

R. JAMIESON.

LOOM.

APPLICATION FILED MAR. 29, 1912.

1,029,756.

Patented June 18, 1912.

Fig. 1.

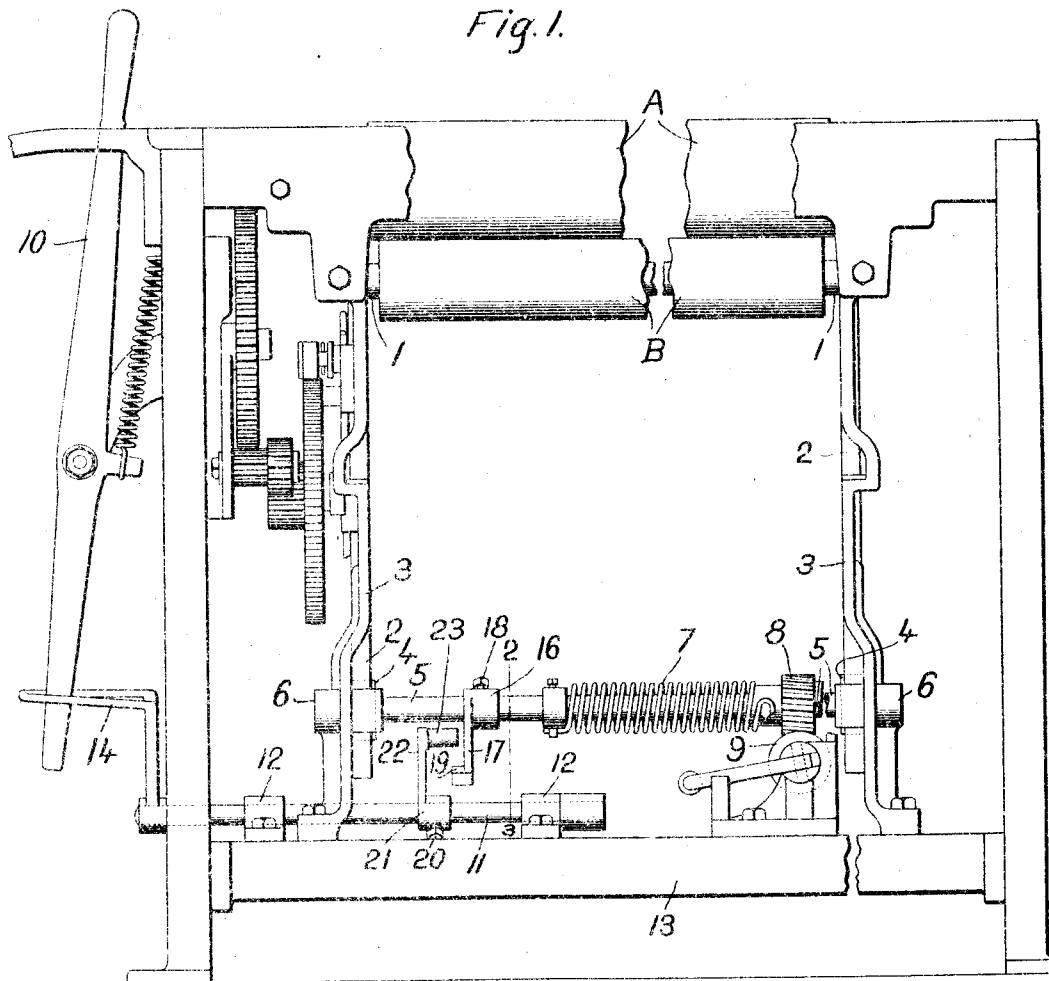


Fig. 2.

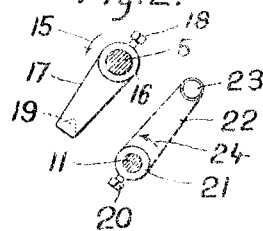
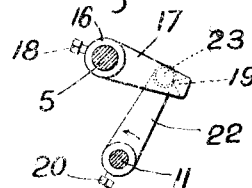


Fig. 3.



Witnesses.

Thomas Drummond
Walter C. Hill

Inventor.

Robert Jamieson,
by Charles H. Smith,
Att'y's.

UNITED STATES PATENT OFFICE.

ROBERT JAMIESON, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO DRAPER COMPANY,
OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

LOOM.

1,029,756.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed March 29, 1912. Serial No. 687,104.

To all whom it may concern:

Be it known that I, ROBERT JAMIESON, a citizen of the United States, and resident of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Looms, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to looms, and it has for its object the production of very simple means for stopping the loom automatically when a predetermined quantity of cloth has been wound upon the cloth roll or beam, the controlling means being capable of quick and easy adjustment for different quantities of cloth wound upon the roll, and readily applicable to looms now in use.

The novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a front elevation, broken out between the loom sides, of a sufficient portion of a loom with my present invention embodied therein; Fig. 2 is a transverse sectional detail, on the line 2—3, Fig. 1, looking toward the left, showing the parts which are brought into cooperation to effect the operation of the knock-off rod at the proper time; Fig. 3 is a similar view, but showing the relative position of the parts when the operation of the knock-off rod has been effected.

In the drawing, Fig. 1, the cloth roll 1 journaled in upright supports 2 slidable longitudinally in fixed guides 3, the rear faces of the supports having rack teeth thereon meshing with pinions 4 fast on the horizontal shaft 5 mounted in fixed bearings 6 on the guides, and the spring 7 coiled about said shaft and attached thereto at one end, the other end of the spring being fixedly secured to the hub of a worm gear 8 mounted on the shaft and rotatable relatively thereto, said worm gear being held from rotation by engagement with a worm 9 when the loom is in operation, are of common and well known construction, and are substantially as in United States Patent No. 610,636 granted to Northrop September 13, 1898. The shipper 10 to effect the operation of a usual stopping instrumentality,

(not shown) the horizontal knock-off rod 11 mounted in bearings 12 on a transverse rail 13 of the loom below and parallel to the shaft 5, and the cam-slotted arm 14 fast on the rod and cooperating with the shipper to release it when the rod is turned, are also of well known construction.

