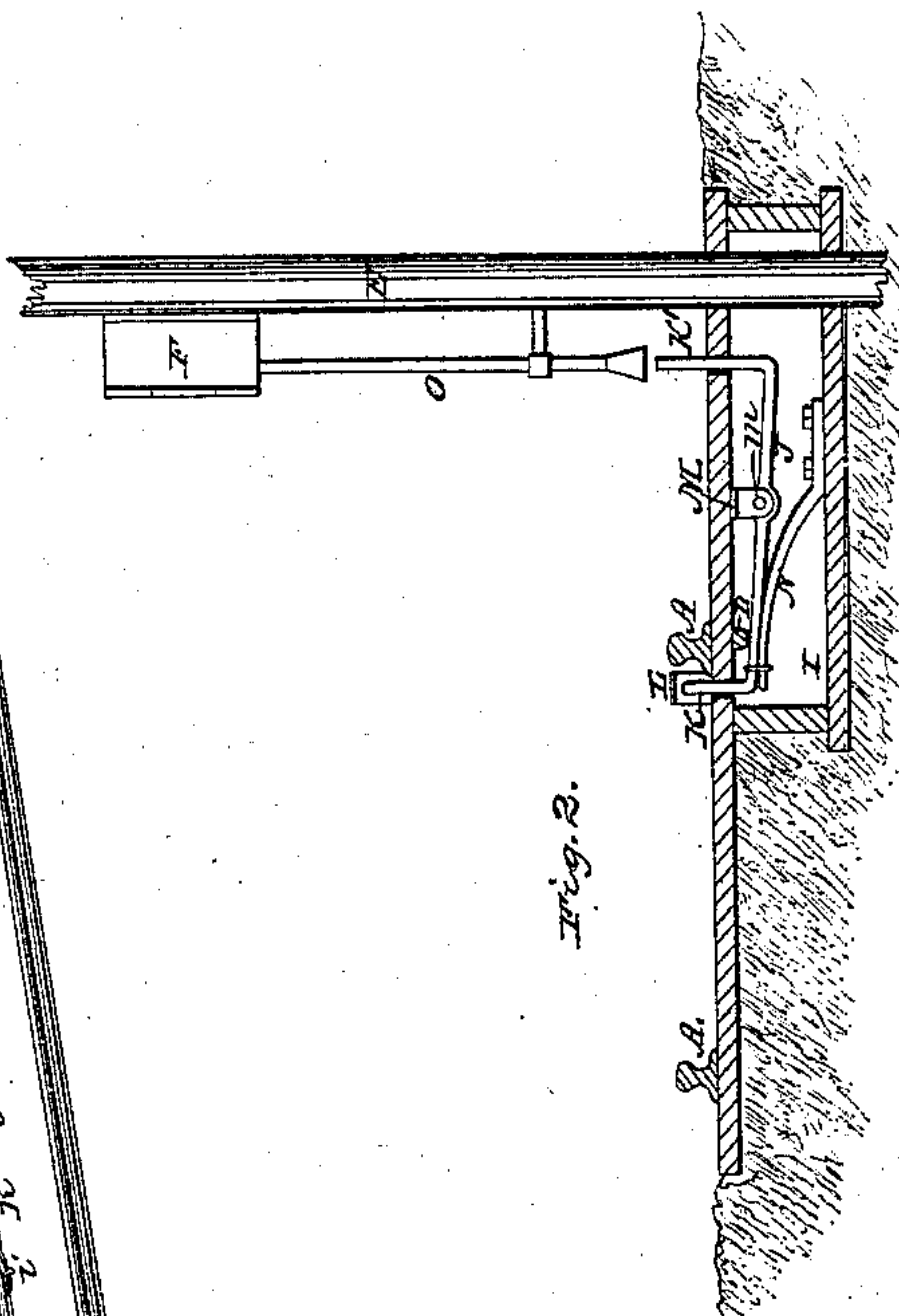
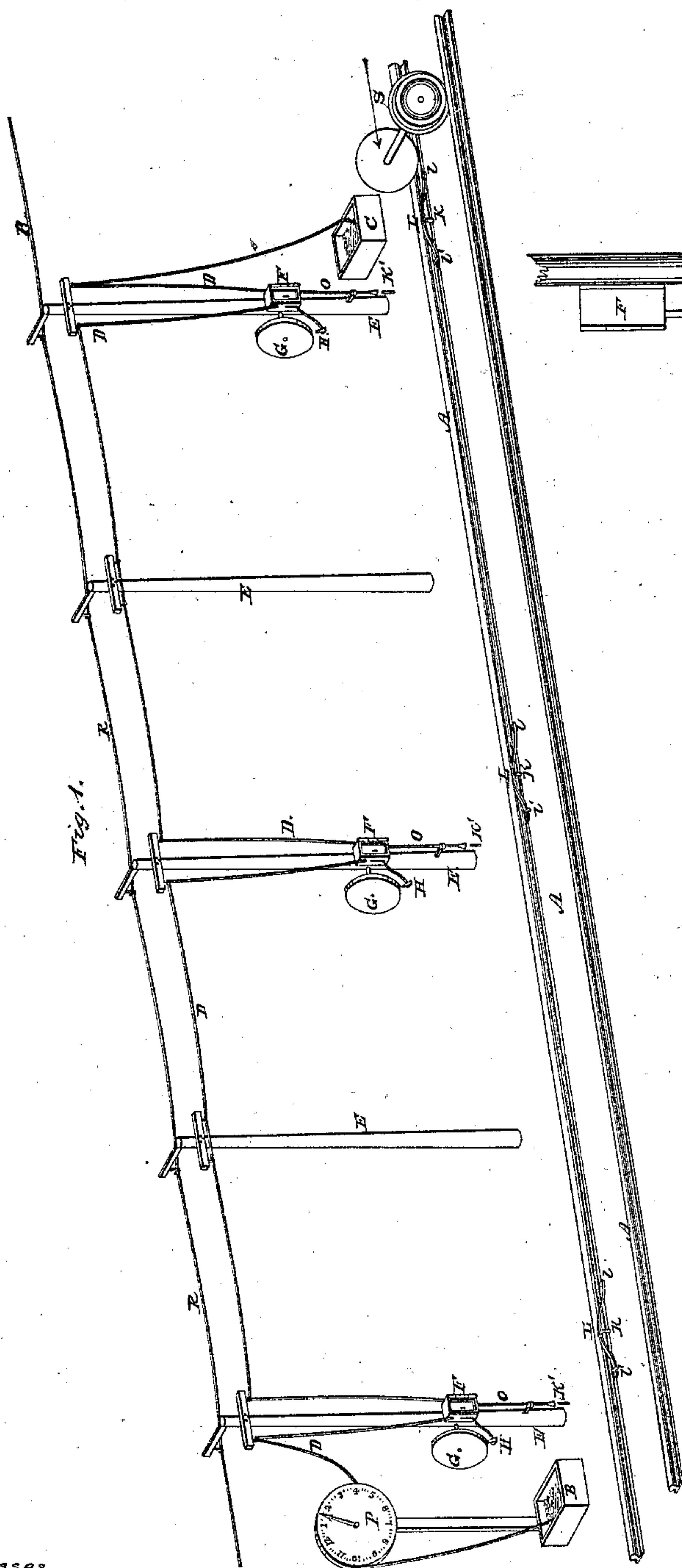


