

J. ROSTRON.
 STOP MOTION DEVICE FOR AUTOMATIC RESHUTTLING LOOMS.
 APPLICATION FILED MAY 3, 1910.

977,329.

Patented Nov. 29, 1910.

3 SHEETS—SHEET 1.

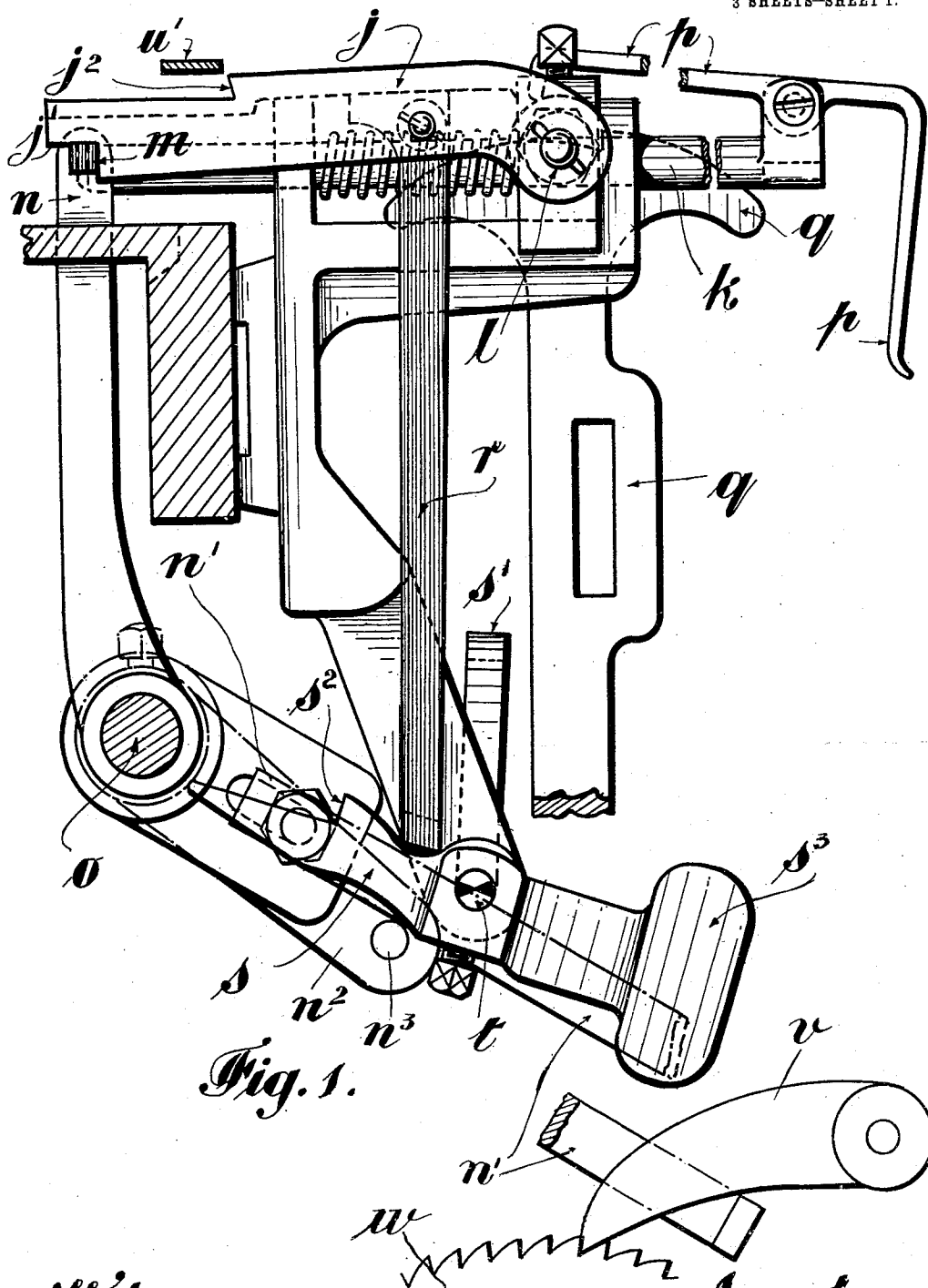


Fig. 1.

Witnesses.

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John A. Percival

Inventor.

James Rostron

By his Attorney.

