

(No Model.)

J. A. MILLHOLLAND.

AUTOMATIC BLOCK SIGNAL MECHANISM FOR RAILWAYS.

No. 267,561.

Patented Nov. 14, 1882.

Fig. 1.

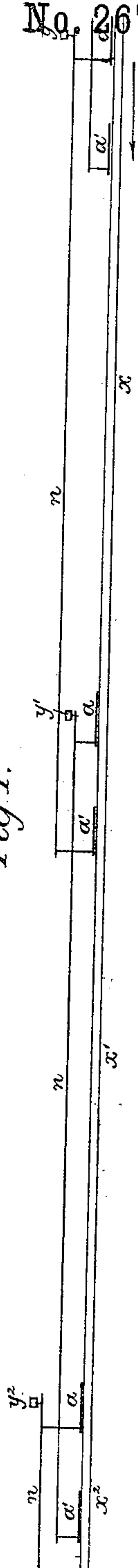


Fig. 3.

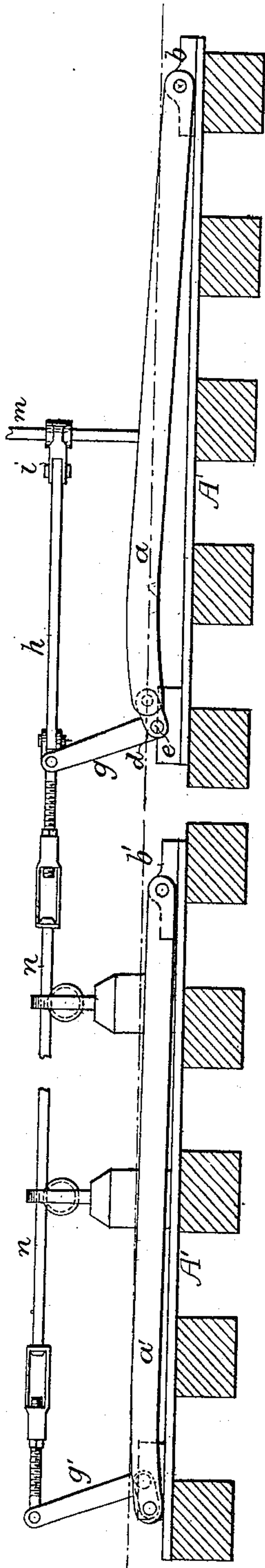
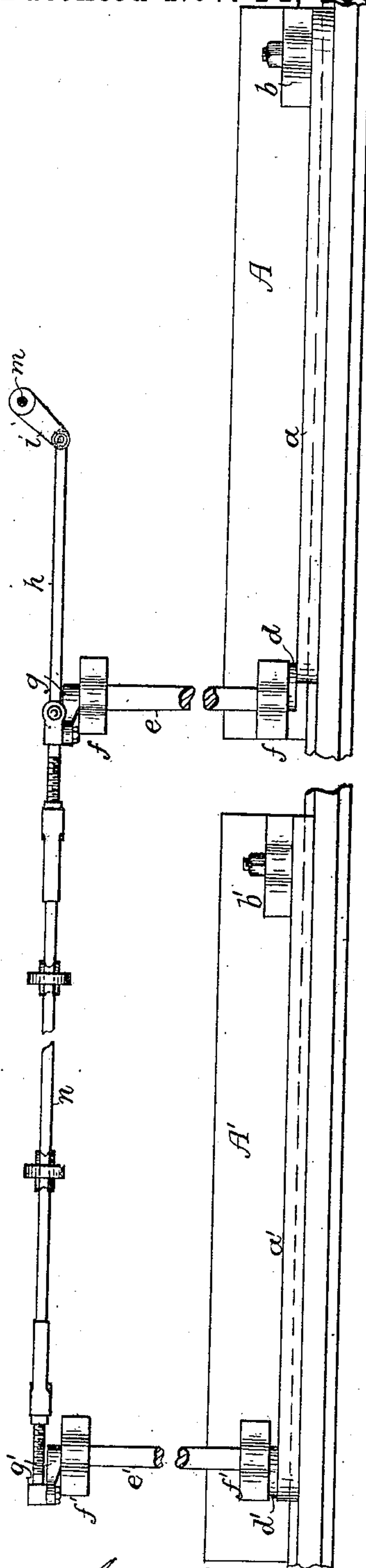


Fig. 2.



