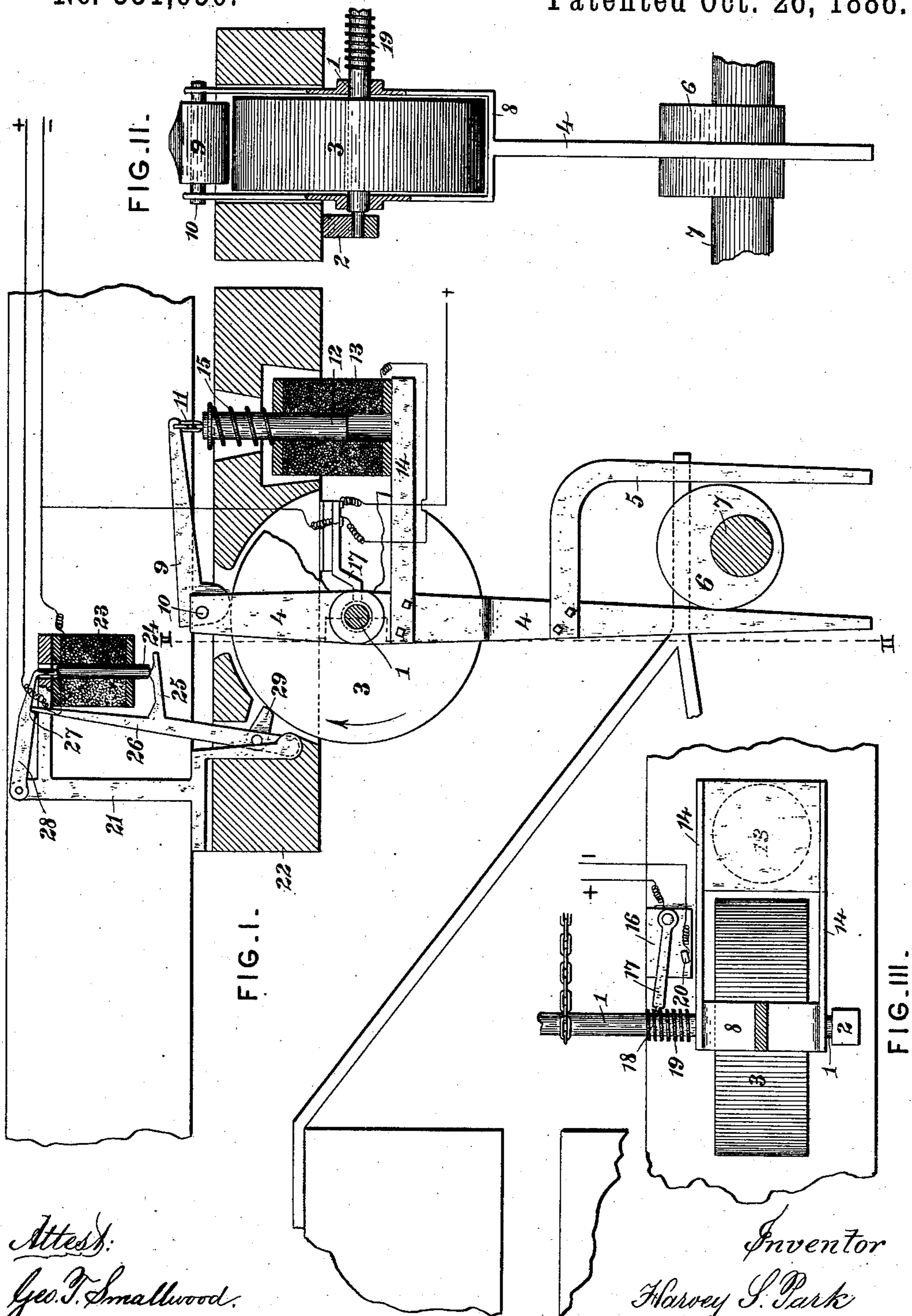


(No Model.)

H. S. PARK.  
ELECTRO MAGNETIC CAR BRAKE.

No. 351,650.

Patented Oct. 26, 1886.



Attest:  
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# UNITED STATES PATENT OFFICE.

HARVEY S. PARK, OF HENDERSON, KENTUCKY.

## ELECTRO-MAGNETIC CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 351,650, dated October 26, 1886.

Application filed February 11, 1886. Serial No. 191,630. (No model.)