W. P. Burke

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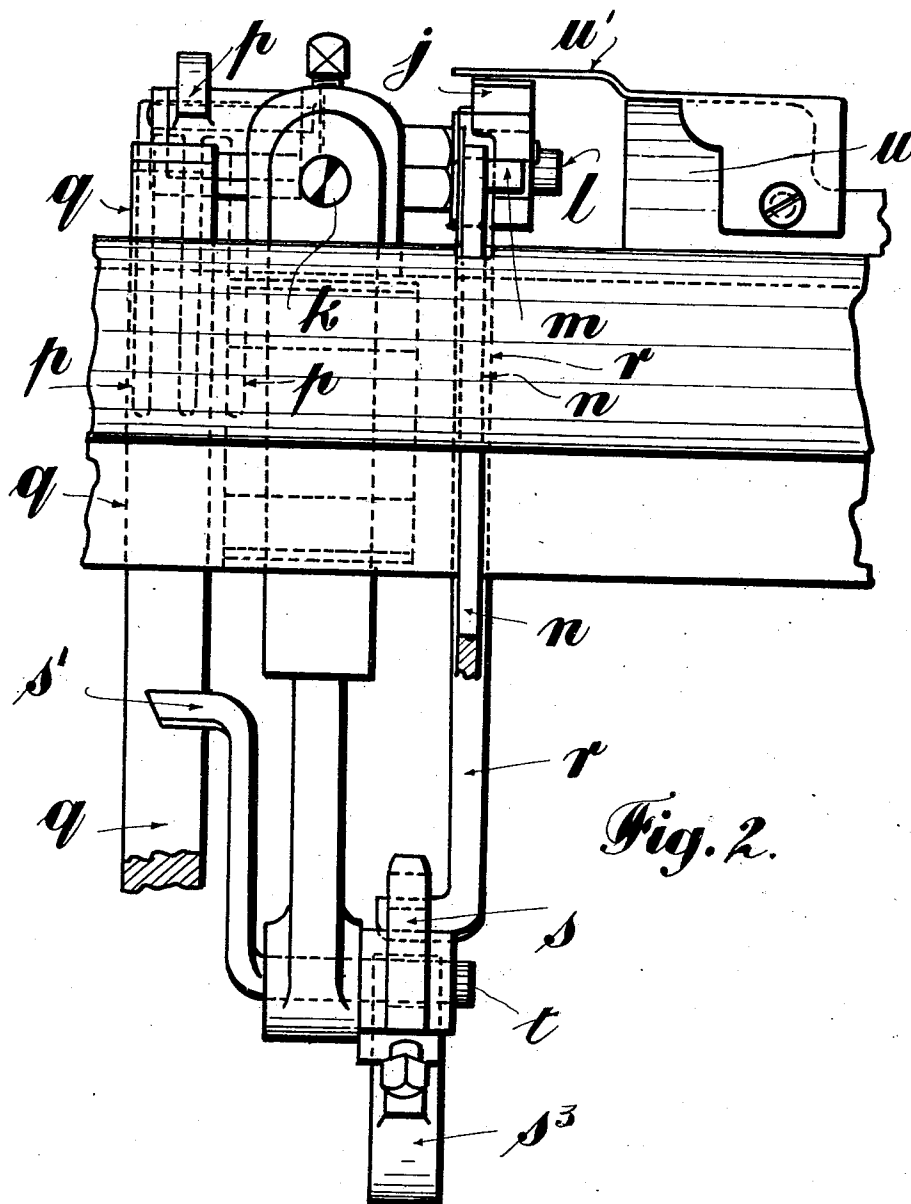


Fig. 2.

Witnesses.

