

(No Model.)

C. M. E. WENDNAGEL.
ALARM FOR USE ON CABLE RAILWAYS.

No. 433,667.

Patented Aug. 5, 1890.

Fig. 1

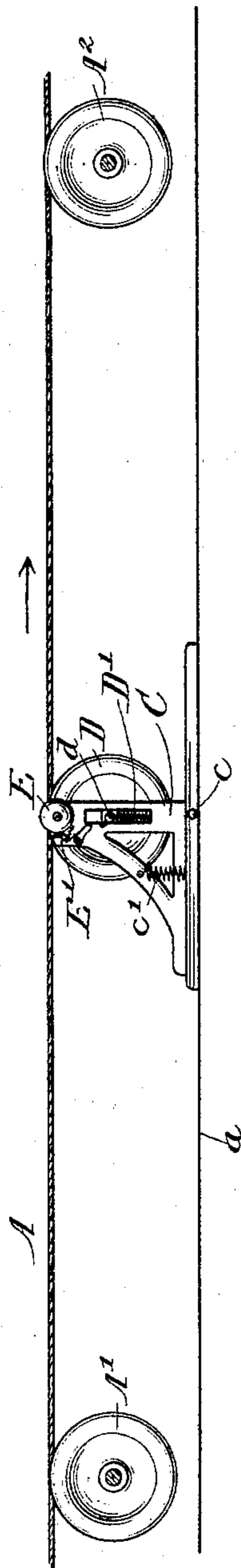


