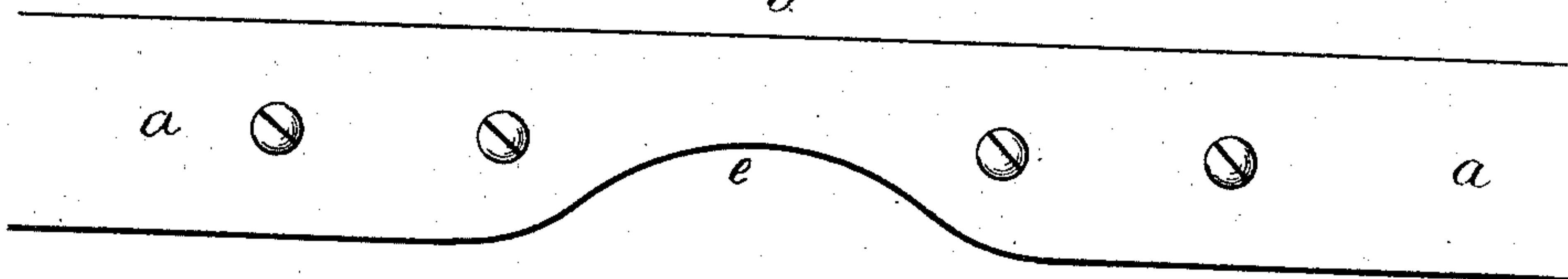


Fig. 1.

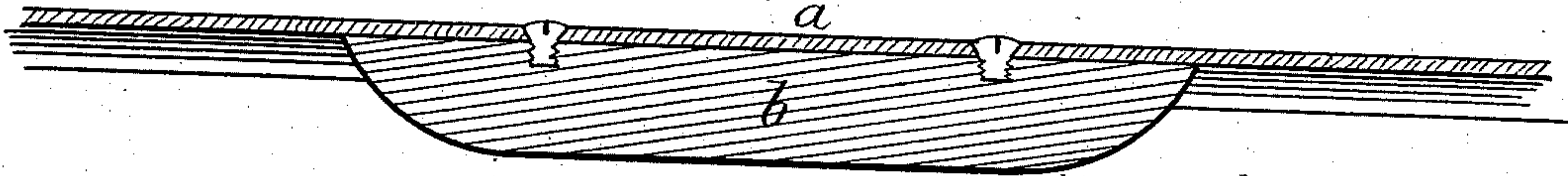


Fig. 2.

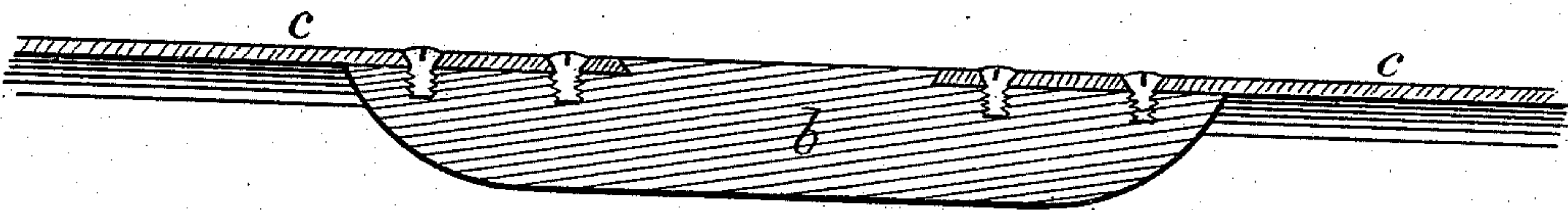


Fig. 4.

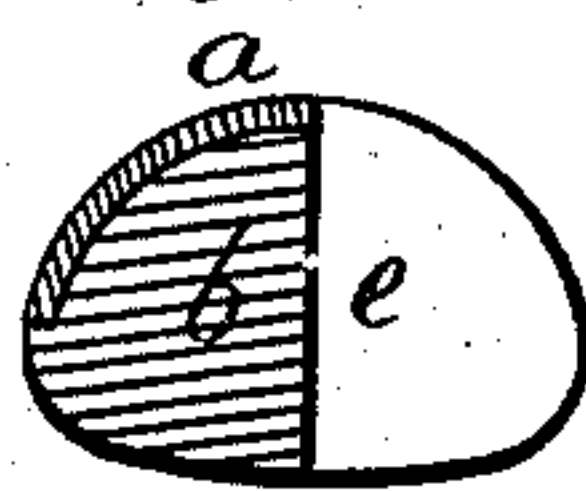


Fig. 6.



Fig. 5.



Witnesses.
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GEORGE A. BADGER, OF QUINCY, MASSACHUSETTS.

BOW.

SPECIFICATION forming part of Letters Patent No. 237,232, dated February 1, 1881.

Application filed June 21, 1880. (No model.)

To all whom it may concern :

Be it known that I, GEORGE A. BADGER, a citizen of the United States, residing at Quincy, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Bows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to metallic bows; and
15 it consists in making them of concavo-convex form in cross-section, the convexity being in front, and providing them with a central hand-piece, substantially as set forth.

The drawings accompanying this specification represent, in Figures 1 and 2, longitudinal section, in Fig. 3 a plan, and Fig. 4 cross-section, of a bow containing my invention. Figs. 5 and 6 represent different forms of the bow in cross-section.

25 In these drawings, Fig. 1 represents a bow composed of one entire piece of sheet-steel, *a*, of the requisite size and form, such bow being concavo-convex in cross-section in order to provide the requisite stiffness while the metal is
30 sufficiently thin to impart the necessary lightness.

In cross-section the bow may be semi-cylindrical, as shown in Fig. 4 of the drawings; U-shaped, as shown in Fig. 5; semi-elliptical, as
35 shown in Fig. 6, or any other proper outline.

The hand-piece of the bow is shown at *b*, as, in the present instance, cast from metal and secured to the center of the bow by being fitted into its concavity and secured therein by
40 screws. This hand-piece may, however, be of

wood or any other desired material, and be secured to the body of the bow by other means than screws.

In Fig. 2 of the drawings the body of the bow is shown as composed of halves *c c*, secured to the hand-piece by screws *d d* or otherwise, the hand-piece thus performing two functions. This construction may be adopted when it is desired to economize material by using pieces too short for the entire bow.
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In order to bring the arrow as near as possible to the center of the bow and to the path of movement of its string to obtain the best results in the flight of the arrow, I form a notch or depression in the center and upon
55 one side of the hand-piece, as shown at *e* in Figs. 3 and 4 of the drawings. This presents the arrow in a plane with the string and bow, and also enables the archer to instantly apply the arrow to its proper place in the center, or near the center, of the bow. By fitting the hand-piece to the concavity of the body of the bow longitudinal misplacement of the two is prevented.

I claim—
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1. In combination with a central wooden hand-piece, *b*, a metallic bow which has its front convex and its rear concave in form, substantially as and for the purposes set forth.

2. A bow composed of sheet-steel, concavo-convex in cross-section, and with a hand-piece independent therefrom and properly secured thereto, substantially as and for the purposes set forth.
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In testimony whereof I affix my signature
75 in presence of two witnesses.

GEORGE A. BADGER.

Witnesses:

F. CURTIS,

CHARLES J. BROTHERS.