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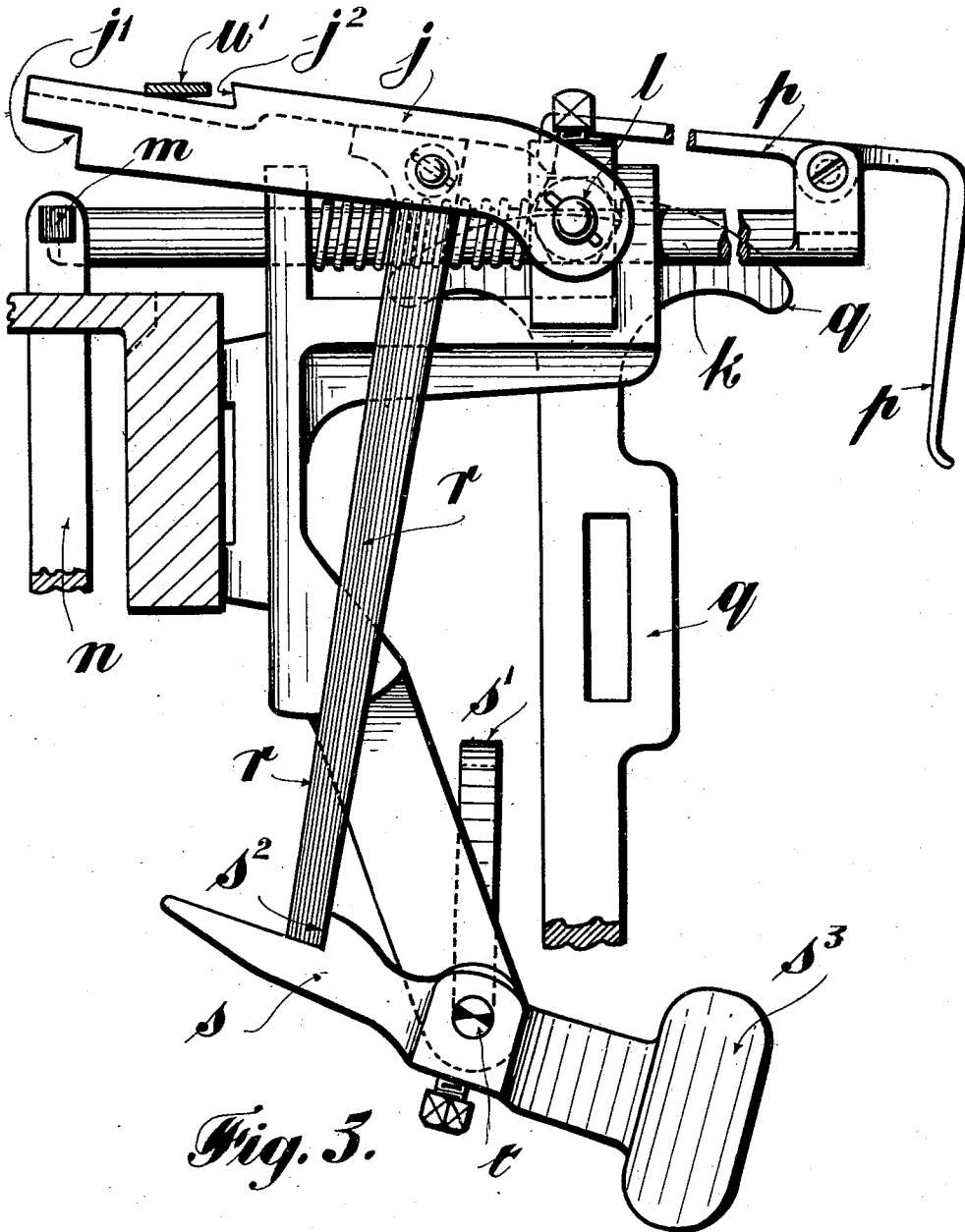


Fig. 3.

Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES ROSTRON, OF MANCHESTER, ENGLAND.

STOP-MOTION DEVICE FOR AUTOMATIC RESHUTTLING-LOOMS.

977,329.

Specification of Letters Patent.

Patented Nov. 29, 1910.

Application filed May 3, 1910. Serial No. 559,198.

To all whom it may concern:

Be it known that I, JAMES ROSTRON, a subject of the King of Great Britain and Ireland, and resident of Manchester, England, have invented certain new and useful Improvements in Stop-Motion Devices for Automatic Reshuttling-Looms, of which the following is a specification.

This invention refers to and consists of an improved arrangement of stop-motion devices for use with looms fitted with automatic reshuttling mechanism. Its object is to stop the loom when a newly inserted shuttle fails to lay the weft at the first pick and before a further shuttle can be inserted, and thus guard against the rapid emptying of the shuttle-holding magazine.

Upon the accompanying drawings Figure 1 illustrates a transverse section of the breast beam of a loom and a side elevation of the improved stop-motion devices and also of certain take-up control mechanism. Fig. 2 illustrates a front elevation of Fig. 1 (in part). Fig. 3 illustrates a like view to Fig. 1 but showing the working parts in the position they occupy immediately after a shuttle has been inserted in the loom and while such shuttle is making its first traverse across the loom.

