

(No Model.)

H. G. JONES.

AUTOMATIC RAILROAD SIGNAL AND ALARM.

No. 282,730.

Patented Aug. 7, 1883.

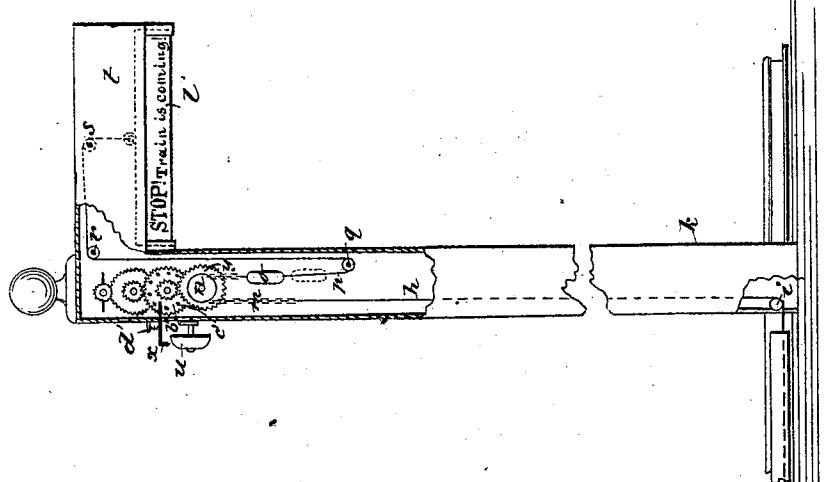


Fig. 2

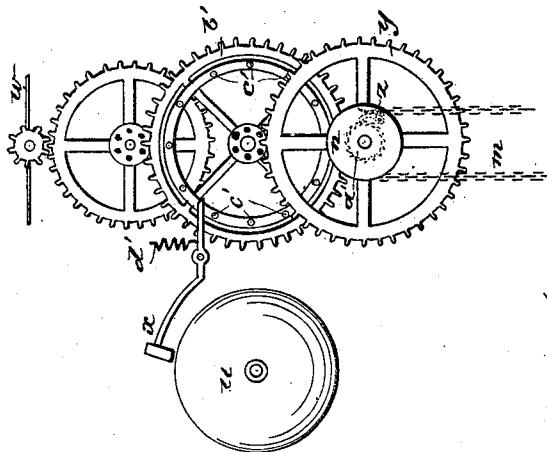
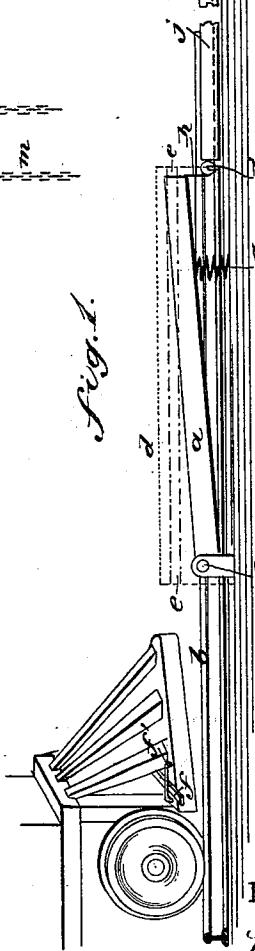


Fig. 3.



WITNESSES:

Chas. C. Clegg
L. Sedgwick

INVENTOR:

H. G. Jones
M. H. Jones
ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY G. JONES, OF DARBY, PENNSYLVANIA.

AUTOMATIC RAILROAD SIGNAL AND ALARM.

SPECIFICATION forming part of Letters Patent No. 282,730, dated August 7, 1883.

Application filed July 19, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. JONES, of Darby, in the county of Delaware and State of Pennsylvania, have invented a new and Improved Automatic Railroad Signal and Alarm, of which the following is a full, clear, and exact description.

My invention relates to an automatic apparatus whereby a signal may be displayed and a gong sounded at a railroad crossing or station to give warning of an approaching train. It can also be applied to a system of block-signals, whereby the engine can throw automatically a red signal, which will stay red for a given time, then change to blue or other suitable color, and finally white.

My invention has for its object to provide an improved automatic signaling apparatus for railroad crossings, stations, and other places that will give timely warning of the approach of trains, and thus serve to prevent accidents, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is partly a side elevation and partly a sectional elevation of my improved signaling apparatus. Fig. 2 is an elevation of some of the working-gear on an enlarged scale. Fig. 3 is a detail in plan view.

