

H. WOLBOLD.

SHEDDING MECHANISM FOR LOOMS.

No. 192,040.

Patented June 12, 1877.

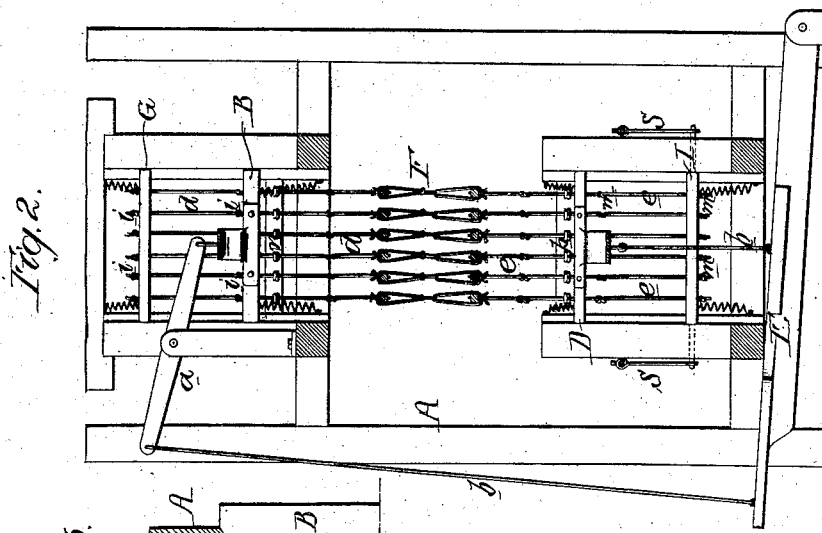


Fig. 2.

Fig. 3.

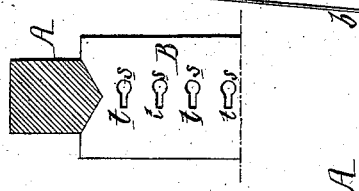
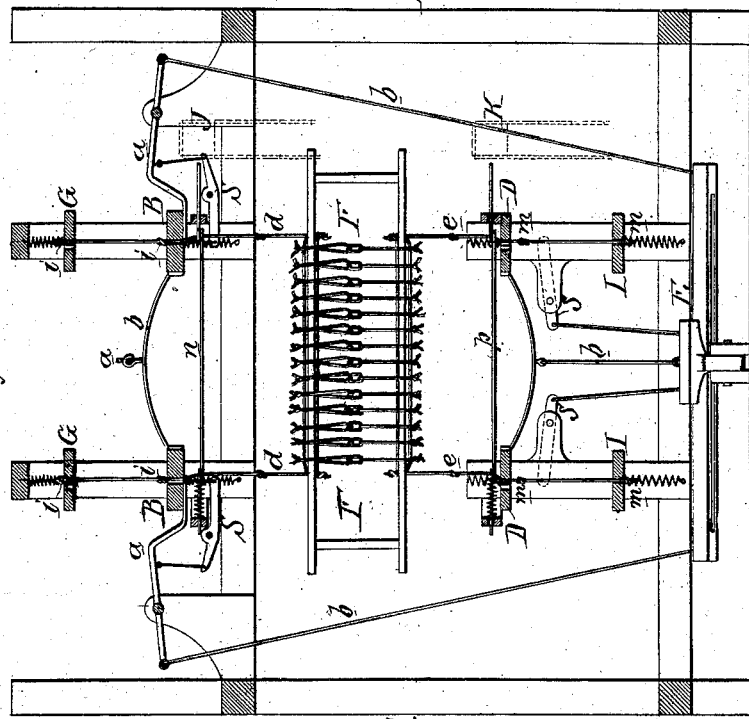


Fig. 1.



Witnesses.  
Henry Bowson Jr.  
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Inventor <sup>A</sup> Henry Wolbold  
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# UNITED STATES PATENT OFFICE

HENRY WOLBOLD, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN SHEDDING MECHANISMS FOR LOOMS.

Specification forming part of Letters Patent No. 192,040, dated June 12, 1877; application filed April 7, 1877.

