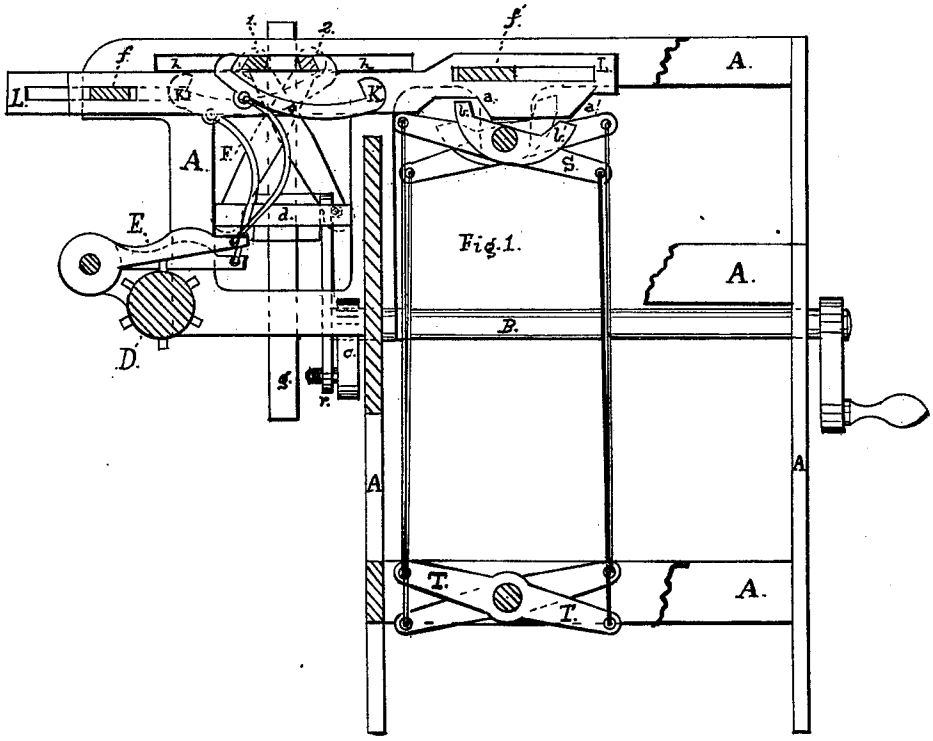
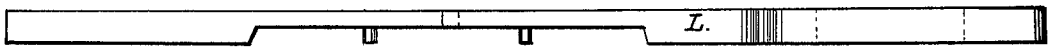
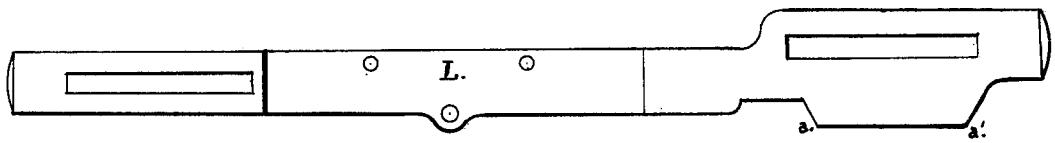
R. B. GOODYEAR.

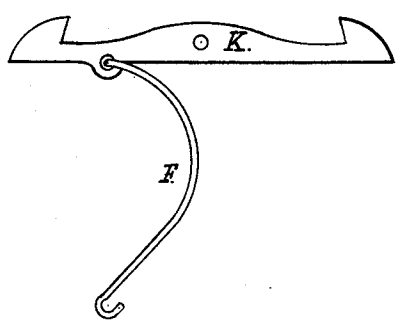
SHEDDING MECHANISM FOR POWER-LOOMS.

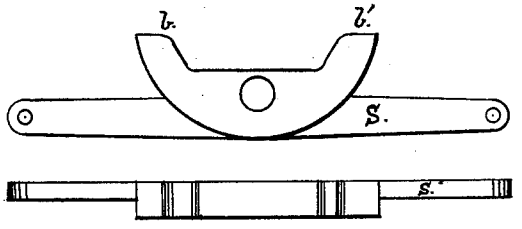
No. 176,467. Patented April 25, 1876.











Witnesses.
H. T. Marcus.
C. D. Waldie

Inventor.
R. B. Goodyear,
By his Attorney
John Shinn.

UNITED STATES PATENT OFFICE.

