2 Sheets--Sheet 1.

# R. W. HUNTON.

## Stopping-Mechanism for Railway Heads.

No. 163,593. Patented May 25, 1875.

*Fig. 1.*

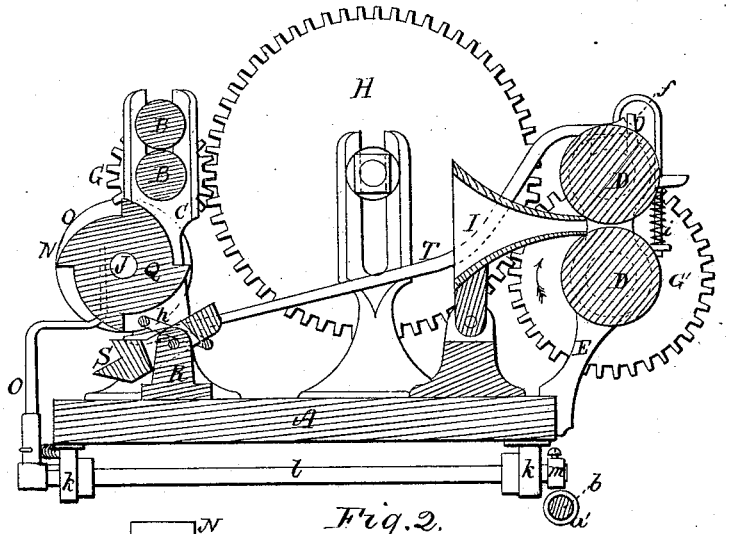
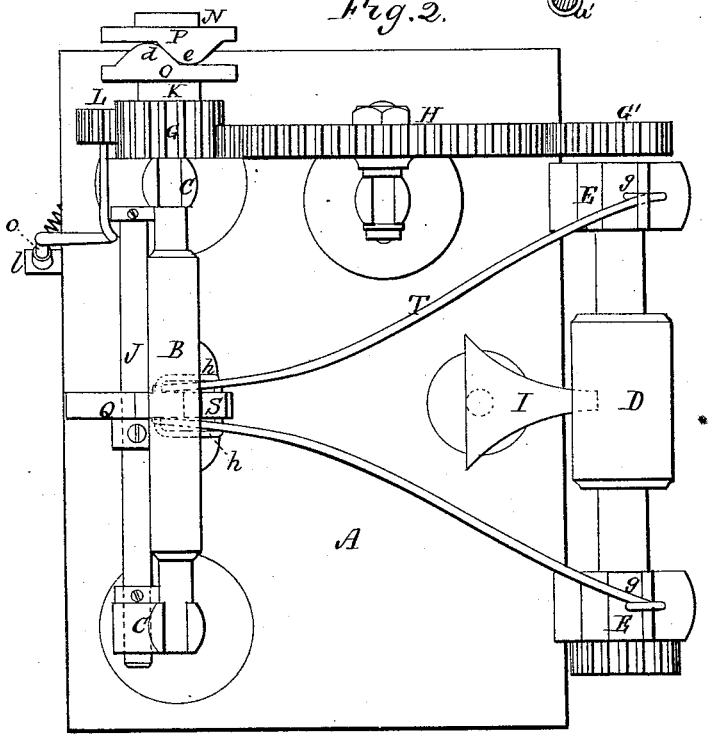



*Fig. 2.*




WITNESSES.
F. Hunnewell.
W. E. Boardman.

R. W. Hunton.
H. Curtis. Atty.

2 Sheets--Sheet 2.

# R. W. HUNTON.

## Stopping-Mechanism for Railway Heads.

No. 163,593. Patented May 25, 1875.

