(No Model.) 2 Sheets—Sheet 1.

L. H. RAUB.

CAR BRAKE ATTACHMENT.

No. 455,114. Patented June 30, 1891.

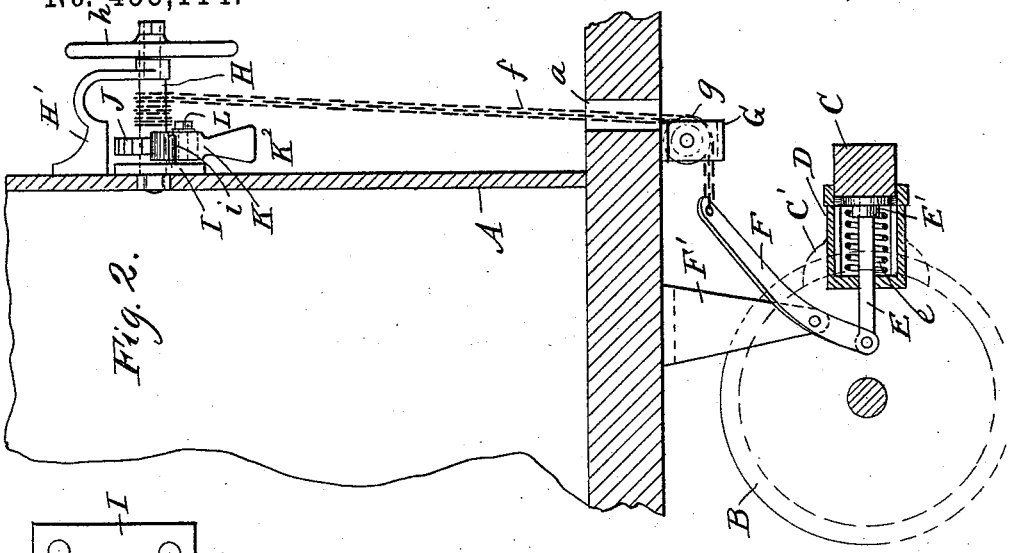

Fig. 2.

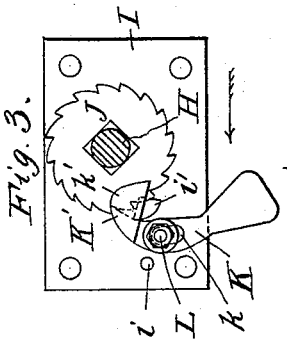

Fig. 3.

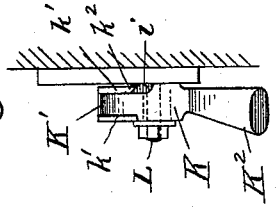

Fig. 4.

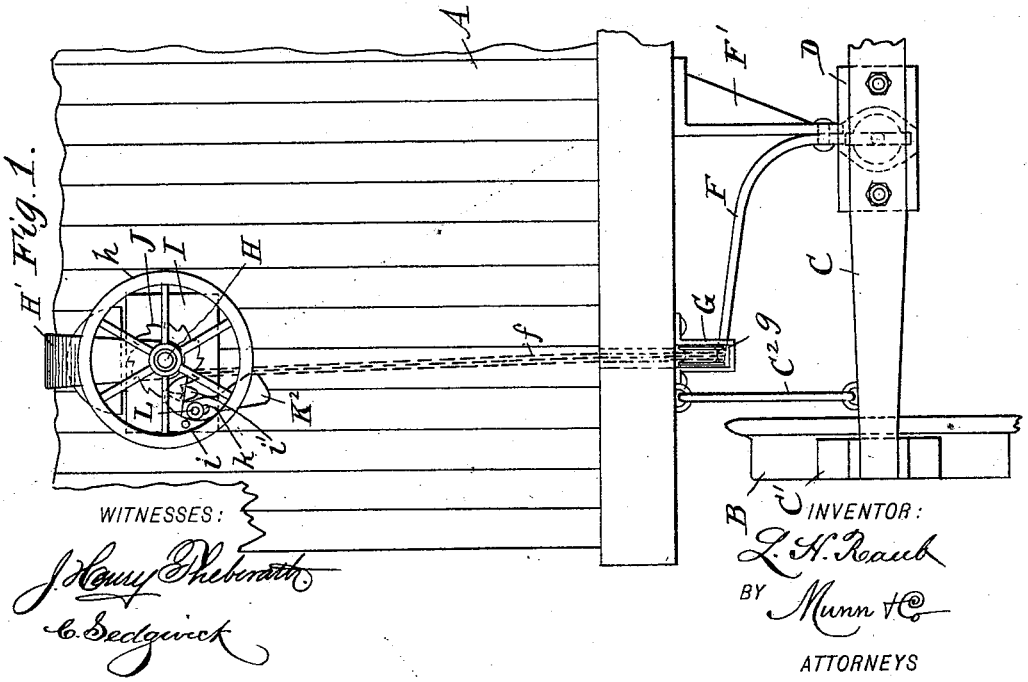

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 5.

