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L. H. SHOLDER.

CAR BRAKE.

No. 259,930. Patented June 20, 1882.

Fig. 1.

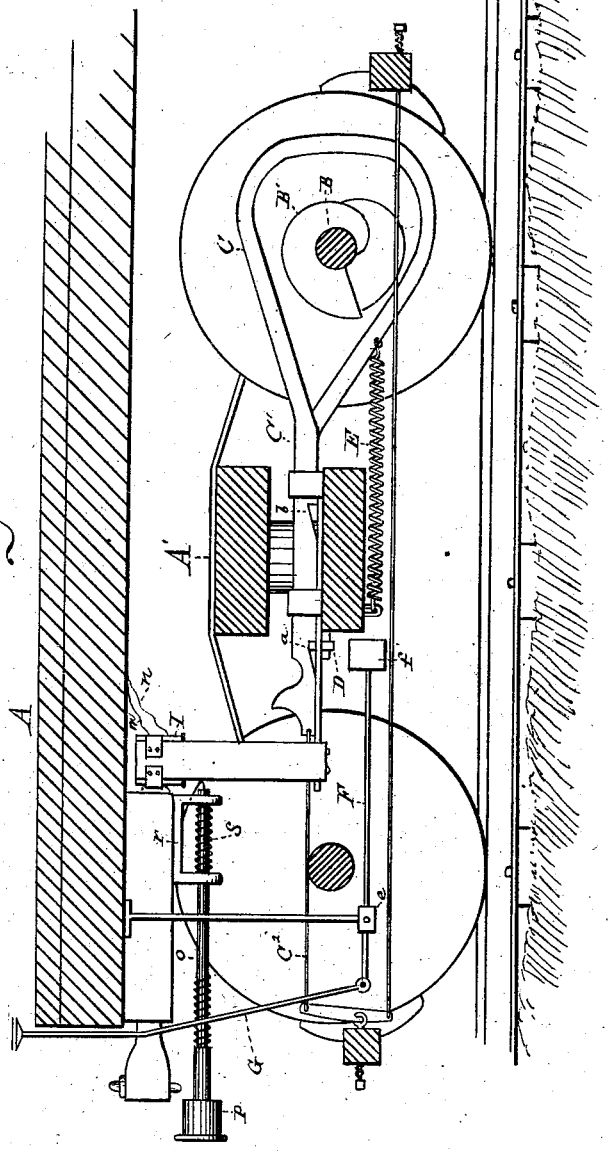
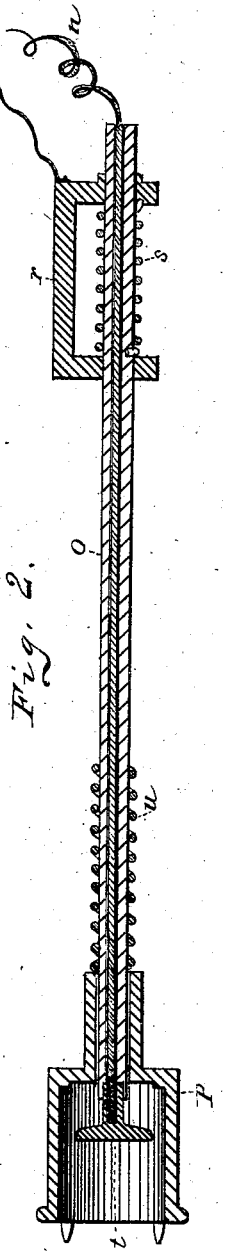


Fig. 2.



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(No Model.) 3 Sheets—Sheet 2.

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Fig. 4.

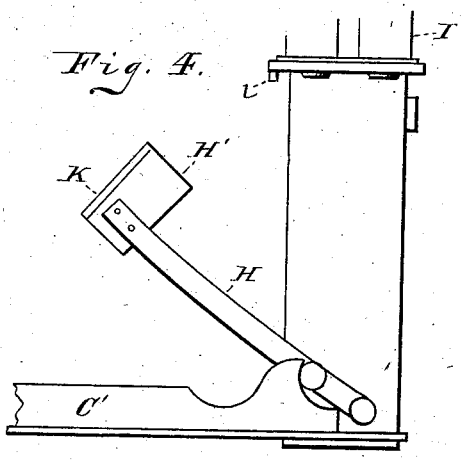


Fig. 3.

