

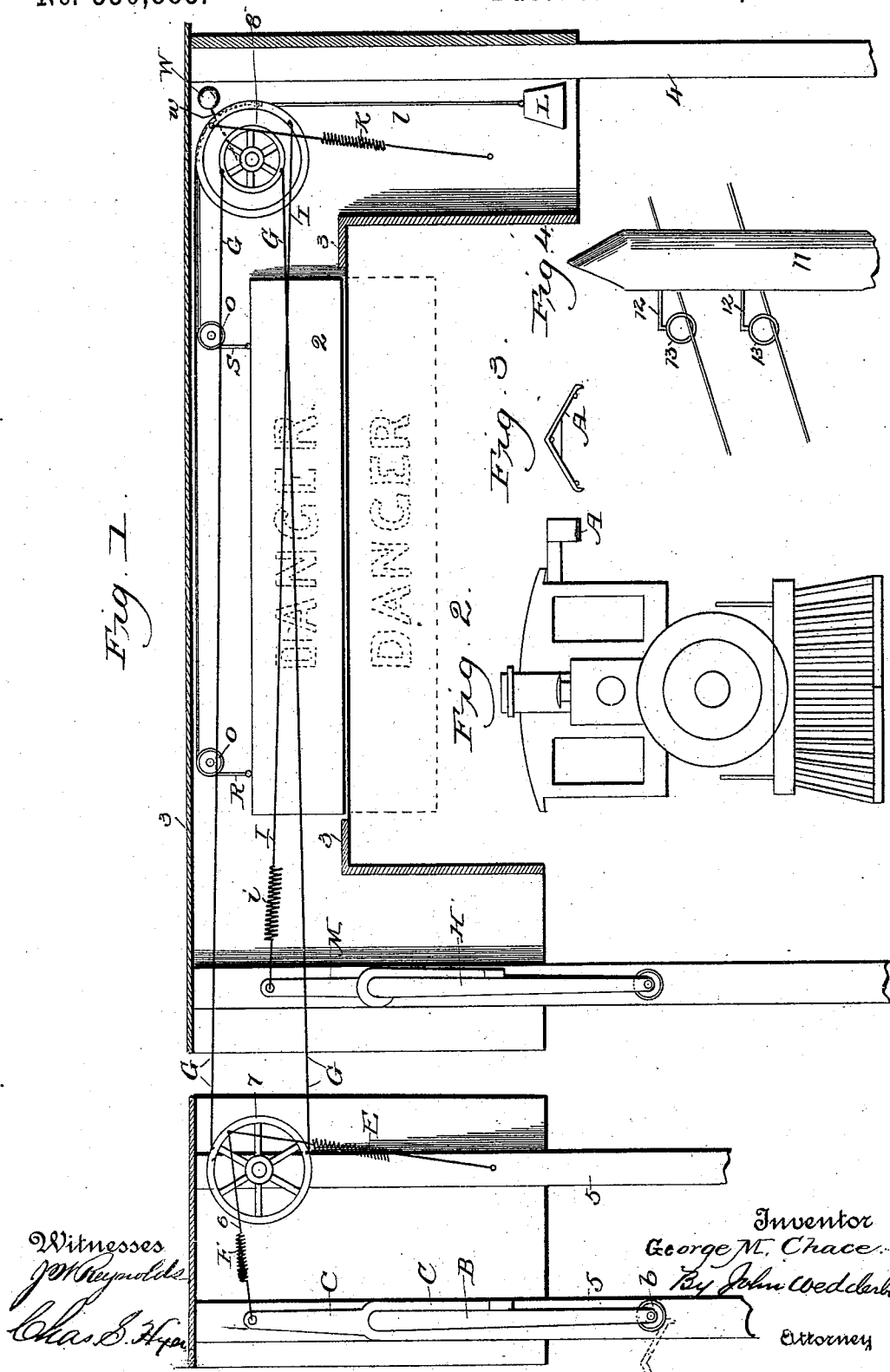
(No Model.)

G. M. CHACE.  
DANGER SIGNAL.

No. 530,883.

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Fig. 1.



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# UNITED STATES PATENT OFFICE.

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## DANGER-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 530,883, dated December 11, 1894.

Application filed March 23, 1894. Serial No. 504,803. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE M. CHACE, a citizen of the United States, and a resident of Somerset, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Danger-Signals; and I 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 appertains to make and use the same.

This invention relates to danger signals, especially designed for railway crossings, and aims to provide a device of this character which will be simple in construction, efficient and easily operated by mechanical appliances from an approaching train, both to display the signal, and return the same to a normal position.

The further purpose of the invention is the provision of a mechanically operated signal device which will not have its movement impaired by ice or snow, and which when not displayed will be housed and protected from the weather, the signal being displayed only at such times when a train is approaching the crossing.

