(No Model.) 2 Sheets—Sheet 1.

R. R. HICE.

CAR BRAKE.

No. 346,202. Patented July 27, 1886.

FIG. I.

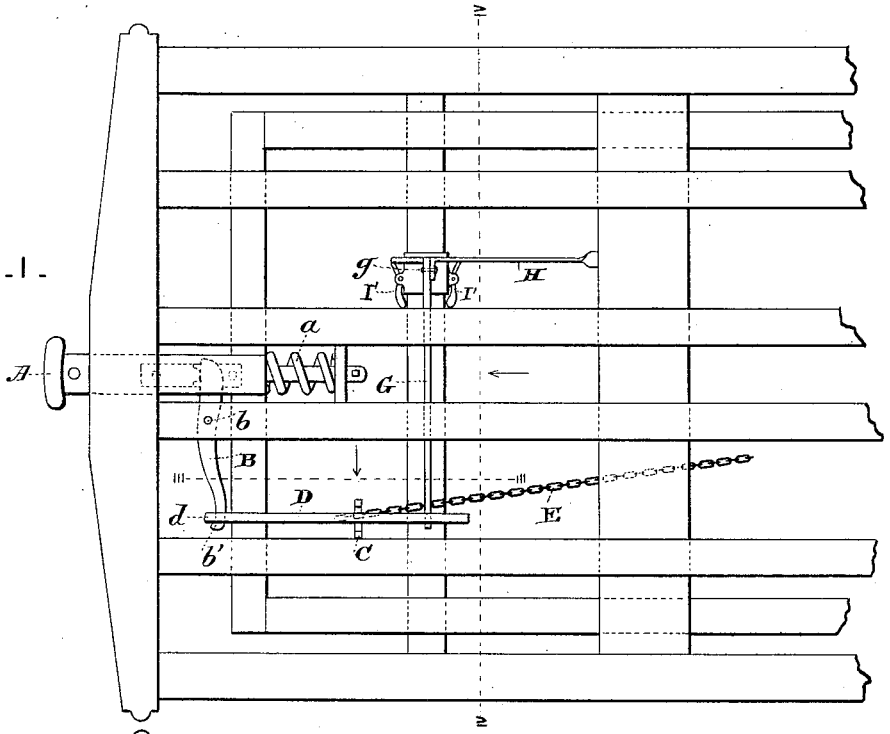
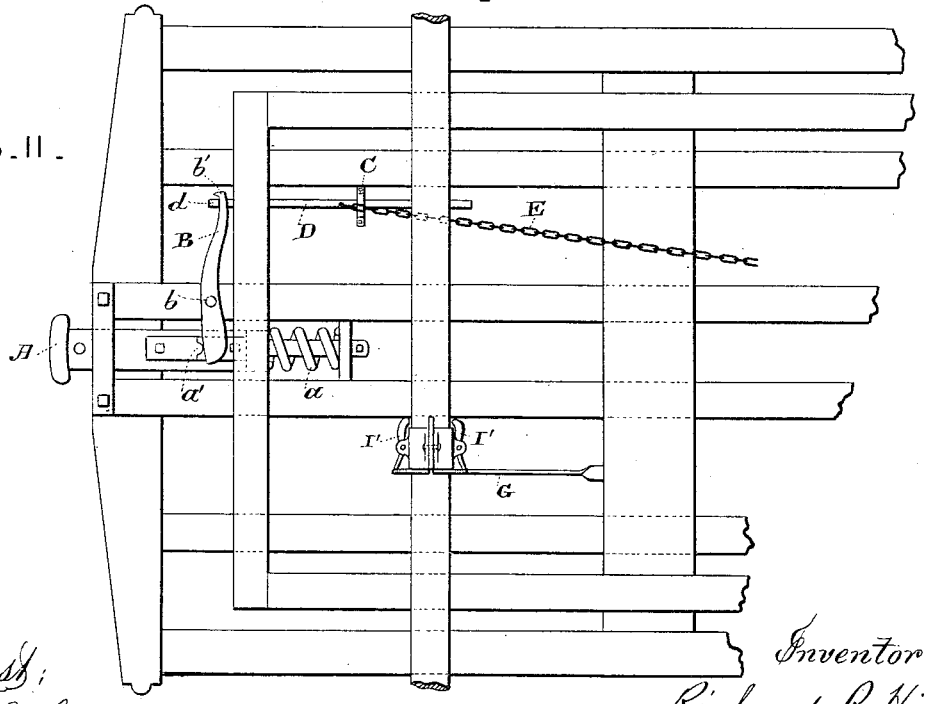


