

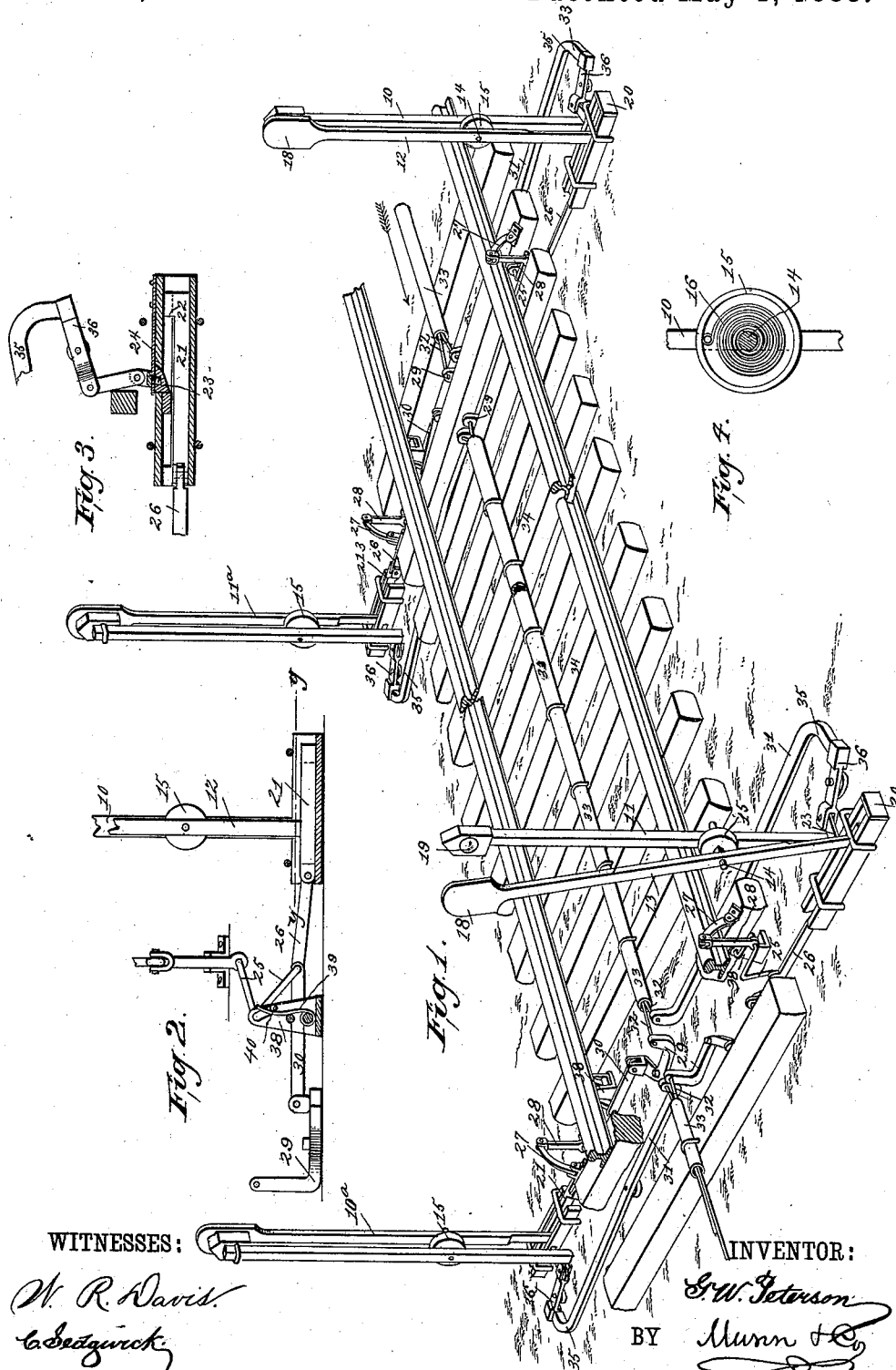
(No Model.)

2 Sheets—Sheet 1.

G. W. PETERSON.
BLOCK SIGNAL.

No. 382,053.

Patented May 1, 1888.



WITNESSES:

W. R. Davis.
C. Sedgwick.

INVENTOR:

