

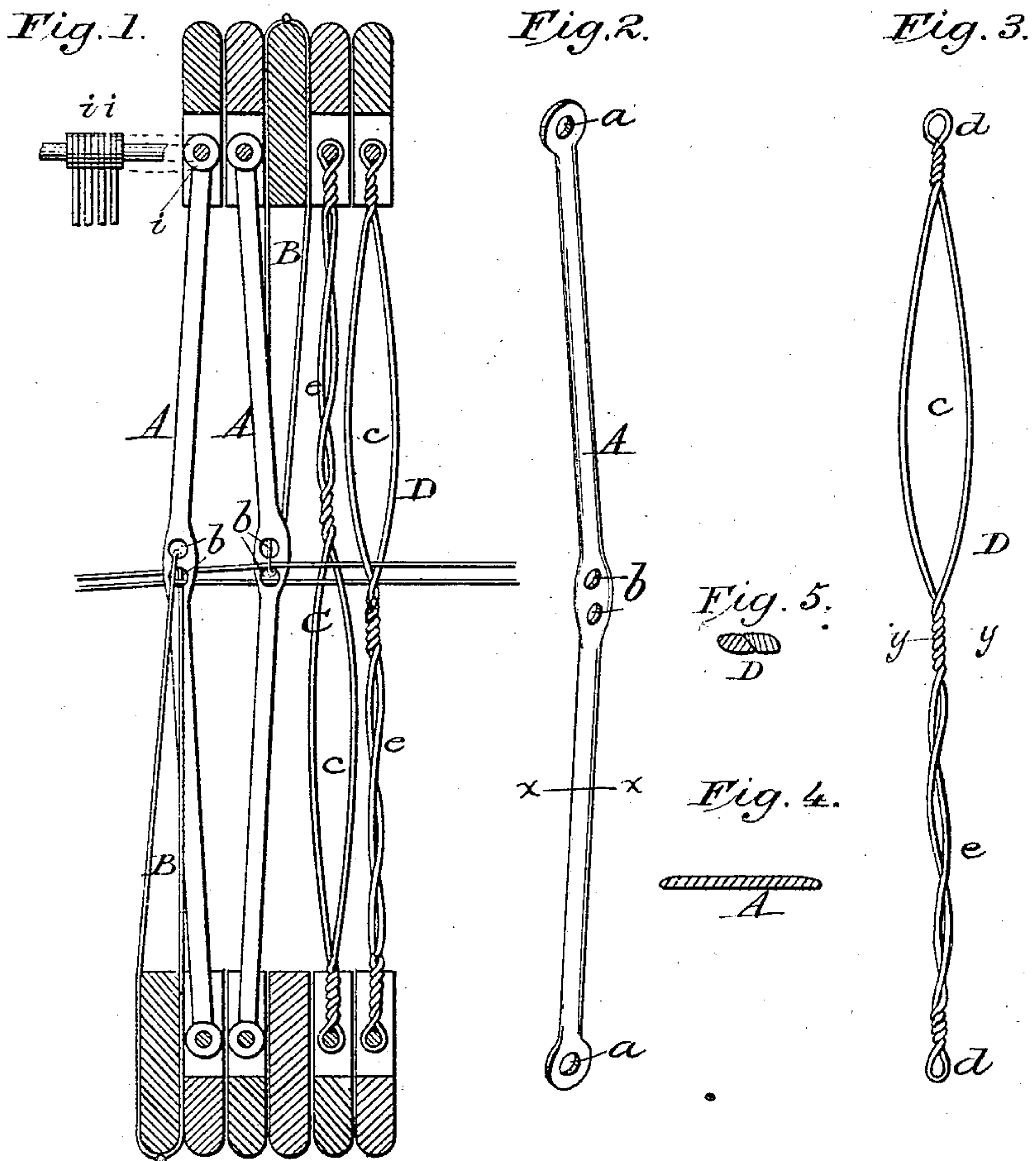
(No Model.)

R. ADAMS & J. LATUS.

DOUP HEDDLE.

No. 250,476.

Patented Dec. 6, 1881.



Witnesses.

