(No Model.)

A. F. STAPLES.

DEVICE FOR ARRESTING THE TAKE-UP MECHANISM OF LOOMS ON BREAKAGE OF THE WEFT.

No. 333,029. Patented Dec. 22, 1885.

Fig. 1.

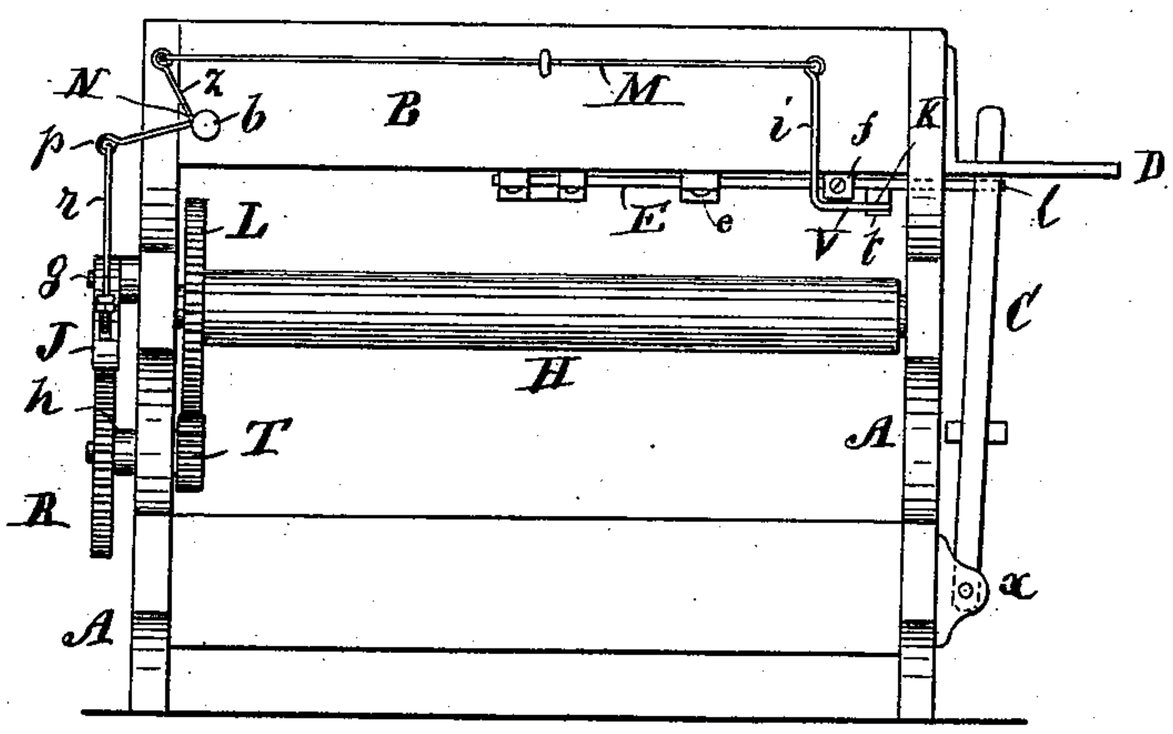


Fig. 2.