G. W. Peterson
BY *Munn & Co.*
ATTORNEYS.

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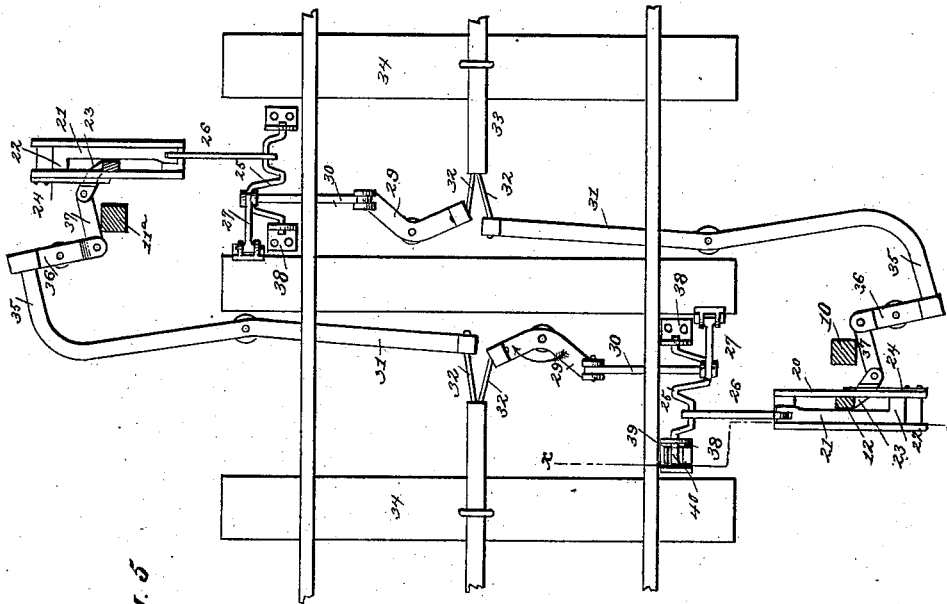
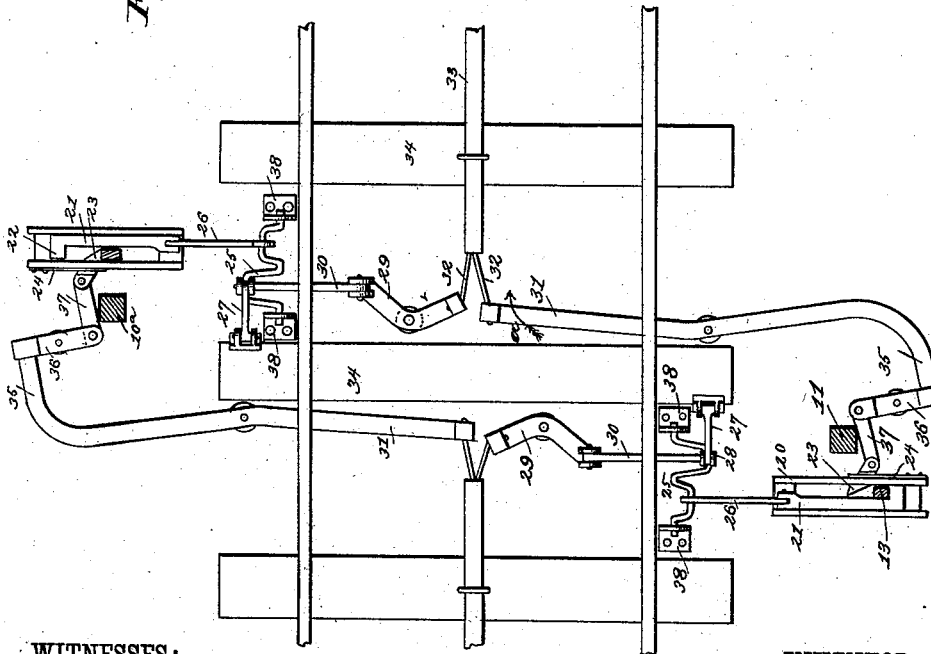


Fig. 5



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UNITED STATES PATENT OFFICE.

GEORGE WILLIAM PETERSON, OF LEONARDVILLE, KANSAS.

BLOCK-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 382,053, dated May 1, 1888.

Application filed May 23, 1887. Serial No. 239,637. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WILLIAM PETERSON, of Leonardville, in the county of Riley and State of Kansas, have invented a new and
5 Improved Block-Signal, of which the following is a full, clear, and exact description.

This invention relates to a mechanical signaling apparatus wherein the signal-stands are arranged to divide the road into a system or
10 series of "blocks," the arrangement being such that a train entering a block will set the signal at that end of the block toward which it is moving to "danger," the signal at the end where the train is entering being closed or
15 set to "safety" by the same movement which acts to set the danger-signal before referred to.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate
20 corresponding parts in all the views.

Figure 1 is a perspective view of a portion of a road, representing the same as it appears when provided with my improved signaling
25 apparatus. Fig. 2 is a cross-sectional view taken on line *xx* of Fig. 5. Fig. 3 is a sectional plan view taken on line *yy* of Fig. 2, the view, however, being upon a slightly larger scale. Fig. 4 is an enlarged detail view representing the spring-connection of the signaling-disk; and Fig. 5 is a plan view of the signaling apparatus, the lamp-posts and the signal-disk levers being shown in section.

In describing the signal illustrated in the drawings above referred to, I will at first confine my description to the signaling devices
35 upon the left-hand side of the track, the train being supposed to be moving in the direction of the arrow shown in connection with the track in Fig. 1. In this construction 10 and
40 11 are two posts which are sunk in the ground or connected to any suitable base which will support them in a rigid vertical position.