G. NATCHER.

## TELEGRAPHIC ALARM FOR RAILROADS.

No. 79,915.

Patented July 14, 1868.



Witnesses.

Chas. Blumer  
Jas. H. Layman

Inventor.

P. Hatcher  
By *[Signature]* 1/2/23

# United States Patent Office.

GABRIEL NATCHER, OF SIDNEY, OHIO, ASSIGNOR TO HIMSELF AND I. MARKS & CO.

*Letters Patent No. 79,915, dated July 14, 1868.*

## IMPROVEMENT IN RAILROAD-TELEGRAPH ALARMS.

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

### TO WHOM IT MAY CONCERN:

Be it known that I, GABRIEL NATCHER, of Sidney, Shelby county, Ohio, have invented a new and useful Telegraph-Alarm for Railroads; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

My invention relates to a reliable and effectual method of preventing collisions on railroads having only a single track, and I accomplish this desirable object by compelling each train to give notice of its progress by sounding an alarm on suitable gongs or bells, both in front and rear of the train; said gongs being placed from two to five hundred yards apart along the entire track, and, as they are struck by electrical apparatus operated by the train alone, there can be no false alarm given, and the lives of the passengers are not jeopardized by depending upon the conductors, brakemen, or other attachés of the road.

In the accompanying drawings—

Figure 1 represents a section of a railroad provided with my improved "telegraphic alarm."

Figure 2 is a transverse section taken at one of the conductor's alarm-boxes, the last view being drawn on an enlarged scale.

A represents a railroad-track connecting two stations, and these stations are furnished with galvanic batteries, B C, which supply the proper amount of electricity for operating the apparatus.

