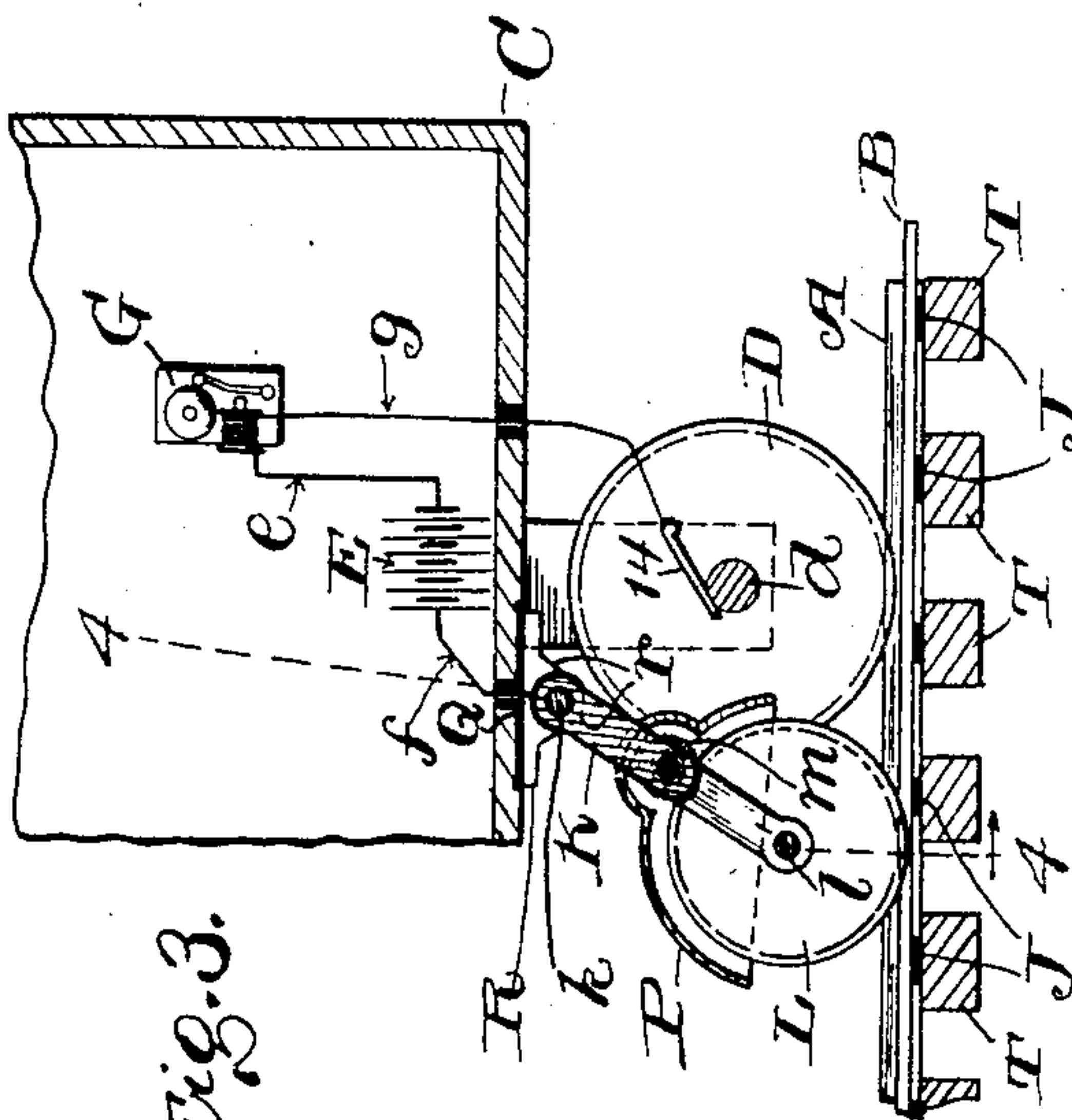
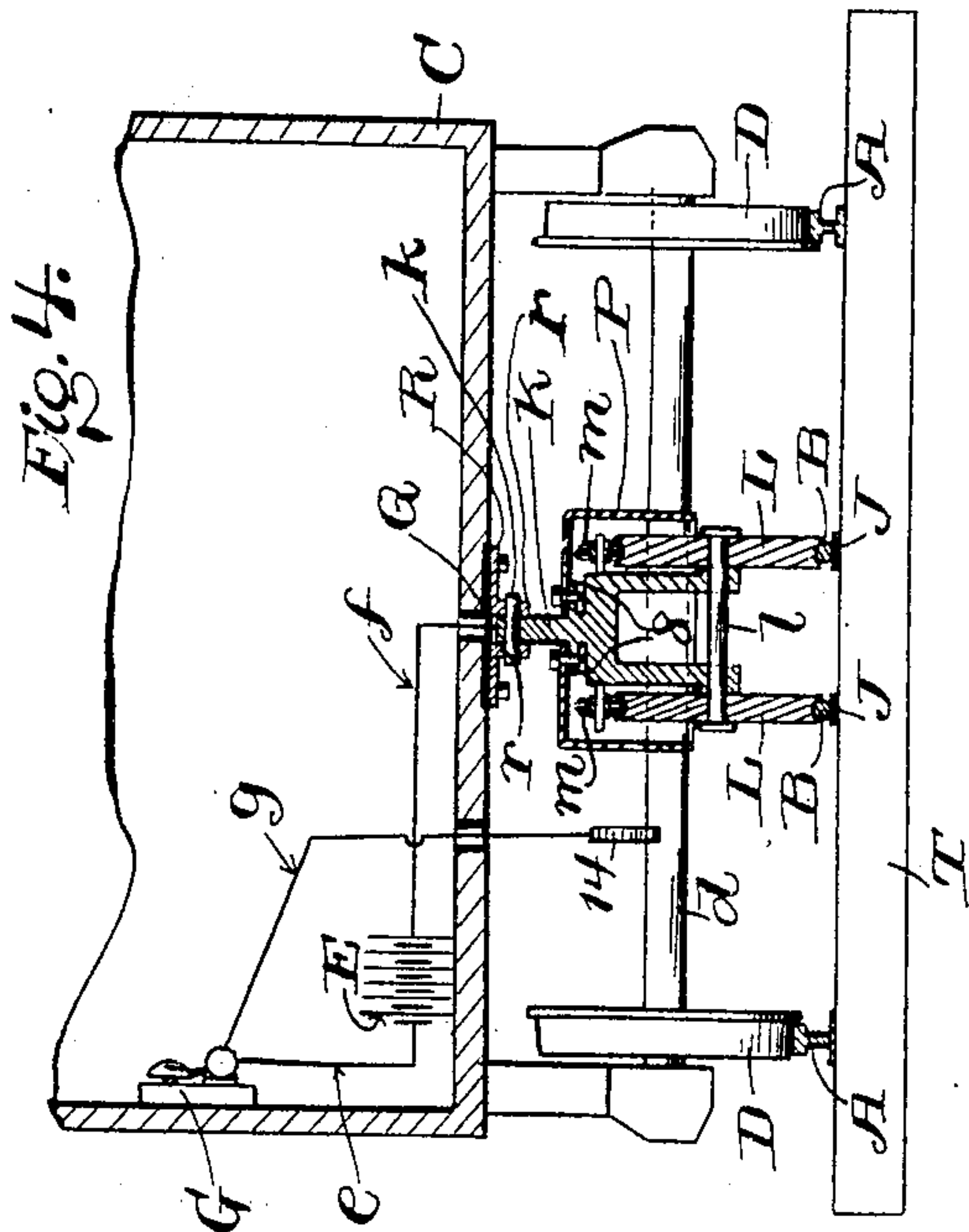
