

P. PHILIP.
Making Wire Heddles.

No. 106,277.

Patented Aug. 9, 1870.

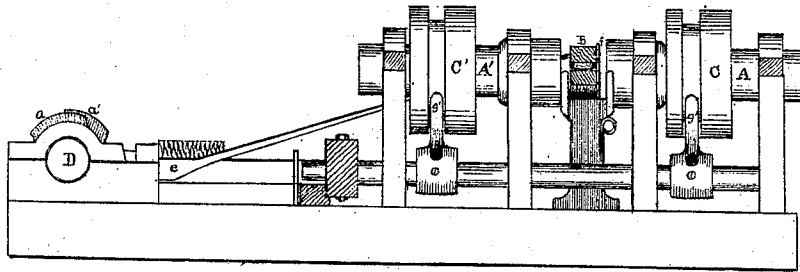


Fig. 1.

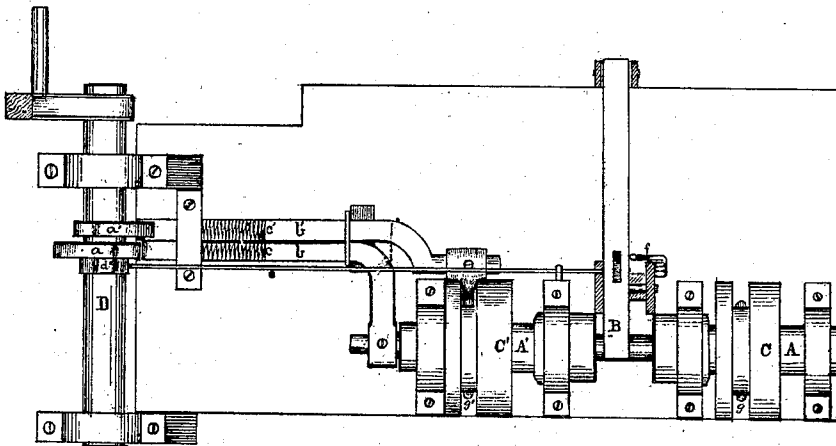


Fig. 2.

Attest.

Alfred Mattley
W. P. House

Peter Philip

United States Patent Office.

PETER PHILIP, OF STOCKPORT, NEW YORK.

Letters Patent No. 106,277, dated August 9, 1870.

IMPROVEMENT IN HEDDLE-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

I, PETER PHILIP, of Stockport, in the county of Columbia and State of New York, have invented certain Improvements in Wire-Heddle Machines, of which the following is a specification.

The first part of my invention consists in a novel method of forming the central or warp-eye of a wire-heddle, by twisting the wires at one end of the eye, either wholly or in part, in advance of forming the twist at the opposite end, and by relieving the gripe of the twisting device first closed in time to give slack sufficient for the twisting at the opposite end, for the purpose of effecting the formation of the eye without straining or marring the wires.

The second part of my invention consists of the pinchers, provided with a tooth, around which the central or warp-eye is formed, and adapted to receive a slight lateral motion, sufficient to accommodate or allow the taking up of slack of the wire required for the twist at each end of this eye.

My invention further consists in a novel combination of mechanism to successfully carry out the methods above set forth, which will be more specifically pointed out in the subjoined description and claim.

Description of the Accompanying Drawing.

Figure 1 is a side elevation of a portion of a machine, showing how my improvements are applied.

Figure 2 is a bird's-eye or plan view of the same.

Like letters on each figure indicate like parts.

General Description.

My improved devices have been applied upon the machine known as the Finkle wire-heddle machine, but the same may be applied to, and employed on other machines used for this purpose.

They consist, principally, of two hollow shafts or cylinders, A A', journaled in the same line, but intercepted by the pinchers B, provided with a tooth, around which the central or warp-eye of the heddle is formed.

These cylinders are each embraced by other cylinders or collars C C', which slide on the cylinders A A', and operate, that is, open and close the jaws or other device employed for grasping the wire after it is drawn into the cylinders or twisting device A A', and hold it firmly while being twisted.

In this description of the construction of a wire-heddle machine, I may add, as to operation, that the wire is not only drawn into, but quite through the two cylinders, A A', and double, so that there are two wires employed, and operated with, in the process of making heddles.

Heretofore the gripping and twisting of the wire have been done simultaneously by both cylinders, or at both ends of the warp-eye at the same time. This has so strained the wire, owing to the want of slack

sufficient to form the twist, that a proper shape could not be given to the eye, and the twist could not be made sufficiently tight without danger of breaking the wire.

My improvements obviate these objections, by twisting either end of the eye in part, or in full, while the opposite end of the heddle is released and free, so that the wire can yield to the contraction or shortening required by the twist.

To do this I place upon the cross-shaft D two cams, a a', of such form as to operate the two horizontal slide-bars b b'; these are connected with the collars C C' at their opposite ends by means of the forks g g', resting in grooves in the collars, and move or slide them laterally in succession, that is, one after the other, on their respective shafts. Of course, the jaws moved by these collars are operated in a corresponding succession.

This operation would be more clearly understood if each collar and pair of jaws were allowed to complete their work, and to release the wire before the others begin to operate, which is easily done by adjusting the cams a a'. But, for the sake of expedition, the perfectness of the heddle being preserved, I arrange or adjust these cams so that one of the collars, and its accompanying device for grasping the wire, are allowed to only partially complete their work before the others are made to commence their work.

The springs c c' serve to restore the slide-bars b b' back to their places after their respective cams a a' successively cease to act.

In all wire-heddle machines heretofore in use the pinchers B, carrying the eye-forming tooth, that around which the central or warp-eye is formed, are fixed and stationary, having no lateral motion. By my device, these pinchers are made to move laterally, so as to conform to and accommodate the twist of the wire at each end of the eye, by means of the slide-rod e, which is actuated by another small cam, d, on the cross or counter-shaft D.

The spring f, operating against the opposite side of the pinchers, restores them to their place, ready to be moved again on the return of the cam d.

The operation of the heddle-machine has been sufficiently hereinbefore described, both with and without my improvements, not to require recapitulation.

What I claim as my invention is—

1. The method herein described of forming the warp-eye of a wire-heddle, by making the twist at one end of the eye, either wholly or in part, before the twisting at the other end is commenced, and relieving the gripe of the twisting-device first closed in time to give slack sufficient for the twisting at the opposite end.

2. The pinchers B, adapted to receive, by appropri-

ate mechanism, a lateral motion, as set forth, to correspond with and accommodate the slack required for the twist at each end of the eye of the heddle.

3. The collars C C', in combination with the jaws of their respective cylinders A A', in the manner, or substantially in the manner, and for the purpose herein described.

4. The combination of shaft D, cams *a a'*, slide-bars *b b'*, springs *c c'*, forks *g g'*, and collars C C', substantially as and for the purpose herein set forth,

whereby the successive or alternating lateral motions are communicated to the collars C C'.

5. The combination of shaft D, cam *d*, slide-rod *e*, pinchers B, and spring *f*, substantially as herein described, whereby a lateral motion is given to pinchers B.

PETER PHILIP.

Witnesses:

ALFRED WATTLES,
H. HOUSE.