

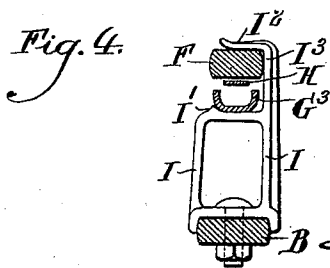
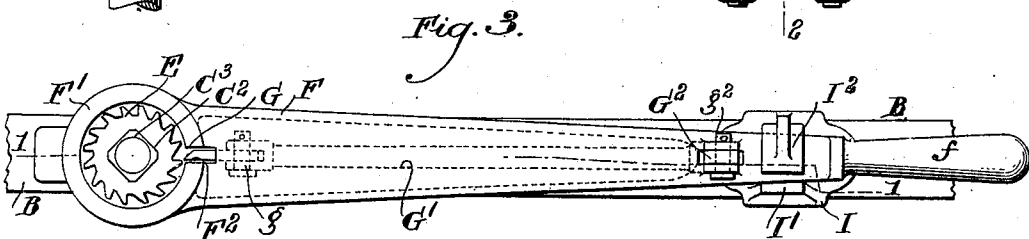
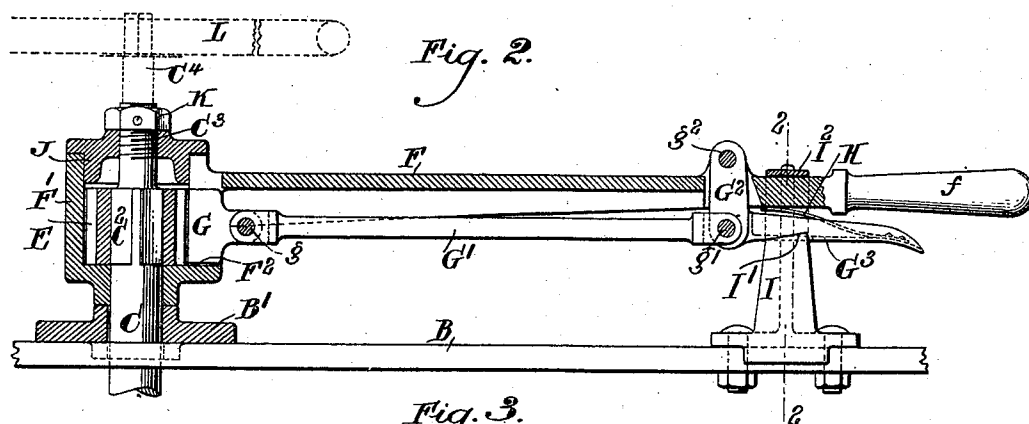
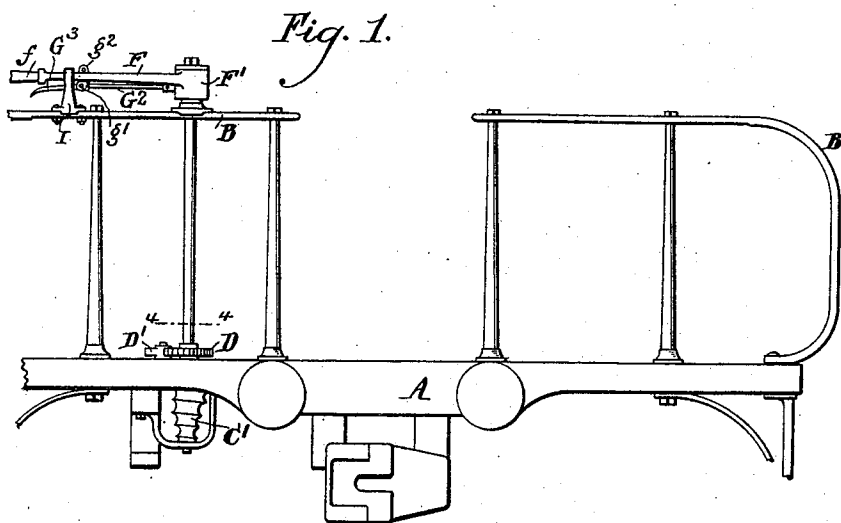
(No Model.)