FIG. II.



Attest;
Geo. T. Smallwood,
Ker. Smith.

Inventor:
Richard R. Hice
By A. M. Smith, atty.

(No Model.) 2 Sheets—Sheet 2.

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FIG. IV.

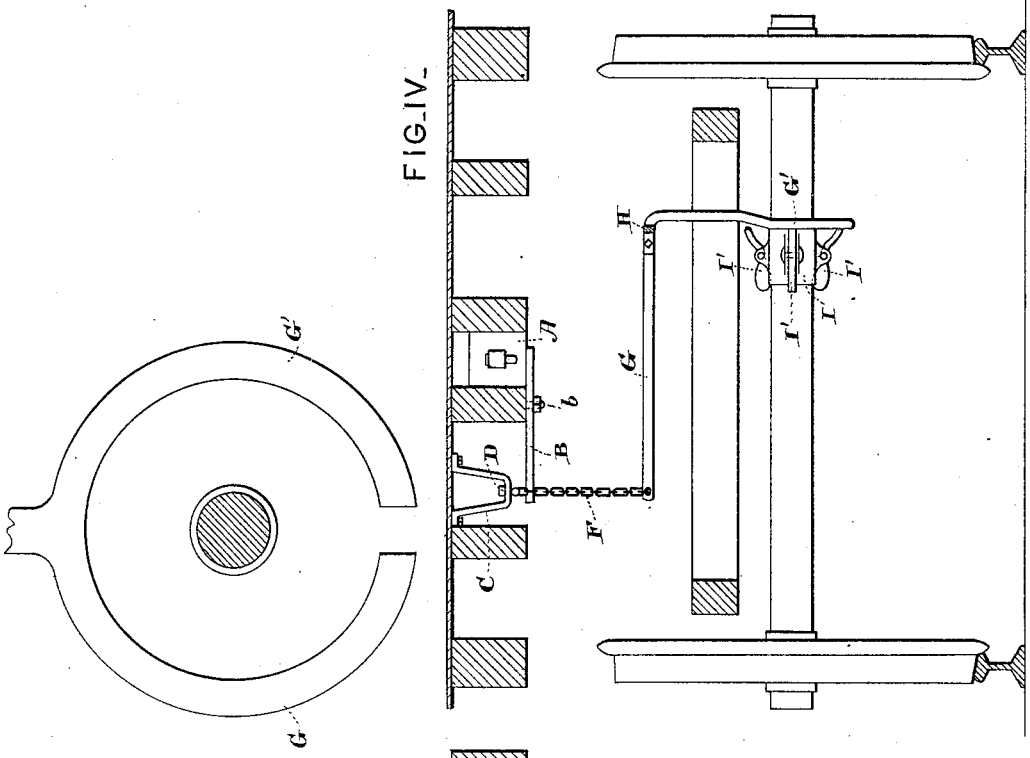


FIG. V.