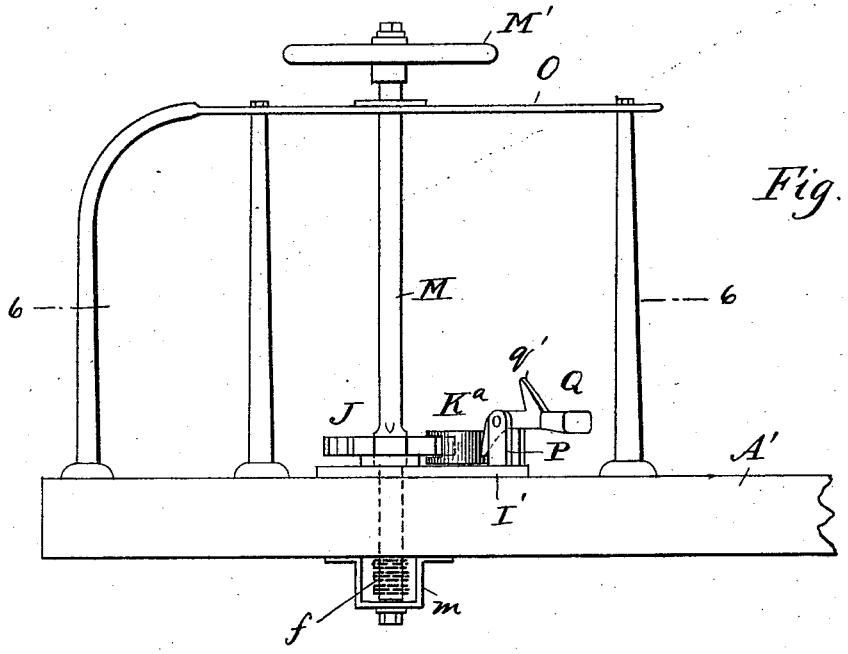


Fig. 6.

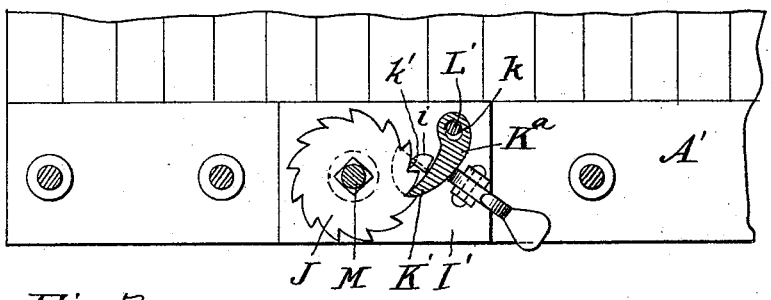


Fig. 7.

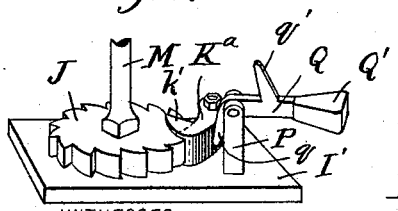


Fig. 8.

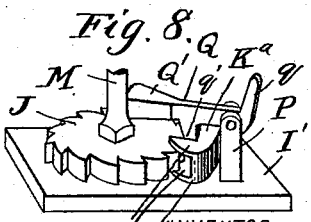
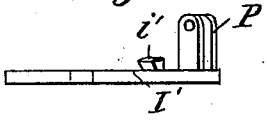


Fig. 9.



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UNITED STATES PATENT OFFICE.

LINCOLN H. RAUB, OF SOUTH EASTON, PENNSYLVANIA.

CAR-BRAKE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 455,114, dated June 30, 1891.

Application filed December 18, 1890. Serial No. 376,190. (No model.)

To all whom it may concern:

Be it known that I, LINCOLN H. RAUB, of South Easton, in the county of Northampton and State of Pennsylvania, have invented new and useful Improvements in Attachments for Car-Brakes, of which the following is a full, clear, and exact description.

It is customary to provide railway-cars with car-brakes which are operated by air, and which also have means for operating them by hand, and a difficulty arising from this construction is that when the brakes are operated by air they are likely to revolve the ratchet-wheel on the hand mechanism in such a manner that the teeth of the ratchet catch the dog or pawl, and thus destroy both the ratchet-wheel and pawl. Another objection to the ordinary car-brake is that the brakes are applied to the car-wheels in such a manner that the wheels are prevented from turning and slide upon the rails, and in this manner the wheels soon get out of true and do not run evenly on the rails, the result being that the rails are rapidly worn, as well as the wheels.