Fig. 2

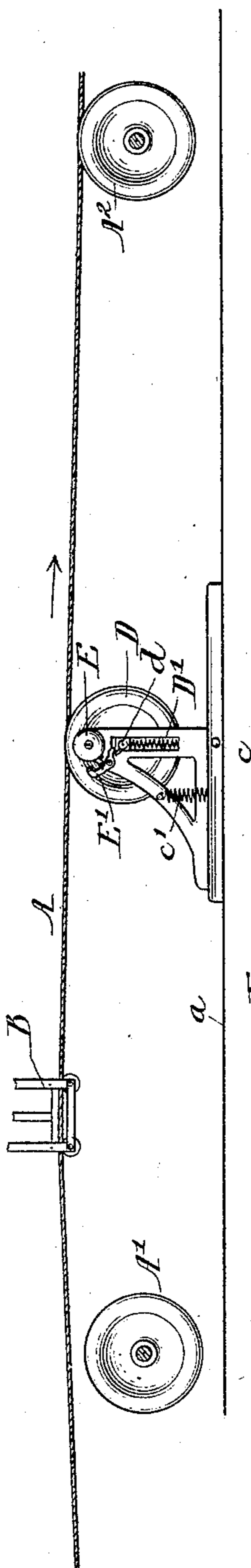


Fig. 3

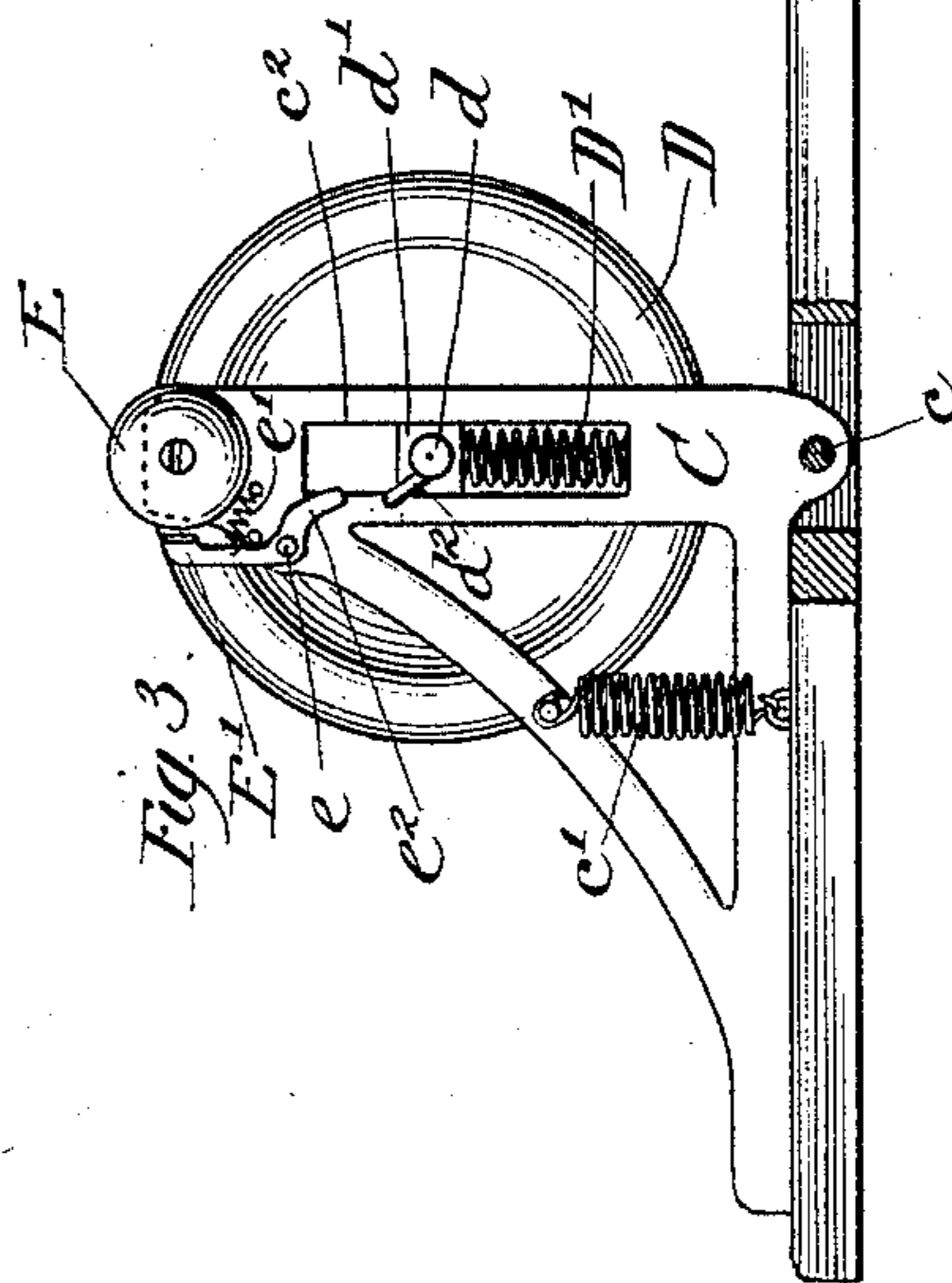
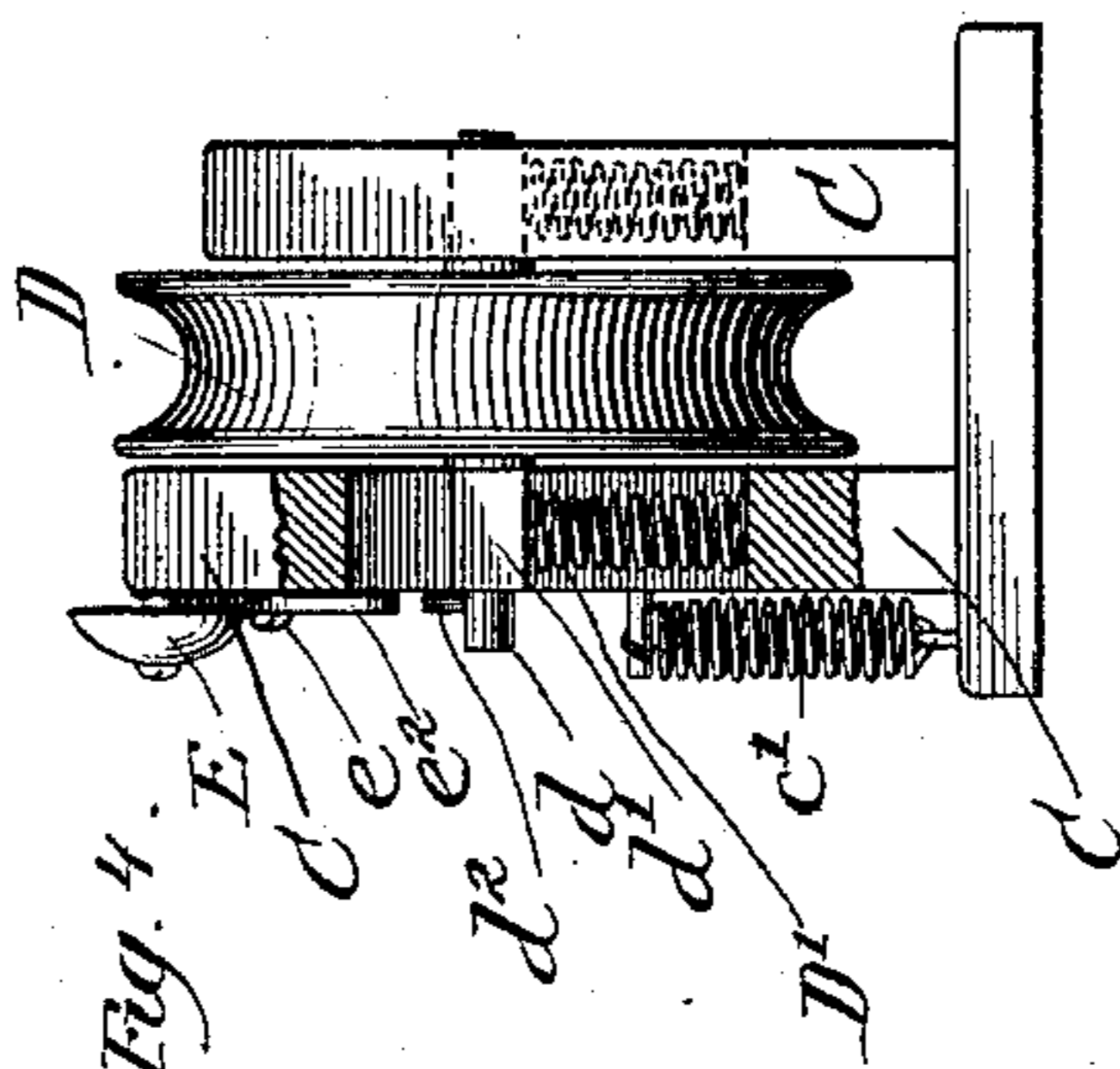