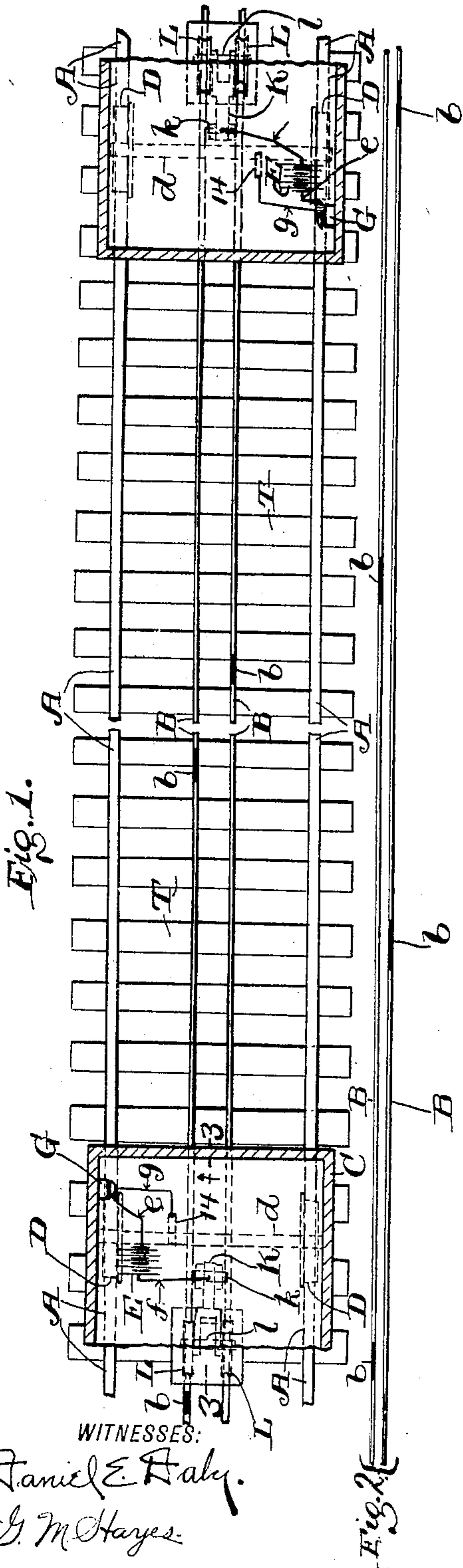


