(No Model.) 2 Sheets—Sheet 1.

W. C. LOWE.

AUTOMATIC CAR BRAKE.

No. 459,141. Patented Sept. 8, 1891.

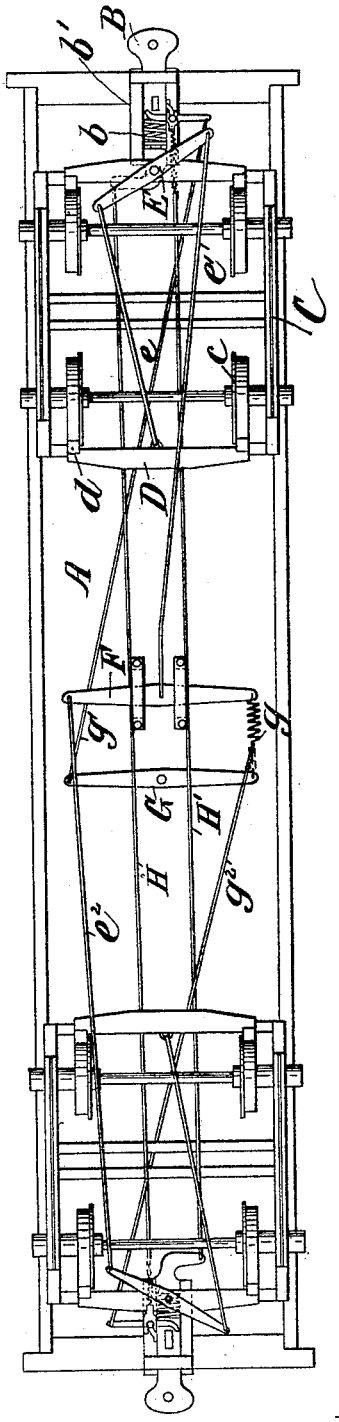

Fig. 1.

Witnesses:
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C. L. Sundgren

Inventor:
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(No Model.) 2 Sheets—Sheet 2.

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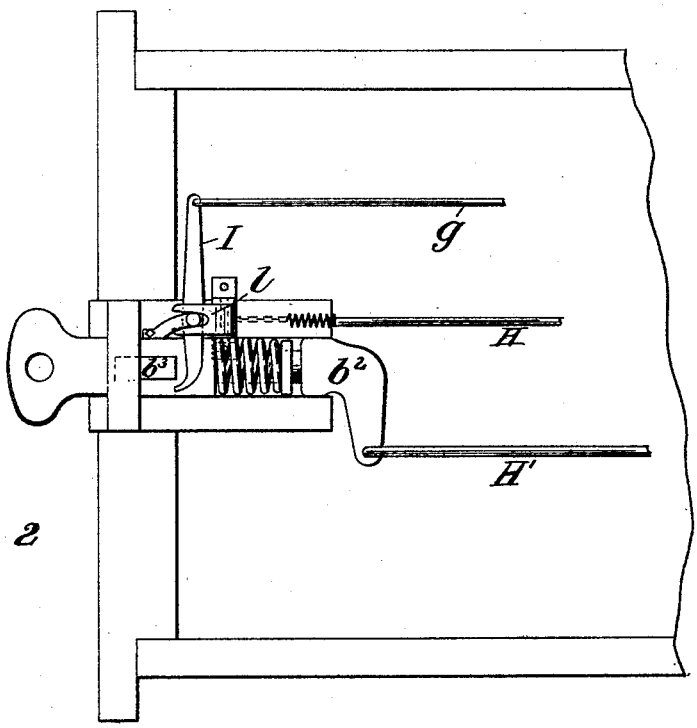

Fig. 2

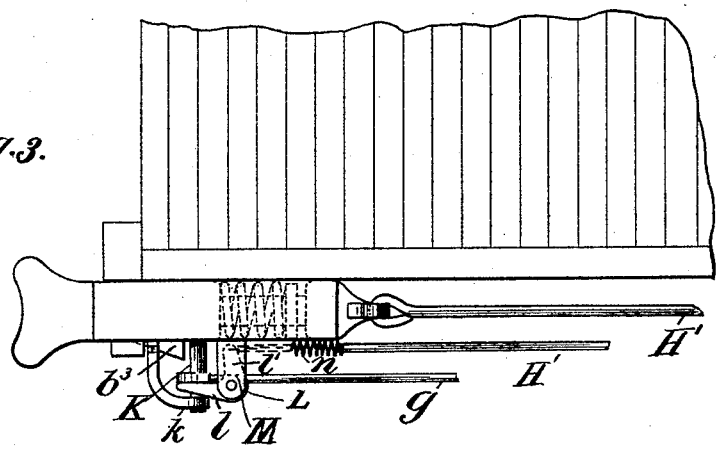

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM C. LOWE, OF HAPEVILLE, GEORGIA.

AUTOMATIC CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 459,141, dated September 8, 1891.

Application filed June 3, 1891. Serial No. 394,908. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. LOWE, of Hapeville, in the county of Fulton and State of Georgia, have invented a new and useful Improvement in Automatic Car-Brakes, of which the following is a specification.

My invention relates to an improvement in automatic car-brakes in which the momentum of the car or cars which make up a train is utilized to set the brakes and stop the train.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents a bottom plan view of a car with the brakes and brake-operating device in position. Fig. 2 is an enlarged bottom plan view of the brake-operating device at one end of the car, the truck and brakes being removed; and Fig. 3 is a view of the same in side elevation.