Fig. 4



Witnesses:

Wm. J. Hemming
Louis M. Whithead.

Inventor:

Charles M. E. Wendnagel.

By Rayton, Poole & Brown
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES M. E. WENDNAGEL, OF CHICAGO, ILLINOIS.

ALARM FOR USE ON CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 433,667, dated August 5, 1890.

Application filed December 9, 1889. Serial No. 333,022. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. E. WENDNAGEL, of Chicago, in the county of Cook and State of Illinois, have invented certain
5 new and useful Improvements in Alarms for Use on Cable Railways; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the let-
10 ters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in alarms for use on cable railways. It has been found necessary heretofore to employ
15 more than one loop or cable for carrying the grip and the car to which it is attached over a given route, and in such cases the loops are sometimes arranged to slightly lap each other and are sometimes placed end to end. To
20 disconnect the gripping device from the one cable and to attach it to the other requires considerable dexterity upon the part of the driver operating the said gripping device. This is usually accomplished by the driver
25 "throwing" or disengaging one cable at a point somewhat distant from the end of the loop and permitting his car to travel on under the momentum acquired when the gripping device was in engagement with the cable.
30 When the car and its gripping device have passed the end of the first-mentioned loop and are opposite the second loop or cable, the driver may clutch or "take up" the new cable without danger of having the "grip" en-
35 tangled with the first cable. It is found in practice that although the driver may properly go through the operation of manipulating the clutch mechanism necessary to "throw" the first cable this result, for va-
40 rious reasons, is not always accomplished, so that when the driver attempts to take up the second cable he finds that his gripping device is still in engagement with the first cable, whereupon a sudden strain is produced upon
45 the latter frequently sufficient to cause serious damage both to the grip and to the cable. In many cases the cable has been completely severed. Inasmuch as the driver of the grip-car cannot view the cable when he is
50 on his car it has been proposed and it is now the practice to station a "lookout" upon the road at a point where the gripping device