Fig. 5

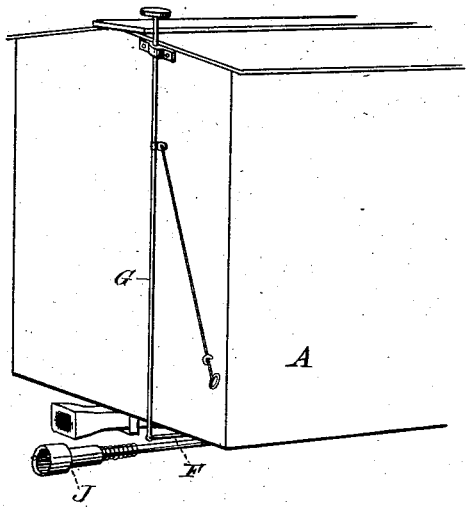


Fig. 6.

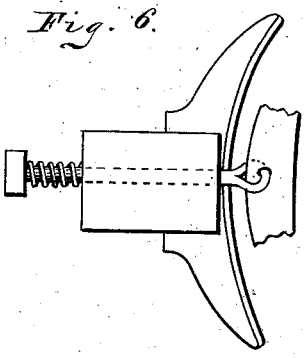
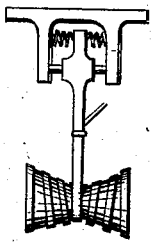


Fig. 11.



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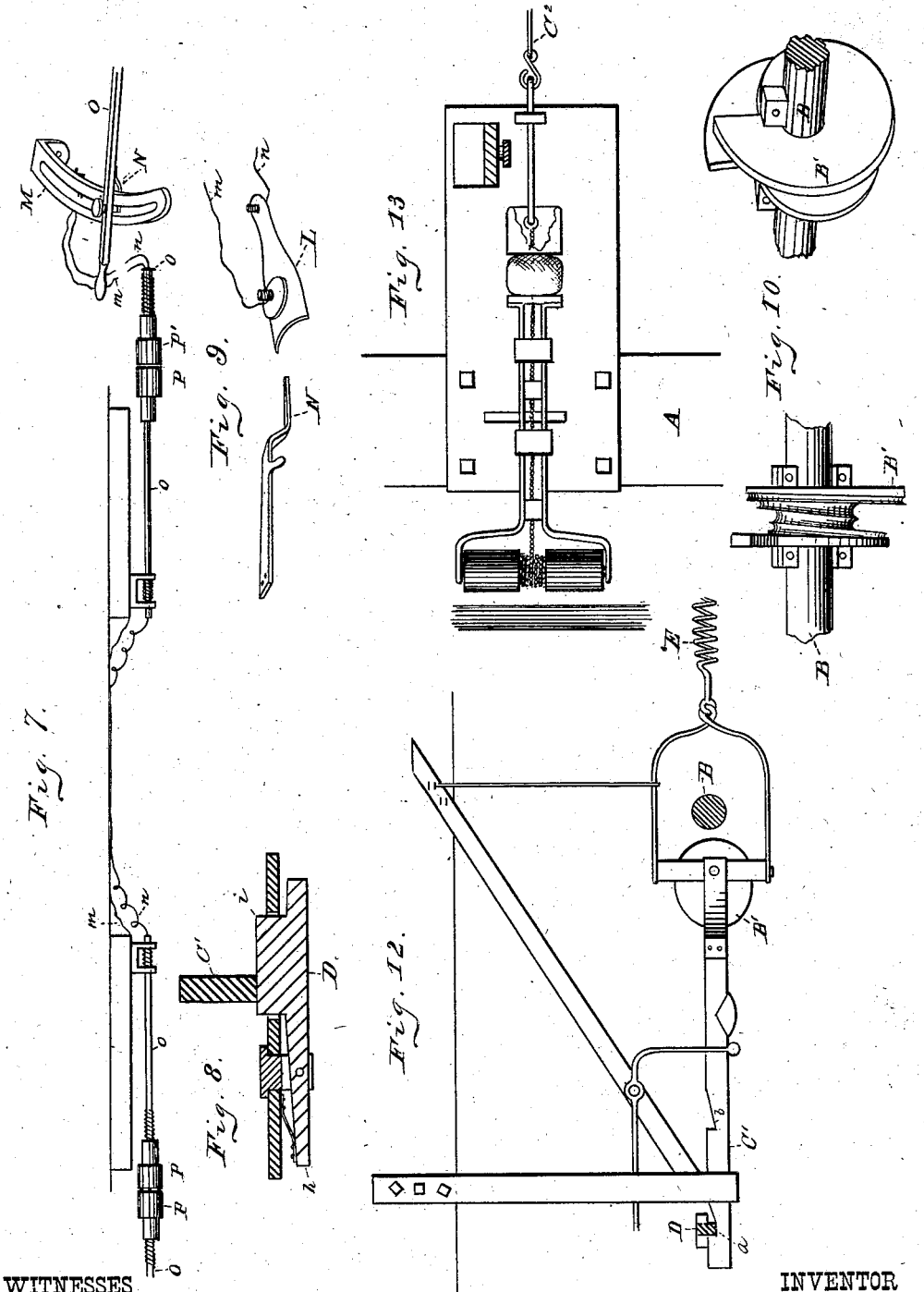

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UNITED STATES PATENT OFFICE.

