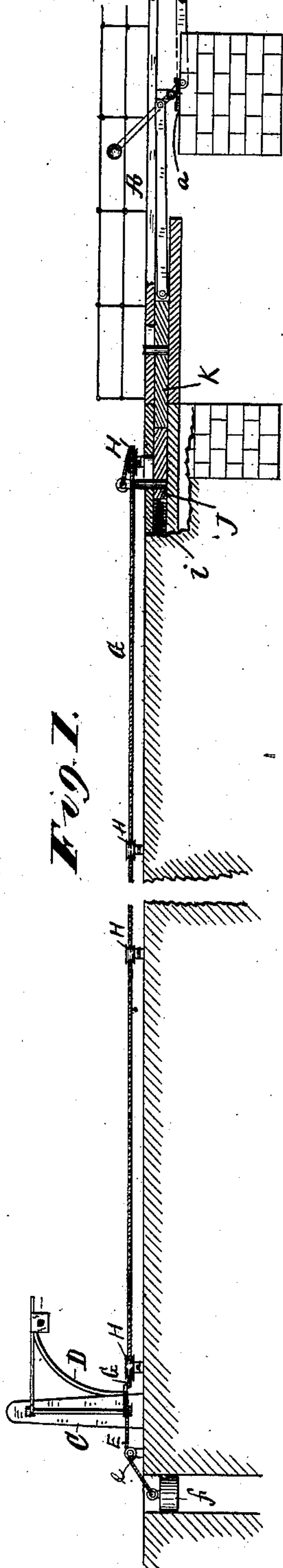


(No Model.)

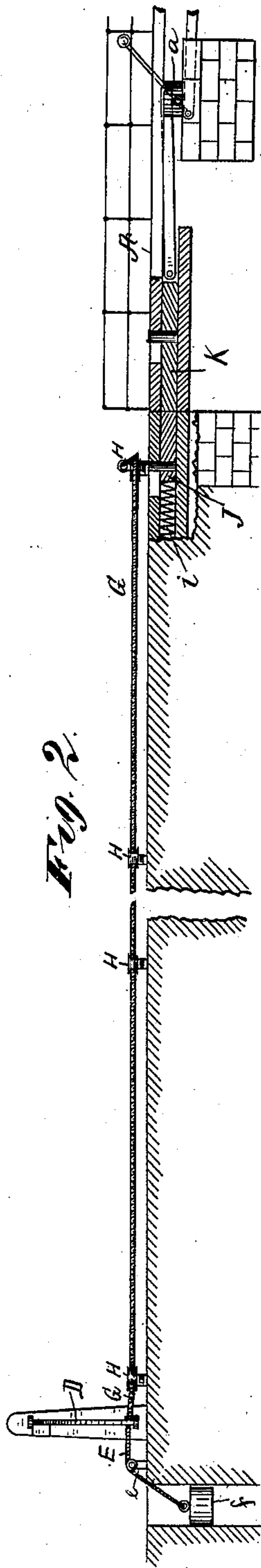
L. J. JOHNSTON.
SIGNAL FOR RAILWAY DRAW BRIDGES.

No. 358,201.

Patented Feb. 22, 1887.



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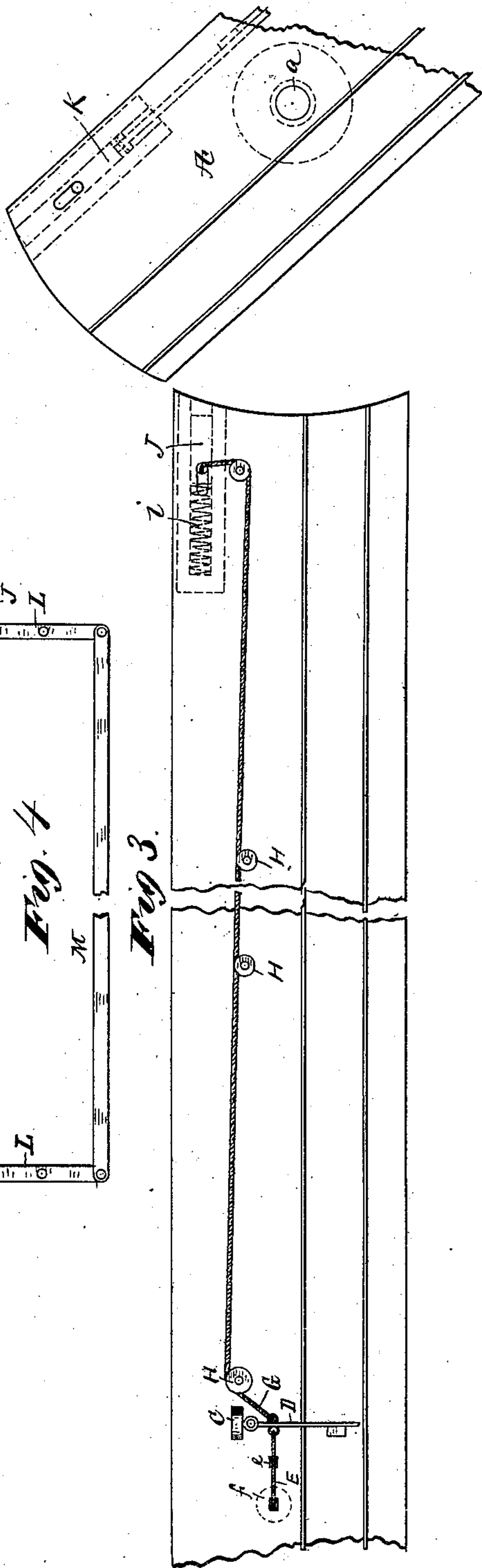


Fig 3.

