

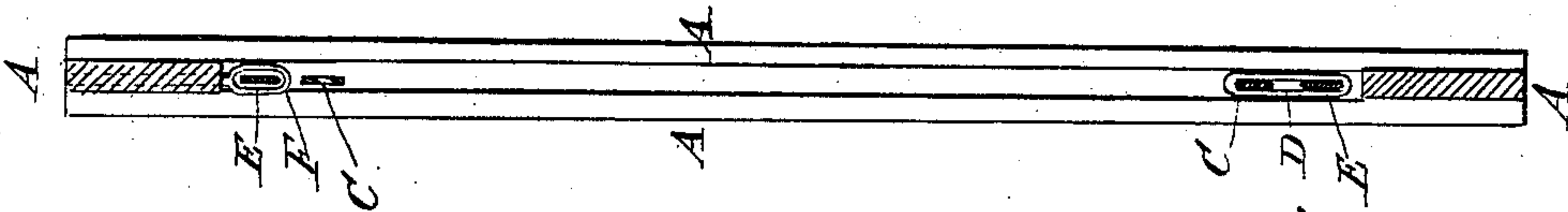
(No Model.)

J. ASHWORTH.  
HEDDLE FRAME.

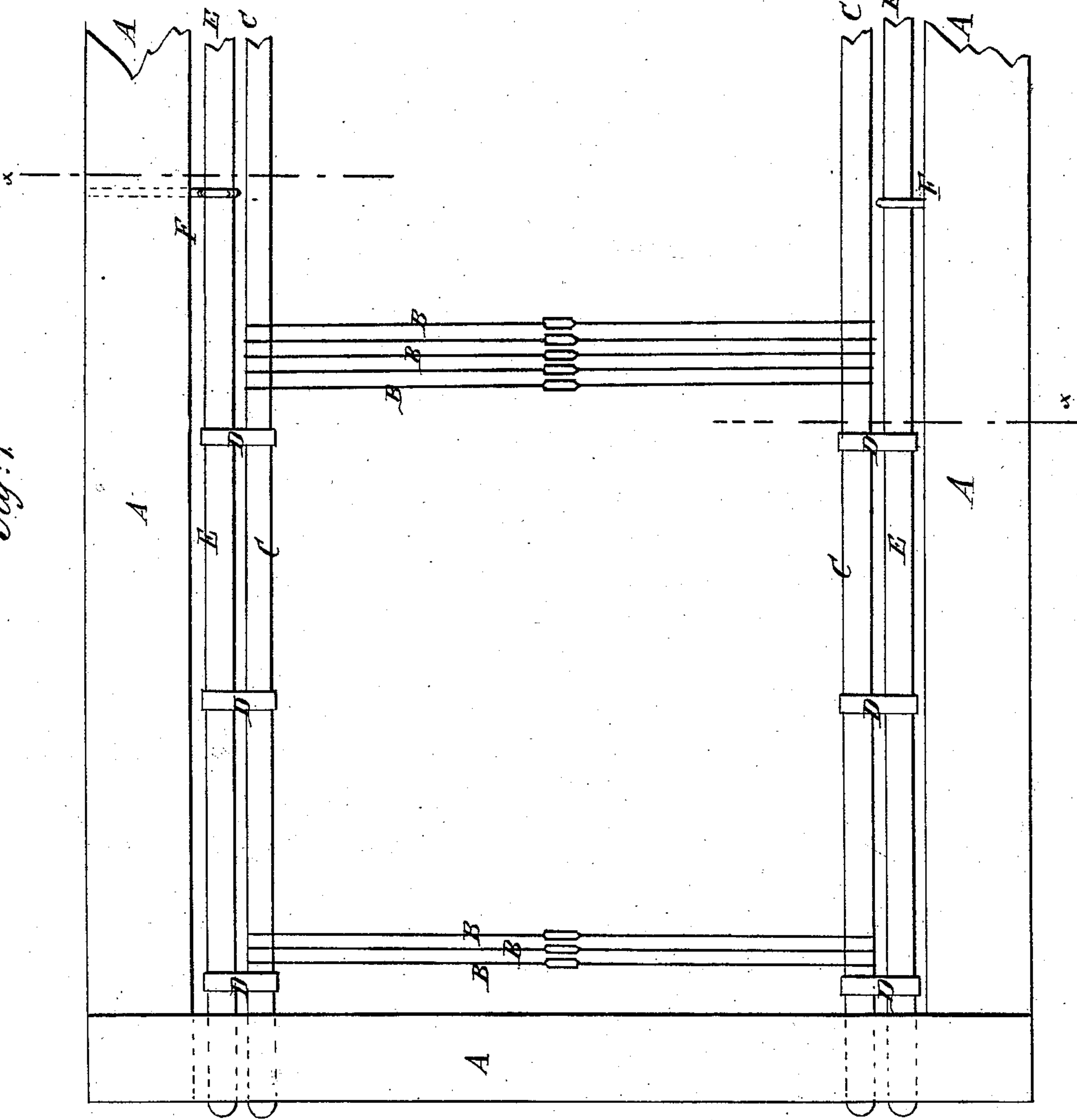
No. 253,335.

Patented Feb. 7, 1882.