LOUIS H. SHOLDER, OF CLEVELAND, OHIO.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 259,930, dated June 20, 1882.

Application filed February 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, LOUIS H. SHOLDER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Car-Brakes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to a device for braking cars; and it consists in the peculiar construction of the same, as will be hereinafter fully set forth and claimed.

In the drawings, Figure 1 is a side elevation, in section, of a car-truck embodying my invention. Fig. 2 is an enlarged longitudinal vertical section of a part of my device for working my brake by means of electricity. Figs. 3 and 4 are also enlarged views of other parts of my device used in connection with electricity for operating my brake. Fig. 5 represents a box-car with my brake attached. Fig. 6 represents an end view of a brake shoe and bar, showing the preferred manner of constructing the same when used in connection with my device. Figs. 7, 8, 9, and 10 are detached views of different parts of my device. Figs. 11, 12, and 13 are modifications of some of the parts.

A is a car platform or frame.

A′ are the trucks.

B′ is a cam which is securely attached to one of the axles B. Surrounding this cam B′ is a yoke, C, which is adapted to engage with the said cam and operate to set the brakes. This yoke C is provided with a shank, C′, to which the rod or chain C^2 is attached, which connects it to the brake or to the lever or levers which operate the brakes.

The shank C′ is provided with two ratchet-teeth, *a* and *b*, which engage with a pivoted pawl, D.

E is a spring, one end of which is secured to the frame of the truck and the other end to the yoke C. This spring acts, when the pawl D is dropped from the ratchet-teeth *a* and *b*, to cause the yoke C to come in contact with the cam B′, which is constructed as shown in Fig. 10—viz., in the form of a double spiral incline having a grooved periphery. Thus, no matter in which direction the cam may be revolving the yoke C is forced out.

F is a hammer or weighted lever, which is pivoted at *e* so that the weighted end *f* is directly opposite or under one end of the pivoted pawl D. The other end, *g*, is pivoted or secured to an upright rod or bar, G, which extends above the platform A, (see Fig. 1,) or it may extend to the top of a box-car, as shown in Fig. 5. Thus by depressing the rod or bar G the weighted end *f* of the lever F is caused to strike the end *h* (see Fig. 8) of the pawl D, which acts to release the shank C′, and the spring E acts to cause the yoke C to come in contact with the cam B′, said cam B′ in turn acting to force the yoke C out and with it draw the shank C′ and rod or chain C^2 and "set" the brake. Now, when the cam B′ has forced the yoke C as far as it can the pawl D engages with the tooth *b* and holds it in this position (see Fig. 1) until it is again released by means of the weighted lever F. When released from the tooth *b* the spring E pulls it back until the tooth *a* catches the pawl D. In this position the yoke C is held out of contact with the cam B′, and the brakes are "off." To again set the brakes, the rod G is depressed, which releases shank C′ and causes the yoke to come in contact with the cam B, and the above-mentioned operation is again repeated.

My invention may also be operated automatically by means of electricity, as shown in Figs. 2, 3, 4, 7, and 9, in which H is a weighted lever, pivoted at one end, and at the other end is provided with a weight, H′. This lever H is held in position by means of a piece of iron, *k*, hinged to the upper part of the weight H′, which acts as an armature to the electro-magnets I, and while a current of electricity is passing through electro-magnets I the armature *k* is drawn toward said magnets and held there as long as the current is passing. While being held in this position the weighted end of the lever is prevented from falling by a lug, *l*, with which the armature *k* comes in contact while being held to the electro-magnets. When the current is interrupted the armature drops down low enough to pass under the lug *l* and allows the weight to drop, which, strik-

ing the end *i* of the pawl D, disengages it from the teeth in the shank C′. Thus it acts in the same manner as the weighted lever F. This arrangement allows of the brake being operated automatically by the breaking of the current, as will be hereinafter fully set forth.

The weighted lever H is returned to its vertical position by means of a lug, *b′*, extending upward from the shank C′, which engages with a pin, *a′*, on the lever H, as shown in dotted lines, Fig. 3.

