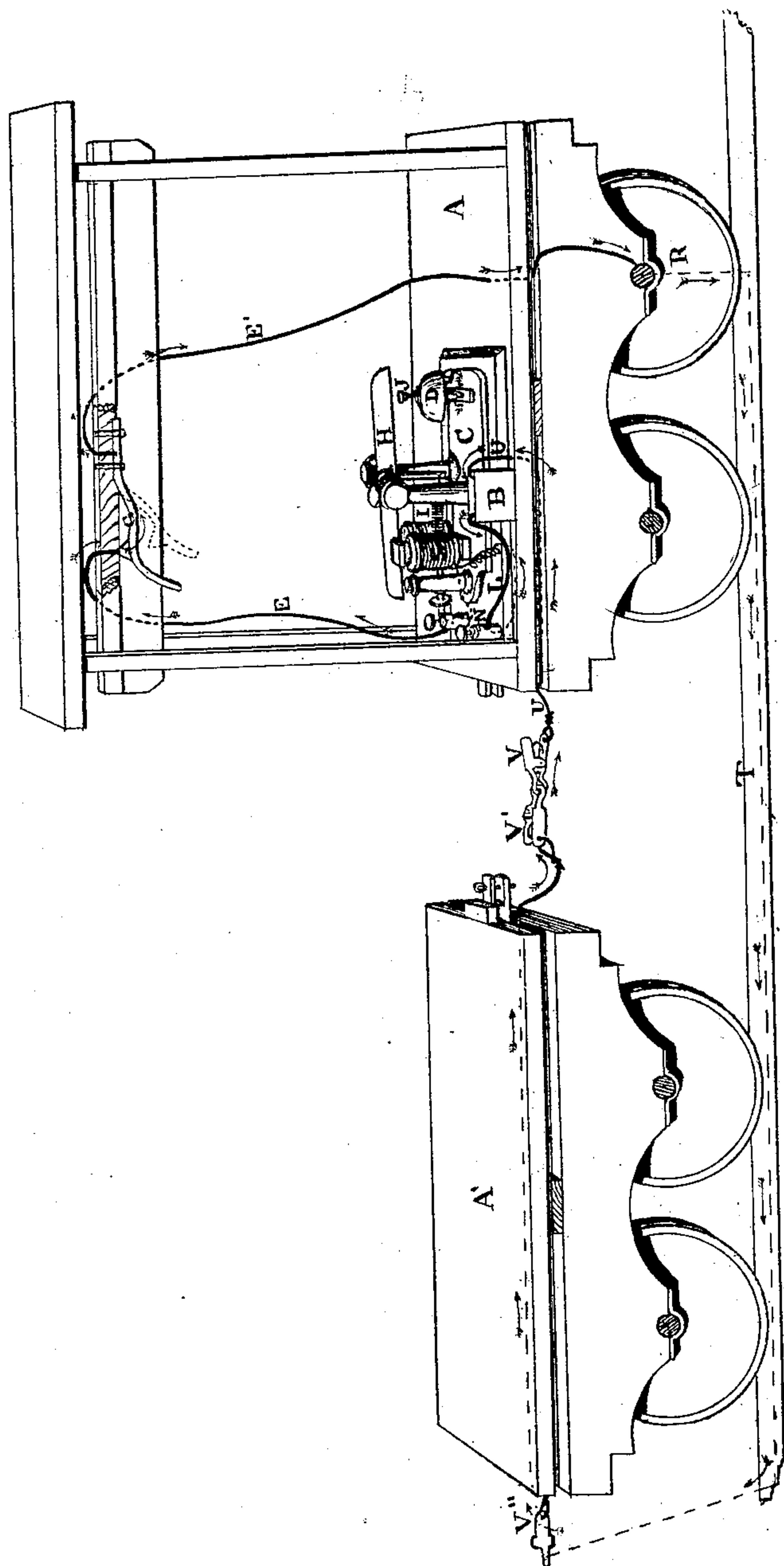


E. H. PURSELL.  
ELECTROMAGNETIC RAILROAD ALARM.  
No. 107,101. Patented Sept. 6, 1870.



Witnesses  
*J. H. Acator*  
*H. A. Daniels*

Edward H. Purcell  
by *W. B. Richards & A. M. Callum*  
Attorneys

# United States Patent Office.

EDWARD H. PURSELL, OF GALESBURG, ILLINOIS.