The object of my invention is to obviate these difficulties by providing a convenient means for setting the brakes by hand and providing a safety attachment therefor, and also by providing a spring attachment for the brake-beam, so that the brakes will not be set sufficiently hard to prevent the wheels from turning.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter described, and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a broken front elevation showing my attachments applied to the brake of a freight-car. Fig. 2 is a broken vertical longitudinal section of the same. Fig. 3 is a detail view, partly in section, showing the connection between the ratchet-wheel and the pawl for the same. Fig. 4 is an edge view of the same, partly in section. Fig. 5 shows my attachments applied to a passenger-car. Fig. 6 is a sectional plan of the same on the line 6 6 of Fig. 5. Fig. 7 is a broken perspective view showing the pawl held in engagement with the ratchet-wheel. Fig. 8 is a broken perspective view showing the pawl held out of engagement with the ratchet-wheel, and Fig. 9 is a detail perspective view of the base-plate on which the ratchet-wheel and pawl are pivoted and of the inclined block and post upon the plate.

In the drawings, A represents an ordinary freight-car, which is mounted on wheels B in the usual manner, and extending across the car in front of the wheels is a brake-beam C, carrying shoes C′, which press upon the wheels B, the beam being pivotally suspended from the car-bottom by means of rods C^2 in the usual manner. The brake-beam and brake-shoes may be of any approved construction, and the brake-beam has a case D secured thereto, through which extends longitudinally a rod E, having the end next to the brake-beam provided with a collar E′ and having the opposite end pivoted to the bent lever F.

Within the case D is a spiral spring *e*, which is coiled around the rod E, and when the brake is applied to the wheel the collar E′ is forced against the spring, and the resistance of the spring is such that the shoes C′ are forced against the wheels hard enough to stop the car, but not to prevent the wheels from turning.

The lever F has its lower end pivoted to the rod E, as described, and the lever is pivoted near the lower part thereof to the lower end of a support F′, which is secured to the car-bottom. It will thus be seen that by tilting the lever the rod E will be moved and the brake-beam C will be actuated, so as to force the brake-shoes against or away from the wheels; but the lever is only intended to force the brake-shoes against the wheels, as the brake-beam is ordinarily suspended in such a manner that it will normally swing away from the car-wheels.

The upper end of the lever F is connected to a chain *f*, which is made to extend over a guide-pulley *g*, pivoted in the depending bracket G on the bottom of the car, and the chain passes upward through a perforation *a* in the end of the car-frame, and the upper end of the chain is secured to the shaft H, which is pivoted in a bracket H′, secured to the front end of the car near the top. The

inner end of the shaft H is pivoted in a plate I, which is secured to the front of the car, and the outer end of the shaft is provided with a hand-wheel h, by means of which it may be turned.

A ratchet-wheel J is fixed to the shaft H, the shaft being squared, so that the wheel will not turn thereon, and pivoted to the plate I at one side of and a little below the ratchet-wheel is a pawl K, the upper end K′ of which is formed into a toe to engage the teeth of the ratchet-wheel, and the lower end K^2 of which is enlarged, so that it will serve as a weight and will normally hold the upper end in engagement with the ratchet-wheel. The pawl is pivoted on a pin or bolt L, which extends through it near the center, and the slot k, through which the bolt extends, is elongated, so as to permit of a vertical movement of the pawl. The pawl is provided at its upper end and on opposite sides with projecting flanges k', which overlap the sides of the ratchet-wheel and serve to guide the pawl, and the edge of the inner flange is inclined, as shown at k^2, so that the pawl may, if necessary, be supported by the inclined block i', as described below. The plate I has a projecting pin i in the rear of the pawl K to prevent the pawl from being tipped over out of place, and between the pawl and the ratchet-wheel, a little below the upper end of the pawl, is a fixed block i', the upper side of which is inclined toward the ratchet-wheel, as best shown in Fig. 4. It will thus be seen that if the bolt L should break the pawl would drop upon the inclined block i', the inclined flange k^2 of the pawl serving to guide it to place, and the block would still hold the pawl in engagement with the ratchet-wheel, so that the brakes would be held in place. This is an important feature of the invention, as in the ordinary brakes if the pawl-bolt breaks the cars are likely to run wild, owing to the fact that the brakes cannot be held against the wheels, and much damage results.

