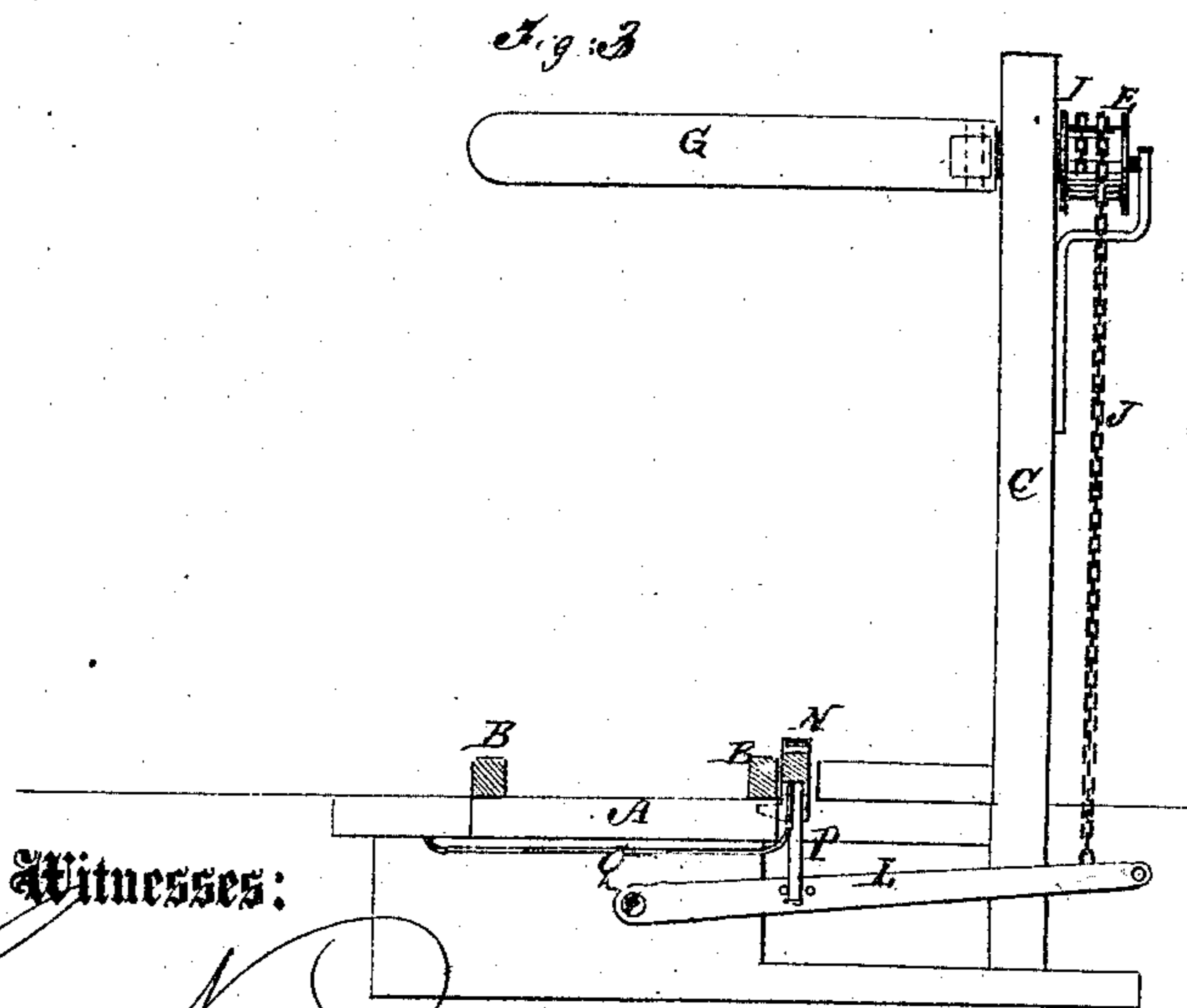
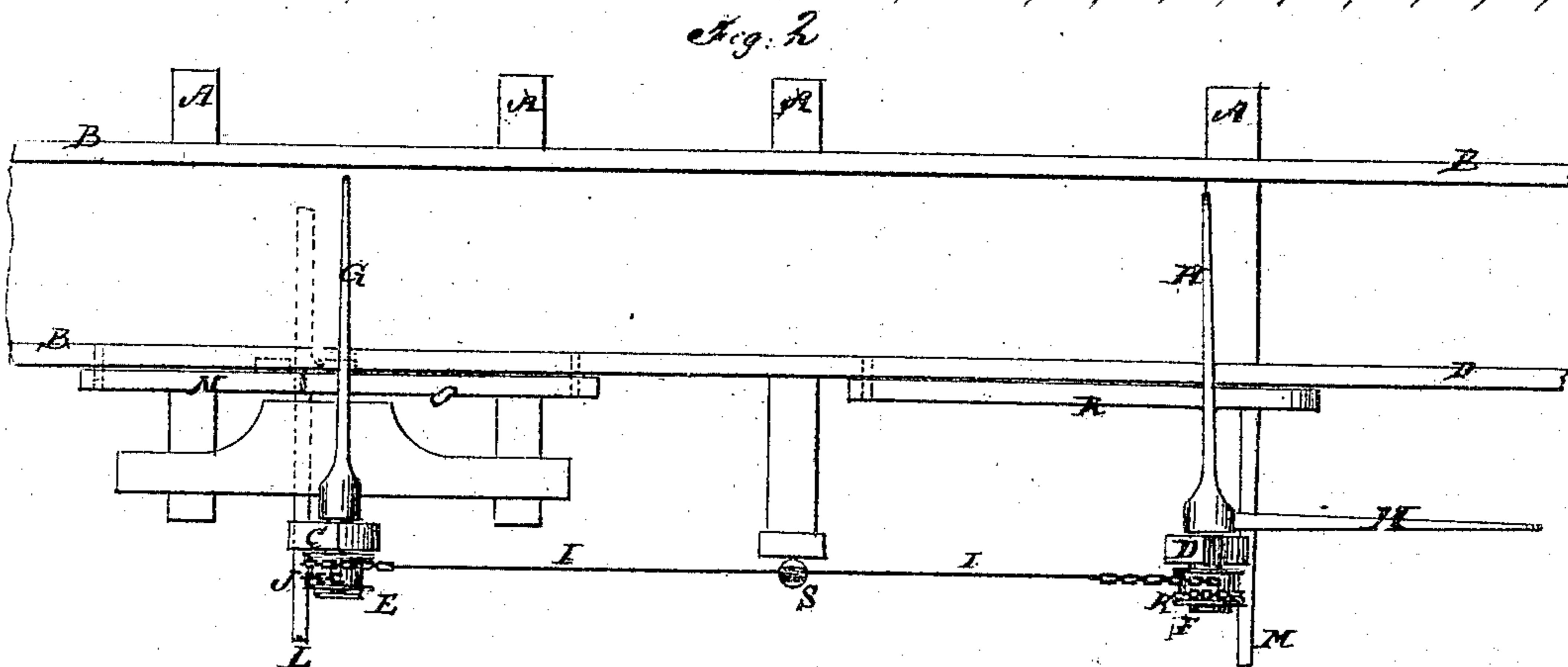
