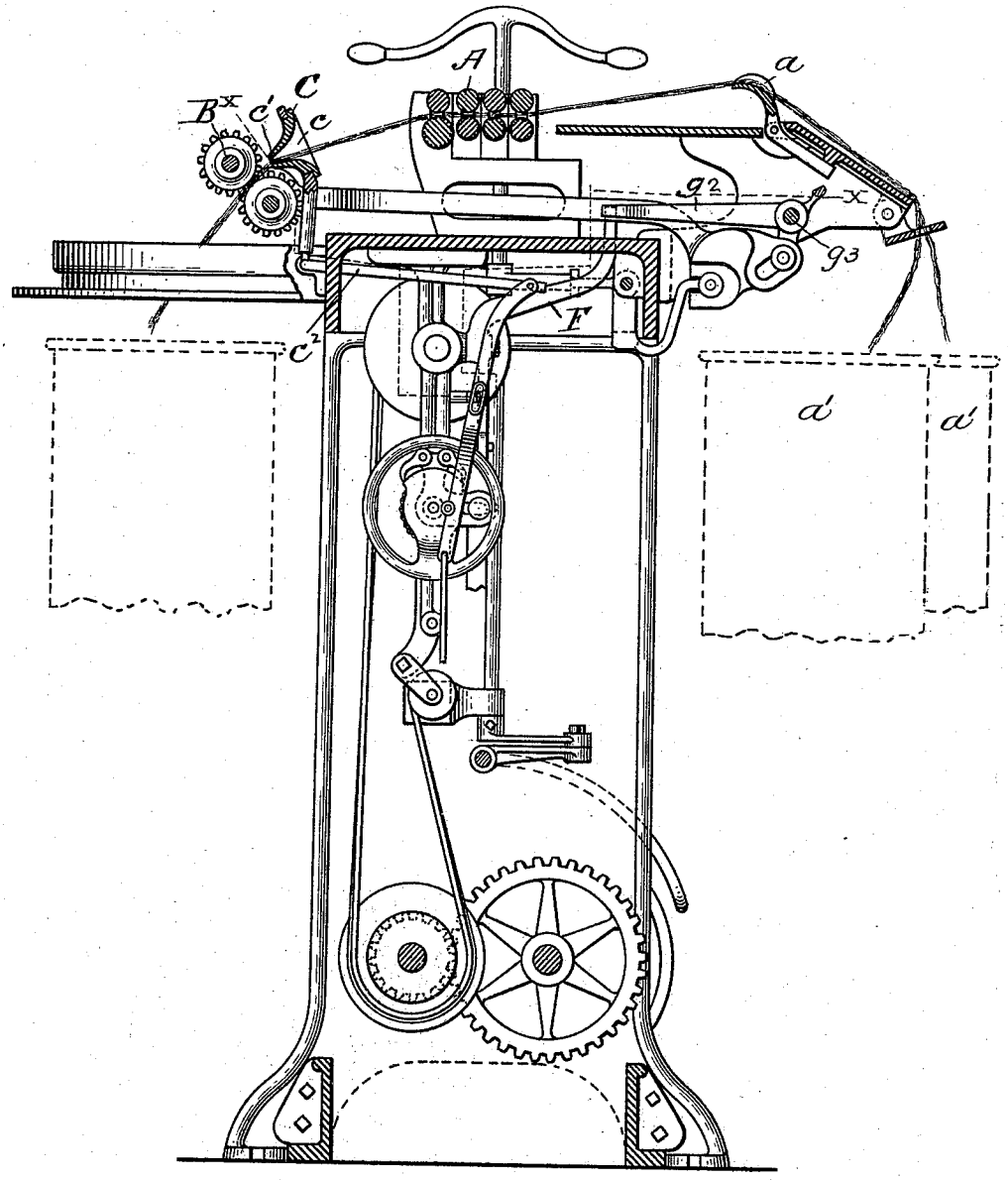
(No Model.)

4 Sheets—Sheet 1.

W. V. THRELFALL.

STOP MOTION FOR RAILWAY HEADS.

No. 547,232. Patented Oct. 1, 1895.



WITNESSES
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Fig. 1.

