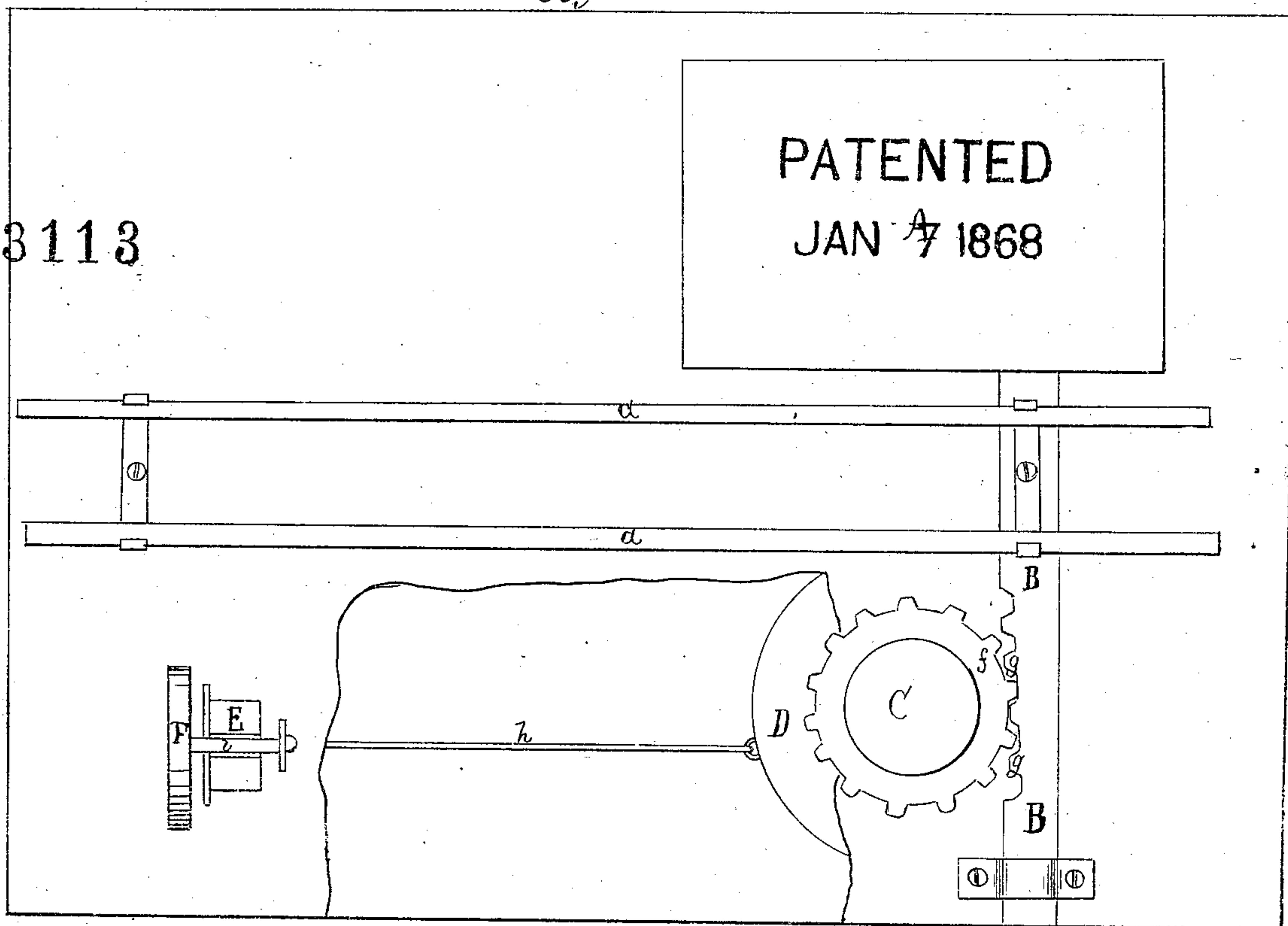


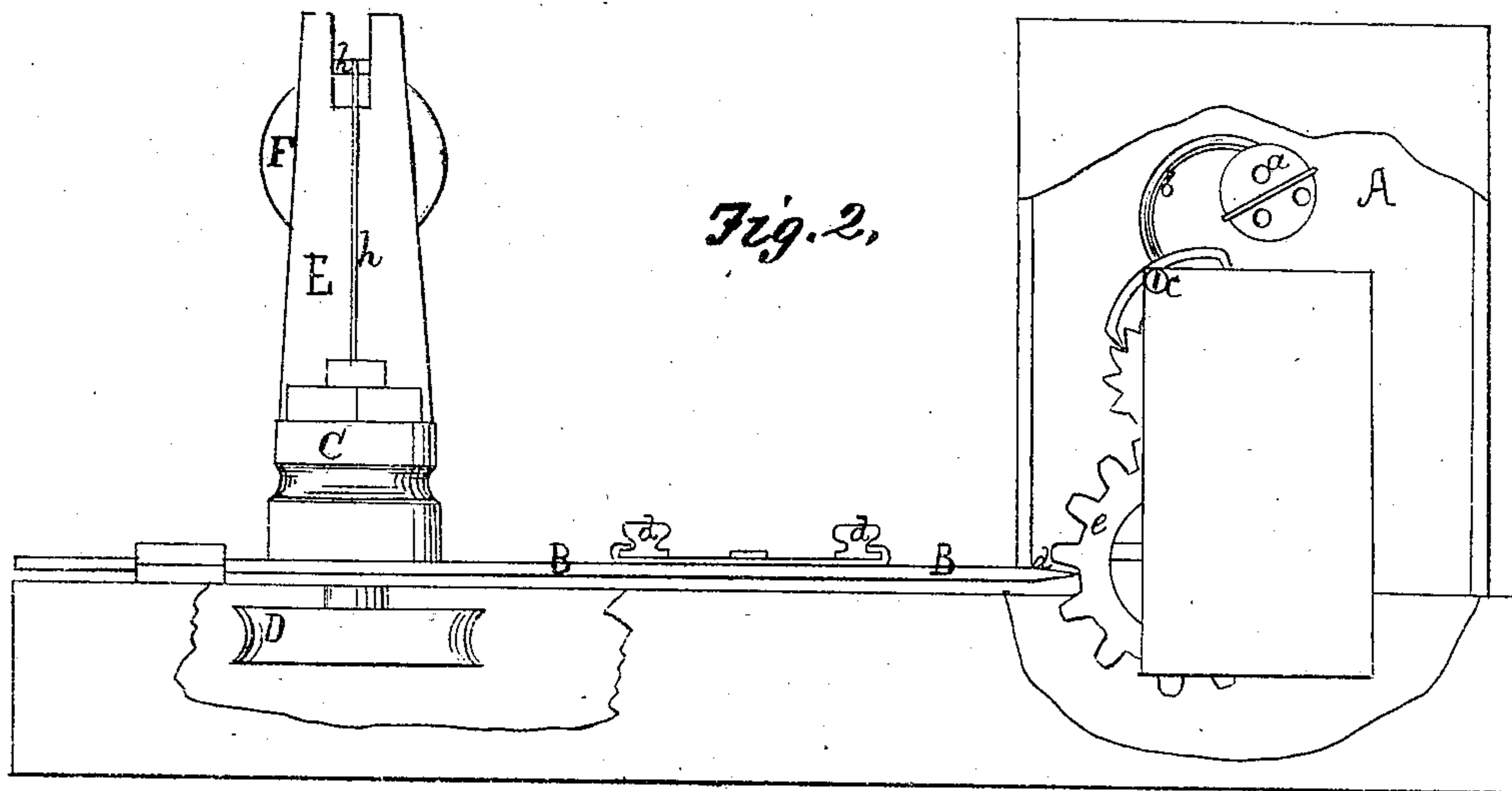
*I. Ferguson Morrell's Imp<sup>t</sup> in Railway Switch Alarms*  
*Fig. 1*

73113

PATENTED  
 JAN 7 1868



*Fig. 2,*



*Witnesses*

*Fredric A. Lays.*

*M. M. Livingston*

*[Signature]*

*Inventor*

*I. Ferguson Morrell*

# United States Patent Office.

I. FERGUSON MORSELL, OF STAMFORD, CONNECTICUT.

*Letters Patent No. 73,113, dated January 7, 1868.*

## IMPROVED RAILWAY-SWITCH ALARM.

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

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, I. FERGUSON MORSELL, of Stamford, in the county of Fairfield, and State of Connecticut, have invented a new and useful Improvement in Railway-Switch Alarms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, forming part of this specification, in which—

Figure 1 is a plan view of my invention, with portions broken away to expose an arrangement for operating a signal.