2 Sheets—Sheet 1.

C. LINDSTRÖM.
BRAKE ACTUATING MECHANISM.

No. 574,549.

Patented Jan. 5, 1897.



Witnesses.

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

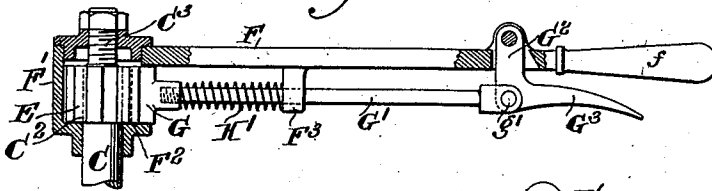


Fig. 6.

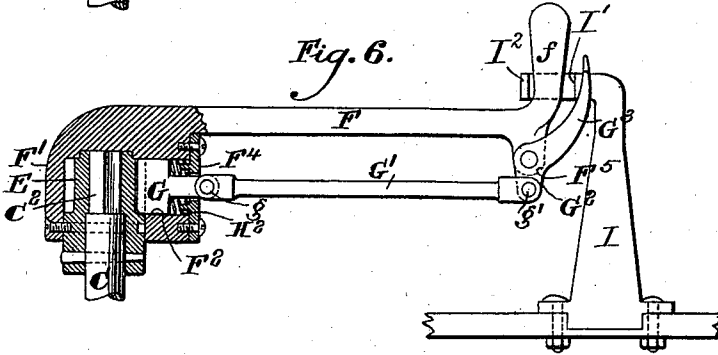


Fig. 7.

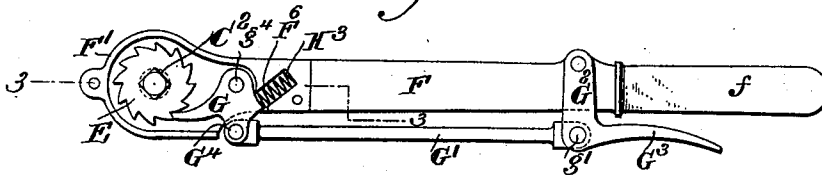


Fig. 8.

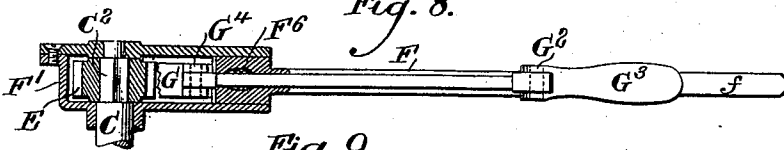


Fig. 9.

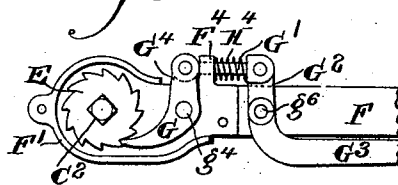


Fig. 10.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES LINDSTRÖM, OF ALTOONA, PENNSYLVANIA.

BRAKE-ACTUATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 574,549, dated January 5, 1897.

Application filed May 14, 1896. Serial No. 591,491. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LINDSTRÖM, a citizen of the United States, residing in Altoona, in the county of Blair, in the State of Pennsylvania, have invented certain new and useful Improvements in Brake-Actuating Mechanism, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of the specification.

My invention relates to the construction of mechanism for actuating brakes on cars by hand, and has for its object to provide a device whereby a brakeman or driver can set the brakes rapidly and with great power and at the same time one which will take up but little room and with which the operator will be exposed to the least possible danger.

