

W. FEHR & J. KAUFMANN.

HEDDLE.

APPLICATION FILED JULY 18, 1908.

950,169.

Patented Feb. 22, 1910.

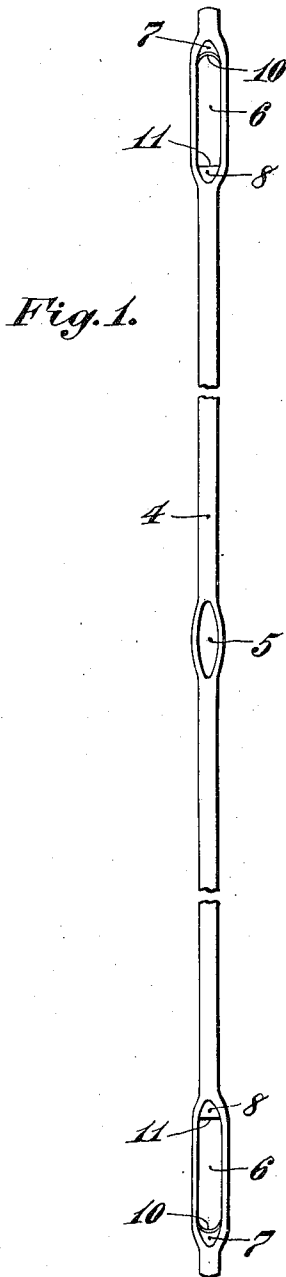


Fig. 2.

Fig. 3.

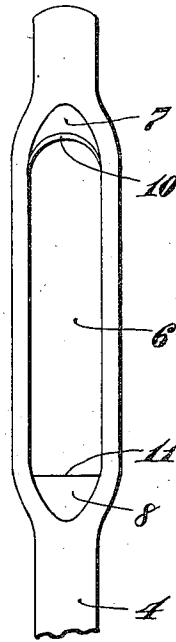
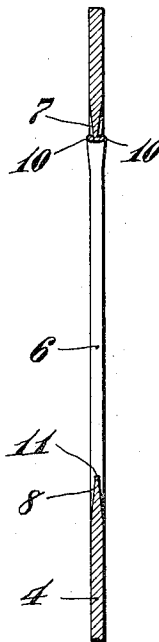
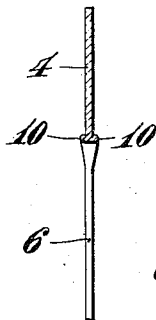


Fig. 4. *Fig. 5.*



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UNITED STATES PATENT OFFICE.

WILLIAM FEHR AND JACOB KAUFMANN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO STEEL HEDDLE MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

HEDDLE.

950,169.

Specification of Letters Patent. Patented Feb. 22, 1910.

Application filed July 18, 1908. Serial No. 444,238.

To all whom it may concern:

Be it known that we, WILLIAM FEHR and JACOB KAUFMANN, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have jointly invented certain new and useful Improvements in Heddles, of which the following is a specification.

Our invention relates to heddles and it has particular relation to the formation and outline of the mortises thereof through which the cross-bars of the heddle frame pass.

The principal object of our invention is to provide the mortises of the heddles at their bearing portions with increased bearing surfaces having certain characteristics, whereby when the heddle is shifted out of its normal position on the heddle-frame rods it may readily return to such normal position, thus preventing the formation of uneven weaves and the breaking of the warp thread. The structure of our invention also results in increased life of the heddles due to the larger bearing surface provided at the point of greatest wear, and for this reason our invention is particularly adapted for use in connection with heddles made of thin flat metal.

Our invention finds a valuable application in connection with that class of heddles which while made of thin flat metal are still further reduced in thickness at the point of bearing on the cross rod of the heddle-frame, such for example as are shown and described in Letters Patent No. 748,713 granted to William Fehr, Jan. 5, 1904.

The nature and characteristic features of our invention will be more readily understood from the following description taken in connection with the accompanying drawings forming part hereof, in which—

Figure 1 is a side elevation of a heddle embodying the main features of our invention, Figs. 2 and 3 are detail views enlarged, illustrating respectively in section and in side elevation one of the end or mortise portions of the heddle, and Figs. 4 and 5 are similar views of a modified form of our invention.

Referring now more particularly to Figs. 1, 2 and 3 of the drawings, 4 is a thin and narrow strip of metal or flattened wire, which is provided with the usual central

warp-eye 5, and at its respective ends with the mortises 6, the formation and outline of which constitute the subject matter of the present invention. The mortises 6 in the present instance may be formed by first slotting the strip and then expanding the slots by swaging the strip at the ends of the slots into openings of oblong outline, in a manner similar to that described in the aforesaid Letters Patent No. 748,713. By the swaging of the strip, fins 7 and 8 of compressed metal are formed at the respective ends of the openings or mortises 6, these fins being so cut or swaged at their free margins as to have straight edges 11. The fins 7 adjacent the ends of the heddle are then manipulated to form the lateral projections or extensions 10 which are slightly bent or rounded in an upward direction, in cross section, forming rounded bearing surfaces of greater lateral extent than the metal from which they are formed. The particular method by which the extensions 10 are formed on the fins 7 forms no part of this invention but will be described and claimed in another application for Letters Patent to be filed by us. Briefly this method consists in forcing a rapidly rotating pin against the free margin of the fin 7 so that the metal of the fin is upset and curled on either face of the fin and thus forms the extensions 10. As a result of this particular method, the extensions 10 will have a curvilinear or arched shape outline as shown in Figs. 1 and 3 of the drawings, and in cross-section being thickest at the center and merging into the sides of the mortise at the point where the fin 7 terminates in the sides of the mortise. The extensions 10 may correspond in lateral extent to the thickness of the heddle proper or they may be of slightly greater or less extent as desired.

In the form of our invention shown in Figs. 4 and 5 the fins 7 are omitted and the lateral extensions 10 are formed so as to extend directly from the faces of the heddle proper, this being a form of our invention which is adapted for use in connection with thinner heddles where the fins 7 are either omitted or cut away before the lateral extensions 10 are formed. There is thus provided a bearing surface for the mortises which is of greater lateral extent than the

metal from which it is formed and which is characterized by the absence of sharp edges, to the end that the heddles will not stick onto heddle-frame rods, but will always return to their normal positions when displaced from any cause. Moreover the increased bearing surface provided will reduce wear of the heddle at the points of greatest strain and thus materially prolong the life of the same.

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

1. A heddle consisting of a thin flat strip of metal having mortises provided with integral bearing portions of greater lateral extent than the adjoining thickness of the metal.

2. A heddle consisting of a thin flat strip of metal having mortises provided with integral bearing portions of a greater lateral extent than the adjoining thickness of the

metal, said bearing portions having rounded edges.

3. A heddle consisting of a thin flat strip of metal having mortises provided with integral bearing portions of a greater lateral extent than the adjoining thickness of the metal, said bearing portions having rounded edges and being of arched or curvilinear outline.

4. A heddle consisting of a thin flat strip of metal having mortises and reduced portions adjacent the ends of the mortises, and having integral bearing portions extending laterally from said reduced portions.

In testimony whereof we have hereunto signed our names in the presence of two witnesses.

WILLIAM FEHR.
JACOB KAUFMANN.

Witnesses:

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