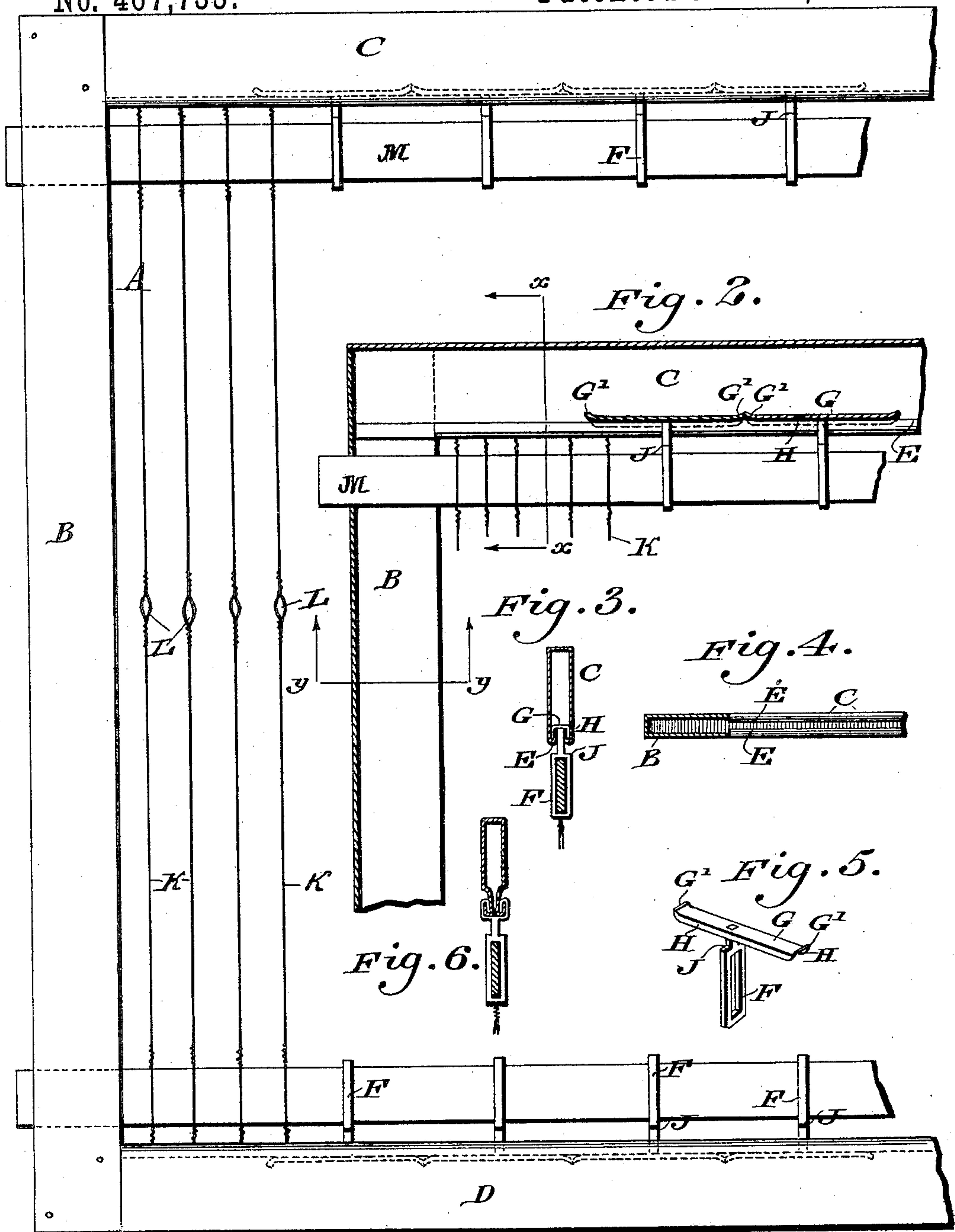


(No Model.)

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JOHN CUTHBERT, Jr.
HEDDLE OR HARNESS FRAME FOR LOOMS.

No. 467,733.

Patented Jan. 26, 1892.



WITNESSES:

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Fig. 1.

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HEDDLE OR HARNESS FRAME FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 467,733, dated January 26, 1892.

Application filed February 16, 1891. Serial No. 381,570. (No model.)

To all whom it may concern:

Be it known that we, JOHN CUTHBERT, GEORGE CUTHBERT, and JOHN CUTHBERT, JR., citizens of the United States, all residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Heddle or Harness Frames for Looms, which improvement is fully set forth in the following specification and accompanying drawings.

Our invention relates to improvements in heddle or harness frames for looms, and has for its object a heddle-frame in which the warp-threads can be readily arranged as desired and reliably held in place while the said frame is being operated; and for this purpose it consists of a frame formed as hereinafter described.

It further consists of a removable cross-bar for the securing of the heddle-wires, said bar having guides which are secured to the frame.

It further consists of the combination of parts, as hereinafter described.

Figure 1 represents a front view of a portion of a heddle-frame embodying our invention. Fig. 2 represents a central longitudinal section of a portion of the top and one side of said heddle-frame. Fig. 3 represents a section on line *xx*, Fig. 2. Fig. 4 represents a section on line *yy*, Fig. 2. Fig. 5 represents a perspective view of a detail portion of the device. Fig. 6 represents a vertical sectional view of a modification of the top or bottom piece.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a heddle-frame formed of the sides B and the metal top and bottom plates or pieces C and D, the said pieces being hollow and having an open side with turned-in edges E, forming a track or guide.

F designates hooks or stays, which are connected to plates G, said plates being within the top and bottom pieces C and D and having bent sides H, which embrace the edges or track E. The said plates G are also pro-

vided at their ends with the lips G' to keep them in proper position. This construction permits the longitudinal movement of the plates G within the said top and bottom pieces on the tracks E when inserting them, while at the same time preventing their withdrawal therefrom after the sides are in place. Each of the hooks is formed with a shoulder J, which is adapted to abut against the edge of the plate with which it is connected, and thereby prevent the entrance of the hook far enough into the same to effect a disengagement of the bent sides H of its plate G with the track E. The wires K of the heddle are formed with loops L, through which the warp-threads are guided, and are fastened at their ends to the bars M, which pass through openings in the sides B and through the loops F, the said loops serving to keep the bars in line. It will be seen that the loops F are, owing to the abutting lips G' of the adjacent plates G, kept at a proper and uniform distance apart, so that the wires K are reliably kept in place on the bars and that the heddle-frame can be readily raised or lowered without affecting the said wires.

In Fig. 6 is shown a modification of the top or bottom piece, the edges being turned up on the outside thereof and the plate G being formed to grasp or ride on the same.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A heddle-frame consisting of side pieces and metal top and bottom pieces, said pieces being hollow and having an open side with turned-up edges forming a track, plates having bent sides embracing said track and provided with end lips to keep them in place, loops connected with said plates and having shoulders, as described, and wires connected with said loops, said parts being combined substantially as described.

2. A heddle-frame having a hollow metallic cross-piece with turned-up edges forming a track, a series of plates with turned-up ends to prevent overriding of one on the other, and

turned-down sides to engage and move on
said track, said plates being provided with
attached loops having shoulders to engage
said hollow metallic cross-piece and prevent
5 disengagement of the turned-down sides of
the plates from the track, a cross-bar engaged
and sustained by said loops, and wires con-
nected to said bar and having loops, whereby
movement or adjustment of one of the plates

will adjust the entire series, substantially as is
described.

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Witnesses:

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