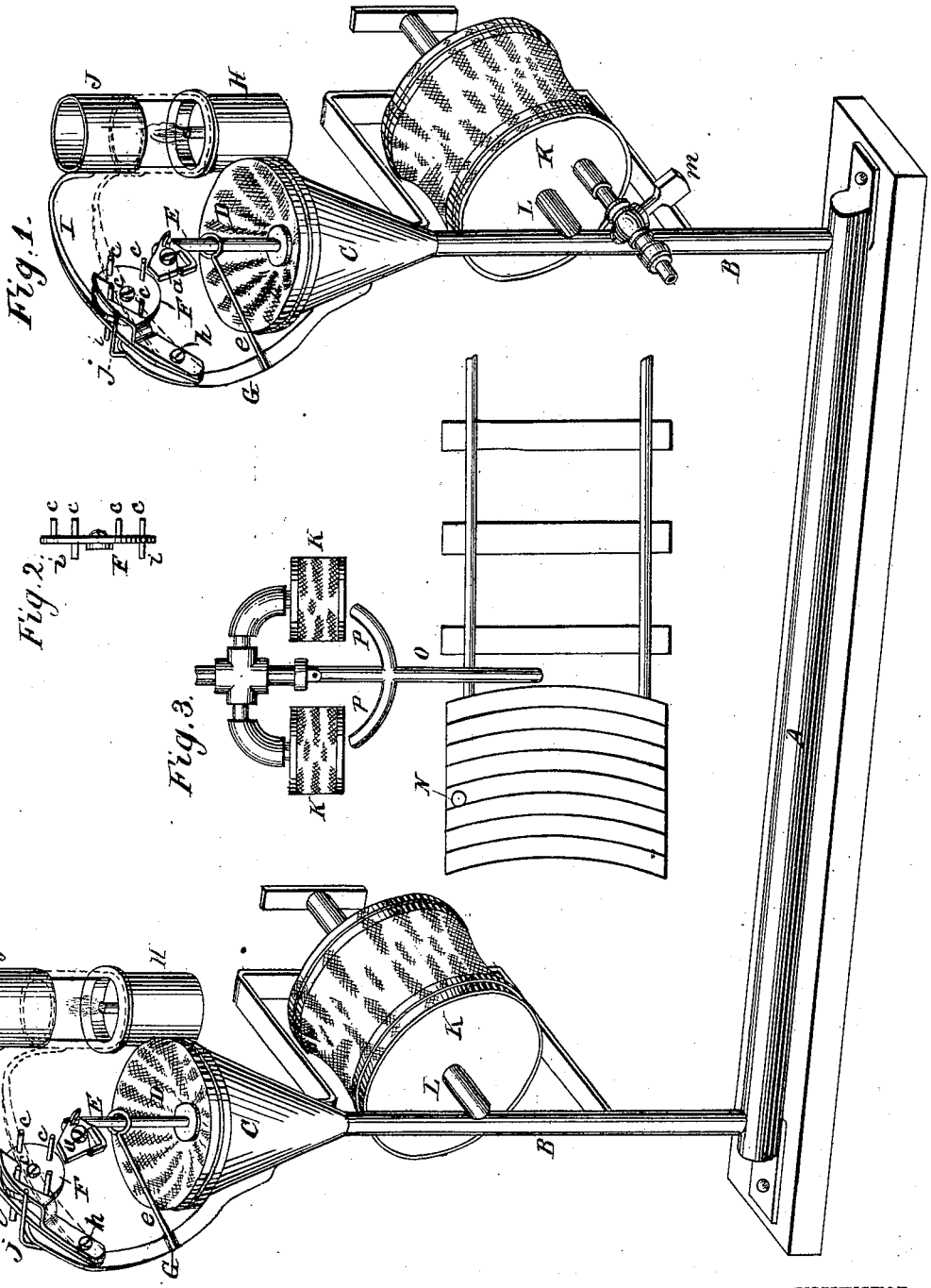
D. H. ISEMINGER.

Pneumatic Signaling Apparatus.

No. 200,457. Patented Feb. 19, 1878.



WITNESSES:

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DANIEL H. ISEMINGER, OF BLOOMINGTON, ILLINOIS, ASSIGNOR OF ONE-HALF HIS RIGHT TO MATHEW FALOON, OF SAME PLACE.

IMPROVEMENT IN PNEUMATIC SIGNALING APPARATUS.

Specification forming part of Letters Patent No. **200,457**, dated February 19, 1878; application filed July 28, 1877.

To all whom it may concern:

Be it known that I, DANIEL H. ISEMINGER, of Bloomington, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Railroad-Signals; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the accompanying drawing, forming a part of this specification, and in which—

Figure 1 is a perspective view. Fig. 2 is a detail view.

This invention relates to improvements in the class of railroad-signals operated by compressed or confined air; and the invention consists in the several combinations of parts, as will be hereinafter described.