*Fig. 4.*
*Enlarged.*

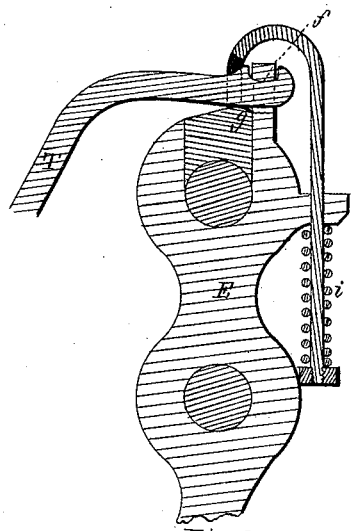
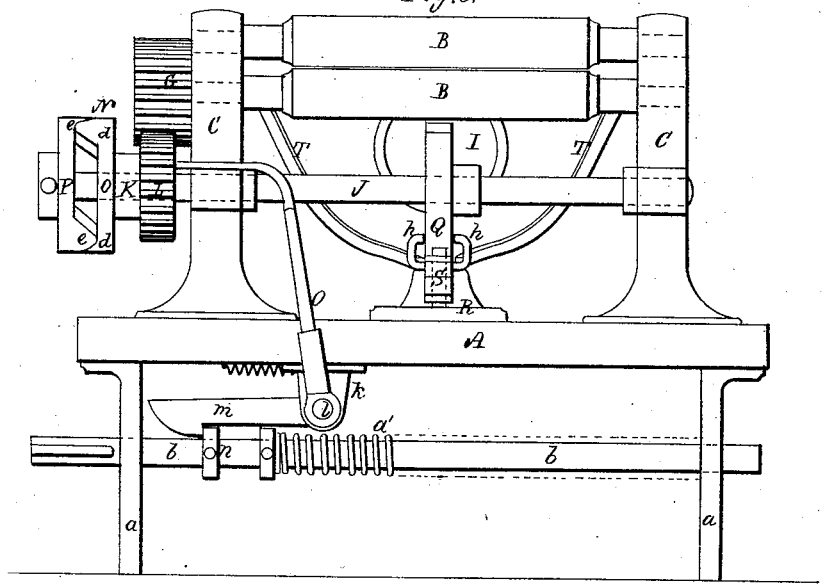



*Fig. 3.*




Witnesses.
F. Hunnewell.
W. C. Boardman

R. W. Hunton.
F. Curtis. Atty.

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# UNITED STATES PATENT OFFICE.

ROBERT W. HUNTON, OF FALL RIVER, MASSACHUSETTS.

## IMPROVEMENT IN STOPPING MECHANISMS FOR RAILWAY-HEADS.

Specification forming part of Letters Patent No. **163,593**, dated May 25, 1875; application filed April 26, 1875.

*To all whom it may concern:*

Be it known that I, ROBERT W. HUNTON, of Fall River, Bristol county, Massachusetts, have invented an Improved Stop-Motion for Cotton-Machinery, of which the following is a specification:

This invention is applicable to that portion of cotton-manufacturing machinery known as the "railway," and which is situated between the carding-engine and the drawing-frame; and my invention relates to means whereby imperfections in the drawings will be transmitted to the belt-shipper with such an effect as to reverse the latter and stop the mechanism. I avail myself of the rise and fall of the upper condensing or calendering roll to transmit to the belt-shipper the motions imparted by the variations or inequalities in the drawings, such as would render them unfit for perfect yarn, as these inequalities have the effect of raising or lowering such condensing-roll.

The means by which I carry out my object will be explained hereafter.

The drawings accompanying this specification represent, in Figure 1, a vertical section, in Fig. 2, a plan, in Fig. 3, an end elevation of a railway containing my improvements; and in Fig. 4 a section of one bearing of the upper calendering-roll.

In these drawings, A represents the platform or beam of the railway of cotton-manufacturing machinery, the legs or standards of which are shown at *a a*, and the shipper-rod, which reverses the belt from the fast to the loose pulley, or vice versa, at *b*, such rod being forced outwardly by a spring, *a'*, applied in any proper way. One pair of draft-rollers is shown at B B as mounted in standards C C erected upon the platform A, and the calendering or condensing rolls at D D as mounted in standards E E, the lower draft-roll and the lower condensing-roll being provided with spur-gears G or G', which are engaged and driven by an intermediate gear, H. The trumpet, which condenses the drawings and guides them into the rolls is shown at I as placed in advance of the rolls D.

The above elementary features of a railway are such as are universally found in mills at the present day, and contain nothing of my invention.

