

E. MILLER.
 AUTOMATIC STOP MOTION FOR RIBBON LOOMS.
 APPLICATION FILED SEPT. 28, 1911.

1,022,435.

Patented Apr. 9, 1912.

2 SHEETS—SHEET 1.

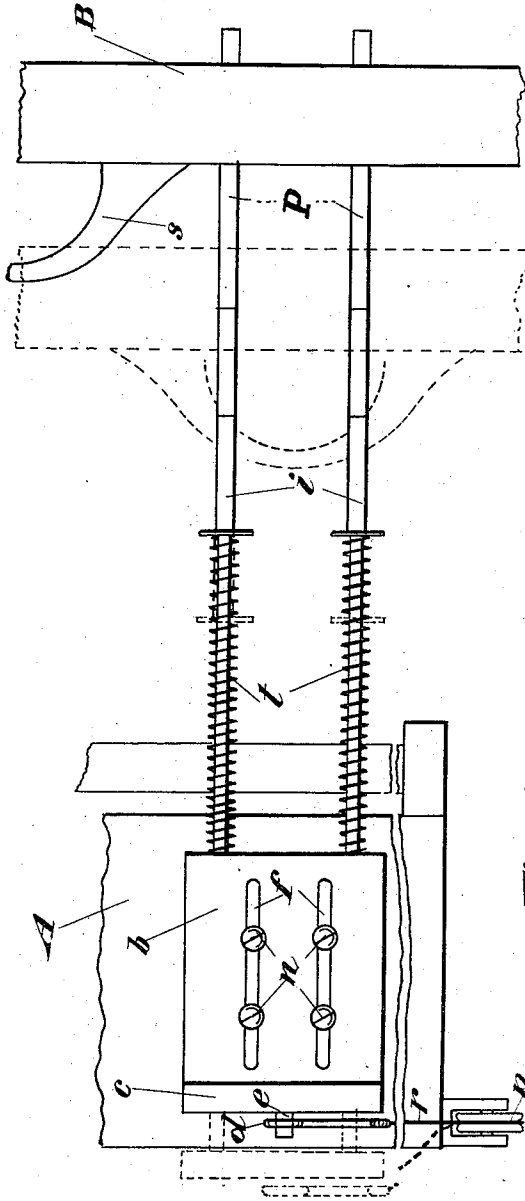


Fig. 1

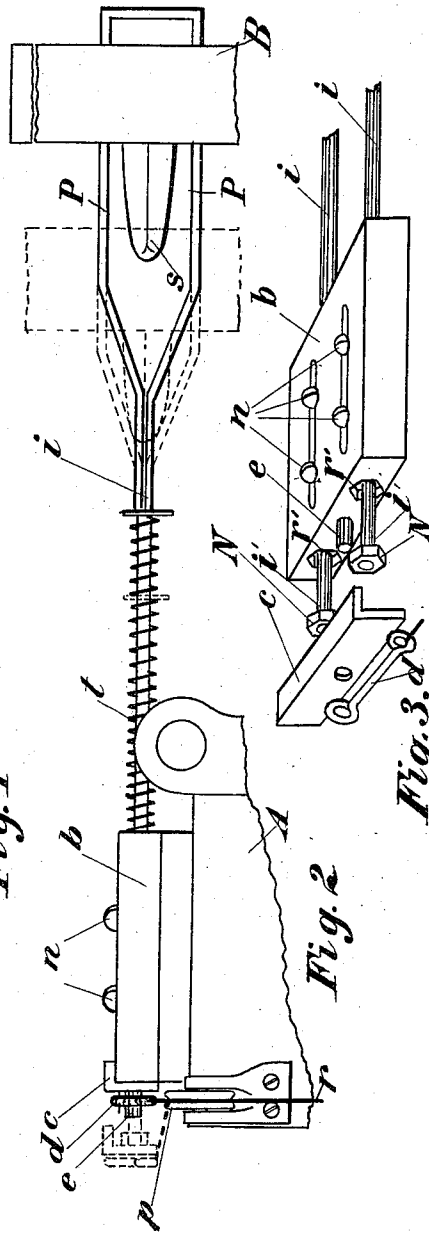


Fig. 2

Fig. 3. d

Witnesses:
 Bessie Berliner
 Franklin Van Hook

Emil Miller
 Inventor
 By his Attorney John F. Kerr

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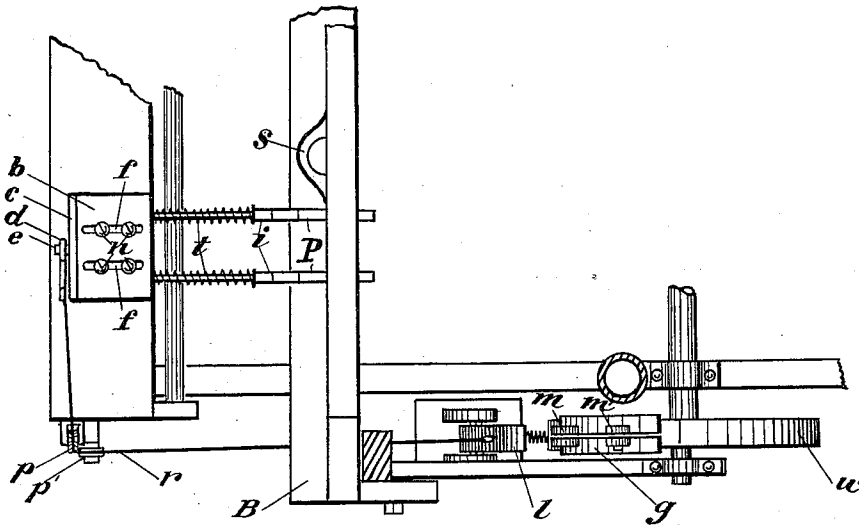


Fig. 4

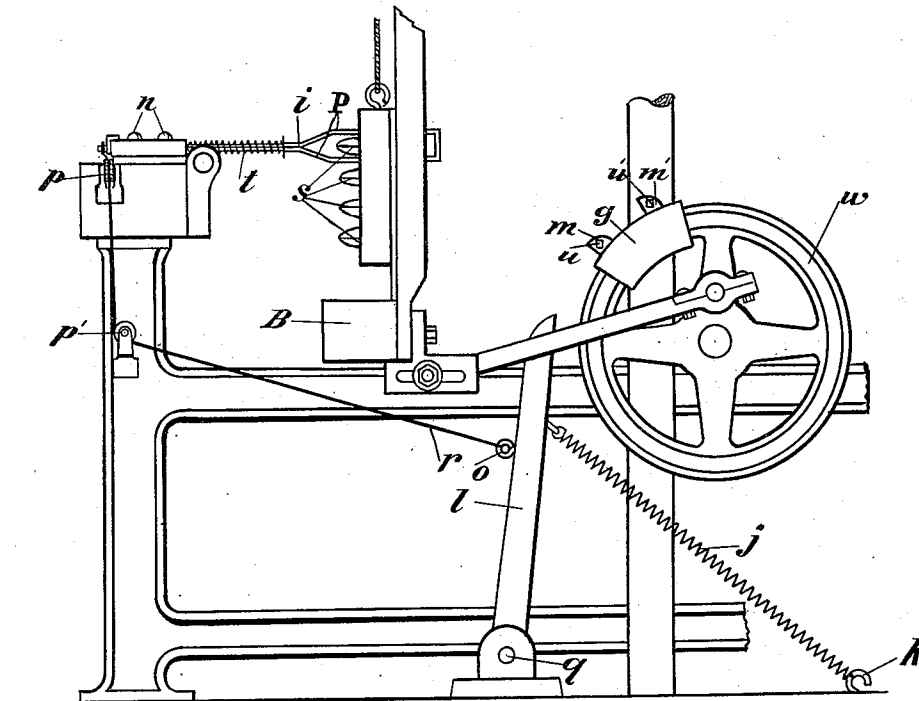


Fig. 5.

Emil Miller

Inventor

Witnesses:
Bessie Berlin
Franklin Van Arsdale

By *his* Attorney *John F. Kerr*

UNITED STATES PATENT OFFICE.

EMIL MILLER, OF NORTH HALEDON BOROUGH, NEW JERSEY.

AUTOMATIC STOP-MOTION FOR RIBBON-LOOMS.

1,022,435.

Specification of Letters Patent.

Patented Apr. 9, 1912.

Application filed September 28, 1911. Serial No. 651,817.

To all whom it may concern:

Be it known that I, EMIL MILLER, a citizen of the United States, residing at the borough of North Haledon, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Automatic Stop-Motions for Ribbon-Looms, of which the following is a specification, reference being had therein to the accompanying drawing.

The object of my invention is to provide an automatic stop motion for ribbon loom that will prevent what is termed any "smash up" or any damage to the silk or the loom, owing to the breaking of the silk threads or any part of the operating mechanism of the loom. Therefore the objects of my invention are to provide a device that may be applied to a loom batten where banks or rows of shuttles are employed, as well as to any other batten, and to provide a device that will combine simplicity of construction, ease of operation and economy.

My invention consists of the device shown in the accompanying drawings, which form a part of this specification and represent what I consider the best means of carrying out or putting into practice the same.

In the drawings, similar letters of reference indicate like parts in the various figures.

Figure 1 is a plan view, enlarged, of my device, showing its application to the loom, portions being broken away; Fig. 2 is a side elevation, enlarged, of the device showing parts of the breast beam and batten; Fig. 3 is a perspective of the block and accessories which form a portion of my device; Fig. 4 is a plan view; Fig. 5 a side elevation of a loom with my device attached thereto.

In all these figures the warp, quills, harness, and reeds are omitted for the sake of clearness in the drawings.