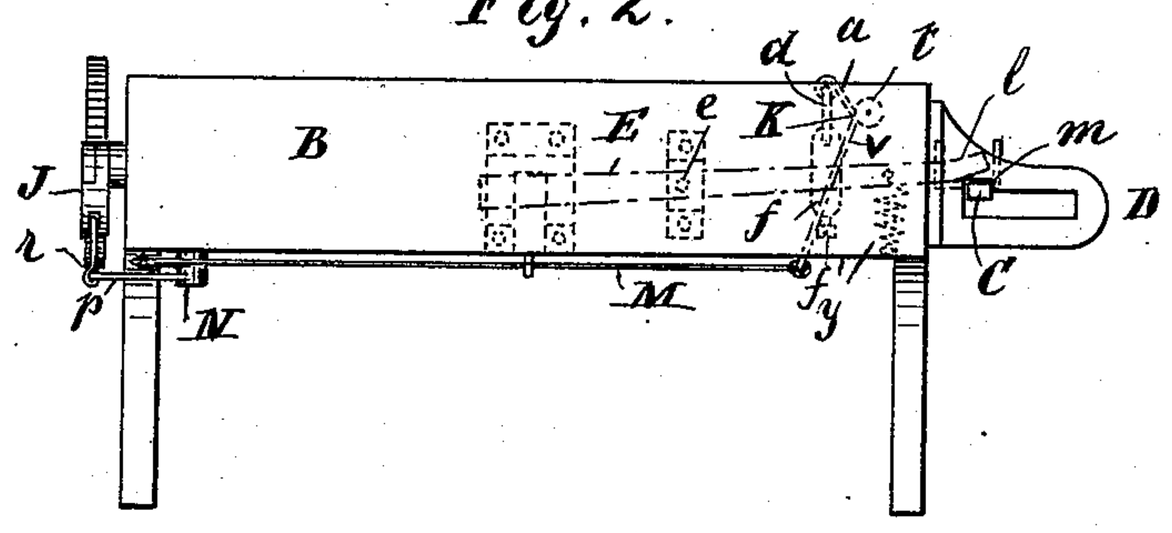


Fig. 3.

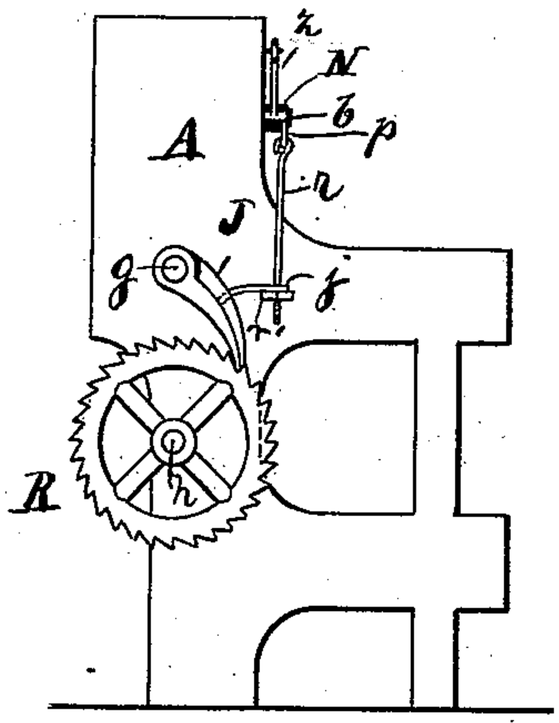
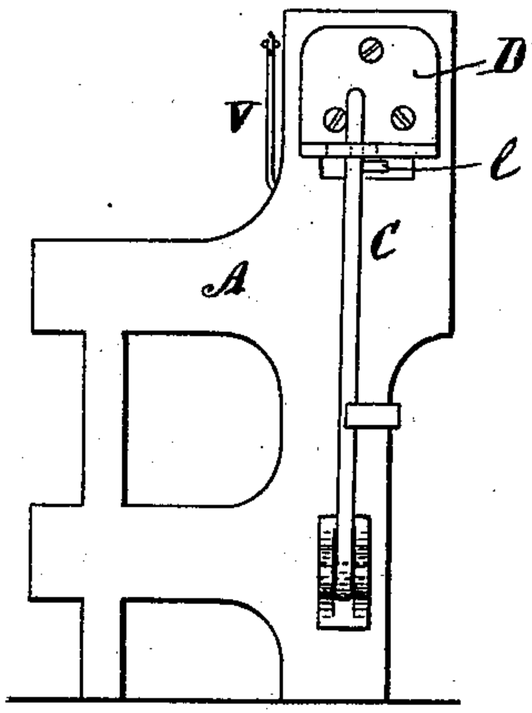


Fig. 4.



Witnesses.

C. Sedgwick.
L. J. White

Inventor.

Albert F. Staples.
Per C. C. Shaw,
his Attorney.

UNITED STATES PATENT OFFICE.

ALBERT F. STAPLES, OF FRANKLIN, MASSACHUSETTS.

DEVICE FOR ARRESTING THE TAKE-UP MECHANISM OF LOOMS ON BREAKAGE OF THE WEFT.

SPECIFICATION forming part of Letters Patent No. 333,029, dated December 22, 1885.

Application filed December 13, 1884. Serial No. 150,225. (No model.)