In Figs. 5 to 9, inclusive, I have shown the application of the attachments to a passenger or platform car A′, and in this case the vertical brake-shaft M is mounted in the railing O of the car in the usual manner, the upper end of the shaft having a suitable hand-wheel M′ thereon and the lower end of the shaft extending through the platform and being supported in a depending bracket m on the car-bottom. When this vertical shaft is used, the chain f is secured to the lower end of the shaft M in the ordinary way, so that when the shaft is revolved the chain will be wound thereon and the brakes operated. The shaft M is squared near the platform of the car, and the ratchet-wheel J is fixed to the shaft in the ordinary way. A plate I′, which is substantially like the plate I described above, is secured to the platform between it and the ratchet-wheel, and a pawl K^a is pivoted on the plate so as to engage the ratchet-wheel, the pawl being substantially like the pawl described above, except that it is not provided with the weighted end, and the plate has the inclined block i' thereon to engage the pawl, which is held to the plate by a bolt L′, extending through an elongated slot k of the pawl, so that the operation of the pawl in relation to the ratchet-wheel and plate is the same as that described above, the only difference being that in one case the plate and pawl are held in a vertical position and in the other in a horizontal position.

Fixed to the plate I′ in the rear of the pawl K^a is a vertical split post P, in which is pivoted the bent lever Q, one end of the lever being enlarged to form the weight Q′ and the opposite end being bent at an angle to the body of the lever to form a finger q, adapted to press against the outer side of the pawl. On the side of the lever opposite the finger q is a similar finger q', which projects in a direction opposite to the finger q and which is such a distance from the finger q that when the lever is tipped in one direction the finger q will press the pawl into engagement with the ratchet-wheel, but when the lever is tipped over into the opposite position, as shown in Fig. 8, the finger q' will strike the inner side of the pawl and hold the same away from the ratchet-wheel.

It will be seen that the weighted end Q′ of the lever will serve to hold it in place, and it is evident that when the lever is arranged to hold the pawl against the ratchet-wheel the pawl cannot become disengaged and when the lever is tilted in the opposite direction the pawl cannot strike the teeth of the ratchet-wheel, so that there will be no danger of injury to the ratchet-wheel or pawl resulting from any movement of the ratchet-wheel imparted from the air-operated brakes.

I do not confine myself to the use of the attachments in connection with the brakes described and shown in the drawings, as it is evident that the attachments may be used in connection with any of the brakes in common use.

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

1. In brake attachments, the combination, with the revolving brake-shaft having a ratchet-wheel thereon, of a weighted pawl pivoted adjacent to the ratchet-wheel and provided with side flanges to embrace the wheel, substantially as described.

2. The combination, with the revolving brake-shaft having a ratchet-wheel thereon, said shaft connecting with the brake, as described, of a pawl having one end formed into a hook to engage the ratchet-wheel, and an inclined block fixed to a support and extending between the pawl and ratchet-wheel, substantially as described.

3. The combination, with the revolving brake-shaft having a ratchet-wheel thereon, said shaft connecting with the brake, as described, of a pawl pivoted adjacent to the

ratchet-wheel and provided with a slot to receive the pivot-pin and having one end formed into a hook to engage the ratchet-wheel, and an inclined block fixed to a support and extending between the pawl and ratchet-wheel, substantially as described.

4. The combination, with the revolving brake-shaft connected with the brake, as shown, and having a ratchet-wheel thereon, and the inclined block fixed to a support and extending near one edge of the ratchet-wheel, of a pawl pivoted adjacent to the wheel and held to slide on its pivot, said pawl having one end formed into a hook to engage the ratchet-wheel and having said end provided with side flanges, substantially as described.

5. The combination, with the revolving brake-shaft connected with the brake, as shown, and having a ratchet-wheel thereon, and the inclined block fixed to a support, having one edge beveled and extending near one edge of the ratchet-wheel, of a pawl pivoted adjacent to the wheel and held to slide on its pivot, said pawl having one end formed into a hook to engage the ratchet-wheel and having said end provided with side flanges, one of which is beveled, substantially as described.

6. The combination, with the revolving brake-shaft connected with the brake, as described, and provided with a ratchet-wheel, of a pawl pivoted adjacent to the ratchet-wheel, and a bent lever pivoted in the rear of the pawl, said lever having fingers on opposite sides adapted to engage opposite sides of the pawl, substantially as described.

7. The combination, with the revolving brake-shaft connected by a chain with the brake-beam and having a ratchet-wheel thereon, of a pawl pivoted adjacent to the ratchet-wheel, a post in the rear of the pawl, and a weighted lever pivoted in the post and provided with oppositely-extending fingers adapted to strike against opposite sides of the pawl, substantially as described.

LINCOLN H. RAUB.

Witnesses:
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JOHN L. KANTNER.