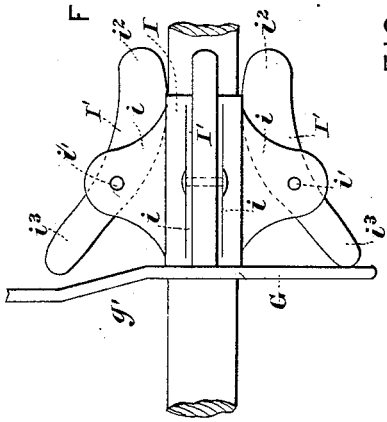
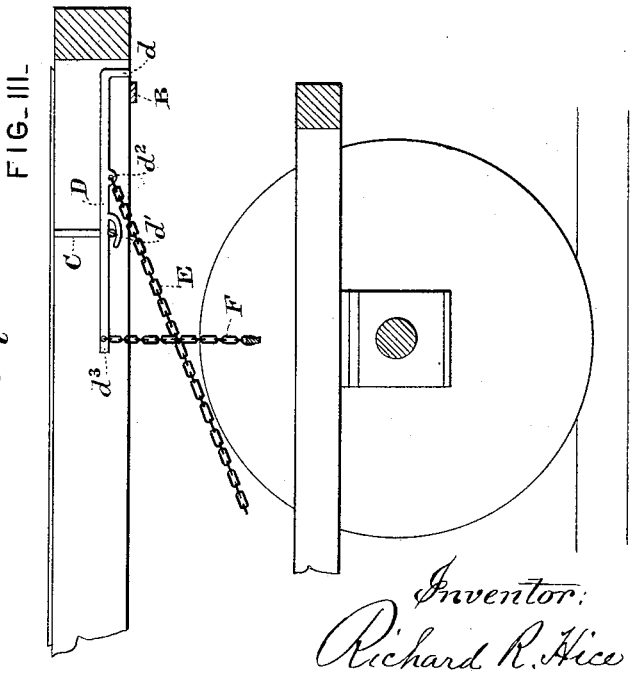


FIG. III.



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UNITED STATES PATENT OFFICE.

RICHARD R. HICE, OF BEAVER, PENNSYLVANIA, ASSIGNOR TO THE ROTE AUTOMATIC BRAKE COMPANY, OF MANSFIELD, OHIO.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 346,202, dated July 27, 1886.

Application filed April 27, 1886. Serial No. 200,323. (No model.)

To all whom it may concern:

Be it known that I, RICHARD R. HICE, of Beaver, county of Beaver, and State of Pennsylvania, have invented a new and useful Improvement in Automatic Car-Brakes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

This invention relates to that class of car-brakes in which the brake-shoes are automatically applied to and released from the truck-wheels in consequence of the inward and outward movements of the draw-bar or buffer, and more particularly to those automatic brakes in which the said movements of the draw-bar or buffer are rendered either effective or non-effective by the action of a centrifugal governor, mounted upon the truck-axle, and operating upon interposed connections to the draw-bar in such manner that when the car or train is traveling slowly the movements of the draw-bar are non-effective, while when the car attains an ordinary rate of speed the said movements of the draw-bar shall serve to apply the brakes.

The object of this invention is to greatly simplify the construction of the devices which are interposed between the movable draw-bar and the governor upon the truck-axle; and to this end the invention consists in certain peculiar and novel features of construction and arrangement, comprising a single pivotal lever operated directly by the draw-bar, a freely-moving lever connected directly with the brake-lever, and a pivoted lever acted upon directly by a centrifugal governor mounted upon the contiguous truck-axle, substantially as hereinafter described and claimed.

In order that the invention may be fully understood, it will be described with reference to the accompanying drawings, in which—

Figure I is an upper side plan view of a car-frame with my improvements applied. Fig. II is an under side plan view of the same. Fig. III is a vertical transverse section of the same on the line 3 3 of Figs. I and II. Fig. IV is a vertical longitudinal section of the same on the line 4 4 of Figs. I and II. Fig. V is a transverse vertical section of same on the line 5 5 of Figs. I and II.

In the said drawings, A designates a draw-bar, which is mounted in the bottom frame of a car, and the inward movement of which is against a buffer-spring, *a*, in the usual manner.