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PATENTED JAN. 23, 1906.

H. W. PARKES & S. L. VINCENT.
ELECTRIC RAILWAY SIGNAL.

APPLICATION FILED OCT. 17, 1904.



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ELECTRIC RAILWAY-SIGNAL.

No. 810,560.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed October 17, 1904. Serial No. 228,803.

To all whom it may concern:

Be it known that we, HELEN W. PARKES and STELLA L. VINCENT, citizens of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Electric Railway-Signals; and we 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.

This invention relates to improvements in electric railway-signals.

The primary object of this invention is to prevent collisions between locomotives, trains, or vehicles moving upon one and the same track.

Another object is the provision, in combination with a railway-track and vehicles mounted and movable on the track, of a trolley-track consisting of two rails arranged between and parallel with and extending longitudinally of the rails of the railway-track, with each rail of the trolley-track composed of conductor-forming rail-sections electrically insulated from the rails of the railway-track and arranged end to end, with adjacent rail-sections of each rail of the trolley-track electrically insulated from each other and from the rail-sections of the other rail of the trolley-track and alternating with the last-mentioned rail-sections, two conductor-forming trolley-wheels borne by each vehicle and engaging the different rails, respectively, of the trolley-track, and means whereby contact with one and the same rail-section of the trolley-track by trolley-wheels of two vehicles on the railway-track closes an electric circuit, including electric alarms, borne by the said vehicles, and thereby operates the said alarms.