The nature of my improvements will be best understood as described in connection with the drawings in which they are illustrated, and in which—

Figure 1 is a front view of a car-platform provided with my improvements. Fig. 2 is an elevation taken as on the section-line 1 1 of Fig. 3 and showing my improved mechanism. Fig. 3 is a plan view of the device illustrated in Fig. 2. Fig. 4 is a side elevation of the bracket or stop I, the hand-rail, the lever, and its attachments being shown in section, as on the line 2 2 of Fig. 2. Figs. 5 and 6 are elevations, partly in section, showing modifications of the mechanism shown in Fig. 2. Fig. 7 is a plan view, and Fig. 8 an elevation, partly in section, on the line 3 3 of Fig. 7, illustrating another modification. Fig. 9 is a plan view illustrating still another modification; and Fig. 10 is a view of the ratchet and pawl at the lower end of the shaft C, taken as on the section-line 4 4 of Fig. 1.

A indicates the car-platform; B, the hand-rail of the car; C, a rotatable shaft carried on the bearings secured to the platform and to the hand-rail and having an extension C' of the usual character, upon which the brake-chain is wound. As shown in the drawings, the upper end of the shaft is formed with flat faces, as indicated at C², to engage with the correspondingly-shaped hub of a ratchet-wheel E, and above this squared portion of the shaft extends a threaded part C³. For some purposes it may be advisable to extend

the shaft still farther, as indicated in dotted lines at C⁴, so that an ordinary brake-setting wheel L may be applied to it, as indicated in Fig. 2.

D is a ratchet-wheel secured to the shaft C just above the floor-line of the platform A, and D' is a pawl provided upon the platform, having one end adapted to engage with the ratchet D and the other end projecting outward, so that it can readily be disengaged from the ratchet by a kick from the foot. This is the ordinary construction, the function of this ratchet and pawl being to hold the brake set and to permit the brakeman or driver to liberate it by a motion of the foot.

E is a ratchet-wheel which is slipped over the squared portion C² of the shaft; F, a lever extending horizontally from a chambered hub F', the lower portion of which fits round the shaft C below the squared portion C² and rests upon any suitable stop, as, for instance, in the plan shown, the bearing-piece B', by means of which the upper end of the shaft C is secured to the hand-rail B. The upper portion of the hub F' is of such size as to permit the insertion of the ratchet-wheel E and the top of the hub is open, so as to permit of the insertion of the ratchet-wheel. A chamber or slot F² is formed through the hub, and in this rests and moves a pawl G, which is preferably of such a shape that it will not only engage and move the ratchet-wheel E when moved in one direction, but will move freely over the teeth of the ratchet when moved in the other direction.

In the construction shown in Figs. 2, 3, 5, and 6 the motion of the pawl G is in a straight line, the pawl being coupled by a joint *g* with a rod G', which again is coupled by a joint *g'* with the lever G² G³, the end G² of which is pivoted at *g*² to the lever F, while the end G³ extends out in a direction approximately parallel to the lever F, lying in such a position with regard to the hand-grip *f* of the lever that it can readily be grasped at the same time. A spring is in all cases provided, the action of which is to thrust the pawl G into engagement with the ratchet E. In the construction shown in Fig. 2 this spring (indicated at H) is made to act directly on the arm G³ of the lever G² G³. In the construction shown in Fig. 5 the spring (indi-

cated at H') rests at one end against the pawl G and at the other end against a shoulder F^3 , extending downward from the lever F , while in the construction shown in Fig. 6 springs (indicated at H^2) are inclosed in the hub F' and connecting at one end against the pawl G and at the other against a plate F^4 , which is screwed or otherwise fastened to the hub.

In the modifications illustrated in Figs. 7, 8, and 9 the pawl G , instead of moving in a straight line, is pivotally secured to the lever F , the pivot being indicated at g^1 , and the pawl being provided with a lever-arm G^4 , to which the rod is directly or indirectly connected. In the plan shown in Figs. 7 and 8 the connection is direct, and here the necessary spring (indicated at H^3) lies in a cavity F^6 , formed in the lever F .