A represents the breast beam, B the batten, S the shuttles and *i-i* the double indicators passing through the reed, and are held stationary by compression spring *t-t*, which holds said indicators in their normal position. The ends of *i-i* of the indicators are adjusted to pass and move through openings in the adjustable blocks *b-b* when a break occurs, in which event they engage and push the bent plate *c-c* together with the ringed wire *d-d* off the pin *e-e* in the end of the block *b-b*. A cord *r-r* passes over the guide wheel or pulleys

-p-p'— having one end secured to the ringed wire *d-d* and the other end connected with the brake or pawl-lever *l-l* by means of the screw eye *o-o*. The helical spring *j-j* is secured to the floor by means of a ring *k-k* by one end, and its other end is secured to the brake or pawl-lever *l-l*. The drive wheel *w-w* is provided with an adjustable ratchet-carrying-sleeve *g-g* having teeth *m-m* and *m'-m'*. The block *b-b* through which the indicator rods *i-i* move is adjustable to meet different conditions by means of the slots *f-f* and the screws *n-n-n-n*. The double indicators *i-i* pass through the reed, the double or bow portion *P-P* registering with the open shed of the warp, so that the shuttle or shuttles *s-s* pass to and fro through the open warp shed and through double or bow portion *P-P* of the indicators.

The operation of my device is as follows: as the warp-shed and the open or bow shaped portion *P-P* of the indicators *i-i* register, the shuttles pass through the bow of the indicators and through the open warp-shed, no matter which row of shuttles are being used, and if any of the shuttles in the series should by reason of a break or other accident stop in its course, it will become fastened in the bow of the indicator, and being carried forward on the batten would push or force the indicator to the position of the dotted lines shown in Figs. 1 and 2, compressing the springs *t-t* which hold said indicators *i-i* in their normal position. The ends *i'-i'* (Fig. 3) of the indicators *i-i* then in turn push the bent plate *c-c* together with the ring wire *d-d* off the pin *e-e* of the block *b-b*. The ring wire *d-d* when pushed off the pin *e-e* will release brake or pawl lever *l-l*, which is normally held in passive position by the cord *r-r* passing over the guide wheels *p-p* and *p'-p'*. When the said brake or pawl-lever *l-l* is released as aforesaid, the helical spring *j-j* fastened to the floor by the ring *k-k* will pull the said brake or pawl lever against the driving wheel *w-w* which being supplied with the adjustable ratchet carrying sleeve *g-g*, said pawl lever will engage the teeth *m-m* or *m'-m'* of the said sleeve and effectively and instantaneously stop all the loom mechanism. The ends *i'-i'* of the indicators

i-i are provided with a nut or head —N— to limit the rear-ward movement of the indicators. The end of the block —b— is provided with recesses —*r'-r'*— to receive the said nuts —N— and permit the bent plate —*c*— to fit snugly on the pin —*e*— and against the end of the block —b—.

Modifications may be made in the construction and arrangement of the mechanism shown in the drawings, without violating the principles or departing from the scope of my invention.

What I claim as new and desire to secure by Letters-Patent, is—

1. In an automatic stop motion for ribbon looms a device having an open, bow-shaped portion which registers with the opening of the warp shed and through which the shuttle is adapted to pass while going through the warp shed, and which in case of a break is adapted to be engaged by the shuttle and be driven by the batten, to set in operation, and in combination with, means for stopping the loom.

2. In an automatic stop motion for ribbon looms, a double indicator having an open bow-shaped portion which registers with the opening of the warp shed to permit the passage of a shuttle therethrough, the bow-shaped portion passing through the reed, the other end of the indicator passing through a block on the breast beam and means for holding the indicator in normal position during the movement of the batten, substantially as set forth.

3. In an automatic stopping device for ribbon looms, the combination with the bat-

ten, the shuttles carried thereon, and the breast beam of a loom, of a break indicator carried loosely by, and normally held stationary in the breast beam, having an open bow-shaped portion which registers with the warp shed and extends through the reed, in the path of the shuttle, and adapted to permit the shuttle to pass therethrough, excepting in case of a break, and adapted to be operated by the batten in case of a break, to release a stopping-arm, and such a stopping-arm, substantially as and for the purposes set forth.

4. In an automatic stopping device for ribbon looms, the combination with the batten, and the reed and shuttles carried thereon, of a driving-wheel and an adjustable ratchet-carrying sleeve, carried by said driving-wheel, a stopping arm adapted when released to engage said ratchet and means consisting of a break indicator carried loosely by and normally held stationary in the breast-beam and having an open bow-shaped portion which registers with the warp shed and extends through the reed in the path of the shuttle, adapted to permit the shuttle to pass therethrough, excepting in case of a break, and in case of a break adapted to be operated by the batten, to release said stopping arm, substantially as set forth.

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

EMIL MILLER.

Witnesses:

FREDERIC C. BARNES,
WM. M. DOME.