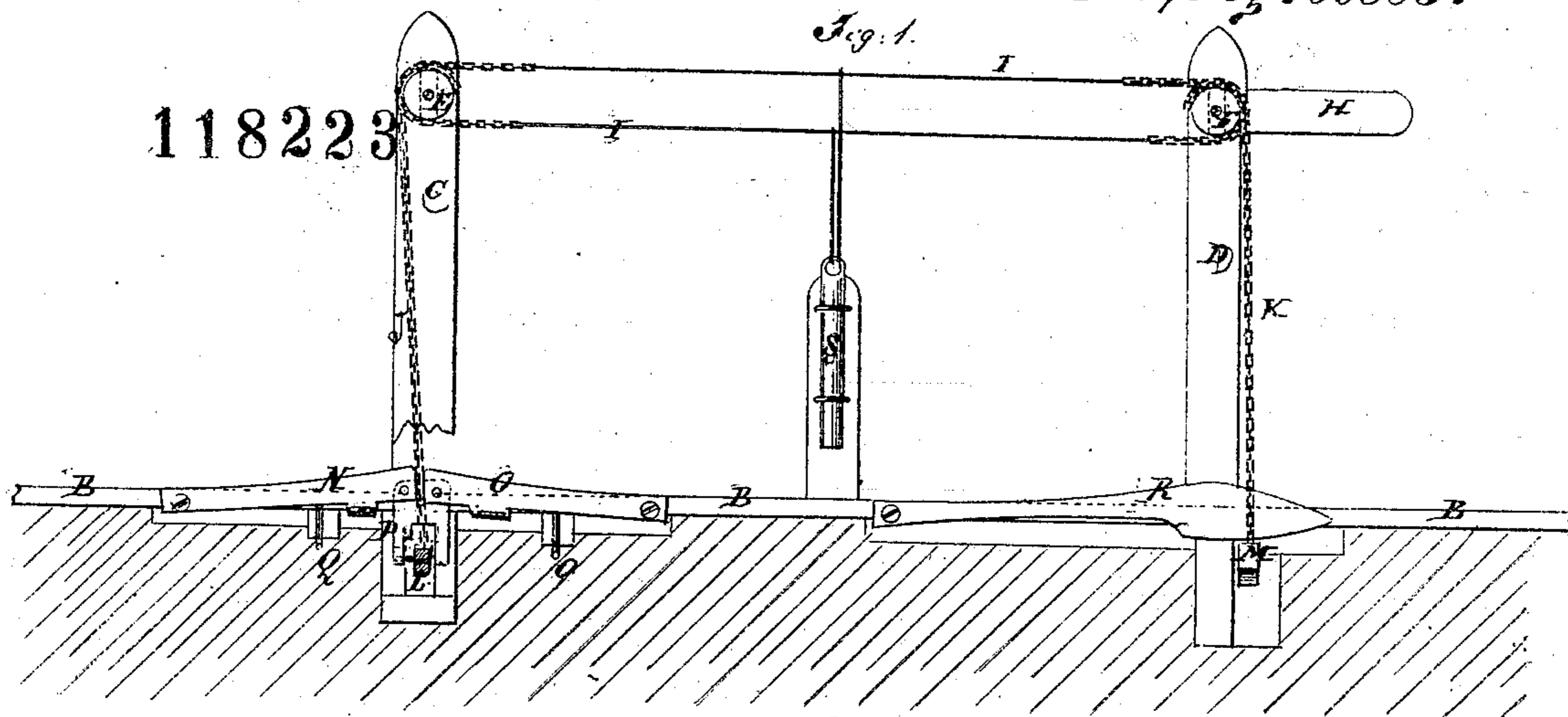