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# UNITED STATES PATENT OFFICE.

ROBERT ADAMS AND JOHN LATUS, OF BIRMINGHAM, CONNECTICUT.

## DOUP-HEDDLE.

SPECIFICATION forming part of Letters Patent No. 250,476, dated December 6, 1881.

Application filed April 27, 1881. (No model.)

*To all whom it may concern:*

Be it known that we, ROBERT ADAMS and JOHN LATUS, of Birmingham, in the county of New Haven and State of Connecticut, have  
5 invented certain Improvements in Doup-Heddles, of which the following is a specification.

This invention relates to what are commonly known as "doup eyed harness," used in weaving gauze, grenadines, mosquito-nettings, and  
10 other fabrics in which the warp-threads are twisted or crossed between the weft-threads; and the invention consists in doup-heddles consisting of an angular or bent standard, and a  
15 half-heddle passed through the middle of said standard, and thence to a point out of line with the ends of the standard, substantially as described and shown.

Referring to the accompanying drawings, Figure 1 represents a longitudinal vertical section through the harness of a loom constructed  
20 on our improved plan, a small supplemental view being applied at one side of the main view, showing the ends of the standard and the washers by which they are separated. Fig.  
25 2 is a perspective view of one of our angular standards. Fig. 3 represents one of the back standards or heddles; Fig. 4, a cross-section on the line *x x*, Fig. 2; Fig. 5, a cross-section on the line *y y*, Fig. 3.

30 Our doup-heddles consist, as usual, of a whole heddle or standard and a half-heddle passed through eyes in the full heddles and forming a loop on one side to receive and carry the warp-thread.

35 Instead of constructing a whole heddle or standard in the usual manner, we form the same, as shown at A in the drawings, of sheet metal, having at each end an eye, *a*, and at the middle two eyes or holes, *b*. It will be  
40 noticed that the standard A is of an angular or bent form, and that in consequence of this form the eyes *b* are thrown forward or out of line with the end eyes, *a*. By thus constructing the device the half-heddle B, formed of thread  
45 or yarn, as usual, and passed through the eyes *b*, is thrown forward out of line with the body of the standard in such manner as to permit free access thereto. This construction of the full heddles, and the application of the half-

50 heddles so that they stand out of line with the full heddles, admits of the parts being brought closer together than under the ordinary construction, relieves the parts from undue friction, and facilitates greatly the mounting of the threads.

55 In constructing the heddles or standards A they may be punched from sheet-iron, sheet-steel, or any other thin rigid material, care being taken to round their edges and render their side faces perfectly smooth, in order to reduce  
60 the wear and friction upon the threads to a minimum.

The standards A are mounted in series side by side, with their ends seated around and sustained by hanging rods secured to the ordi-  
65 nary harness-frames, or otherwise sustained.

In order to maintain the proper distance between the standards, washers *i* may be slipped upon the rods between their ends in the manner indicated in the drawings. The standards  
70 may be placed very near each other for the production of fine fabrics without danger of their coming in contact, or of their producing objectionable friction on the thread or yarn.

It is preferred, in a loom containing two sets  
75 or series of the standards or heddles A, to arrange them, as shown in the drawings, with their middle portions bowed outward in opposite directions away from each other.

80 The half-heddles B, which may be of thread, yarn, mohair, silk, wire, or other material, will be secured to the harness-frames, as shown, or attached in any other suitable manner, their outer ends standing to one side of or out of line with the ends of the standards A.  
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90 C D represent the opening heddles, commonly called "back standards." They are constructed of wire in the manner shown, each with a large opening or eye extending from the middle to one end. The construction of these standards forms no part of the present invention, and the right is reserved to make their construction and their combination with the peculiar doup-heddles the subject of a separate application.  
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Having thus described our invention, what we claim is—

1. A doup-heddle consisting of an angular



or bent standard, and a half-heddle passing through the middle of said standard, and thence to a point out of line with the ends of the standard, substantially as described and shown.

- 5 2. In combination with the bent standards or heddles A, the half-heddles B, extending from the central eyes of the standard outward

beyond the edges of the standard, substantially as described and shown.

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