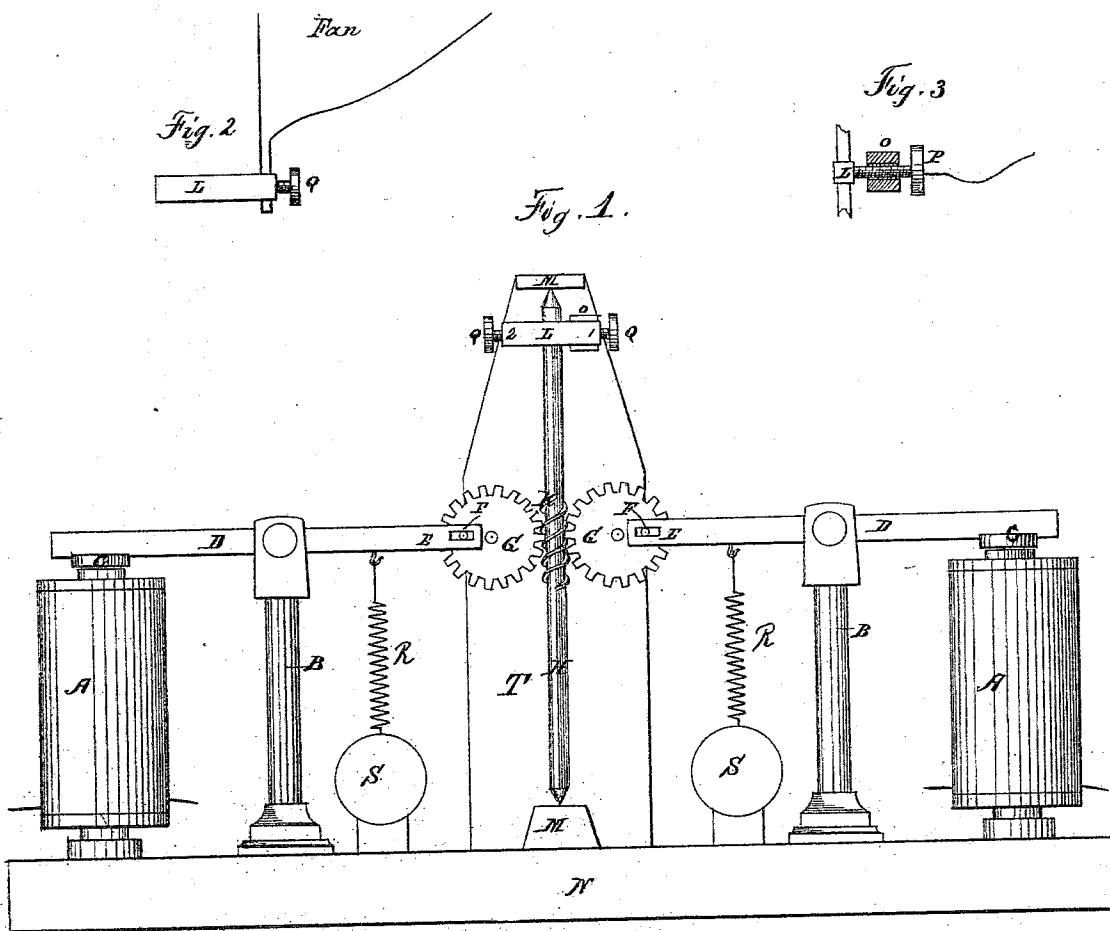


S. C. HENDRICKSON.

Improvement in Railroad Danger Signals.

No. 115,610.

Patented June 6, 1871.



Witnesses.

Stephen Chester
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UNITED STATES PATENT OFFICE.

STEPHEN C. HENDRICKSON, OF BROOKLYN, E. D., NEW YORK.

IMPROVEMENT IN RAILROAD DANGER-SIGNALS.

Specification forming part of Letters Patent No. 115,610, dated June 6, 1871.

I, STEPHEN C. HENDRICKSON, of the city of Brooklyn, E. D., county of Kings and State of New York, have invented certain Improvements in Railroad Danger-Signals, of which the following is a description:

My invention consists of a combination of two electro-magnets with armatures and armature-bars, the ends of the latter connecting with, and by their motion causing to rotate in opposite directions, two cog-wheels, the teeth of which engage with a screw, the axis of which stands in a direction perpendicular to the axes of the two cog-wheels. Thus the axis of the screw is caused to rotate by the rotation of the cog-wheels, and may thus cause a fan or signal to turn backward or forward, or to become exposed or hidden, as the armatures are caused to approach or recede from the faces of the magnets.

Referring to the accompanying drawing, Figure 1 is a side view of the entire apparatus, except the fan or signals, or electrical connections, in which—

N represents the base; A A, the two electro-magnets; C C, the two armatures; D D, the two armature bars; G G, the two cog-wheels; and K, the screw, with its shaft H. T represents one side of the metal frame, supporting cog-wheels, screw, &c.; B B, the posts in which the armature-bars are hung. It is evident that if the electric circuit be open or broken the springs R will cause the ends of the armature-bars furthest from the magnets to descend simultaneously, and as the pins F F, on the two cog-wheels, project through the slots E E on the armature-bars, the cog-wheels will be caused to rotate and communicate their rotation to the shaft H by means of the screw K. L is a bar of metal, through which the shaft H passes, being firmly fastened thereto. On this the signal or fan may be placed, being fastened thereto as shown in Fig. 2, and made fast by means of the screw Q. This figure requires no further explanation. O, in Figs. 1 and 3, represents a post of metal projecting from one of the frames T in such manner that, when the bar L stands in the position represented

in Fig. 1, it rests upon the top of said post O, and is prevented thereby from moving any further toward the right; but when the shaft turns toward the left until the bar L is in the position shown in Fig. 3, its other end, 2, strikes upon the end of the screw P, which passes through post O, being insulated therefrom, however, by a bushing of hard rubber or some other insulating substance. Thus the motion of the bar L, and, consequently, the shaft, is restricted to one-quarter of a circle; but the screw P has another office to perform. Being insulated, it forms one end of an electric circuit, the other end of which terminates in the bar L. Therefore, when the bar L is in the position represented in Fig. 3—that is, when the fan or signal is exposed—this circuit is closed; but when the bar L is in the position represented in Fig. 1, or in any other position than with one end firmly pressed against the end of the insulated screw P, the circuit will be open. Hence, if a small bell or other signal be placed in this latter circuit, near the switch or other apparatus, the movement of which is intended to affect the above-described fan or signal, the operator of the switch or other apparatus will be informed, by the ringing of said bell, if said fan has made the movement required. It is, therefore, evident that if the above-described apparatus be connected by the usual telegraphic wires with batteries to railroad switches, draw-bridges, gates, steering apparatus of vessels, or other moving apparatus, in connection with appropriate "circuit-breakers and closers," (all of which, being of common application, are not here further described,) that any movement of said switch or other apparatus may be indicated by signal at a distant point, and that the operator of said moving apparatus may be informed by another signal, near his own location, of the proper operation of the distant signal.

I do not claim the application of an electro-magnet with its appurtenances to railroad or other signals; nor do I claim the method of causing a shaft to revolve by

means of the movement of a cog-wheel in a screw formed upon said shaft, both being in common use.

Claim.

The combination of an endless screw or worm, operated by a toothed wheel or wheels,

with one or more electro-magnets, armatures, and armature-bars, substantially as and for the purpose specified.

STEPHEN C. HENDRICKSON.

Witnesses:

STEPHEN CHESTER,

VAN ZANDT DAWES.