

(No Model.)

A. B. SNYDER.
AUTOMATIC RAILWAY SIGNAL.

No. 389,258.

Patented Sept. 11, 1888.

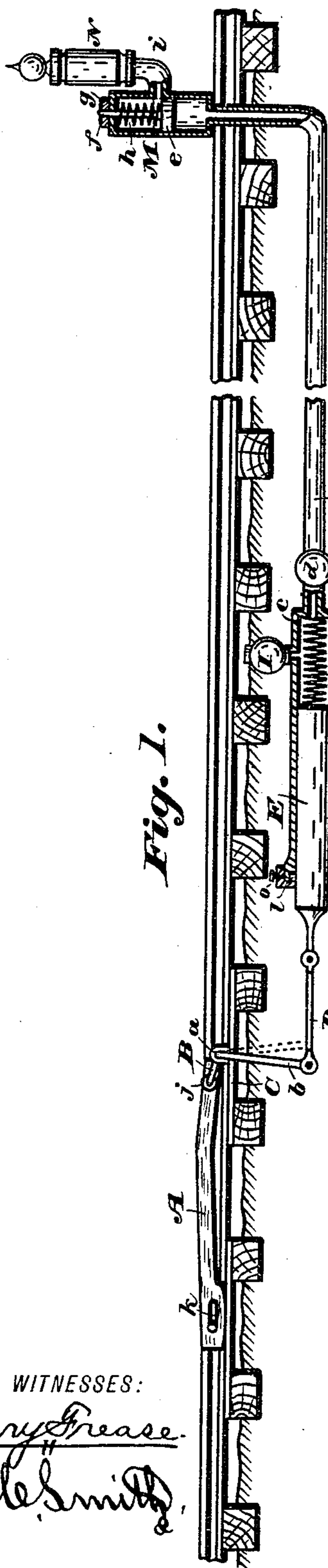


Fig. 1.

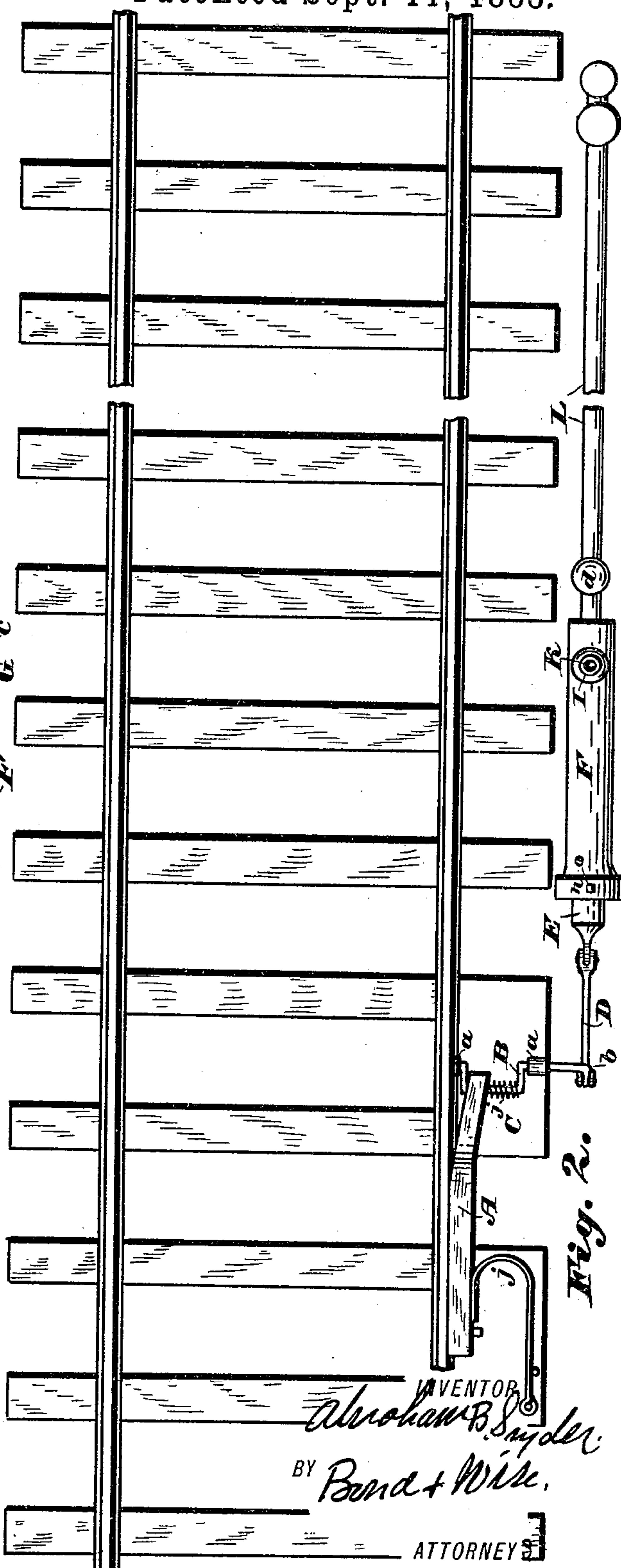


Fig. 2.