Witnesses:

Harry Druce
James F. Tobin

Inventor

Jas A. Millholland
By his attorneys
Howson and Jones

UNITED STATES PATENT OFFICE.

JAMES A. MILLHOLLAND, OF CUMBERLAND, MARYLAND.

AUTOMATIC BLOCK-SIGNAL MECHANISM FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 267,561, dated November 14, 1882.

Application filed June 5, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. MILLHOLLAND, a citizen of the United States, and a resident of Cumberland, Alleghany county, Maryland, have invented certain Improvements in Automatic Block-Signal Mechanism for Railways, of which the following is a specification.

My invention relates to certain improvements in block-signals adapted to be automatically operated by passing trains.

One object of my invention is to insure the setting of a "danger" signal at the commencement of a block on which the train is about to enter before the restoration to the "safety" position of the signal at the commencement of the block which the train is just leaving, a further object being to provide simple mechanism whereby the signals are operated.

In the accompanying drawings, Figure 1 is a diagram illustrating one of the features of the invention; Fig. 2, a plan view of the signal-operating mechanism, and Fig. 3 a longitudinal section of the same.

In the diagram, Fig. 1, x and x' represent two blocks or sections of a railroad-track, and x^2 part of a third block, y being the signal controlling the block x , y' the signal controlling the block x' , and y^2 the signal for the block x^2 , the trains moving in the direction of the arrow. Each signal is connected by a system of rods and levers (described hereinafter) to two pedals, a a' , located immediately alongside of the track, and adapted to be actuated by one of the wheels of, or by a projection on, a locomotive or car passing over the track, the pedals a being located immediately adjacent to the signals which they operate, but the pedals a' occupying the relation shown to their signals and to the pedals a —that is to say, the pedal a' of the signal y is located just beyond the pedal a of the signal y' , the pedal a' of the signal y' just beyond the pedal a of the signal y^2 , and so on. The pedals a a' of each signal are so connected to each other and to the signal that the depression of the pedal a causes the setting of the signal to indicate "danger," and at the same time effects the elevation of the pedal a' , while the depression of the pedal a' restores the signal to the position indicating "safety," and effects the ele-

vation of the pedal a . Owing to this arrangement, the signal at the commencement of a block which a train is about to enter must be set to indicate "danger" before the signal at the commencement of the block which the train is just leaving is restored to the position indicating "safety." For instance, a train entering the block x' first sets the signal y' to indicate "danger," and then restores to the "safety" position the signal y at the commencement of the block x , and so on.

The mechanism whereby the pedals a a' are caused to act upon each other and upon the signals is shown in Figs. 2 and 3, in which A represents a plate secured to the ties at one side of the track, and having a lug, b , to which is pivoted one end of the pedal a , the opposite end of the latter being connected to an arm, d , on one end of a rock-shaft, e , adapted to bearings f , the opposite end of the shaft having an arm, g , connected by a rod, h , to an arm, i , on the vertical shaft m , which carries the signal.

In connection with the pedal a' , I use a similar arrangement comprising the plate A' , pivot-lug b' , and rock-shaft e' , with arms d' and g' . The arms d and g are set at right angles on the shaft e , and the arms d' and g' are similarly set on the shaft e' , the arms g and g' being connected by a suitably-supported rod, n , and the arms d and d' being set on their respective shafts, so as to act in opposition to each other, whereby the depression of the pedal a will effect the elevation of the pedal a' , and vice versa, the movement of either pedal being transmitted through the rod h and arm i to the signal-shaft.

A semaphore or any other desired form of signal may be used, that shown being merely selected to illustrate one application of the invention.

I claim as my invention—

1. The combination of each of a series of block-signals on a railway-line with a pair of connected pedals, a a' , adapted to be operated by passing trains, the pedals of one signal occupying the relation described to those of adjoining signals, whereby the signal at the commencement of the block which the train is entering is set at "danger" before the restoration to

the "safety" position of the signal at the commencement of the block which the train is leaving, as set forth.

5 2. The combination of the pedals *a a'*, the rock-shafts *e e'*, having arms *d d'* and *g g'* set in respect to each other as described, and mechanism for connecting the arms *g g'* together and to the signal, as set forth.

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

JAMES A. MILLHOLLAND.

Witnesses:

HARRY DRURY,

HARRY SMITH.