should be entirely disconnected from the first-mentioned cable and before the grip is ready to take up a second cable. This lookout
55 glances through a suitable hole or opening in the side of the track, and as the car and grip approach him he observes the appearance of the cable. If the cable is raised from the sheaves or pulleys upon which it should nor-
60 mally rest, he then knows that the gripping device has not properly thrown the cable, but is still connected therewith, and he thereupon signals the driver to stop his car. This is done as quickly as possible and the car
65 pushed back, the first cable properly disconnected from the grip, and the car is pushed forward by hand or is pulled forward by a team of horses until the grip is opposite to the end of the second cable. This operation
70 consumes time, frequently delaying a second grip-car, and also requires the employment of several men. Two men or look-outs are always so employed at each point in the route where one cable is dropped and another is
75 taken hold of.

It is the purpose of my invention to provide a device to automatically indicate when the grip has properly thrown the first cable, and is therefore in condition to take up the sec-
80 ond cable.

The invention consists, broadly, in providing an alarm or gong which is actuated by the cable and in so adjusting the parts that the gong or alarm will be sounded only when the
85 gripping device retains its hold upon the first cable at a time when it should have been detached therefrom. This will more fully appear from an inspection of the accompanying drawings and the description thereof, in which
90 I have illustrated and described one means of embodying my invention, and in illustrating only one means I do not intend to limit myself thereto, as the many other ways of accomplishing the desired result will readily
95 suggest themselves, all of which will embrace the invention, the essential feature of which is a cable and an alarm actuated thereby, as will more fully appear by reference to the appended claims.

Figure 1 is a side view of such portion of the cable railway as is necessary to illustrate my invention. Fig. 2 is a similar view showing one form of the alarm device in opera-
100

tion. Fig. 3 is an enlarged side view of the same. Fig. 4 is an end view of the same partially in section.

In the drawings, A is a cable adapted to rest upon the pulleys or sheaves A' A^2 , which latter are suitably journaled in bearings in the pit or tunnel in the ground.

a is a line representing the bottom of the tunnel in the street in which the cable is located. The construction of the tunnel for the reception of the grip and the sheaves A' A^2 is not material or necessary to a full understanding of my invention, and I have therefore omitted any illustration of the same.

B represents any suitable grip mechanism attached to a car and adapted for engagement with the cable A. The grip B is of such height above the sheaves A' A^2 as to cause the cable A to raise up from said sheaves as the grip B passes over the same, as illustrated in Fig. 2.

C C are suitable standards or frames preferably pivoted at c to the bottom a of the tunnel, and held in a vertical position by means of the spring c' . This spring yields, however, as will be obvious, to any sudden blow upon the top of the standards C.

D is a pulley similar to the pulleys A' A^2 , the axle d of which is mounted in suitable sliding journals or bearings d' in the standards C. Springs D' are interposed between the bottom of the axle d and the lower ends of the slots c^2 in the standards C, in which said bearings d' are adapted to move. Said springs D' tend to press the sheave D upwardly into contact with the cable A. The power of the springs D' is sufficient to cause the sheave D to follow the cable A when the latter is raised by the grip B, as shown in Fig. 2, while on the other hand said springs are sufficiently weak to permit the weight of the cable A (which is considerable) to normally hold the sheave D in its lowermost position, as shown in Fig. 1.

To the upper end of one of the standards C is attached a gong E, of suitable size, operated or rung by a hammer E' , which latter is pivoted at e to said standard. A spring e' tends to draw the upper end of the lever or hammer E' toward the gong. The lower end e^2 of the lever is bent inwardly, and in such position as to be engaged by a suitable arm or pin d^2 upon the revolving axle d of the sheave or pulley D. It is manifest from the construction described that when the pulley D is revolved in its lower position, as shown in Fig. 1, the pin d^2 will not engage the arm e^2 , and also that when the pulley D is raised, as shown in Fig. 2, the revolution thereof will cause the pin d^2 to repeatedly engage the said arm e^2 and thereby sound the gong.