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(No Model.) 4 Sheets—Sheet 2.

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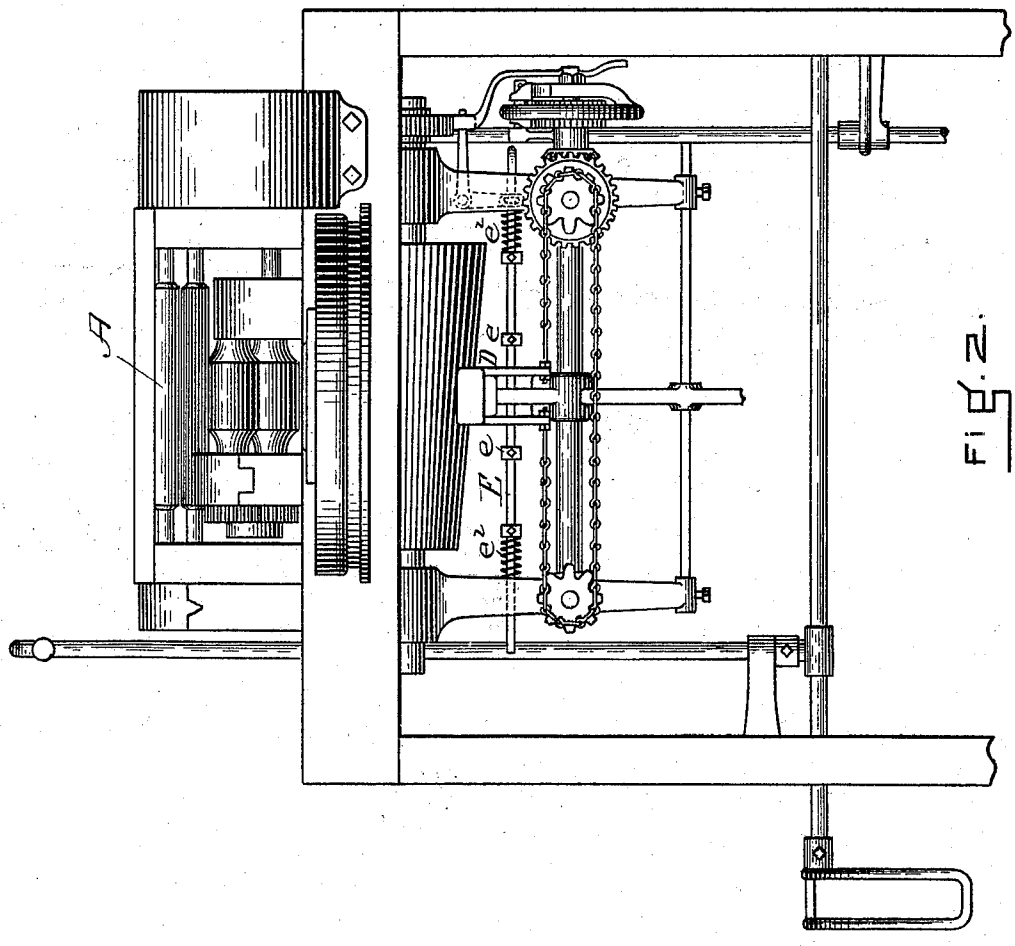

FIG. 2.

WITNESSES
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(No Model.) 4 Sheets—Sheet 3.