PATENTED AUG 22 1871

# H. S. Evans' Automatic R.R. Signals.

118223



Witnesses:

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# UNITED STATES PATENT OFFICE.

HENRY S. EVANS, OF WEST CHESTER, PENNSYLVANIA.

## IMPROVEMENT IN AUTOMATIC RAILWAY SIGNALS.

Specification forming part of Letters Patent No. 118,223, dated August 22, 1871.

*To all whom it may concern:*

Be it known that I, HENRY S. EVANS, of West Chester, in the county of Chester and State of Pennsylvania, have invented a new and useful Improvement in Automatic Railroad Signals; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side view of my improved apparatus, part being broken away to show the construction. Fig. 2 is a top view of the same. Fig. 3 is a detail sectional view of the same.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved apparatus for operating railroad signals by the passing engine or train, and which shall be simple and inexpensive in construction, effective in operation, and not liable to get out of order; and it consists in the construction and combination of various parts of the apparatus, as hereinafter more fully described.

A represents the ties, and B the rails of an ordinary railroad track. C and D are two signal-posts erected at a suitable distance from the track A B, and at least at such a distance apart that the entire train shall pass one of said posts before its forward end reaches the other post. The posts C D are placed upon the right-hand side of the track, a separate set being used for each track upon a double-track road, and for each side of the track upon a single-track road. To the upper ends of the posts C D are pivoted pulleys E F, with which pulleys are rigidly connected the signals G H. The signal G is a single straight signal or wing, and the signal H is a double signal, its parts or wings being at right angles with each other, and is designed to be used where there is a crossing. I is an endless chain or wire, or a combination of chains and wires, which passes around the pulleys E F, and is so connected with said pulleys as not to slip upon them, so that the two signals may always be moved together. To the pulleys E F are also attached the upper ends of the chains J K, the lower ends of which are attached to the outer

ends of the levers L M, which are pivoted at their inner ends to suitable supports beneath the track.

N O are two levers, extending in opposite directions along the right-hand rail of the track, and the outer ends of which are pivoted to suitable supports at the side of said rail. The inner or adjacent ends of the levers N O are pivoted to a stirrup, P, the arms of which pass down upon the opposite sides of the lever L. The arm of the stirrup P toward the lever N has a shoulder or offset formed upon its inner side, as shown in Fig. 1. By this construction a train moving toward the left, in Figs. 1 and 2, will first depress the lever O, which will throw the stirrup P to the left as it is forced downward, so that it will descend without depressing the lever L. A train moving to the right will, on the contrary, throw the stirrup to the right, so that its shoulder or offset will take hold of the lever L, force it down, and set the signals. As the train passes off the levers N O the said levers N O are raised to their former position by the springs Q, placed beneath them, and which may be made of any suitable material and of any desired form. The upward movement of the levers N O may be limited by a projection formed upon one or both of said levers, and which takes hold of the base of the rail or some other suitable support. The upper side of the levers N O, with which the tread of the wheels of the train comes in contact, should be made inclined or curved, so as to operate the signals gradually.

R is a lever, the left-hand end of which is pivoted to some suitable support at the side of the rail B, and its right-hand end rests upon the lever M, so that as a train moving to the right passes the post D it may depress the levers R M to withdraw the signals. The upper edge of the forward or right-hand end of the lever R is beveled off, so that it may not be struck by the wheels of a train moving to the left. By this construction a train moving to the left will not effect the signals G H, but a train moving to the right, as it approaches the post C, will set the signals G H, which signals will remain set until the train passes the post D, thus signaling in both directions that a train is at the station.

S is a weight suspended from the endless chain

or wire I, to take up the slack caused by the expansion of said chain or wire, so that it may always have sufficient tension to cause the signals G H to move together.

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

1. An improved automatic-signaling apparatus, formed by the combination of the posts C D, pulleys E F, signals G H, endless chain or wire I, chains J K, levers L M, levers N O, stirrup P, springs Q, lever R, and weight S with each other,

substantially as herein shown and described, and for the purposes set forth.

2. The stirrup P, constructed substantially as herein shown and described, in combination with the levers N O and lever L, to cause the signals to be operated by a train passing in one direction, and prevent them from being operated by a train passing in the other, as set forth.

Witnesses: HENRY S. EVANS.

JOS. J. HALL,  
J. S. RUTAN.