WITNESSES:

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AUTOMATIC RAILWAY-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 389,258, dated September 11, 1888.

Application filed April 4, 1888. Serial No. 269,622. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM B. SNYDER, a citizen of the United States, residing at Louisville, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Automatic Railway-Signals; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon, in which—

Figure 1 is a side elevation, showing parts in section. Fig. 2 is a top view.

The present invention has relation to automatic railway-signals; and it consists in the different parts and combination of parts hereinafter described, and particularly pointed out in the claim.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, A represents a pivoted or hinged bar located at the side of one of the railway-rails, substantially as shown in the drawings. To the free end of this pivoted or hinged bar A is attached the rock-bar B. Said rock-bar is securely held in proper position by means of the bearings *a a*. Said bearings are securely held to the block C or its equivalent in any convenient and well-known manner. The rock-bar B is provided with the arm or crank *b*, the free end of which has pivotally attached the bar D. The opposite end of the bar D is pivotally attached to the plunger E. The air-cylinder F may be substantially of the form shown in the drawings, and is located at the side of the track proper. Within the air-cylinder F is located the plunger E, which is substantially of the form shown in Fig. 1. This plunger is so adjusted that it will draw air into the cylinder F and force air as hereinafter described. Between the plunger E and the shoulders *c* is located the helical spring G, which is for the purpose of forcing the plunger E backward or away from the shoulders *c* after said plunger has been released.

To the cylinder F is attached the inlet-valve I, which may be constructed in the ordinary manner.

The opening K is provided for the passage of air into the cylinder F, and may be located as illustrated in Fig. 2; or said opening may, if desired, be located at one side of the valve. For the purpose of preventing dirt from being drawn into the cylinder, the opening K should be protected by a suitable screen.

To one end of the cylinder F is attached the conduit L, which extends along the side of the railway-track to the place where it is desired to locate a signal, and, if desired, said pipe may be under ground.

The cut-off valve *d* may be located substantially as shown in the drawings, and is for the purpose of holding air in the conduit L after it has been forced from the cylinder F by means of the plunger E. The signal end of the conduit L is bent or curved upward, as illustrated in Fig. 1, and may extend to any desired height. To the top or upper end of this bent or curved portion of the conduit L is attached the cylinder M, which may be substantially of the form shown in Fig. 1.

Within this cylinder M is located the valve *e*, which has securely attached thereto the rod or bar *f*, which extends up through the top of the cylinder M. To the top or upper end of this rod or bar *f* is attached the nut *g*, which is for the purpose of holding the valve *e* in the position shown in Fig. 1 when the air-pressure is normal. Around the rod or bar *f* is located the helical spring *h*, the ends of which press against the valve *e* and the cylinder M. To one side of the cylinder M is attached the pipe *i*, and to the outer end of this pipe *i* is attached the whistle N. This whistle is preferably located from one hundred to three hundred feet away from the highway. In use, as a train of cars passes over the bar A the wheels will press said bar downward, thereby forcing the plunger E forward by means of the rock-bar B, thus contracting the helical spring G and at the same time forcing air into the conduit L through the check-valve *d*, and as soon as a wheel has left the bar A the spring G will react, thereby pushing the plunger E backward and elevating the bar A; and as the plunger moves backward air will be drawn into the cylinder F, and as the next wheel passes over the bar A the air will be forced through the valve *d*, the operations being

substantially the same as in an ordinary air-pump. As the air is compressed or forced into the conduit L it will press against the valve *e*, elevating or forcing said valve past the opening in the pipe *i*, when the air is free to enter and sound the whistle N, thereby indicating the approach of a train. It will be understood that the strength of the helical spring *h* may be increased or decreased, so as to regulate the pressure of air in the conduit L, thereby holding or confining compressed air in said pipe at all times, so that the whistle will sound as the wheels strike the pivoted or hinged bar A. As the train leaves the signal the bar A will be forced away from the railway-rail by means of the wheels pressing against the angular portion of said bar A. This bar A is automatically replaced by means of the spring *j j*. It will be understood that a signal is to be placed upon each side of a street.

The pivoted end of the bar A is provided with the elongated slot *k*, which is for the purpose of allowing said bar to move back and forth the distance traveled in operating the rock-bar B. The free end of the pivoted or hinged bar should extend about two inches above the top of the railway-rail. It will be understood that the springs *j j* should be properly housed or covered, so as to protect them

from snow, ice, or dirt, said housing or covering being so constructed as not to interfere with the longitudinal or lateral movements of the bar A. The length of the crank is so adjusted that it will give the plunger E the desired length of stroke.

To the open end of the cylinder F is attached the elastic packing *l*, which surrounds the plunger E, and is held in proper position by means of the cap *n*. The cap *n* is held in proper position by means of the set-screws *o*. Said cap is adjusted from time to time as the packing becomes worn.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with the hinged bar A, connections B *b* D, air compressing cylinder F, signal N, and a conduit, L, between said cylinder and signal, of the check-valve *d* and valve *e*, for maintaining a constant pressure in the conduit, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ABRAHAM B. SNYDER.

Witnesses:

L. C. WISE,

FRED W. BOND.