W. V. THRELFALL.

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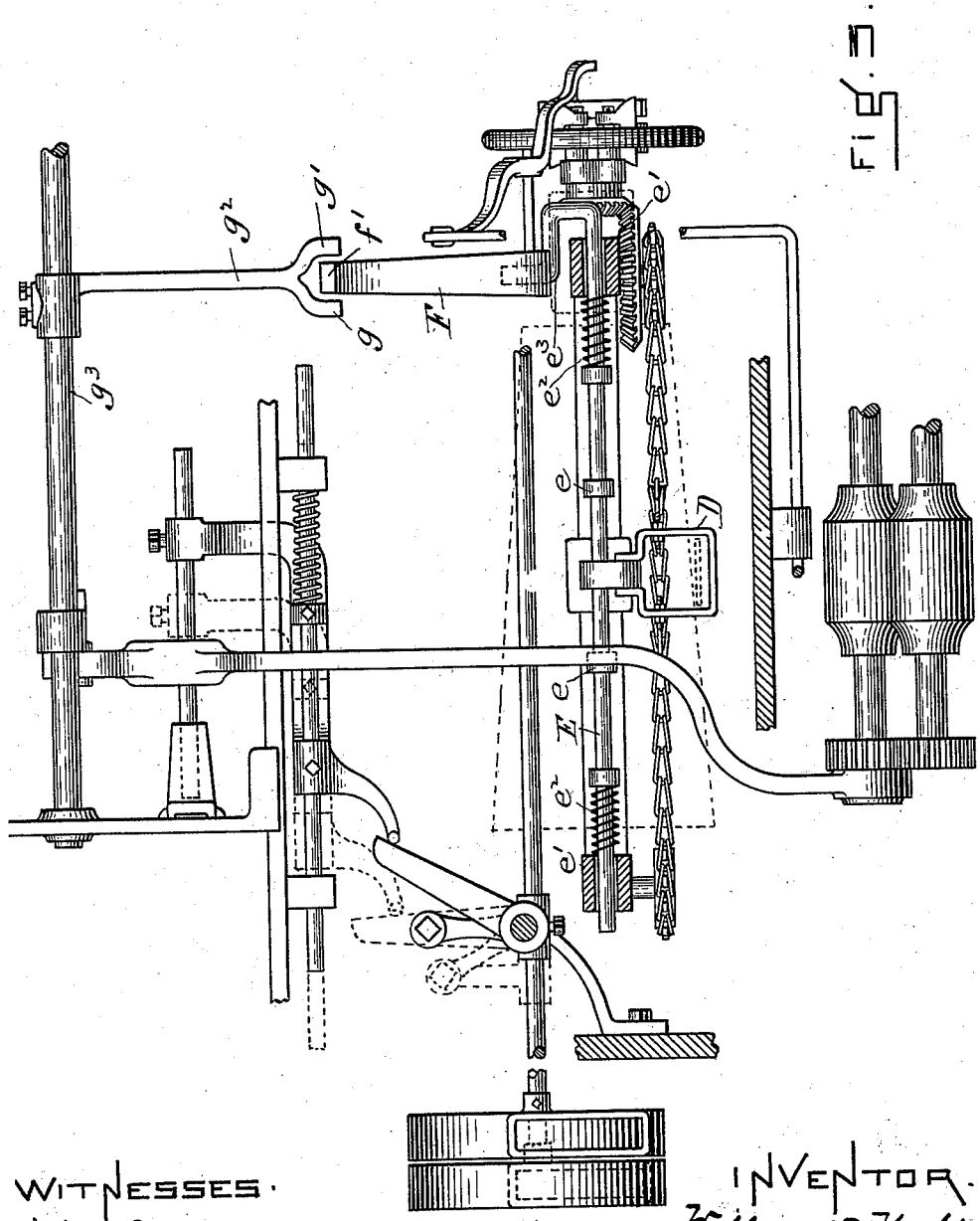

Fig. 1.

WITNESSES.
J. W. Dolan.
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(No Model.) 4 Sheets—Sheet 4.

W. V. THRELFALL.

STOP MOTION FOR RAILWAY HEADS.

