No. 887,102. PATENTED MAY 12, 1908.

W. S. LACKEY.

HEDDLE.

APPLICATION FILED FEB. 2, 1906. RENEWED SEPT. 24, 1907.

Fig. 1.

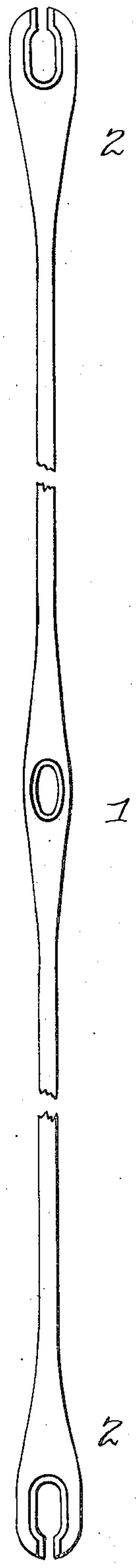
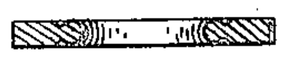


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM SHINN LACKEY, OF HADDONFIELD, NEW JERSEY.

HEDDLE.

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Application filed February 2, 1906, Serial No. 299,194. Renewed September 24, 1907. Serial No. 394,411.

To all whom it may concern:

Be it known that I, WILLIAM SHINN LACKEY, citizen of the United States, residing at Haddonfield, Camden county, New Jersey, have invented certain new and useful Improvements in Heddles, of which the following is a specification.

My invention relates to heddles for looms and particularly to the construction of the eyes of said heddles, the purpose being to prevent chafing, wear, or breaking of the warp threads passing through the eyes, and to allow freedom of movement of the heddles on the heddle frame rod.

The improvement relates to that class of heddles known as flat steel or wire heddles. In this class the inner walls of the eyes and the edges of the said eyes are left flat and square and the surfaces adjacent the said edges are left rough and wiry, owing to the action of the dies which are used to stamp out or cut them. This roughness causes the warp threads to drag, to become chafed and often to break in the warp eyes, and as regards the rod eyes, the same roughness prevents the heddles at this point from moving freely upon the rods. Heretofore, various means have been provided to remove this roughness, such as by rumpling or brushing with sand, but such methods have not been attended with success, as no amount of rumpling or brushing will entirely remove the rough edges from the eyes, and further than this, the heddles will not be of uniform finish and uniform smoothness, or thickness.

My invention consists in the features hereinafter described and particularly pointed out in the claims.

In the accompanying drawings,—Figure 1 represents a front view of a heddle embodying my invention, and Fig. 2 is a cross sectional view enlarged at the warp eye.

In carrying out my invention, I provide the heddle eyes with rounded edges presenting contacting surfaces to the warp threads and heddle rods exactly similar to a perfectly cylindrical wire. In the drawing this rounded edge is indicated at 1, it being formed by the action of suitable dies which contact with the metal adjacent the opening of the eye and form it up into a rounded rib bordering the eye. The necessary pressure for forming the rounded bead or rib at the margin of the eye is a graduated pressure and the result of the action of the dies or tools is not only to produce a smooth contacting surface for the warp thread passing through the eye, but also to strengthen the heddle at the eye, making it possible to use a much thinner metal than would otherwise be the case. This rounded bead or rib is also provided at the eyes which engage the heddle rods as indicated at 2, the said rib or bead not only extending around the opening of the eye, but also along the longitudinal opening extending from the eye to the end of the heddle. The effect of the rounded rib or bead at the rod eye is to permit the said heddle to have greater freedom of movement on the heddle frame than is usual with heddles as now constructed.

My invention is applicable to any shape or style of flat steel or wire heddle and I do not confine myself in this regard.

By my invention I am enabled to provide a heddle of flat metal or wire of the minimum thickness, but strengthened at both the warp eye and the rod eye, said heddle having freedom of movement on the heddle rods and having no chafing or dragging contact with the warp thread.

It will be understood that the heddles when in place in the frame present their thread eyes in planes inclined in relation to the planes of the warps and thus the warps bear not upon the interior of the eye, but upon those portions of the edge of the eye lying substantially in the planes of the faces of the heddle adjacent the eye, and by reason of the round-wire-like edge presented at these points, all chafing of the thread will be avoided.

An important advantage accrues from the use of the eyes formed with the bead as described in that the heddles can be employed with the finer gages of yarns, for as above stated, the reinforced eyes permit me to use metal which is much thinner than could otherwise be employed, and further as the bead is formed from the metal itself and is of the same or substantially the same diameter as the thickness of the heddle, the heddles can lie close together.

It will be understood that where I have used the term "eye" herein, I do so in a generic sense to include either the warp eye or the rod eye.

I claim as my invention:

1. A heddle having a warp eye provided with a bead or rib formed from the metal of the heddle and extending about the said warp eye, substantially as described.

2. A heddle consisting of flat metal having an eye provided with a bead or rib formed from the metal of the heddle and extending along the edge of the metal, integral therewith and of substantially the same diameter as the thickness of the metal of the heddle, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM SHINN LACKEY

Witnesses:
A. P. RUTHERFORD,
R. W. LACKEY.