With these objects in view, and to the end of realizing other advantages hereinafter appearing, this invention consists in certain features of construction and arrangement and combinations of parts, hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan, largely in section, illustrating the rails of a railway-track, two locomotives or vehicles moving upon the said track, and an electric railway-signal embodying our invention. Portions are broken away in Fig. 1 to reduce the size of the figure. Fig. 2 is a top plan of the trolley-track, drawn on a smaller

scale than shown in Fig. 1. Fig. 3 is a vertical section on line 3 3, Fig. 1, looking in the direction indicated by the arrow. Fig. 4 is a vertical section on line 4 4, Fig. 3, looking in the direction indicated by the arrow.

The drawings are largely diagrammatic.

Referring to the drawings, A represents the two parallel rails of a railway-track, which rails are mounted on wooden ties T in the usual manner to elevate the rails above the ground. A trolley-track is mounted on the ties between the rails A of the railway-track. The trolley-track is composed of two rails B, arranged longitudinally of and parallel with the railway-track. Each rail B of the trolley-track is composed of conductor-forming rail-sections arranged end to end and electrically insulated from the rails of the railway-track, with adjacent sections of the said rail electrically insulated from each other, as at b, and from the rail-sections of the other rail of the trolley-track. Preferably insulation J is interposed between the said trolley-track and the ties, as shown in Figs. 3 and 4. The trolley-track is shown detached in Fig. 2, wherein it will be observed that the rail-sections of each rail of the said track alternate with the rail-sections of the other rail of the track.

In Fig. 1 two vehicles C are shown mounted on the railway-track. Wheels D of each vehicle C engage the rails A of the railway-track, and the said wheels and the axle d, connecting the said wheels together, operate as conductors and are obviously, therefore, electrically connected with the said rails. Each vehicle C is provided with an electric source E—such, for instance, as an electric battery—which is diagrammatically illustrated. One terminal of the said electric source is electrically connected by a wire e, as shown more clearly in Figs. 3 and 4, with one of the terminals of an electric alarm G, with which the said vehicle is also provided. The other terminal of the said alarm is electrically connected by a wire g with a contact 14, which engages the axle d of the said vehicle. The other terminal of the aforesaid electric source is electrically connected with the trolley-track through the medium of wire f and a conductor-forming trolley-frame K, provided with two conductor-forming trolley-wheels L, which engage the different rails, respectively, of the trolley-track. The trolley-wheels L of each vehicle C are connected with one and the same axle l, which is borne by the frame K,

which is pivotally supported from the vehicle in such a manner as to render it capable of being swung in a vertical plane and longitudinally of the trolley-track. As shown in
 5 Figs. 3 and 4, the trolley-frame K is pivoted at its upper end, as at *k*, horizontally and transversely of the travel of the vehicle provided with the said frame, to depending lugs
 10 *r* of a horizontally-arranged plate R, which is secured to the body portion of the said vehicle and electrically insulated, as at Q, from the said body portion. The wire *f* connects, preferably, with the frame K. The said
 15 frame K, axle *l*, and trolley-wheels L are of iron or steel, and consequently operate as conductors in electrically connecting the rail-sections engaged by the said trolley-wheels with the said wire *f*.

By the construction and arrangement and
 20 combinations of parts hereinbefore described it will be observed that when two vehicles on the railway-track begin to make contact with one and the same rail-section of a rail of the
 25 trolley-track the electrical circuit including the railway-track, electric alarms G, and electric sources E of the said vehicles, the electrical connections between the said alarms and the railway-track, and the electrical connections between the electric sources and the
 30 trolley-engaging rail-section of the trolley-track is closed and the alarms of both vehicles operate. We would also remark that the trolley-frame K of each vehicle C is provided above the trolley-wheels L of the said frame
 35 with two parallel rotary brushes *m*, which are suitably supported from the said frame and arranged opposite to and in close proximity to the periphery of and above the different
 40 trolley-wheels, respectively. The brushes *m* keep the trolley-wheels in a clean condition. We would remark, furthermore, that the trolley-frame K of each vehicle is preferably provided with a dust-guard P, which is in the
 45 form of a hood covering the brushes *m* and trolley-wheels L of the said vehicle and resting upon and secured to lugs or seats 8, (see Fig. 4,) with which the aforesaid frame K is provided, at an elevation of the brushes.