The operation and the application of the invention, therefore, are as follows: The cable is supposed to be traveling in the direction indicated by the arrow. The grip B approaches the pulley A' , and, if properly disengaged from the cable A, the latter will rest upon the

pulleys A' and A^2 , as shown in Fig. 1, while the grip B will pass along until it is entirely free from and beyond the cable A. No alarm will be sounded in such case. On the other hand, if upon approaching the pulley A' the cable A is not disengaged properly from the gripping device B the latter will appear, as in Fig. 2, with the cable A raised from the pulley A' . The springs D' are then permitted to force the pulley D upwardly until the arm E' is oscillated back and forth by the rotation of said pulley D and an alarm thereby sounded. Upon hearing this alarm the driver of the grip-car immediately stops the same and pushes his car backwardly in the direction opposite to that shown by the arrow, properly disengages his gripping device from the cable A, and then proceeds forward in the usual manner. The use of this device, therefore, will entirely dispense with the services of the lookout-men (one of whom is stationed by day at the opening in the track and the other by night) by automatically giving an alarm to the grip-car driver when and only when his cable is not disengaged from his gripping device when it should be. Should by any possibility the gripping device B strike the sheave D or the standards C, the latter, by reason of its pivotal connection, will yield to such blow, and thus prevent breakage. The standards C will be returned to operative position by the action of the spring c' .

Any suitable gong mechanism may be employed. When the cable rises, the upward movement of the parts connected to it may make or break an electric circuit and thereby ring an alarm in a familiar manner. In fact, various ways of carrying out the mechanical details may be employed without departing from the essential principle of my invention.

I am aware that heretofore various devices have been made for actuating an alarm or displaying a signal when the cable has not been disengaged from the gripping device at the proper time, and I do not therefore claim such devices broadly. I am not aware, however, that heretofore any device has been invented or produced comprising a vertically-movable part constantly in engagement with the cable which, when the latter is in proper position, will be in its lowermost position and there disconnected from an alarm or signal apparatus, and which in its raised position will operate such alarm or signal apparatus. I may find it convenient in some cases to make the sheave D considerably larger in diameter than the supporting pulleys or sheaves A' A^2 , and in such cases it will not be necessary to make the supporting-frame C movable by pivoting it at c , as shown. In such proposed construction should the grip B by any possibility strike the sheave D the latter will simply be depressed vertically out of the way of the grip B.

I claim as my invention—

1. In a cable railway, the combination of a cable, a vertically-movable part constantly in

engagement therewith, and an alarm actuated thereby, substantially as described.

2. The combination, with a cable and suitable sheaves for supporting the same, of a vertically-movable sheave constantly in engagement with said cable, and an alarm and means for sounding the same when the cable is raised above its supporting-sheaves, substantially as described.

3. The combination, with a cable and suitable supporting-sheaves, of a movable part and an alarm connected therewith and adapted to be operated thereby and a spring or its equivalent adapted to bring said movable part constantly in engagement with the said cable, substantially as specified.

4. The combination, with a cable and suitable sheaves for supporting the same, of a yielding supporting-frame, a part movably journaled or secured therein, an alarm adapted to be actuated by said movable part, and a spring or its equivalent for causing said movable part to be constantly in engagement with the said cable, substantially as described.

5. The combination, with a cable and suitable sheaves for supporting the same, of a yielding supporting-frame, a part movably journaled or secured therein, an alarm

adapted to be actuated by said movable part, a spring or its equivalent for causing said movable part to be constantly in engagement with the said cable, and means for causing said movable support to assume normally a vertical position, substantially as described.

6. The combination, with a railway-cable and suitable sheaves for supporting the same, of the frame C, secured beneath said cable and adapted to be moved in the direction of the length thereof, means for restoring said frame to its normal position, an alarm mechanism mounted on the upper part of said frame, a sheave or other movable support for the cable mounted in journal-bearings, said bearings being adapted to be moved vertically in suitable slots in said frame, and a spring D', located in said slots, having a normal pressure upward, whereby the said movable part is caused to constantly engage said cable, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

CHARLES M. E. WENDNAGEL.

Witnesses:

TAYLOR E. BROWN,

HARRY COBB KENNEDY.