The batteries are connected by the wire D, which is supported upon poles E, the latter being placed alongside the railroad, and from two to five hundred yards apart, as may be found necessary.

The poles, E, are provided with conductors' signal-boxes, F, and gongs, bells, lights, or other alarm-apparatus, G; said gongs being struck at the proper moment by the hammers H, which are operated by suitable mechanism within the boxes F.

Communication between the batteries B C and the striking-apparatus contained in the boxes F is effected in the following manner:

A pit, I, is sunk in the ground between each post and the track, and these pits contain levers, J, having upwardly-projecting tappets K K', the one, K, which is situated just inside one of the tracks, being protected by a spring-guard, L, one end of which is fastened to a cross-tie at l, and the other end plays within the staple l'.

The lever J is pivoted at m to a hanger, M, and that end of the lever which projects towards the track is maintained in an elevated position by the spring N, which is sufficiently powerful to prevent the lever being accidentally depressed by an animal or any person walking along the track, and yet said spring will yield readily whenever the wheels of the locomotives or cars come in contact with the guard L or tappet K.

The tappet K is prevented from protruding too far above the road-bed by means of a stop, n, which limits the return of the lever J after it has been depressed by the wheels of the train.

Placed vertically above the tappets K' are rods, O, whose upper ends communicate with the striking-apparatus in the conductors' alarm-boxes F, and the lower ends of these rods are distant from said tappets about one-quarter of an inch.

P is an indicator, or annunciator, whose dial-plate has marked upon it the numerals 1, 2, 3, &c., which correspond with the number of stations on the entire length of the road, and the degrees which are placed between the numbers indicate the signal-boxes between the stations.

R is an independent wire, which may be used for the ordinary business of the road, and also for the purpose of lighting and extinguishing lamps, whenever the train enters or departs from a tunnel; the current of electricity which lights and extinguishes said lamps being automatically turned on and shut off at the proper moment by action of the car-wheels, or any part of the train, in the same manner that the gongs are struck, which operation will now be described.

The electrical current between the batteries B and C at the stations is supposed to be closed, and the train S is approaching in the direction indicated by the red arrow, and it will be seen that the moment the wheels



of the cars strike the guard L, it will yield, thereby depressing the tappet K, and elevating the one, K', so as to bring the latter in contact with the rod O. As soon as the tappet K' strikes the rod O, it raises it a sufficient distance within the signal-boxes F, so as to break or open the current of electricity, which liberates the striking-apparatus contained within said boxes, and the hammers H strike all the gongs between the two stations, and this action of said hammers occurs as rapidly as every wheel in the train strikes the tappet K'.

When the train arrives at the next post which is provided with an alarm-apparatus, the above-described operation of ringing the gongs is repeated, and it will be seen that, by this arrangement, the approaching train is made to sound a continuous alarm in advance and rear of itself, thus giving an unmistakable warning to any train which might be approaching from either direction.

The train not only sounds the gongs whenever it passes one of the posts having signal-boxes, but it also compels the hand on the indicator P to move one degree, by which means the attendants at the stations are enabled to know the exact location of the train.

The operation of ringing the bells has been described as effected by the car-wheels acting on the tappets, but it is evident that said tappets may be struck by any suitable projections on the top, bottom, or sides of the cars or locomotives.

In case an accident should happen to any portion of the train, the conductor will proceed to the nearest signal-box, and, by unlocking said box, and making a connection between the wires and his pocket-instrument, he can telegraph to both stations for assistance, and also indicate the exact point where the accident has occurred.

The boxes F being furnished with any approved form of electro-magnet and accessories, such as are commonly employed for giving signals, require no specific description here.

The operating-lever J has been described as acted upon by a spring, N, but the spring may be omitted and a weight substituted for it, or a self-acting gravitating lever may be employed, without either spring or weight.

I claim herein as new, and of my invention—

1. A telegraphic alarm for railroads, which is capable of indicating at each station the progress of the train along the track, and also of giving a suitable alarm along the entire track, both in front and rear of said train, by means of the signal-boxes F, gongs G, hammers H, levers J, tappets K K', and rods O, or their mechanical equivalents, the whole being arranged and operating substantially as herein described, and for the purpose set forth.

2. In combination with the elements F, G, H, J, K, K', and O of the preceding clause, I claim the spring-guard L, for the object set forth.

3. In combination with the elements F, G, H, J, K, K', and O of the first clause, I also claim the indicator P, for the purpose herein described.

In testimony of which invention, I hereunto set my hand.

GABRIEL NATCHER.

Witnesses:

GEO. H. KNIGHT,  
JAMES H. LAYMAN.