ROBERT BURNS GOODYEAR, OF PHILADELPHIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JONATHAN WOLFENDEN, JESSE SHORE, AND JAMES WOLFENDEN, OF CARDINGTON, PENNSYLVANIA.

IMPROVEMENT IN SHEDDING MECHANISMS FOR POWER-LOOMS.

Specification forming part of Letters Patent No. **176,467**, dated April 25, 1876; application filed February 18, 1876.

To all whom it may concern:

Be it known that I, ROBERT BURNS GOODYEAR, of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Power-Looms, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The nature of my invention consists in the combination of a sliding bar (upon which is pivoted a double hook controlled by a pattern chain or roller) with an oscillating lever, upon which are fixed two projecting shoes that engage with the shoe on the sliding bar by which the heddles are raised, lowered, and held in an open position till changed by the action of the pattern chain or roller, and is called an open-shed harness motion. The second part of my invention consists in the combination of the double hooks and lever-fingers with a bow-spring connection, all of which will be hereafter explained by referring to the drawings making a part of this specification.

Figure 1 is a front elevation of parts of a loom-frame with my improvements.

The other figures are parts in detail, and will be referred to by the same letters that are used in Fig. 1 to refer to like parts.

A represents the loom-frame, part of which is broken away, and parts are shown in section. B is the main or what is called the crank shaft. On the left end is a crank, *c*. By the connecting-rod *r* the crank *c* is connected to the cross-head *d* and guide *g*. This cross-head is connected by cross-arms to the lifting and depressing bars 1 and 2. (The bars are shown in section, Fig. 1.)

This arrangement for working the lifting and depressing bars is fully described and claimed in a patent, No. 163,064, granted to me May 11, 1875.

D is the pattern-roller, but I prefer to use the well-known roller-chain. E is the lever-finger. F is the bow-spring connection, which can be made of steel or brass wire. K is the double hook. L is the sliding bar, and is made of cast-iron, and, as shown in detail, with a slot at each end and a shoe on the right end, which has two inclined faces *a a'*; that act as cams. S is the oscillating lever, which is made of cast-iron, with two projecting shoes, *b b'*. The lever S is shown in the drawing, as connected to a bottom lever, T, it being understood that in practice the heddle-frames are hung between these levers and connected to them by bow-cords.

The operation is as follows: The lifting and depressing bars receive from the crank *c* an opening and closing movement in the slot *h* in the top of the loom-frame. The sliding bar L slides on two fixed supports, *f f'*. (Shown in section, Fig. 1.) The hook K is engaged into lifter-bar 1. This will draw the bar L to the left, and the shoe *a* will engage shoe *b* on lever S, and will raise the heddle, and it will be held elevated till the pattern-roller changes to let the lever-finger E drop. This will cause the hook K on the bar L to hook on the depressing-bar 2, which will cause the shoe *a'* to engage with the shoe *b'* on lever S, and draw the heddle down, and it will be kept down till the changes on the pattern-roller raise the lever-finger E, when the lifter-bar 1 will engage the hook K, and the heddle will be raised, as before described.

The object of making the connections F in the form of a bow-spring is that if the pattern-roller changes before the lifting-bars get past the hooks when closing, the bow-spring will give and let the bars 1 and 2 pass over them, when the hooks will be sprung to the position indicated by the pattern chain or roller; and there will not be any liability to break should the weaver turn the roller or chain at any time without regard to the position of the lifting and depressing bars.

It is desired to put the heddles all of one level when putting broken ends through the heddle-eyes, which may be done by pushing the sliding bars L with the hand all to the left or to the right. This will bring them all up or down, as desired, and the loom can be started up with the heddles in that position without danger of breakage, as the bow-springs will yield, and the hooks will engage the proper lifting or depressing bar, as is indicated by the pattern.

Having thus described my invention and

method of operating it, I admit that some of the parts shown and described are not new, and I do not claim them as such; but

I claim as new and desire to be secured to me—

1. The bar or jack L, adapted to be reciprocated in a horizontal position, and provided with two inclined faces, *a a'*, in combination with the pivoted double hook K, (adapted to be controlled by the pattern-cylinder,) and the oscillating lever S, provided with two projecting shoes, *b b'*, for the purpose of raising and lowering the heddles, and holding them in an open position until changed by the action of the pattern chain or roller, as shown and described.

2. The bow-spring connection F, in combination with the lever-finger E and double hook K, as shown and described, and for the above purpose.

ROBERT B. GOODYEAR.

Witnesses:

W. N. MARCUS,

C. D. WALDIE.