*To all whom it may concern:*

Be it known that I, HENRY WOLBOLD, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Heddle-Operating Mechanism for Looms, of which the following is a specification:

The object of my invention is to provide a loom with devices for easily and rapidly operating the heddles, an object which I attain in the manner hereinafter set forth, reference being had to the accompanying drawing, in which—

Figure 1 is a longitudinal section of my improved heddle-operating mechanism for looms; Fig. 2, a transverse section of the same; and Fig. 3, an enlarged view of a part of the same.

A is the frame of the loom, to guides near the upper and lower ends of which are adapted sliding bars B B and D D, movements from and toward each other being imparted to these bars from a treadle, E, through the medium of suitable connecting-levers *a* and cords *b*, the bars B rising when the bars D are depressed, and vice versa.

F are the heddle-frames, of which six are shown in the present instance, cords or wires *d* extending from the upper portion of each frame through slots in the bars B, and through openings in spring-plates G, hung to the frame of the loom, while from the lower portion of each heddle-frame extend cords or wires *e*, which pass through slots in the bars D, and through openings in spring-plates I, similar to the plates G.

The cords *d* are knotted, as shown at *i*, and the cords *e* are similarly knotted, as shown at *m*, for a purpose described hereinafter.

The longitudinal positions of the cords *d* are governed by needles *n*, having eyes, through which the cords pass, these needles being adapted to guides on the frame, and being operated by a card-cylinder, J. (Shown by dotted lines in Fig. 1.) The cords *e* are controlled by similar needles *p*, arranged to be operated by a card-cylinder, K.

The slots in the bars B and D are of the peculiar character shown in Fig. 3, each slot comprising an enlarged portion, *s*, large enough for the passage of the knots on the cords, and a contracted portion, *t*, which is too small to permit such passage.

Suppose the parts to be in the position shown in Figs. 1 and 2, which is their position when all the warp-threads are in line, no shed being formed. In order to form the shed, the cords *d* of those leaves of heddles to be lifted are operated by the needles *n* of the card-cylinder J so as to throw their lower knots *i* into line with the contracted portions *t* of the slots in the bars B, while the cords *e* connected to those leaves of heddles which are to be lowered are operated by the needles *p* of the card-cylinder K so as to throw their upper knots *m* into line with the contracted portions of the slots in the bars D.

The treadle E is now depressed, so as to raise the bars B and depress the bars D, thus causing the rise of those heddles whose cords *d* are controlled by the frames B and the depression of the rest of the heddles whose cords are controlled by the bars D, the knots *i* on those of the cords *d* which are attached to the depressed heddles passing freely through the enlarged portions of the slots in the frames B, while the knots *m* on those cords *e* connected to the raised heddles pass freely through the enlarged portions of the slots in the frames D.

The pull on the cords *d* connected to those heddles which are depressed is exerted against the spring-plate G, while the pull on the cords *e* connected to those heddles which are raised is exerted against the spring-plates I, these spring-plates yielding to the degree necessary to permit the movement of the heddles, but serving to keep a proper tension upon the cords, and prevent the heddles from sagging.

The ends of the cords *d* connected to the raised heddles and the ends of the cords *e* connected to the lowered heddles are at liberty to slide freely through the plates G and I, as they are not rigidly secured thereto.

In order to prevent a twisting strain on the plates G and I—such, for instance, as would be exerted if the leaves of heddles at the extreme front or back only of the loom were raised or lowered—I connect said plates to levers S, which are operated from any convenient moving part of the loom, so as to impart to the plates G movements corresponding with those of the bars D, and to the plates I movements corresponding with those of the bars B, the extent of movement of the plates, how-

ever, being slightly less than that of the bars, so that, while the twisting of the plates is prevented, their duty of maintaining a proper tension on the cords is not interfered with.

I claim as my invention—

1. The combination of the heddles, their cords *d* and *e*, and selecting mechanism with the operating-bars B and D and the spring-plates G and I, as specified.

2. The combination of heddle operating

mechanism, substantially as described, with spring-plates G and compensating-levers S, as set forth.

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

HENRY WOLBOLD.

Witnesses:

HERMANN MOESSNER,

HARRY SMITH.