Figure 2 is a side elevation, with portions broken away for same purpose.

My invention consists in the combination, with a sliding switch-bar and the lever, windlass, or other device for operating the same, of a clock-movement, or equivalent mechanism, the latter being arranged in such relation to the former that when the main line of track is unbroken, the alarm will be at rest, but so soon as the switch is opened an alarm will be sounded, and continue until the main line is again uninterrupted, and hence constantly remind the switchman of his duty.

A designates a box or case, containing an ordinary clock-movement, to the pallet of which a bell, *a*, is affixed by an arm, *b*, attached to the pallet-shaft *c*, so that when the pallet rocks, the bell *a* will ring, and continue to ring so long as the clock-movement is operating.

I will here remark that although I have shown a bell thus connected, I do not limit myself to such device. A hammer operating on a gong, as in the case of an ordinary burglar-alarm, would answer, or indeed any arrangement which will make a noise, whilst the clock-movement is operating, will answer the purposes of my invention.

B designates the switch-bar, to which the rails *d d* are connected. The said switch-bar is to be operated by a lever or capstan, in the usual way. I have shown a capstan, C, for operating the switch-bar B, the said capstan carrying a cog-wheel, *f*, which engages with a rack, *g*, upon the switch-bar, so that by turning the capstan the switch-bar is moved in a longitudinal direction. The switch-bar is of a sufficient length to permit its end, *d*, being thrust into the interdental spaces between the teeth or cogs of the wheel *e* of the clock-works, to arrest the movement of such wheel when the main line of track is unbroken, and hence no alarm will be sounded. But it is evident that so soon as the said end *d* is withdrawn from said wheel *e*, as it necessarily must be when the switch is open, the clock-works will be permitted to operate, and hence keep up an alarm till the switch-bar is returned to the first-mentioned position.

D is a wheel, attached to the lower end of the capstan-shaft, and to this wheel a cord or chain, *h*, is attached, which passes up a standard, E, and is secured to one end of a lever, *l*, to the other end of which lever a disk, F, is attached. Now, when the main line is unbroken, this disk presents a white face—the signal that all is right; but when the switch is open, the capstan draws the cord *h*, and this elevates the disk F so as to display a red signal (which signifies “stop”) on the post, located directly under the disk when the latter is down. This same arrangement can be effected when a lever is used to operate the switch-bar, a bell-crank, or the like, being properly applied thereto.

I will here remark that instead of the clock-movement described, any system of wheels which can be held at rest, or permitted to operate by moving the switch-bar, may be employed. And it is obvious that the alarm may be located in any place near the track, so long as it shall be in a position to be operated upon by the switch-bar, or by an arm, rod, or other device connected therewith.

In applying my invention to railroads, it will be only necessary to locate the clock-works near the switch-bar, and to attach a short arm to the ordinary switch-bar, which shall be so arranged as to stop the operation of the clock-movement when the main line is unbroken. Thus the expense of putting my invention into practice is very little indeed, and there is no outlay necessary to keep it in operative condition, as in the case where an electric switch-alarm is used. I will remark that it is designed that the clock-works shall be of a capacity to run for, say, eight days, even if the same were required to run all the while; this will not be the case, however; hence the clock-works can be wound up once a week, and my invention will always be in operative condition.

An alarm-attachment connected to a switch, which will work perfectly, cannot be too highly appreciated,

inasmuch as accidents are constantly occurring by reason of switches being left open, and hence an alarm, which will continually notify the careless switchman that the switch is open, is a measure of safety to the public which should not be neglected by railroad companies.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with the switch-bar and lever, capstan, or other device for operating the same, of a clock-movement, provided with an alarm-gong attachment, substantially as and for the purposes herein specified.

I. FERGUSON MORSELL.

Witnesses:

M. M. LIVINGSTON,

T. B. BEECHER.