B designates a lever, which is pivoted at *b* upon one of the longitudinal timbers of the car-frame, and the outer or free end of which is curved, as shown at *b'*, for a purpose to be hereinafter described.

D designates a lever, which is supported by a U-shaped hanger, C, upon the bottom frame of the car in such a manner as to move freely in its support D. At its forward end this lever has a downwardly-turned portion, *d*, which, when the forward end of said lever is depressed, as hereinafter described, engages the outer end of lever B. On its under side the lever D has a pendent L-shaped lug, *d'*, which extends rearwardly beneath the hanger C, so as to properly confine said lever to the hanger, and at the same time to allow said lever to tilt and slide on the hanger. To a lug or stud, d^2, extending downward from the under side of the lever D, is connected the brake-chain E. The inner end, d^3, of lever D is connected by chain F to the outer end of an L-shaped lever, G, which is pivoted at *g* upon a hanger, H, which is mounted on the truck-beam. The opposite arm of this lever depends downward over the truck-axle, and is bifurcated at its end, as shown at G' G'. The arms G' are curved, as shown, to embrace the truck-axle contiguous to the centrifugal governor I thereon. This governor consists of a ring or collar, I, properly secured around the axle, and having a number of lugs or flanges, *i*, to which are pivoted, at *i'*, a corresponding number of arms I'. The end i^2 of each of the arms I' is heavier than the opposite end, i^3, and the latter extend toward the bifurcated end of lever G, so as to come in contact with its arms G'. The said arms G' also have a slight lateral curvature, as shown at *g'*, for a purpose to be hereinafter explained. A stop, *a'*, is formed upon the under side of the draw-bar head, and in such position as to come in contact with the inner end of lever B when the draw-bar is forced inward. It will now be seen that when the car or train is moving slowly the lighter end of the governor-arms will be held upward by the preponderant weight of their heavier ends, so that the outer end of lever G will, through the chain

F, hold the inner end, d^3, of lever D sufficiently depressed to hold its outer end upward out of engagement with the lever B. When, however, the speed of the train is increased, the heavier ends of the governor-arms will fly upward, drawing their lighter ends inward, and powerfully depressing the upper arm of lever G. This will, through chain F, draw the lever D into engagement with the lever B, and cause the ensuing inward movement of the draw-bar to pull upon the lever D through the medium of lever B, and, drawing said lever D outward upon its hanger C, will apply the brakes through a pull upon chain E. When the speed of the train is arrested by the brakes, the governor-arms will resume their normal position, and throw the lever D out of engagement with lever B, and thus allow the brakes to be released.

The device is simple and durable, and at the same time prompt and reliable in action.

Having thus described the invention, what is claimed as new therein, and desired to be secured by Letters Patent, is—

1. In an automatic car-brake, a pivoted and longitudinally-movable lever connected directly to the brake-chain and arranged to engage and disengage a pivoted draw-bar lever, substantially as described.

2. The combination, with a pivoted and longitudinally-moving lever connected directly to the brake-chain, of a pivoted L-shaped lever connected at one end with said longitudinally-moving lever and embracing at its opposite end the truck-axle contiguous to a governor thereon, substantially as described.

3. The lever G, having the curved arms G′, for embracing the truck-axle and to receive the thrust of a governor-arm, as described.

4. The combination, with the draw-bar and its pivoted lever B, of the hanger C, the lever D, having the hooked end d, L-shaped extension d', and lug d^2, the L-shaped lever G, having curved arms G′, pivoted at g upon the truck-frame, the chain F, connecting levers D G, and the brake-chain E, extending from lug d^2 of lever D, as set forth.

In testimony whereof I have hereunto set my hand this 24th day of April, A. D. 1886.

RICHARD R. HICE.

Witnesses:
WINFIELD S. MOORE,
JOHN M. SCOTT.