To those familiar with the art it will be understood that as the cloth passes from the usual take-up roll A, Fig. 1, it is wound at B upon the cloth roll 1, and as the diameter of the roll of cloth B increases the supports 2 will gradually descend, their toothed portions acting through the pinions 4 to slowly revolve the shaft 5 in the direction of the arrow 15, Fig. 2, gradually winding up the spring 7, which latter resists the descent of the supports 2 and maintains the roll of cloth pressed firmly but yieldingly against the take-up or sand roll A. As the shaft 5 and knock-off rod 11 are in parallelism and near each other, in a well known type of loom, I have utilized them to effect the stoppage of the loom automatically when a predetermined length or quantity of cloth has been wound upon the roll 1, so that it is unnecessary for the weaver to pay close attention to the loom when a cut-mark on the warp comes into view. To this end the hub 16 of a radially extended tripping finger 17 is fixedly held upon the shaft 5 in any desired position of angular adjustment by a suitable set screw 18, the finger having its free end offset laterally and provided with a cam portion 19 shown as triangular, Figs. 2 and 3, with its apex toward the shaft 5. Manifestly, as the roll of cloth B increases in diameter the tripping finger will be moved through an arc, the cam portion 19 traveling through a circularly curved path.

The knock-off rod 11 has attached to it by a set screw 20 the hub 21 of an arm 22 radially extended from the rod and having at its free end a lateral projection 23, which may be a roller or other stud, in the path of movement of the cam portion 19 of said tripping finger. As shown by Fig. 1 the projection 23 and cam portion 19 are turned toward each other, and their relative positions illustrated in Fig. 1 are shown in side elevation in Fig. 2.

Having set the tripping finger properly it will be apparent that when the shaft 5

has been turned through a certain arc, (corresponding to a predetermined quantity of cloth wound upon the roll 1) the cam portion 19 will engage the projection 23 on the arm 22, and as the beveled face of said part 19 continues its movement it will swing the arm 22 from the position shown in Fig. 2 to that shown in Fig. 3. This swing of the arm is sufficient to turn the rod 11 in the direction of arrow 24, Fig. 2, and through the bent arm 14 the shipper is released and the loom is stopped when the rod 11 has been turned into the position shown in Fig. 3.

The greater the arc through which the finger 17 moves before engaging the arm 22 the larger will be the quantity of cloth wound upon the roll, and conversely, the less the arc of movement of said tripping finger the smaller will be the quantity of cloth wound. The angular adjustment of the tripping finger 17 thus provides for stopping the loom when a desired quantity or length of cloth has been wound on the cloth roll 1, the angular motion of the shaft 5 being practically proportionate to the diameter of the roll of cloth.

Any necessary adjustment between the tripping finger and the arm 22 on the knock-off rod is easily and quickly effected, as both of said members are adjustable, and the simplicity of the device is apparent, just two parts being added to the usual loom structure, and those parts are of the simplest character and construction.

When the loom has been stopped the roll of cloth is removed, the weaver first having unwound the spring 7 by means of the gearing 9, 8, and a new cloth roll is inserted in the supports 2, after which the spring is rewound, whereby the supports 2 are raised and the roll 1 is returned to position to receive the cloth. At this time the shaft 5 is restored to starting position, the tripping finger moving with it back to the position shown in Figs. 1 and 2, and thereby the shipper is free to be moved to running position, such movement turning the knock-off rod 11 back to the position shown in Figs. 1 and 2.

It will be understood that in practice the tripping finger will always be set to stop the loom after the cut-mark is on the roll of cloth, and it makes no difference if a yard or two of the cloth has been wound past the cut-mark, for the cloth is unwound back to the mark, cut off at that point, and the "cut" of cloth is removed and a new

cloth roll inserted and positioned after which weaving is resumed.

When the loom has been stopped the weaver usually attempts to start it in order to discover the cause of stoppage, and in this case when an attempt is made to throw on the shipper it is resisted by the engagement of the tripping finger and the arm on the knock-off rod, as shown in Fig. 3, so that the weaver at once knows that the loom has been stopped because the desired amount of cloth has been woven.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a loom having vertically movable supports for the cloth roll, a shaft revolved by movement of the supports as the cloth is wound upon the roll, and the knock-off rod for the shipper, in combination, a tripping finger fixedly mounted on and extended radially from the shaft, and an arm secured to said rod and having a projection in the path of movement of said finger, whereby a predetermined rotative movement of said shaft will effect engagement of the tripping finger and the arm and cause operative rotation of the knock-off rod.

2. In a loom having means to support the cloth roll, including a shaft revolved proportionally to the increase in the diameter of the cloth wound upon the roll, and a knock-off rod for the shipper, in combination, a radially extended tripping finger angularly adjustable upon said shaft, and an arm fixed on the said rod and having a part in the path of the finger, to be struck thereby after a predetermined rotative movement of the shaft, whereby the knock-off rod is turned.

3. In a loom having means to support the cloth roll, including a shaft revolved slowly as the cloth is wound upon the roll, and a knock-off rod for the shipper, in combination, a radially extended tripping finger angularly adjustable on said shaft and having an offset cam portion, and an arm secured on the knock-off rod and provided with a lateral projection in the path of and to be struck by the cam portion of the tripping finger, to operate the knock-off rod.

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

ROBERT JAMIESON.

Witnesses:

E. D. OSGOOD,
ALONZO F. RHOADES.