A represents the bottom of an ordinary freight-car provided with the combined draw-heads and buffers B, having a limited longitudinal movement against the tension of a cushioning-spring b, and held in position by suitable guards b', fixed to the under side of the car. Trucks are of the four-wheeled type, their frames being denoted by C and their wheels by c.

The brake-beams are denoted by D, and are arranged in the present instance in position to apply the brake-shoes d to the opposite sides of the wheels of the truck. The brake-beams at the end of the car have pivotally secured thereto levers E, one arm of which is connected by a rod e with the other brake-beam of that truck-wheel, the opposite arms of said levers E being connected by means of rods e' and e^2, respectively, with the middle and one end of a movable lever F, secured in position underneath the car intermediate of the trucks. A lever G is pivoted to the under side of the car and has one of its arms connected with the opposite end of the lever F by means of a chain and spring connection g, while the opposite end of said lever G is connected with a brake-operating device by a suitable connecting-rod g'. A corresponding connecting-rod g^2 connects the spring and chain connection g with a brake-operating device at the opposite end of the car.

The several parts thus far described are substantially the same as may be found in common use in connection with railway-cars, and their operation is well understood.

The inner end of each draw-head and buffer is provided with a lateral extension b^2 and has connected therewith a rod H, the purpose of which is to throw a brake-operating lever at the opposite end of the car into position to be operated by the inward stroke of the draw-head and buffer. Brake-operating levers I are pivotally secured to suitable supports at the under side of the car, one at each end, in such position that one of their arms will extend across the path of an abutment b^3, formed on the under side of the draw-head and buffer. The abutment b^3 is formed with an abrupt face on its inner end and tapers gradually toward the front, so that it may move freely toward the front without engaging the arm of the lever I. The opposite arm of each of the levers I is connected, the one by the rod g' and the other by the rod g^2, with the lever G and the spring and chain connection g, as hereinbefore referred to. From this it follows that if the lever I be located in such position that its arm will be engaged by the abutment b^3 on the draw-head and buffer as the latter is forced inwardly the said lever I will thereby be rocked in a direction to set the brakes. It is desirable, however, that said levers I should not be at all times in position to set the brakes under the inward movement of the draw-head and buffer—as, for example, when it is desired to back the train. To provide for this I have pivoted the lever I upon a depending pivotal bolt or stud K in such a manner that it may be raised and lowered on the stud, so as to bring it into and out of the path of the abutment b^3. A guard k, fixed at one end to the under side of the car and at the opposite end to the pivotal bolt K, serves to steady the pivotal bolt, and at the same time forms a stop to limit the swinging movement of the lever I. A bell-crank lever L is pivotally secured in a hanger M, fixed to the under side of the car, with the branches of its forked arm l in position to embrace the opposite sides of the pivotal bolt K and form a support for the lever I. The opposite arm l' of said bell-crank lever has a chain and spring connection n with

a rod H, connected with the lateral extension b^2 on the draw-head and buffer at the opposite end of the car, the corresponding arm of the bell-crank lever L at the opposite end of the car being connected by a rod H′ with the lateral extension b^2 upon the opposite draw-head. The several spring and chain connections serve to allow any thrust or undue strain which may occur to take place without liability of straining or injuring the parts connected thereby.

From the above construction it follows that when the train is in motion under a pull from the locomotive the several draw-heads and buffers will be thrown outwardly, and through the rods H H′ and the bell-crank levers L the levers I will be elevated upon the pivotal bolts K into a position to be engaged by the abutments b^3 upon the draw-heads. If now it be desired to stop the train, the locomotive first applying brakes will set back against the forward movement of the several cars, which under the momentum which they have acquired will impinge one after another against the one ahead, thereby suddenly forcing the draw-heads and buffers inwardly, and thereby swinging the levers I in a direction to set the brakes. If after having come to a standstill it be required to back the train, the several levers I may be released and allowed to drop out of engagement with the abutments on the draw-heads by simply starting up the locomotive sufficient to relieve them from the pressure under which they are held without producing a continuous strain upon the draw-heads as in advancing the train.

It is obvious that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the construction herein set forth; but

What I claim is—

1. The combination, with a system of brakes and a buffer having a limited longitudinal movement under the advance and retrograde movement of the train, of a brake-operating lever having a movement into and out of the path of the movement of the buffer and adjusting devices for said lever under the control of the buffer, substantially as set forth.

2. The combination, with a system of brakes and a reciprocating draw-head and buffer provided with an abutment, of a brake-operating lever having one of its arms in position to be moved into the path of the abutment on the draw-head and buffer, an elongated pivot on which the said brake-operating lever has a lateral adjustment, and a device for sliding the lever along the pivot, the said lever-adjusting device being under the control of the draw-head and buffer at the opposite end of the car, substantially as set forth.

3. The combination, with a system of brakes and the reciprocating draw-heads at the opposite ends of the car, of brake-operating levers located at the opposite ends of the car in position to be engaged by the reciprocating draw-heads and buffers, the said operating-levers having lateral movements on their pivotal bolts, and angle-levers for adjusting the said operating-levers into the paths of the reciprocating draw-heads and buffers, the said angle-levers being connected each with the draw-head at the opposite end of the car, substantially as set forth.

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Witnesses:
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ERNEST F. CLARKE.