In connection with the posts 10 and 11 I arrange levers 12 and 13, said levers being mounted upon studs 14, which extend outward from the posts through spring-cases 15, spiral springs 16 being arranged within the cases, and one end of each of these springs being connected to its stud, while the other end is connected
50 to the spring case, the arrangement being such

that the springs continually tend to throw the levers 12 and 13 toward the track—that is, toward the position in which the lever 13 is shown in Fig. 1.

The levers 12 and 13 carry signaling-disks 55 18, while the posts 10 and 11 carry lights or lanterns 19, which, when the disks 18 are in the position shown upon the right in Fig. 1, are closed or set to "safety," but which are exposed or set to "danger" when the disks 60 are in the position in which the disk 18 is shown upon the left in Fig. 1. The lower ends of the levers 12 and 13 extend downward into cases 20, in which there are mounted slides 21, having shoulders 22, stops 23 being arranged 65 to enter the sides of the cases, said stops being supported by springs 24.

The slides 21 are connected to double-crank bars 25 by links 26, and these crank-bars are in turn connected with tripping-bars 27 by links 70 28 and with bell-crank levers 29 by other links, 30, the bell-crank levers 29 being connected with levers 31 by wires 32, which wires extend through tubes 33, that are secured to the ties 34, the levers 29 and 31 being pivotally 75 connected to their supporting-stands. The levers 31 are formed with curved ends 35, which bear against short levers 36, that are connected by means of links 37 with the stops 23. 80

In connection with each of the shafts 25, 80 which shafts are mounted in standards 38, I arrange springs 39, which bear against auxiliary crank-arms 40, that are formed upon the shafts 25, the springs 39 tending to throw the shaft 25 and the parts carried thereby to the 85 position in which the said shaft and parts are shown in Figs. 2 and 3.

We will now suppose that a train is approaching the post 10 from the direction of the arrow shown in Fig. 1, and that the engine of 90 such train is provided with an overhanging arm upon its left side, such arm being mounted in a position so that it will strike against and depress the tripping-bar 27, and as such bar is depressed the lever 29 will be moved in the 95 direction of the arrow shown in connection therewith, and the inner end of the lever 31 will consequently be drawn in the direction of its arrow *a*, while the outer curved end, 35, will be forced against the lever 36, which will 100

be moved so as to draw the stop 23 out of the case 20, thus permitting the spring 16 to act to throw the disk-carrying lever 13 to the position in which it is shown at the left in Fig. 1; but as the tripping-bar 27 is depressed it also acts, through the medium of the shaft 25, to draw the slide 21 forward—that is, toward the track—and as the slide is so drawn forward its shoulder 22 will strike against the lower end of the lever 12, and said lever will be moved to a position in advance of its stop 23, thus closing the signal at the post 10; then as the train reaches the post 11, the tripping-lever 27, arranged in connection with said post, will be depressed and the signal-stand at the farther end of the block the train is just entering will be thrown to “danger” and the signal at the post 11 will be closed, from which arrangement it will be seen that while a train moving in the direction of the arrow shown in Fig. 1 is in the block between the posts 10 and 11 the engineer of a train approaching in the opposite direction will see the danger-signal displayed at the post 11, and will know that it is unsafe to enter said block.

The signals above described are of course applicable only for trains moving in the direction of the arrow shown in Fig. 1; but in order that signals for trains moving in the opposite direction may be provided I arrange a duplicate set of signals upon the opposite side of the track, the posts of said signal-stands being shown at 10^a and 11^a, the other parts being numbered to correspond with the parts heretofore described. The connecting-wires of this second system of signaling devices are passed through the tubes 33 and the operation is in all respects the same as that hereinbefore described, except that the trains move in the opposite direction.

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

1. The combination, with two signal-disks located at opposite ends of a block, of springs, against the tension of which the disks are normally held, a slide arranged in connection with the signal-disk at the entrance to the block, a tripping-bar connected to said slide and to a stop which holds the disk at the other end of the block, substantially as described.

2. The combination, with two signal-disks and their supporting-levers, of springs, stops which hold the signal-disk levers against the tension of the springs, slides arranged in connection with the levers and formed with shoulders adapted to bear upon the levers, a rock-shaft, connection between the slide and the rock-shaft, a tripping-lever, also connected to the rock-shaft, a bell-crank lever, a connecting-wire leading from said bell-crank lever to a lever, 31, said lever, and a lever, 36, that is connected to the stop of the second signal-disk, substantially as described.

3. In a block signaling apparatus, the combination of a lever, 12, a spring, 16, arranged in connection with the lever, a stop, 23, a slide, 21, formed with a shoulder, 22, a link, 26, a crank-shaft, 25, a tripping-bar, 27, connected to said shaft, a lever, 29, also connected to the crank-shaft, a connecting-wire, 32, a lever, 31, to which the wire 32 is connected, and a lever, 36, connected to the stop 23, all substantially as described.

GEORGE WILLIAM PETERSON.

Witnesses:

ROWLAND DAVIES,
C. W. HUDSON.