*To all whom it may concern:*

Be it known that I, HARVEY S. PARK, a citizen of the United States, residing at Henderson, in the county of Henderson and State of Kentucky, have invented a new and useful Improvement in Electro-Magnetic Car-Brakes, of which the following is a specification.

My invention relates to those car-brakes in which the movement of the car-wheel axle is taken advantage of to apply the brakes; and the improvement particularly consists in the peculiar electro-magnetic devices for rendering the connection from the car-wheel axle to the brake-chain windlass effective.

In order that the invention may be better understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure I is a vertical sectional view of a portion of a car-truck to which my invention has been applied. Fig. II is a transverse vertical section on the line II II, Fig. I. Fig. III is an under side view of the same.

The brake-chain-winding windlass 1 is mounted in hangers 2, fixed to the draft-timbers of the car, and it is keyed to a disk or cylinder, 3, whose periphery may, if necessary to obtain sufficient friction, be milled or roughened.

4 is a lever, bifurcated, to pass on each side of the cylinder 3, and mounted loosely upon the windlass 1.

At bottom the lever 4 is provided with a stirrup, 5, to embrace the eccentric 6 on the car-wheel axle 7, and said stirrup is of sufficient height to allow for the vertical movement between the car truck and body. The bearings of the shaft upon the windlass 1 must also be of sufficient length to allow the lever slight vertical movement, so that when necessary the transverse bar or crotch 8 of the lever may be lifted so as to bear upon the (for the time being) under surface of the cylinder 3.

At its upper end the lever 4 bears a cam-lever, 9, pivoted at 10 and connected by link 11 with the movable core 12 of a hollow magnet or solenoid, 13, which is supported upon an arm, 14, rigid with the lever 4. A spring, 15, surrounding the core 12, keeps said core normally out of its solenoid when the latter is not in circuit. When the circuit through the solenoid 13 is completed, however, the core 12 is

drawn down into the same, and the cam-lever 9 and crotch 8 forced into contact with the periphery of the disk or cylinder 3, so that with every rotation of the eccentric 6 the said cylinder will be clutched, carried forward a short distance, and then released as the lever 4 makes its backward stroke.

The electric circuit to the magnet or solenoid 13 is through a cut-out, 16, on which 17 is a key, having nose 18 engaging with a screw-thread, 19, on the windlass 1 in such manner that after the brake-winding mechanism has been set in operation the key 17 will be forced to travel over the screw-thread 19 until on reaching the end of said screw-thread it will short-circuit the solenoid 13 by making contact with the button 20.

In order to prevent the backward rotation of the cylinder 3 while or after the brakes are being applied, I employ the following locking mechanism: 21 is a bracket bolted to a block, 22, fixed to the draft-timbers and hollowed out to receive the other parts of the brake-winding mechanism. A hollow magnet or solenoid, 23, is fixed to an arm of bracket 21, and its movable core 24 is supported on arm 25 of a lever, 26, pivoted at the bottom to the bracket 21, and carrying near its pivotal point a rounded projection, 29. This projection normally lies in contact with the cylinder 3, and is held against said cylinder with considerable force by the upper end of the lever 26 catching upon a shoulder, 27, on the dog 28, also pivoted to said bracket 21. The nose of the dog 28 is supported upon the core.

When it is desired to release the brakes, a circuit is completed through the solenoid 23, thus raising the core 24 and dog 28, releasing the lever 26, so that it is thrown away from the cylinder 3. When the circuit through the solenoid 23 is broken, the core 24 drops, restoring the lever 26 to its normal locking position.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In combination with a windlass to which the brake-chain is attached, a lever operated by an eccentric on the car-wheel axle, clamps carried by said lever, a solenoid or magnet, a movable core therefor connected to said clamp, and an electric circuit passing through said

magnet or solenoid, substantially as and for the purposes set forth.

2. In combination with a brake-chain and windlass, a magnet or solenoid, and connections with the car-wheel axle operated by said magnet or solenoid, a circuit through said magnet or solenoid, and a cut-out operated by the brake-chain windlass, substantially as and for the purpose set forth.

10 3. In combination with a brake-chain windlass, a disk or cylinder thereon, and mechan-

ism for operating said disk or cylinder from the car-wheel axle, a locking-lever having a projection normally bearing on said cylinder, and an electro-magnet or solenoid, armature, and circuit for releasing said locking-lever, substantially as set forth. 15

HARVEY S. PARK.

Witnesses:

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