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UNITED STATES PATENT OFFICE.

LEONARD J. JOHNSTON, OF BERGEN POINT, NEW JERSEY.

SIGNAL FOR RAILWAY DRAW-BRIDGES.

SPECIFICATION forming part of Letters Patent No. 358,201, dated February 22, 1887.

Application filed June 19, 1886. Serial No. 205,731. (No model.)

To all whom it may concern:

Be it known that I, LEONARD J. JOHNSTON, of Bergen Point, in the county of Hudson and State of New Jersey, have invented a new and
5 useful Improvement in Signals for Railway Draw-Bridges; and I hereby declare the following to be a full and clear description thereof.

The object of this invention is to throw out a danger-signal for a draw-bridge at the moment and by the act of the withdrawal of the bolt which secures the draw when closed and releases it to allow it to swing open. This signal may be displayed at some distance from the bridge, so as to give timely warning to an
10 approaching train that the draw is about to be opened.

The invention will be readily understood by reference to the accompanying drawings, in which—

20 Figure 1 is a side view of the invention, partly in section, showing the draw closed and the track clear. Fig. 2 is a similar view showing the parts in position for opening the draw. Fig. 3 is a general plan view, partly in section, showing the draw open. Fig. 4 is a detail view of a modification.

A represents the draw of a swinging draw-bridge of any ordinary construction, and B the abutment with which it engages. The pivot
30 or center on which the draw swings is represented at *a*. At a suitable distance from the end of the abutment is a vertical post, C, to which is connected a swinging crane, D, the horizontal arm of which carries a signal flag, target, or lantern. To the lower portion of the crane is attached one end of a cord, rope, or chain, E, which passes over a pulley, *e*, and then downward below the floor or surface of the abutment, and carries at its lower end a
40 weight, *f*, the tendency of which is to swing the crane D in such a direction as to place the horizontal signal-carrying arm transversely across the track or roadway. There is also attached to the lower portion of the crane one
45 end of a cord, rope, or chain, G, arranged to pull in an opposite direction from the one which carries the weight *f*. This cord, rope, or chain G passes around one or more pulleys, H, and has its other end attached to a block
50 or piston, J, sliding in ways below the floor or surface of the abutment, and arranged so that its outer end may work flush with the

edge of the abutment with which the edge of the swinging draw engages. This block or piston J may be provided with a spring, *i*, having a tendency to force it outward. 55

Under the floor or surface of the draw is a fastening latch or bolt, consisting of a rod or bar, K, sliding in suitable ways and arranged to project beyond the edge of the draw which
60 engages with the edge of the abutment, and to work in a right line with the block or piston J. This bolt K may be operated by the bridge-tender, while standing on the draw, by means of a handle projecting up through a slot; or
65 it may be connected by a series of rods and levers with a station situated at or near the center of the draw and operated in a similar manner to that in which railway-switches are operated. 70

The operation of my invention is as follows: When the parts are in the position shown in Fig. 1, the draw is closed and locked, and the crane D is swung around parallel with the track or roadway, and the signal indicates that
75 the track is clear. When the bolt K is drawn back to unlock the draw, the weight *f*, acting on the crane through the chain and pulley, swings the crane, with the signal attached, across the track or roadway, and also, through
80 its connection with the sliding block or piston J, forces said piston outward until its outer end is flush with the edge of the abutment, in which latter movement the spring *i* co-operates with the weight *f*, as shown in Figs. 2 and
85 3, in which the draw is represented as open. When the draw is again closed, the bolt K is shot into its seat, which is formed by the outer portion of the ways in which the block or piston J works, and this movement forces the
90 block or piston J inward, causing it to pull on the cord or chain G and swing the crane and signal back to the former position parallel with the track or roadway.

Instead of the cord or chain G and pulley
95 H, the crane may be connected with the block or piston by a series of levers and connecting-rods, as shown in Fig. 4, in which L represents a lever, and M a connecting-rod, the operation of which is obvious. It is also obvious that instead of the weight *f* a spring may be used to swing the crane across the track, and may be made to operate either by contraction or expansion. 100

It will be noted from the foregoing description that this my improved signal differs from those heretofore in use in connection with draw-bridges by having its signal made in the form of a swinging crane adapted to be thrown out over the track or roadway when it is used for the danger-signal, and being thus over the roadway it becomes impossible for an engineer or other person approaching to fail to notice it. In this respect it differs from all signals heretofore in common use, where the cautionary signal is displayed by the side of the roadway. Signals may have been thrown out over the roadway in some forms of railway-signals, but not operated by the latching mechanism of a draw-bridge. The target swinging out over the roadway and the combination with it of mechanism for operating it by and in connection with the latch of the draw-bridge constitute the essential elements of this invention.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. The abutment B and its swinging-crane signal D, with the operating mechanisms, the cord or chain E, pulley e, and weight f, or its equivalent spring, in combination with the cord or chain G and the operating piston or follower J, actuated by the bridge-latch, substantially as described.

2. The combination, with the abutment B and swinging crane D and its operating weight or spring f, of the cord or chain G and pulley H, or equivalent device, and the sliding block or piston J, and the bridge-locking bolt K, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

LEONARD J. JOHNSTON.

Witnesses:

DANIEL R. GARDEN,
JACOB H. JOHNSTON.