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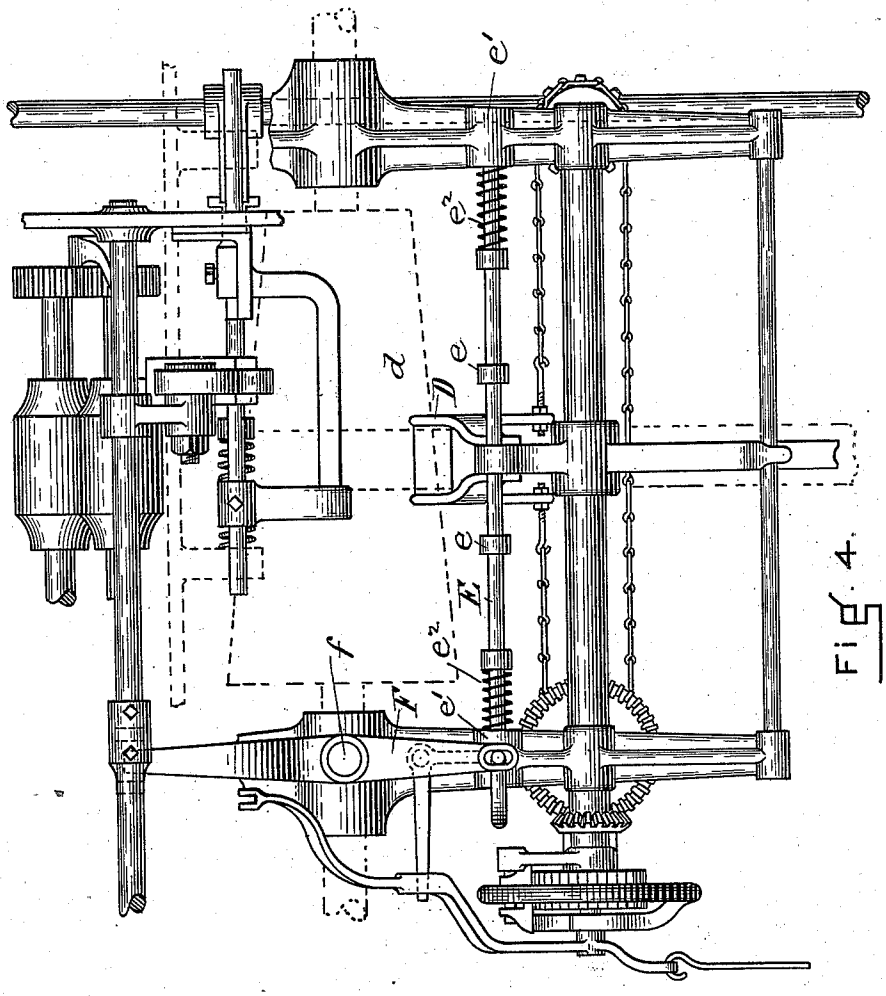

Fig. 4.

WITNESSES
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UNITED STATES PATENT OFFICE.

WILLIAM V. THRELFALL, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO THE PETTEE MACHINE WORKS, OF SAME PLACE.

STOP-MOTION FOR RAILWAY-HEADS.

SPECIFICATION forming part of Letters Patent No. 547,232, dated October 1, 1895.

Application filed August 1, 1894. Serial No. 519,153. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM V. THRELFALL, a citizen of the United States, residing at Newton Upper Falls, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Stop-Motions for Railway-Heads, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

In drawing-frames the action of the drawing-rolls upon the sliver is regulated by means of the evener, through which the sliver is drawn by a pair of drawing-rolls located in front of it. This evener is in the form of a tunnel or trumpet having a flaring mouth opening toward the drawing-rolls, and at its inner end a small hole through which the strands of sliver are passed, the trumpet serving to gather together the various strands and the hole to govern or control or even the size of the collected strands. This trumpet is supported upon or connected with a lever and so as to be movable toward and from the drawing-rolls in front of it, and as the sliver which runs through the hole varies in thickness it produces more or less tension or strain upon the trumpet, causing it to be moved toward the outer drawing-rolls as the sliver thickens, and as the strain lessens the trumpet returns to its normal position and the sliver runs of the right gage and moves. If the gage becomes small the trumpet moves backward or away from the drawing-rolls. These movements of the trumpet, caused by variations in the size of the sliver passing through the hole, effect through mechanism well understood variations in the drawing action of the main drawing-rolls, causing them to draw more if the sliver is thick and less if it is not, the result being produced in part by means of a belt, which is caused to be moved laterally upon a cone-pulley or drum. It happens occasionally, however, that the sliver in passing through the hole in the trumpet bunches up to such an extent as to fill the trumpet and cause imperfect operation of the device, and, finally, the sliver to break; but, so far as I am aware, there has never been employed in connection with a trumpet any means actuated by it whereby the machine is stopped when this difficulty or wrong action occurs, and my invention relates to means whereby the movement of the trumpet is utilized in causing the stop-motion of the machine to be actuated—that is, a movement beyond that in which it operates to make perfect or substantially perfect sliver toward the outer drawing-rolls will cause it to be operated, or, if the sliver is broken and the trumpet thereby permitted to return to a position beyond its normal working position, the stop-motion is then actuated by it. The mechanism which I have introduced into the machine for accomplishing this purpose acts with that already used for moving the belt in relation to the cone and with the same stop-motion and is very simple, consisting of but few parts.