To all whom it may concern:

Be it known that I, ALBERT F. STAPLES, of Franklin, in the county of Norfolk, State of Massachusetts, have invented a certain new and useful Improvement in Devices for Arresting the Take-Up Mechanism of Looms on Breakage of the Weft, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a rear elevation showing part of a loom provided with my improvement. Fig. 2 is a plan view of the same. Fig. 3 is an elevation of the end having the ratchet for the cloth-beam, and Fig. 4 is an elevation of the opposite end.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to means for automatically stopping the rotation of the cloth-beam simultaneously with the shipping of the belt when a filling-thread breaks or the filling runs out and the stop-motion acts; and it consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a simple, cheap, and very effective device of this character is produced.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation:

In the drawings, A represents the frame or sides, and B the breast-beam, of the loom. A belt-shipping lever, C, has its lower end pivoted to the frame of the loom at *x*, its upper end being adapted to engage the notch *m* in a slotted plate, D, which is secured to the upper portion of the frame in the usual manner. A lever, E, is pivoted at *e* to swing horizontally beneath the beam B, its outer end, *l*, being adapted to engage the upper end of the lever C and throw it out of engagement with the notch *m*, when actuated by proper mechanism for that purpose, which it is not deemed necessary to show, as the lever E, lever C, and slotted plate D, having the notch *m* and operative mechanism for said lever E, are in common use in connection with the stop-motions of a variety of looms—as, for instance, in Patent No. 44,080, to Duckworth, September 6, 1864—and are therefore not herein claimed broadly.

Attached firmly to the lever E by means of set-screw *f'*, there is a short horizontally-arranged adjustable collar, *f*, and pivoted at *t* to the under side of the beam B there is a bell-crank lever, K, having a short arm, *a*, and long arm *v*. The short arm *a* is connected to the collar *f* by the link *d*, and the long arm *v* is extended outwardly and bent upwardly by the side of the beam B, as shown at *i* in Fig. 1. Pivoted to the side of the beam at *b* there is a bell-crank lever, N, and fitted to slide horizontally on said beam there is a rod, M, one end of which is jointed to the arm *v* of the lever K, and the other to the arm *z* of the lever N.

Mounted on a stub-shaft, *h*, in the frame A there is a ratchet-wheel, R, said shaft being provided at its inner end with a pinion, T, which intermeshes with a gear, L, on the cloth-beam H in the usual manner, and pivoted to the side of the frame at *g* there is an ordinary retaining-pawl, J, adapted to engage the wheel R, (the ratchet-hook for actuating said wheel not being shown,) it being common to actuate the cloth-beam by such hook, as shown in a number of looms—for instance, in the additional improvement, Patent No. 176, granted to Snell and Bartlett, October 6, 1857. Projecting horizontally from the pawl there is a short arm, *j*, which is connected with the arm *p* of the lever N by means of a vertically-arranged rod, *r*, which passes through a hole in said arm *j*, and has upon its screw-threaded lower end a suitable adjusting-nut, *r'*.

In ordinary stop-motions in which the lever E is employed to throw the lever C out of engagement with the notch *m*, the cloth-beam will be moved forward a short distance by the ratchet mechanism before the belt is fully unshipped and the loom stopped, thereby causing a thin place or "out" in the web, and necessitating raising the retaining-pawl and ratchet-hook, and moving the beam back a short distance before starting up the loom.

My invention is designed to obviate these

objections, and to that end I make use of the levers N K and rods M *r*, in connection with the lever E and pawl J, whereby, when the lever E is swung to dislodge the lever C, the rod M will be drawn by the lever K toward the lever C, and the retaining-pawl J disengaged from the ratchet-wheel R in a manner which will be readily obvious without a more explicit description. A coiled spring, *y*, has one of its ends attached to the beam B, and the other to the lever E between the pivot *e* and the end *l* of said bar, said spring acting contractively to draw the lever against the lever C, but not with sufficient force to detach it from the notch *m*. The object of the spring is two-fold—viz., first, it assists the stop mechanism in throwing the lever E, and detaching the lever C from the notch *m;* and, secondly, after the lever C is detached from the notch *m*, it prevents the lever E from being returned to its normal position by the weight of the pawl J. As soon as the lever C is thrown (either by hand or by the stop mechanism) and the driving belt shifted to the loose pulley, the retaining-pawl J will be thrown out of engagement with the ratchet-wheel R, and the only effect of the momentum of the loom, through the ratchet-hook above referred to, upon the wheel R will be to oscillate it and the cloth-beam through a small arc, thereby avoiding the causing of an out in the web.

Having thus explained my invention, what I claim is—

1. The loom-frame having the notched plate D, the lever E, bell-cranks N K, rods M *r*, link *d*, collar *f*, pawl J, ratchet-wheel R, and lever C, combined and arranged to operate substantially as described.

2. The loom-frame having the notched plate D, the lever E, spring *y*, bell-cranks N K, rods M *r*, link *d*, collar *f*, pawl J, ratchet-wheel R, and lever C, combined and arranged to operate substantially as described.

ALBERT F. STAPLES.

Witnesses:
C. A. SHAW,
L. J. WHITE.