

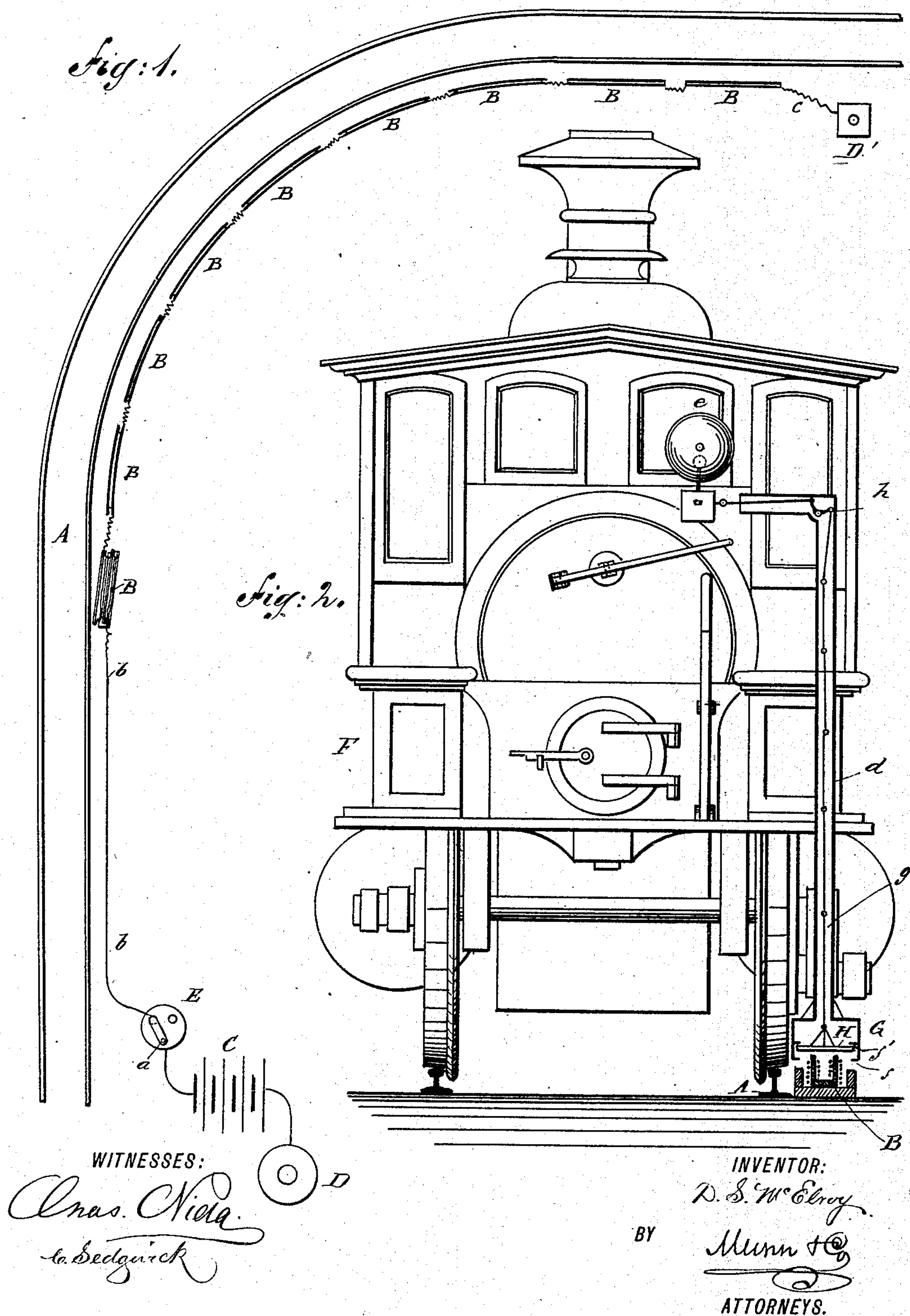
(No Model.)

