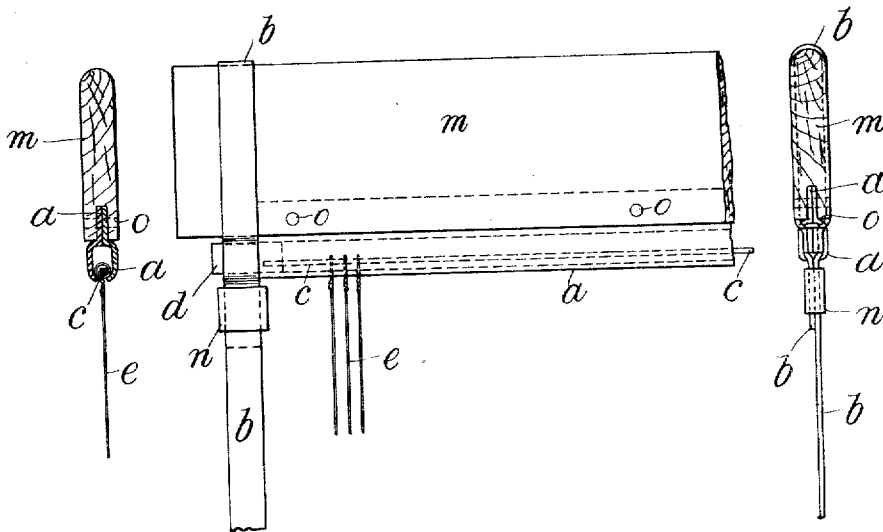


APPLICATION FILED FEB. 24, 1909.

2 SHEETS—SHEET 1.

FIG. 2.



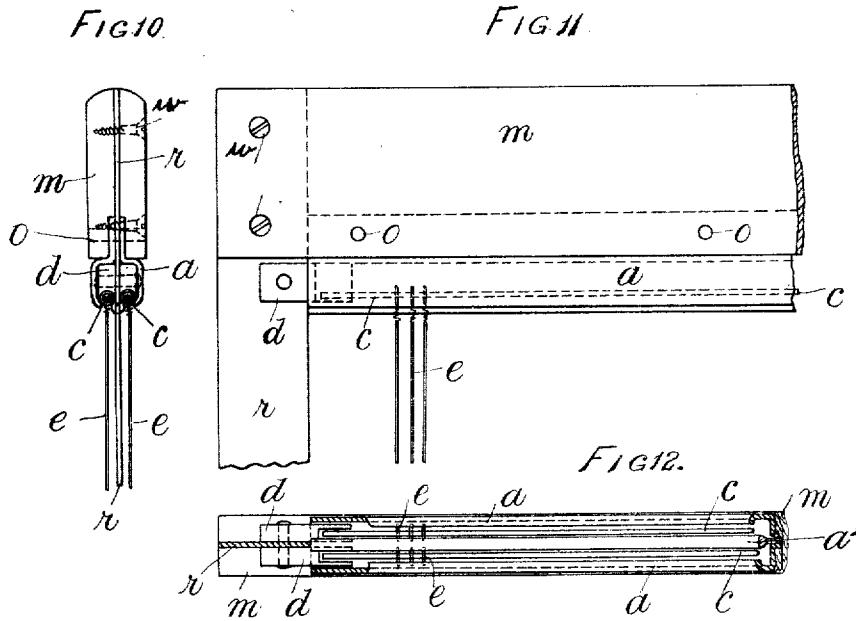
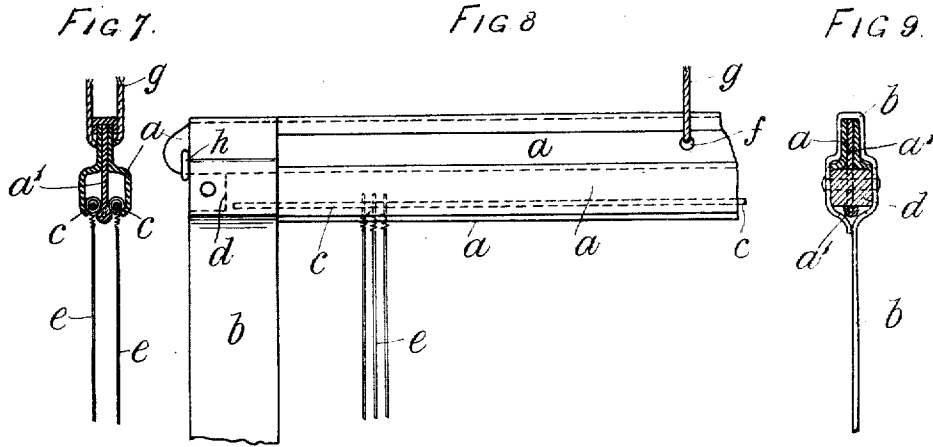
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H. B. BARLOW.
 HEALD SHAFT FOR WIRE AND METAL HEALDS.
 APPLICATION FILED FEB. 24, 1909.

954,013.

Patented Apr. 5, 1910.

2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY BERNOULLI BARLOW, OF MANCHESTER, ENGLAND.

HEALD-SHAFT FOR WIRE AND METAL HEALDS.

954,013.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed February 24, 1909. Serial No. 479,774.