In carrying my invention into effect I proceed as follows: Within the lower part of the standards C C I mount a rotary horizontal shaft, J, upon the rear end of which I loosely mount a sleeve or hub, K, upon which is formed a spur-gear, L, which engages the gear G, before alluded to, as carried by the lower draft-roll, the sleeve K and integral gear L being independent of the shaft J, except when locked to it by a clutch, N. This clutch is composed of two disks, O P, whose coinciding faces are formed with pyramidal or crowning projections *d d* or *e e*, one disk being secured to or forming part of the hub K, and rotating with it, and the other secured to and rotating with the shaft J. Furthermore, upon the shaft J, and centrally thereof, I affix a ratchet-wheel, Q, and upon the platform or beam A, and immediately below such wheel, I pivot upon a post, R, a tilting pawl or tripper, S, whose outer or front end preponderates in weight over its inner, so as naturally to fall away from and out of engagement with the ratchet-wheel. T T in the drawings represent two twin levers, the bases *f f* of which are, in the present instance, hooks, which enter eyes formed in the upper part of the standards E E, before named, each lever finding its fulcrum upon the upper boxes *g* of the upper condensing-roll, while the handle or greater body of each lever extends rearward, and passes loosely through staples or eyes *h h*, affixed one to each side of the pawl or tripper S, the said boxes *g g* being depressed upon the journals of the upper condensing-roll by springs *i i* suitably applied.

Below the beam A and transversely thereof I mount, in suitable hangers *k k*, a horizontal rock-shaft, *l*, to the front end of which I affix a hooked dog, *m*, which operates in connection with a collar, *n*, affixed to the shipper-rod *b*, while to its rear end I affix an upright rod, O, whose upper end bears against the inner face of the gear L, before alluded to as secured to the hub K, and is pressed against such gear by a spring or by its own gravity.

When perfect drawings are fed to and pass between the calendering-rolls, the hub K is clutched to the shaft J and rotates with it, for the reason that the tripper is below and out of contact with the ratchet-wheel.

The tripper S and its eyes or staples, and the positions of the levers T T with respect thereto, are to be so adjusted that, when perfect drawings are passing between the calendering-rolls, the tripper is at its lowest position.

Should the thickness of the drawings be varied by imperfections which would be objectionable, the upper calender-roll will rise or fall to a corresponding degree, and the free ends of the levers T T will, as a consequence, be raised or lowered, but to a much greater extent. Either the elevation or depression of the levers T T, acting upon the eyes of the tripper S, will tilt the latter from its inactive position and raise its outer end, the effect of which is to intercept and estop the rotation of the ratchet-wheel Q and shaft J. The stoppage of the shaft J, and consequently of the outer half of the clutch N, separates the two halves of such clutch, and forces the sleeve K and its gear L inward; while this inward movement of the gear swings the rod *o* in the same direction, and rocks the shaft *l*, and elevates the dog *m*, thus releasing the shipper-rod *b* and permitting it to be thrown suddenly outward, and, by shifting the belt, stop the movements of the machine.

One prominent evil my improvement is designed to obviate, is that resulting from the winding and accumulation of drawings about either of the condensing-rolls. As any increase in thickness of such drawings instantly raises the upper condensing-roll, the belt is shipped before any accumulation about the roll can take place. As a consequence I make little waste and economize labor, as I am enabled to dispense with any attendant to the railway, for the reason that the drawing-frame attendants are sufficient.

I am also enabled to produce perfect yarn, as any imperfections in the drawings are instantly transmitted through the levers T T to the shipper, and the mechanism stopped.

Another advantage attaches to my invention, in that strains and shocks to the machinery are avoided.

I claim as my invention, and desire to secure by Letters Patent, the following:

The levers T, pivoted to the boxes of the upper roll, the tripper S, connected with such levers, the ratchet-wheel Q, shaft J, sleeve K, clutch N, rod *o*, rock-shaft *l*, and dog *m* with shipper-rod *b*, combined for operation as described, whereby the changes in position of the two condensing-rolls relatively to each other are transmitted to the belt-shipper.

R. W. HUNTON.

Witnesses:

G. H. BELCHER,

F. A. LOCKWOOD.