The improvement consists of the novel features and the peculiar construction and combination of the parts which hereinafter will be more fully described and claimed, and which are shown in the accompanying drawings, in which—

Figure 1 is a diametrical view of the invention in side elevation. Fig. 2 is a front view of a locomotive engine, showing the relative position of the trip for actuating the signal. Fig. 3 is a detail view of the tappet. Fig. 4 is a view of the supporting brackets.

In the drawings, the numeral 2 represents the signal which is preferably a board, suspended at its ends by cords R and S which pass over guide rollers O. This signal normally is inclosed by a housing 3, composed of parallel boards closed at their upper end and suspended between posts or uprights 4 furnished on each side of the road way or crossing. When a train is approaching, the signal 2 drops below the lower edge of the housing 3, and warns persons of the approach of a train.

At a proper distance from the crossing, say about an eighth or a quarter of a mile, a trip

device is disposed to be actuated by the approaching train to display the signal. This device comprises a post 5 on which is mounted a lever C, which is connected at its upper end by a cord or cable 6, with a wheel 7 suitably mounted on a frame attached to the said post 5.

A yielding connection F, is interposed in the cord or cable 6 to prevent breakage of the parts when the lever C is suddenly operated from the moving train. A second lever B is mounted at its upper end on the post 5, and its lower end is provided with a roller b which is engaged by the tappet A, which is attached to the locomotive or other part of the moving train.

A spring E attached at one end to a portion of the frame at the upper end of the post 5 and at its opposite end to the wheel 7, to one side of a vertical line passing through the axes of the said wheel, serves to hold the latter in either of its two positions. By having the levers B and C independently mounted, the lever B can be vibrated by a train passing backward and forward without operating the signal after the same has been displayed.

A wheel 8, similar to the wheel 7 is mounted on one of the posts 4 at the crossing, and is connected at diametrically opposite points by cords, cables or rods G. G., with the wheel 7 at corresponding points, so that the two wheels 7 and 8 will move in unison as the signal 2 is housed or displayed. A spring K connects the wheel 8 with a portion of the supporting frame for a purpose similar to the spring E, that is to hold the wheel 8 in either of its two positions to retain the signal in its exposed or hidden position. A weight L, is connected by a cord I, with the wheel 8, and serves to counterbalance the signal 2, so that to operate the device, it is only necessary that the tappet A, overcome the inertia of the actuating device. A gong or alarm W, is suitably supported to the frame work, and is connected by cord w with the wheel 8 so as to be sounded when the signal is lowered, to warn persons both audibly and visually.

Levers M and H, similar in construction and arrangement to the levers C and B, are mounted on the opposite post 4 at the crossing, and the lever M is connected by cable or cord l with the wheel 8 for the purpose of returning the signal within the housing when

the train reaches the crossing and passes the same. A spring *i*, is interposed in the connection I, to prevent breaking of the parts on the sudden operation of the lever H. The tappet A is oppositely inclined on its active face so as to actuate the levers when the train is moving in either direction. This tappet will be suitably disposed on the moving train so as to strike the lower end of the operating levers, and will be sufficiently high from the road bed to prevent injurious contact with objects along the road.

The construction herein shown and described is the preferable form, and is adapted for operating the signal from one direction only. Obviously, minor changes may be made in adapting the invention to different locations and stations without departing from the spirit of the invention.

In order to operate the signal from a train passing in opposite direction, the operating levers will have to be duplicated and located on the opposite side of the track, it being understood that suitable connections will be provided whereby same will have operative connection with the signal 2. To support the connections G. G. at intermediate points, posts 11 will be provided and have brackets 12, provided with eyes 13 through which the said connections G. will move freely in the operation of the invention.

Having thus described the invention, what is claimed as new is—

1. The combination with a vertically movable signal, a counterbalancing device, of an actuating lever located a proper distance from the signal, a wheel having connections with

the said lever, connections between the said wheel and signal for operating the latter, and a spring for holding the said wheel in either of its two positions, substantially as set forth.

2. The combination with a vertically movable signal, a wheel, a counterbalancing weight attached to said wheel connections for attaching the signal to the said wheel, an operating lever located a proper distance from the signal, a second wheel having connection with the said lever, springs connected to said wheels and connections for uniting and causing the said wheels to operate in unison, whereby the signal and operating lever will move together, substantially as set forth.

3. In combination, a housing and vertically movable signal hidden from view within the said housing, a wheel, connections between the said signal and wheel, a weight and spring for operating on the said wheel, an audible signal operatively connected with the said wheel, a second wheel located a proper distance from the signal and connected at opposite points with corresponding points of the first mentioned wheel, two sets of levers, each composed of independent parts and having separate connection with the said wheels, substantially in the manner set forth for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE M. CHACE.

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