D. S. McELROY.

ELECTRO MAGNETIC RAILWAY SIGNAL.

No. 413,410.

Patented Oct. 22, 1889.



UNITED STATES PATENT OFFICE.

DANIEL S. McELROY, OF NEW YORK, N. Y.

ELECTRO-MAGNETIC RAILWAY-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 413,410, dated October 22, 1889.

Application filed May 16, 1889. Serial No. 310,982. (No model.)

To all whom it may concern:

Be it known that I, DANIEL S. McELROY, of the city, county, and State of New York, have invented a new and Improved Electro-Magnetic Railway-Signal, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a plan view of a railway-track provided with a series of elongated magnets for operating a signaling apparatus carried by the locomotive or one of the cars; and Fig. 2 is a rear elevation of a locomotive furnished with my improved signaling apparatus.

Similar letters of reference indicate corresponding parts in both views.

The object of my invention is to construct a simple and reliable electro-magnetic railway-signal, which will enable an operator at a station to produce a signal upon the train, so as to notify the engineer or attendant.

The invention consists in the particular construction and arrangement of parts, as hereinafter fully described, and pointed out in the claims.

At the side of the track A is arranged a series of electro-magnets B, furnished with elongated polar extremities extending parallel with the railway-track. At a passenger or signaling station is located a battery C, or other suitable generator, one terminal of which is connected with the ground D, the other being connected with the pivot *a* of the switch E, the said switch being capable of directing the current of the battery C through the wire *b* to the magnets B, and from the said magnets through the wire *c* to the ground D' at a distant point.

As the magnets B are fully described in another application bearing even date herewith, it will be unnecessary to enter into a detailed description of them.

The locomotive F carries a box G, which is connected with a tube *d*, extending upwardly into the cab, and in the present case provided with a right-angled elbow which projects toward the alarm-bell *e*. The box G is provided with stops *f f'*, between which is placed the armature H, the movement of which is limited by the said stops.

The armature H is held within the influence of the magnets B by a chain *g*, which is preferably formed of long links to avoid kinking. The upper end of the chain *g* is connected with the bell-crank lever *h*, which in

turn is connected with the operating mechanism of the alarm-bell *e*; but I do not limit or confine myself to this exact form, as a straight tube may be used, and the alarm-bell may be placed on the side of the cab and connected directly with the chain *g*, omitting the bell-crank lever *h*.

As the locomotive and train pass along the portion of the track provided with the electro-magnets B, if a current be sent into said electro-magnets they will become energized and will draw down the armature H, so as to give an alarm upon the locomotive.

It is obvious that the switch E may be turned so as to cause the current to pass from the battery C continuously through the magnets B, or the current may be sent at will by manipulating the said switch.

My improved railway-signal is intended to be used as a block-signal, or as a signal at or in the vicinity of stations, in the place of the usual semaphore-signal.

By suspending the armature by a flexible connection, as above described, it will always assume a horizontal position, thereby permitting it to be within even influence of both poles of the magnet. It will also act quicker and require less power to pull it.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an electro-magnetic railway-signal, the combination of a series of electro-magnets arranged parallel with the track, an alarm device carried by the locomotive, a chain connected to the alarm device, and an armature connected to and supported by the chain within the influence of the magnets, substantially as described.

2. In an electro-magnetic railway-signal, the combination, with a locomotive and a series of elongated electro-magnets arranged parallel with the track, of the alarm *e*, carried by the locomotive, the tube *d*, secured to the locomotive and provided at its lower end with the box G, having stops *f f'*, the bell-crank *h* in the upper end of the tube and connected to the alarm, the chain *g*, connected to the bell-crank, and the armature H within the box G and connected to the lower end of the said chain, substantially as herein shown and described.

DANIEL S. McELROY.

Witnesses:

E. M. CLARK,
C. SEDGWICK.