In the plan shown in Fig. 9 the rod G' is made short and the bent lever $G^2 G^3$ is pivoted at g^6 to the lever F , the spring, here indicated at H^4 , acting between the projection F^1 and the arm G^2 of the lever $G^2 G^3$.

It will be noticed that in all the modifications the action of the parts described is substantially the same. The operator, taking hold of the hand-grip f , moves the lever F half-way, turning the shaft C , which is engaged and held against a backward motion by the pawl D' and ratchet D , so that in place of setting the brakes by one continuous movement the operator can work the lever F like the handle of a pump and having the pawl always under control of the same hand which grasps the hand-grip of the lever.

For the double purpose of making it certain that the brake shall at all times, except when the hand-lever is actually held by the operator, be released by disengaging the pawl D' from the ratchet D , and of avoiding the danger which would arise from a whirling action of the hand-lever or from the sudden stoppage of the hand-lever after moving with great velocity and in full engagement with the ratchet E , I provide a releasing device so arranged as to withdraw the pawl G from engagement with the ratchet E whenever the hand-lever F is moved to its normal position of rest, which is most conveniently that shown in the drawings, when the hand-lever f lies parallel to the hand-rail B , and preferably I arrange this device so as to act upon the arm G^3 of the lever $G^2 G^3$.

Referring again to the drawings, I is a standard or stop device which I secure to the rail B , and which I provide with an inclined face I' , so situated as to engage and press the arm G^3 of the lever $G^2 G^3$ upward, thus disengaging the pawl G from the ratchet E .

I^3 indicates an upward projection of the bracket I , which serves as a stop to prevent the lever F from moving over the bracket, and I^2 an angular inwardly-projecting flange

which it is preferable to provide, and which, in connection with the stop proper, I^3 , holds the lever F securely in normal non-operative position.

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

1. In combination with the rotatable shaft as C of brake-setting mechanism having a ratchet and pawl as $D D'$ to hold the brake closed, of a lever pivoted on shaft C , a clutch secured to said lever and arranged to engage and turn the shaft when the lever is moved in the direction to set the brake while permitting the lever to move freely in the opposite direction, and an automatic clutch-releasing device whereby the clutch and shaft are disengaged when the lever is in its normal position of rest.

2. In combination with the rotatable shaft as C of brake-setting mechanism having a ratchet and pawl as $D D'$ to hold the brake closed of a lever pivoted on shaft C , a clutch secured to said lever and arranged to engage and turn the shaft when the lever is moved in the direction to set the brake while permitting the lever to move freely in the opposite direction, a stop to hold the lever in normal position of rest, and an automatic clutch-releasing device whereby the clutch and shaft are disengaged when the lever is in its said normal position of rest.

3. In combination with the rotatable shaft as C of brake-setting mechanism having a ratchet and pawl as $D D'$ to hold the brake closed, of a lever pivoted on shaft C , a clutch secured to said lever and arranged to engage and turn the shaft when the lever is moved in the direction to set the brake, a clutch-releasing lever as $G^2 G^3$ pivoted to the brake-setting lever at or near the handle-grip and a fixed stop as $I' I^3$ arranged to act on the clutch-releasing lever whenever the brake-setting lever is moved to its normal position of rest.

4. In combination with the hand-rail of a car-platform, a rotatable brake-setting shaft as C having a ratchet and pawl as $D D'$ for holding the brake closed, a brake-setting lever as F pivoted to shaft C above the hand-rail, a clutch device secured to said lever whereby it engages and turns the shaft when moved in the direction to set the brake, a clutch-releasing lever as $G^2 G^3$ pivoted to lever F near its handle-grip and a stop as $I' I^3$ secured to the hand-rail and adapted to actuate lever $G^2 G^3$ and stop the motion of lever F when said lever F is moved to a position parallel or nearly so to the hand-rail.

CHARLES LINDSTRÖM.

Witnesses:

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WILLIAM WRIGHT.