In the drawings, *a* represents a treadle, arranged parallel with the rails *b* and mounted on a pivot, *c*, within a suitable box, *d*, (dotted,) which has a slot, *e*, for the arm *f*, projecting from the cow-catcher or other part of the locomotive, to run in over treadle *a* and depress it, and the spring *g*, which in the normal condition holds the treadle with its free end above slot *e* of the box for being so depressed by arm *f*. From said free end of the treadle a cord or wire, *h*, extends along guide-pulleys *i* any suitable distance through pipes, or other guards to the signal-post *k* at the crossing, station, or other place where the signal *l* is to be placed. This cord extends upward in the post and has a pitch-chain section, *m*, passing over a pulley, *n*, and suspending a weight, *o*, thereon. From the weight a cord, *p*, extends down around the guide-pulley *q*, thence up over the pulleys *r* and *s* in the signal box or housing *t*, where it suspends the

foresaid signal *l* for dropping it down in sight by the action of the arm *f* on the treadle when the train approaches, and raising it up again out of sight by the spring *g* after the train has passed, the weight *o* pulling up the cord *h* and letting the signal fall when the treadle is depressed by the arm *f*, and the spring *g* raising the weight, and also the signal, after the arm *f* has passed beyond the treadle.

In order to delay the rise of the signal and cause the gong to be rung a sufficient length of time for the slowest train to reach the crossing or station, I have arranged the fan-regulator *w*, together with the gong *u*, on the post *k*, and mechanism for retarding the action of the spring *g* and operating the gong-hammer *x* as follows: The pulley *n* is mounted on the shaft of a driving-wheel, *y*, so as to turn loosely thereon, and let the wheel rest when the weight *o* falls; but when the spring begins to pull the weight up again a pawl, *z*, (dotted,) on the pulley *n* engages a ratchet, *a'*, (dotted,) on wheel *y*, and sets in it motion, and it revolves the fan *w* at high speed through the medium of the multiplying train of gearing connected therewith, and the wheel *b'*, having tappet-pins *c*, and together with spring *d'*, operates the gong-hammer *x*. By the resisting-power of the fan the ascent of the spring *g* may be delayed more or less, according to the capacity of the fan and the speed by which it is operated.

The arm *f* is pivoted to the heel of the cow-catcher or other part of the locomotive by a bolt, *e'*, and arranged in a guard, *f'*, so that when the engine backs and the arm strikes the high end of the treadle *a* it will swing sufficiently on its pivot to escape from the treadle.

A spring, *g'*, is attached to the arm and to some part, *h'*, of the locomotive, so as to swing it back to its normal position after passing the treadle.

It will be seen that with a treadle of suitable length for gradual and easy action the arm *f* will work the apparatus without any shocks or jars by simply slackening the cord *h* and dropping the weight *o*.

The box *d* may be extended a suitable length beyond the treadle, so as to protect it from snow, &c.

By coloring the signal in red, blue, and white stripes, and arranging the housing to show the

signal through a slot, the signal will show the different colors successively, as before stated, by arranging the machine to run slower.

I am aware that railway-signals have been made with a treadle to be acted upon by the approaching train, running-gear, a fan, weight, and connecting-wire, operating in a manner similar to mine, and I do not claim these individual features, broadly; but

10 I claim—

1. The combination of the treadle *a*, cord *h*, spring *g*, pulley *n*, weight *o*, cord *p*, and signal *l*, the treadle being arranged to be operated by an attachment of the locomotive, and 15 the weight and signal being suspended in the signal-post, substantially as described.

2. The combination, with the signal *l*, displaying a sign of warning, the weight *o*, pulley *n*, the suspending-cords, the treadle, its spring, 20 and the connections therewith, of the gong and its connections, operated by the same treadle

and connections, substantially as described, whereby a sound of alarm is made to call attention to the sign of warning.

3. The retarding-fan and its gear-train, in 25 combination with the signal *l*, its supporting-cord *p*, the weight *o*, attached thereto, the pulley *n*, supporting the same and communicating with the gear-train, and the chain *m*, communicating with the treadle, substantially as and 30 for the purpose specified.

4. The combination of treadle *a*, spring *g*, slotted box *d*, and the arm *f*, attached to the locomotive, substantially as described.

5. The arm *f*, pivoted to the locomotive and 35 provided with spring *g'* and arranged in a guard, *f'*, in combination with the treadle *a* and spring *g*, substantially as described.

HENRY G. JONES.

Witnesses:

D. S. LINDSAY,
STACY JONES.