To all whom it may concern:

Be it known that I, HENRY BERNOULLI BARLOW, a subject of the King of Great Britain, residing at 17 St. Ann's Square, Manchester, in the county of Lancaster, England, have invented new and useful Improvements in Heald-Shafts for Wire and Metal Healds, of which the following is a specification.

My invention relates to improvements in heald shafts for wire and metal healds employed in looms for weaving, the objects of my invention being to make a heald shaft entirely of metal or metal and wood to support a single or two rows of healds, in such manner that the healds can be moved freely all along the shafts, there being no fixed hooks or movable supports as now customary in the ordinary heald shafts, which hooks or supports divide the healds and cause spaces between the warp threads.

In the accompanying 2 sheets of drawings—Figure 1 represents a side elevation of part of a metal heald shaft to support a single row of wire and metal healds made according to my invention, Fig. 2 is an end elevation and Fig. 3 a sectional view respectively of Fig. 1. Fig. 4 is a side elevation, Fig. 5 an end elevation, and Fig. 6 a sectional view respectively of Fig. 4, of part of the heald shaft shown in Figs. 1, 2 and 3 combined with a wooden stave according to my invention. Figs. 7, 8 and 9 are similar sectional, side elevation and end views respectively, illustrating a modification of my invention in which the heald shafts are designed to support two rows of wire and metal healds, in place of a single row. Figs. 10 and 11 represent a side and end elevation respectively of part of the heald shaft shown in Figs. 7, 8 and 9 combined with a wooden stave according to my invention, and Fig. 12 is a plan of the underside of part of Fig. 10.

Referring to Figs. 1, 2 and 3, *a* designates the upper stave, made in this instance of two strips of metal folded to form a channel with a contracted mouth, and with two flat surfaces soldered or otherwise secured together; *b* one of the two end pieces for connecting the upper and lower staves *a* together to complete the heald shaft; *c* a wire placed in the channel in each stave; *d* stop pieces secured to each end piece *b* to prevent the wire *c* moving endwise; *e* wire

healds threaded upon the wires *c*; *f* holes in the flat portion of *a*; *g* the jack cords or wires by which the shaft is supported in the loom; *h* rings or clips which pass through the projecting flat ends of the staves and hold the end pieces *b* in place.

In Figs. 4, 5 and 6 each metal portion *a* is made as previously described, but is used in combination with a wooden stave *m*; I fit one of the metal staves into each wooden stave by cutting a longitudinal groove in the wood into which the flat portion of the metal stave is inserted as shown, and secured by screws or pegs *o*, which pass transversely through the wood and metal; in these views *b* represents one form of metal end pieces which pass over recessed portions of the wooden staves *m*, and are held in position by clips *n*, the jack cords or wires, not shown, being fastened to hooks which screw into the staves *m* as usual. The end loops of the metal healds are threaded upon the wires *c*, one wire in each top and bottom stave *a*, these wires *c* are then placed in the channels in *a* and the end pieces *b* put in position on the staves and fastened by the rings *h*, or clips *n*, or their equivalents; in place of the end pieces *b* for connecting the top and bottom staves *a* together any other suitable end pieces may be employed for this purpose.

Figs. 7, 8 and 9 only differ from Figs. 1, 2 and 3 in this that a division strip of metal *a'* beaded upon one edge is secured between the side pieces *a* so as to form two parallel channels with contracted mouths, to receive two pieces of wire *c* one in each channel, upon which the wire healds *e* are threaded.

In Figs. 10, 11 and 12 the side pieces *a* and metal strip *a'* are combined with a wooden stave *m*. I fit one of the metal staves into each wooden stave *m* by cutting a longitudinal groove in the wood into which the flat portion of the metal stave is inserted as shown and secured by screws or pegs *o* which pass transversely through the wood and metal. In these views *r* represents one form of metal end pieces fitted into saw-gates in the wooden staves *m* and held in position by screws *w*. In place of the end pieces *r* or *b* for connecting the top and bottom staves *a* together any suitable end pieces may be employed.

If found desirable my improved staves, whether of metal or metal and wood combined may be used without ends, in this case

suitable stop pieces must be applied to each end of the staves to prevent the wires upon which the healds are threaded from moving endwise.

5 By forming heald staves as shown in the drawings, I am enabled to construct a heald shaft for wire and metal healds which will allow the healds to be moved freely anywhere along the shaft, and also the construction shown in Figs. 1, 2 and 3 and Figs. 7, 10 8 and 9 permits the jack cords to be readily attached to the metal of which the shaft is composed.

What I claim as my invention and desire 15 to secure by Letters Patent of the United States is:—

1. A heald shaft for wire and metal healds, consisting of two metal staves bent to form a channel having a constricted mouth, and 20 having flat engaging portions above the channel and oppositely disposed with respect to said mouth, healds extending through said mouth and having end loops fitted into the channel, a wire within the channel passing 25 through the end loops and a support for the

jack cords in said flat portions, substantially as described.

2. A heald shaft for wire and metal healds, comprising two strips of metal secured to one another throughout a portion of their 30 width, the remaining portions of said strips being bent outward with respect to one another, then bent substantially parallel to one another, and then bent inwardly with respect to one another to form a channel, the 35 edges of the inwardly extending portion being spaced from one another to form an opening communicating with said channel, healds passing through said openings and having end loops positioned within the chan- 40 nel, and a wire within the channel passing through the end loops of said healds.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY BERNOULLI BARLOW.

Witnesses:

HERBERT ROWLAND ABBEY.
JOSEPH BENNETT.