J is my device for coupling the electric wires *m* and *n* on a train of cars. This coupler J is formed as shown in Fig. 2—viz: *o* is a tube of brass or other good electric conducting metal. This tube *o* is provided on its one end with a cup, *p*, and at its other end it is held in place by means of a hanger, *r*, (which is secured to the frame of the car in any suitable manner,) and a spring, *s*, one end of which is secured to the tube *o* and the other end to the hanger *r*. This spring *s* allows of the tube *o* having a limited horizontal motion, and also prevents it from revolving far enough to twist off the wire *n*.

n is an electric conducting-wire, which passes through the tube *o*, being well insulated from the same, and ends in a disk, *t*. The other wire, *m*, connects with the hanger *r*, and from thence passes on to the cup *p*. Thus the disk *t* is the end of one wire and the cup *p* is the end of the other wire.

When the inner face of the cup *p* is held against the disk *t* by means of a spring, *u*, it forms a continuous line, and when the cup *p* is pushed or held back from the disk *t*—as is the case when a train is coupled, (see Fig. 7)—the connection is broken at this point, as shown, and the line *m* is continued on through the next cup, and from thence to the tube and hanger, and so on to the end of the train, the line *n* continuing through the disks *t t*, which now touch each other. The last coupling on the last car forms a connection through the cup *p* and disk *t*, thus forming a continuous line to the forward end of the train or engine, where the battery may be placed. At this end is also placed a switch, which consists of a swinging lever and a disk, one wire being connected to the pivoted end of the lever and the other wire being connected to the disk. This switch is insulated from and secured to the guide-segment M of a locomotive, and a spring-latch, N, is so attached to the lever O that when the engine is stopped suddenly, as in case of danger, this spring-latch will come in contact with the lower end of the switch-lever and disconnect the wires *m* and *n*, which, as said wires are connected to the electro-magnets, will release the weight H, which in turn, as before mentioned, will operate to set the brakes.

If a car should from any cause become detached from the train, the supply of electricity being cut off, the armature K falls and releases the weight H, which will also act to set the brakes.

Fig. 6 shows my preferred manner of connecting the brake-lever to the brake-bar viz., by means of an eyebolt and a spring. Thus constructed, it is adapted to take up any wear of the parts and allow of the brake being firmly set.

Fig. 11 is a modification of the cam and yoke, and is intended for use on street-cars. It consists of an upright bar, one end of which is pivotally attached to a hanger and the other or free end adapted to engage with the cam. It is also provided with a spring at its upper end, which allows of a lateral movement to accommodate it to the cam.

Figs. 12 and 13 are also modifications of the cam and yoke, and are sufficiently shown in the said figures. They are operated by means of friction with the axle.

I do not claim in this application the improved devices for coupling the electrical wires herein shown and described; but I reserve to myself the right to make a separate application for Letters Patent therefor.

What I claim is—

1. In a car-brake, the combination, with the brake-beams and connecting rods or chains, of a cam secured to or operated by the car-axle, a reciprocating yoke encircling the cam, a notched bar connected with said yoke, a pawl and means for actuating the same, and a spring for retracting the yoke, substantially as set forth.

2. In a car-brake, the combination, with the brake-beams and connecting rods or chains, of a double spiral cam secured to the car-axle, a reciprocating yoke encircling the cam, and means, substantially as described, for throwing the yoke into and out of engagement with said cam, substantially as set forth.

3. In a car-brake, the combination, with the brake-beams and connecting rods or chains, of a double spiral cam attached to the car-axle, a reciprocating yoke encircling the cam, a notched bar connected with the yoke, a pawl adapted to engage the notched bar, and a weighted lever for releasing the pawl, substantially as set forth.

4. In a car-brake, the combination, with a notched bar adapted to be actuated by means of a cam secured to a car-axle and while not in operation to be held out of contact with said cam by means of a pawl engaging the notches of said bar, of a hammer or weighted lever adapted to disengage the pawl and permit the bar to come in contact with the cam, substantially as and for the purpose set forth.

5. In a car-brake, the combination, with a bar, said bar being adapted to be actuated by means of a cam secured to a car-axle, of the teeth *a* and *b* and a pawl for engaging with said notches, one of the said teeth acting while engaged with the pawl to hold the bar out of contact with the cam while the brake is off and the other adapted to hold the bar out of contact with the cam while the brake is set and hold the brake set, substantially as and for the purpose set forth.

6. In a car-brake, the combination, with the

notched bar and yoke, of a weighted lever, F, and an actuating-bar, G, pivoted to one end of said lever and extending upward to a point above the car-platform or above the top of a car, substantially as and for the purpose set forth.

7. In a car-brake, the combination, with the brake-beams and connecting rods or chains, of a spiral cam attached to the car-axle, a reciprocating yoke encircling the cam and provided with a notched bar, a pawl adapted to engage said notched bar, a weighted lever, and an electro-magnet for actuating said lever, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS H. SHOLDER.

Witnesses:
JOHN GILKERSON,
DAVID O. ORONDORFF.