A in the drawing represents a tube designed to be placed under ground. B B represent two vertical tubes or hollow posts communicating therewith. Each of said tubes or posts B is provided with a funnel-shaped mouth, C, having an air-tight flexible covering, D; and secured to the center of each of said coverings D is a vertical rod, E, held in position by a guide-rod or brace, *e*. Each of said rods is provided with a cam or equivalent device, *a*, which engages with the pins *c* on the wheel or disk F, journaled in the free end of the arm G, which is secured to the portion of tube forming the mouth C. This arm G is made semicircular in shape, so that its upper or free end will bring the wheel or disk F, with its pins *c*, in contact with the cam on the end of the rod E when it is raised, in the manner to be hereinafter described.

To the portion of the tube forming the mouth C is secured a lantern, H, and to the arm G is pivoted an arm or lever, I, carrying an opaque screen, J, which is arranged to be raised and lowered over the globe or illuminating portion of said lantern by means of pins *i*, arranged on the opposite face of the wheel or disk to which the pins *c* are secured, and which engage with the arm carrying the opaque screen when the wheel or disk F is revolved.

To each of the tubes or hollow posts B is secured a bellows, K, by a tube, L, communicating therewith. These bellows are arranged to be compressed by devices operated by an engine or car of a passing train at each vertical tube or hollow post.

Any desired device can be used for compressing the bellows; but in Fig. 3 I have shown a device for compressing the bellows when two are used at each tube or post.

N is a lug projecting from top of an engine or car, which comes in contact with the end of a pivoted arm or lever, O, which carries the arm or lever in either direction the car or engine is moving, thereby forcing one of the curved arms P against the center of one of the bellows, thereby compressing it.

The manner of operating my improved signals is as follows: The bellows K and communicating tubes A B are to be filled full of air through the tube having stop-cock *m*. When a passing engine or car at either end of the underground tube comes in contact with the device for compressing the bellows, the confined air in the tubes forces up the air-tight coverings at the top of the funnel-shaped mouths C, and raises the two rods E, so that the cams *e* strike against the pins *c* on the wheel or disk F, there by rotating it, the pins *i* upon the opposite side of the wheel or disk, by the rotation or turning thereof, raising the pivoted arms or levers I, thereby simultaneously raising the opaque screens, so as to leave the illuminating portions of the lantern unobstructed, the arms I, with their screens, being held in their raised position, by catches *h* engaging with the pins *c* of the wheel or disk F. The weight of the rods E forces the air-tight coverings down in their original position, when the devices for compressing the bellows are released from contact with the passing car or engine, which causes the bellows to assume their original condition by the air being forced back in them when the air-tight coverings are forced down by the rods E. When the engine passes the tube or post at the other end of the tube A the bellows at that post are compressed, which, through a similar operation of the devices above described, releases the pivoted arms I at each of the tubes or posts B, thereby allowing the screens to simultaneously fall down over the lanterns, as shown by dotted lines in Fig. 1.

It will be observed that one elevation of the

rods E at each end throws one of the four pins *c* under the catches *h*, and the second movement or elevation of the rods D releases the catches, thereby allowing the arms and screens to fall down over the lanterns. The pivoted arms are prevented from being thrown too far back by stops *j*.

These signal-lanterns can be located at any distance from each other, at extreme ends of tunnels, curves, &c., and as the engineer approaches with his train or passes the first post, the screens are raised at both ends, and both lanterns display a light, which is evidence that a train is somewhere between the two signal-lanterns, and the engineer from a train approaching in an opposite direction, seeing either light displayed, is warned of an approaching train.

If for any reason the signal should not be displayed as the train passes, the engineer, looking at the lantern he is passing, sees at once that something is wrong, and in consequence thereof will go slowly around a curve or through a tunnel, on the watch for any train that may be approaching from an opposite direction.

I do not desire to limit or confine myself to bellows for compressing the air, as any other suitable device or apparatus could be substituted therefor.

I have only shown in the drawing one underground tube, it being well understand that a series of connecting-tubes would be necessary, depending entirely upon the length of the tunnel, curve, &c., where the signals are required.

I claim as my invention—

1. The combination, with the tube A and air-compressing device K, of the tube or hollow post B, having a funnel-shaped mouth, C, flexible air-tight covering D, and a signaling device, substantially as and for the purpose described.

2. The combination of the tube A, tubes or hollow vertical posts B, with the lanterns H H, screens J J, and intermediate connecting mechanism, substantially as and for the purpose specified.

3. The combination of the tube or hollow post B, having funnel-shaped mouth C and flexible air-tight covering D, vertical rod E, wheel or disk G, having pins *c i*, pivoted arm I, carrying screen J, lantern H, and an air-compressing device, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 17th day of July, 1877.

DANIEL H. ISEMINGER.

Witnesses:

THOS. SLADE,

RANDOLPH A. PIKE.