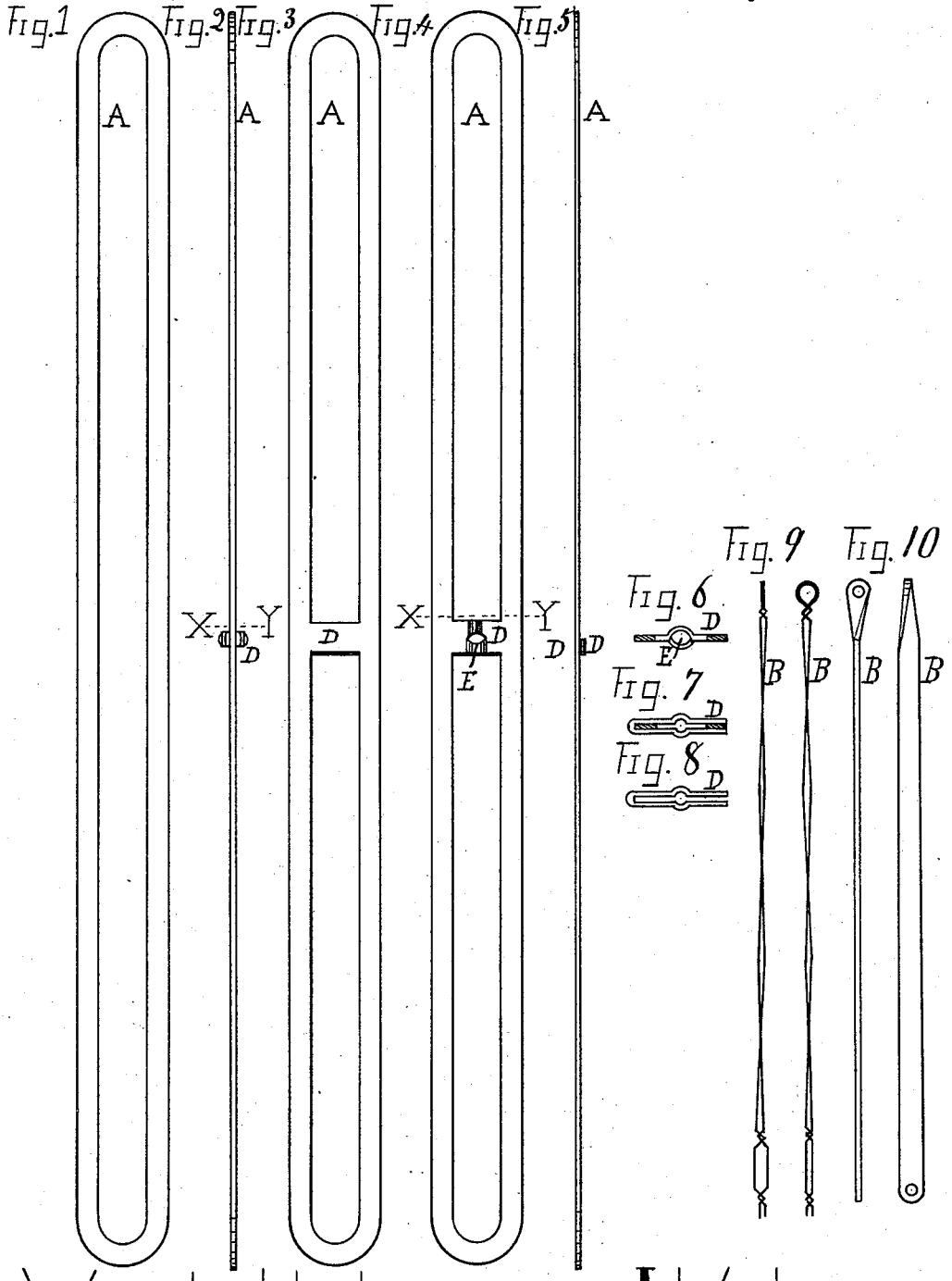
(No Model.)

R. WHARTON.

DOUP HEDDLE FOR LOOMS.

No. 456,180. Patented July 21, 1891.



WITNESSES.

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RICHARD WHARTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF FIVE-EIGHTHS TO JAMES B. PATTERSON, OF SAME PLACE.

DOUP-HEDDLE FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 456,180, dated July 21, 1891.

Application filed February 2, 1891. Serial No. 379,894. (No model.)

To all whom it may concern:

Be it known that I, RICHARD WHARTON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Doup-Heddles for Looms for Cross-Weaving, of which the following is a specification.

My invention relates to doup-heddles used for cross-weaving; and it consists in constructing the full heddle of flat sheet metal, slotted and provided with a perforated cross-bar midway in the length of the slot, and a half-heddle, made of round or flat wire and having an eye at the top, as is fully illustrated in the accompanying drawings, in which—

Figure 1 is a view of the full heddle, as cut from sheet metal, and before the cross-bar is soldered on. Fig. 2 is an edge view of Fig. 1, with the cross-bar soldered on. Fig. 3 is a view of the full heddle, as cut from sheet metal, and having a cross-bar midway in the slot. Fig. 4 is a view of Fig. 3, with the cross-bar perforated and "swaged" to form an eye. Fig. 5 is an edge view of Fig. 4. Fig. 6 is a cross-section of Fig. 4 at the line X Y. Fig. 7 is a cross-section of Fig. 2 at the line X Y. Fig. 8 is a view of the detached cross-bar. Figs. 9 are views of the half-heddle, made of round wire. Figs. 10 are views of the half-heddle, made of flat wire.

Similar letters in the drawings refer to like parts.

A represents the full heddle, which may be cut from any kind of sheet metal, but I prefer to make them from tempered sheet steel, and to cut them as shown in Fig. 3, with a cross-bar D. In this bar D is cut a hole E, and after the hole E is cut the bar D is swaged so as to throw half of the bar on each side, as shown in section, Fig. 6.

B is the half-heddle, and it may be made of round wire, as shown in Fig. 9, or of flat wire, as shown in Fig. 10. These half-heddles have an eye at the top for the crossing warp-thread, and an eye at the bottom by which they are strung in heddle-frames.

Constructing the full heddle of a wide piece of metal and slotting out the center, enables me to make a thin, strong, and light heddle. A greater number of thin heddles can be put into the inch than thick ones, and a wide heddle will not chafe the yarn as much as a narrow one.

The full heddles A are strung in heddle-frames of ordinary construction, having stringing-bars at top and bottom. The half-heddles B are strung in frames having a stringing-bar at the bottom only. The top end of heddle B is passed through the eye E in the full heddle A, and the eye in the half-heddle is made to project a little above the bar D. When the heddle A is cut as shown in Fig. 1, the cross-bar D is made of half-round wire and in form as shown in Fig. 8, and when soldered on, as shown in Fig. 2, and section, Fig. 7.

To apply my improved doup-heddle to looms, the doups are strung in heddle-frames of ordinary construction, such as are used for ordinary wire heddles, and the warp-threads are drawn in my improved doup, as is customary in cross-weaving. The heddles are operated, as usual, in looms for cross-weaving.

Having as above fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A doup-heddle for cross-weaving, consisting of a full heddle, made from flat sheet metal and having a longitudinal slot, and a perforated cross-bar, in combination with a half heddle adapted to pass through the perforation of said full heddle, as described, and for the purpose specified.

RICHARD WHARTON.

Witnesses:
JOHN SHINN,
M. R. PATTERSON.