According to the invention a link bar j is pivotally connected to the weft-fork holder h by a pin l . This link bar j extends forwardly toward the loom front and upon its underface is formed with a notch or shoulder j' . At such point the bar overlies a lateral stud m carried by an upstanding lever arm n connected with the cross-rod o of the reshuttling devices. Such cross-rod may be the same as that mentioned in the specification of Letters Patent 938,276.

When the weft fails and the weft fork p engages the hammer lever q in the usual way the link bar j is also moved by the hammer lever, thereby causing its notched end to press upon the stud m and rock the cross-rod, thereby operating the reshuttling mechanism and causing a new shuttle to be inserted in the loom.

For the purpose of preventing the insertion of another shuttle should the weft fail to be laid by the first shuttle, the said link bar j is fitted with a depending arm r , the free end of which lies in the plane of a short lever s , mounted upon a relatively fixed stud t on the loom frame. Upon or in one with this stud t is a short lever arm s' which ex-

tends upward and forwardly in the path of the hammer lever q . The lever s is provided with a shoulder s^2 designed to engage the arm r for the purpose of raising, under the force of a weight s^3 , the link arm j as shown in Fig. 3.

Upon the usual loom stopping lever u is a pivoted plate-like extension u' which normally extends over but lies clear of the forward end of the link bar j in which is a shoulder j^2 .

With the forward movement of the hammer lever and link bar j to operate the lever arm n , the depending arm r moves over the top face of the lever s and beyond the shoulder s^2 . As the hammer lever and link j make their return movement the shoulder s^2 retards the movement of the arm r and as a result the link j is tilted up about its fulcrum, see Fig. 3, thereby bringing the shoulder j^2 of the link bar opposite the edge of the extension u' . The extension u' being pivoted allows the link bar j to move upward and backward, the plate falling into its normal position as soon as the shoulder of the bar has passed below it. With the new weft properly laid across the loom the weft fork is made free from the hammer lever q and such lever making its next forward movement presses against the lever arm s' and frees the arm r from the lever s , the link bar j thus falling down into its normal position, but should, however, the new weft not be properly laid, the weft fork again engages the hammer lever, and, as the hammer lever moves forward, it moves the link bar j in its raised position against the extension u' of the loom stopping lever, thereby stopping the loom. To restart the loom the attendant frees the arm r from the notch of the lever s by say raising the weight s^3 , and also, if necessary, by freeing the weft fork from the hammer lever. With the loom restarted and the weft properly laid, the hammer lever has no effect on the link bar until the weft again fails, and the loom will not be stopped by the automatic devices until the weft again fails with the insertion of a newly-filled shuttle.

To prevent thin places in the cloth when the weft fails the pawl v , Fig. 1, of the take-up roller wheel w is raised clear of the wheel during the period of the failure of the weft. This is effected by the lever arm n' loose on the cross rod o and the short lever arm n^2 fast on the cross-rod and provided with a

pin n^2 which extends below the lever arm n' , see Fig. 1.

What I claim is:—

1. In automatic stop motion devices for
 5 use with looms fitted with reshuttling mechanism, and in combination with the usual hammer lever and weft fork, a weft fork holder, a link bar pivotally connected with
 10 the holder and having a shoulder upon its upper and under edges respectively, a stud forming part of automatic reshuttling mechanism upon which the link bar normally rests
 15 and against which the shoulder in its under edge normally lies, a fixed depending arm on the said link bar, a loom stopping lever, a plate-like extension pivoted to the loom stopping lever and overlying the said link bar, a
 20 lever having a shoulder on the upper edge of one arm adapted to be engaged by the depending arm and a weight on the other arm, a stud carrying such lever and a cranked lever arm connected to such stud and adapted to be engaged by the hammer lever, substantially as described.

25 2. In automatic stop motion devices for

use with looms fitted with reshuttling mechanism, and in combination with the usual hammer lever and weft fork, a weft fork holder, a link bar pivotally connected with the holder and having a shoulder upon its
 30 under and upper edges respectively, a stud forming part of automatic reshuttling mechanism upon which the link bar normally rests and against which the shoulder in its
 35 under edge normally lies, means for raising the free end of the link bar when the link bar moves in one direction, a loom stopping lever and an extension piece pivoted to such
 40 lever and adapted to be engaged by the upper shoulder of the link bar when the same is in raised position and means for lowering the link bar when the weft fork holder remains stationary, as set forth.

In witness whereof I have hereunto set
 45 my hand in the presence of two witnesses.

JAMES ROSTRON.

Witnesses:

JAS. STEWART BROADFOOT,
 F. C. PENNINGTON.