*Fig. 2.*



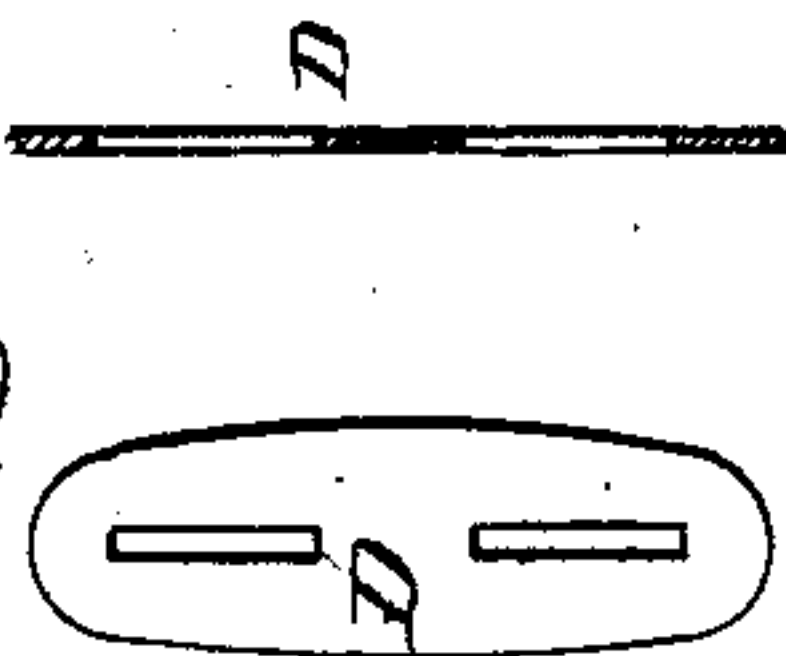
*Fig. 1.*



WITNESSES:

*Chas. Viola*  
*C. Sedgwick*

*Fig. 3.*



INVENTOR:

*J. Ashworth*  
BY *Munn & Co*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JOHN ASHWORTH, OF WETHEREDVILLE, MARYLAND.

## HEDDLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 253,335, dated February 7, 1882.

Application filed July 2, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ASHWORTH, of Wetheredville, in the county of Baltimore and State of Maryland, have invented a new and useful Improvement in Heddle-Frames, of which the following is a full, clear, and exact specification..

Figure 1 is a front elevation of a part of one of my improved heddle-frames, showing a number of heddles applied thereto. Fig. 2 is a sectional end elevation of the same, taken through the line *xx*, Fig. 1, the heddles being removed. Fig. 3 is a side and a sectional view of one of the suspension-links.

The object of this invention is to promote convenience in using and repairing the heddles, increase the durability of the heddle-bars, and prevent them from getting out of order.

The invention consists in the combination, with the heddle-frame having slotted side bars, the heddles, and the ordinary bars upon which the heddles are strung, of additional outer bars or rods and links and hooks or eyes for uniting the said bars and connecting them with the frame, whereby the ordinary inner bars upon which the heddles are strung are prevented from bending and twisting and the heddles are rendered easily changeable, as will be hereinafter fully described.

A represents the heddle-frame, the side bars of which are made double, as shown in Fig. 2, or are slotted to receive the heddle rods or bars, hereinafter described.

B are the heddles, which are strung upon rods or bars C, the ends of which pass through the slots in the side bars of the frame A. The bars or rods C are supported by sliding links D, through the inner ends of which the said rods C pass. The suspending slides or links D can be formed of sheet metal, having slots punched in them or eyes formed by bending their ends in their inner ends to receive the bars or rods C, and slots punched in them, or eyes formed by bending their ends in their outer ends to receive the bars or rods E. The rods E are thus parallel with the rods C, and their ends pass through the slots in the side bars of the frame A. The bars E are connected with and suspended from the top and bottom bars of the frame A by suspending

hooks or eyes F, rigidly attached to the said bars of the frame A and through the eyes of which the said bars E pass.

The hooks F can be made in the form of closed eyes, as shown in Fig. 2, so as to have no projecting points to catch upon the bars of other heddle-frames, as the said frames cross each other in weaving, so that the bars E G cannot be bulged or twisted by being caught upon the suspending-hooks of adjacent heddle frames. With this construction, if the rigid suspenders F cut the rods E, the said rods can be readily replaced with new ones by threading the new rods through the sliding links D. With this construction, also, when the frames have been taken from the loom, they are ready for the drawer or twister without changing the relative position of a hook.

In stringing the heddles B the middle suspending-links, D, are placed upon the opposite sides of and equally distant from the rigid suspenders F, and by placing the same number of heddles B between the adjacent suspending-links D the said links will serve as counters to show the number of heddles placed upon the bars C.

I am aware that heddles have been attached to a wire suspended by vertical wires or links from an upper wire, which is supported in a recess in the top bar or shaft of the harness by cross-pins, the top wire being fastened at one end to a spring, which is at its other end connected to the lower wire, which lower wire is attached at its reverse end to another spring; and I therefore do not claim such; but

What I do claim, and desire to secure by Letters Patent, is—

The combination, with the frame A, having slotted side bars, the heddles B, and the heddle-bars C, of the bars E, arranged between the said frame and heddle-bars, the links D, and the hooks or eyes F, whereby the heddle-bars are prevented from bending and twisting and the heddles rendered easily changeable, substantially as shown and described.

JOHN ASHWORTH.

Witnesses:

MARTIN FULTON,  
THOMAS C. WEAVER.