In the drawings, Figure 1 represents a view, partly in side elevation and partly in section, of a drawing-frame having the features of my invention. Fig. 2 is a view in front elevation thereof. Fig. 3 is a view principally in horizontal section upon the dotted line of x x and in plan of the parts below said line. Fig. 4 is a view principally in rear elevation of many of the parts shown in Fig. 2.

Referring to the drawings, A represents the group of main drawing-rolls, by which the strands of sliver passing over the spoons a from the cans a' are drawn.

B is the front pair of drawing-rolls.

C is the trumpet having the open or flaring mouth c and the gage-hole c'. This is located closely to the meeting point of the drawing-rolls B, and it is supported by a rock-lever c^2, which communicates by familiar mechanism the movement to the belt-shipper D. It is obvious that when the machine is properly working the belt-shipper D has but a limited range of lateral movement in shifting the belt upon the drum d, and that any excess of such movement can be utilized in actuating a stop-motion, and I have availed myself of this fact to use in connection with the shipper the slide-rod E, upon which I have placed stops e, one upon each side, and adjustable upon the rod by set-screws or in any other desired way, and with one of which the

shipper comes into contact when there is cause for the operation of the stop-motion.

The rod E has suitable bearings at e' in the frame of the machine, and has springs e^2 to return it and hold it in normal position. When moved by the contact of the shipper D with either stop, its bent end e^3, which engages a lever F, causes said lever to be moved upon the fulcrum f and its upper end f' to be moved into the path of one of the two forks g g' of the vibrating arm g^2 on the vibrating shaft g^3, and when the vibrating arm g^2 is thus arrested the stop mechanism of the machine is caused to be actuated to stop its further operation.

This stopping mechanism is like that in common use upon drawing-frames having spoons a, the spoons a serving upon their release by the breaking of sliver to cause the actuation of the said stop, and I have utilized the same mechanism by simply extending an arm from the vibrating shaft to a position where it can be arrested by the stop-lever F when the trumpet C, by the imperfection of the sliver, causes the belt-shipper to be moved beyond its normal and safe range of action.

As the construction and operation of this stop mechanism is well understood, it is not necessary that it be further described here. The operation of the apparatus has been given in connection with the description of its parts, and its advantages are too obvious to need comment.

It will be understood that the trumpet serves to stop the machine only at an extreme of a movement toward or from the rolls B, and that at one extreme the end of the lever F is moved into operative relation with the fork g, and at the other extreme into operative relation with the fork g'; but that normally it is held in inoperative relation.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a machine of the character specified the combination of the following instrumentalities, the trumpet evener and drawing rolls, a cone belt shipper actuated by the trumpet evener, the spoons, a stopping mechanism with which the spoons are connected and by which it is adapted to be actuated, and mechanism intermediate the cone belt shipper and the said stopping mechanism to actuate the latter upon an excessive movement of the cone belt shipper, all as and for the purposes described.

2. The combination of the trumpet evener C, the drawing roll E, the belt shipper, means connecting the shipper and trumpet evener as specified, stop motion devices, the vibratory arm g^2 having the forks g, g', and the stop lever F connected to and actuated by the belt shipper, as and for the purposes described.

3. The combination in a machine of the character specified of the trumpet evener, the belt shipper, means connecting the shipper and trumpet evener, as specified, a sliding rod having stops e and returning springs e^2, the stop lever F connected with said slide rod and adapted to be moved thereby, the stopping mechanism and the vibrating arm g^2 having forks g, g' connected thereto, as and for the purposes described.

WILLIAM V. THRELFALL.

Witnesses:
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J. M. DOLAN.