The arrangement of the parts is preferably
 50 such that the trolley-frame K of each vehicle C extends between the trolley-wheels L of the said vehicle, and consequently between the brushes *m*, which are arranged above and close to the said wheels, as already indicated,
 55 and affords bearing for the axle *l*, connecting the said wheels together. This arrangement of the parts is advantageous in that it accommodates a convenient application of the brushes *m* of the said frame and facilitates
 60 access to the said brushes upon removing the hood or guard P.

What we claim is—

1. The combination, with a railway-track comprising two parallel rails, and vehicles
 65 mounted and movable on the said track, of a

trolley-track arranged between and parallel with and extending longitudinally of the railway-track and composed of conductor-forming rail-sections, with adjacent rail-sections
 70 of the trolley-track electrically insulated from each other and from the rails of the railway-track; a trolley-wheel borne by each vehicle and engaging the trolley-track; means whereby an alarm is automatically operated
 75 on each of two vehicles when the trolley-wheels of both vehicles make contact with one and the same rail-section of the trolley-track, and a suitably-supported rotary brush adjacent each trolley-wheel and arranged opposite and in close proximity to the periphery
 80 of the said wheel.

2. In combination, with a railway-track comprising two parallel rails; vehicles mounted and movable on the said track; a trolley-track consisting of two rails arranged be-
 85 tween and parallel with and extending longitudinally of the rails of the railway-track, with each rail of the trolley-track composed of conductor-forming rail-sections arranged end to end and electrically insulated from
 90 each other and from the rail-sections of the other rail of the trolley-track and alternating with the last-mentioned rail-sections, and each of the aforesaid vehicles being provided with the following: two conductor-forming
 95 trolleys engaging the different rails respectively of the trolley-track, a conductor-forming trolley-frame bearing and extending between and electrically connected with the said wheels; brushes supported from the said
 100 frame and arranged in close proximity to the peripheries of the wheels; a suitably-supported hood extending over the brushes and trolley-wheels; an electric source; an electric alarm; an electric connection between one of
 105 the terminals of the alarm and one of the terminals of the electric source, and the other terminal of the electric source and the other terminal of the alarm being electrically connected the one with the trolley-frame and the
 110 other with a rail of the railway-track.

3. In combination, with a railway-track comprising two parallel rails; vehicles mounted and movable on the said track; a trolley-track consisting of two rails arranged be-
 115 tween and parallel with and extending longitudinally of the rails of the railway-track, with each rail of the trolley-track composed of conductor-forming rail-sections arranged end to end and electrically insulated from
 120 rails of the railway-track, with adjacent rail-sections of each rail of the trolley-track electrically insulated from each other and from the rail-sections of the other rail of the trolley-track and alternating with the last-men-
 125 tioned rail-sections, and each of the aforesaid vehicles being provided with the following: two conductor-forming trolleys engaging the different rails respectively of the trolley-track, a conductor-forming trolley-frame
 130

bearing and extending between and electrically connected with the said wheels; brushes supported from the said frame above the wheels and arranged in close proximity to the peripheries of the wheels; a hood supported from the trolley-frame and extending over the brushes and trolley-wheels; an electric source; an electric alarm; an electric connection between one of the terminals of the alarm and one of the terminals of the electric source, and the other terminal of the electric

source and the other terminal of the alarm being electrically connected the one with the trolley-frame and the other with a rail of the railway-track.

Signed by us at Cleveland, Ohio, this 12th day of October, 1904.

HELEN W. PARKES.
STELLA L. VINCENT.

Witnesses:

C. H. DORER,
B. C. BROWN.