Letters Patent No. 107,101, dated September 6, 1870.

## ELECTRO MAGNETIC RAILROAD-ALARM.

The Schedule referred to in these Letters Patent and making part of the same

I, EDWARD H. PURSELL, of Galesburg, Illinois, have invented certain Improvements in Electro Apparatus for Ringing Railway-train Signal-Bells, of which the following is a specification.

### *Nature and Object of the Invention.*

The first part of my invention relates to the arrangement on a train on railway cars of an electro-magnetic battery, wires, and an ordinary telegraph-sounder, with a bell, one of the wires or poles passing from the battery through the train, and coupled between each car, with spring jaws, in such a manner that, if the train becomes broken, the spring jaws will be separated and the circuit broken and the bell or bells rang, all as hereinafter fully described.

The second part of my invention relates to the arrangement of keys or circuit-openers with the aforesaid devices, for the purpose of allowing the engineer or conductor to open the circuit whenever desired, thereby ringing the bell and dispensing with the bell-cord, as ordinarily used, all as hereinafter fully described.

### *Description of the Accompanying Drawing.*

Figure 1 is a perspective view of two cars of a train with my invention attached, the cars being shown more than the ordinary distance apart, in order to show the coupling.

### *General Description.*

A A' represent cars.

B represents a battery.

C represents an ordinary telegraph-sounder.

D is a bell under the free end of the armature-lever of the sounder C.

E E' are ordinary insulated telegraph-wires.

V are spring jaws.

G is a key or circuit-closer.

T is the railway-track or rails.

The operation of my invention is as follows:

A battery, B, is placed in any suitable position on the locomotive-car or on the way-car, which is always drawn at the rear end of freight trains, this invention being adapted more particularly for freight trains than for passenger trains.

An ordinary telegraph sounder, C, is also placed in each of said cars, with a bell, D, beneath the armature lever H, so arranged that, while the electric circuit is closed, the said armature lever will be held free from the bell, but the moment the circuit is broken the end of the lever H will be drawn down by the spring I, and striking the pin J, will ring the bell

D, of course, ringing simultaneously the bell in the way-car and on the locomotive.

One of the wires, L, is carried from the battery B direct to the post N of the sounder C.

The galvanic current through this wire, after traversing the coils on the magnet S, passes to the wire E, which, in turn, is connected with one end of the key G, the other end of the key G being connected with the wire E', which passes down and connects with the car-wheels R, said car-wheels and the track T forming the ground line for the circuit.

The wire U passes from the battery B down through the bottom of the car, and extending thence to the end of said car, and projecting, as shown, carries, on the end, a spring jaw, V.

Each car of the train, between the engine and the way-car, is provided with a wire underneath the floor thereof, which extends from each end of the car, as shown by the car A, and carries, on each end, a spring jaw, V' V".

When the train is made up, these spring jaws are hooked together at the adjacent ends of the cars, and, of course, complete the electric circuit.

Now, if the train is, by any means, broken in two, the spring jaws V will be jerked apart where broken, and, of course, the circuit thereby broken and the bells rang, both in the way-car and on the locomotive.

Or, if the free end of the key G is drawn down, the circuit will be broken and the bells rang, thus dispensing with the ordinary bell-cord.

The way-car and engineer's car are both provided similar to car A, with the exception that it is only necessary to carry a battery on the one car.

### *Claims.*

I claim as my invention—

1. The combination of a telegraph-sounder, C, battery B, wires E E' and L, and spring jaws V, with a train of railway cars, in such manner that the breaking of the train at any time will ring the train signal-bell, substantially as described and for the purpose specified.

2. The arrangement, substantially as herein described, of a battery, B, sounder C, bell D, wires E E' and L, and key G, with a railway train, A A', to operate in ringing the signal-bell, substantially in the manner and for the purpose specified.

EDWARD H. PURSELL.

Witnesses:

T. R. RICHARDS,

SAMUEL KERR.