

(No Model.)

2 Sheets—Sheet 1.

H. W. RAGSDALE.
SIGNAL FOR RAILWAY CROSSINGS.

No. 464,145.

Patented Dec. 1, 1891.

FIG. 1.

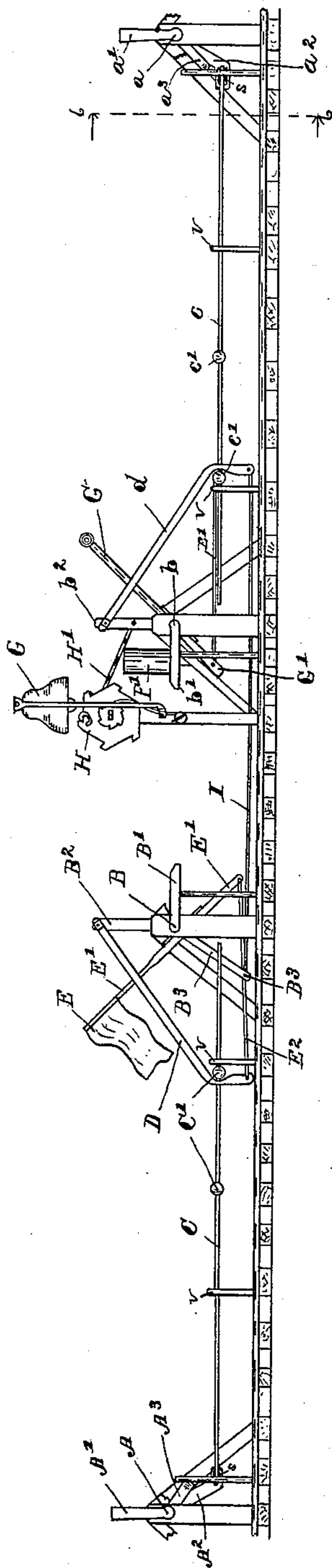
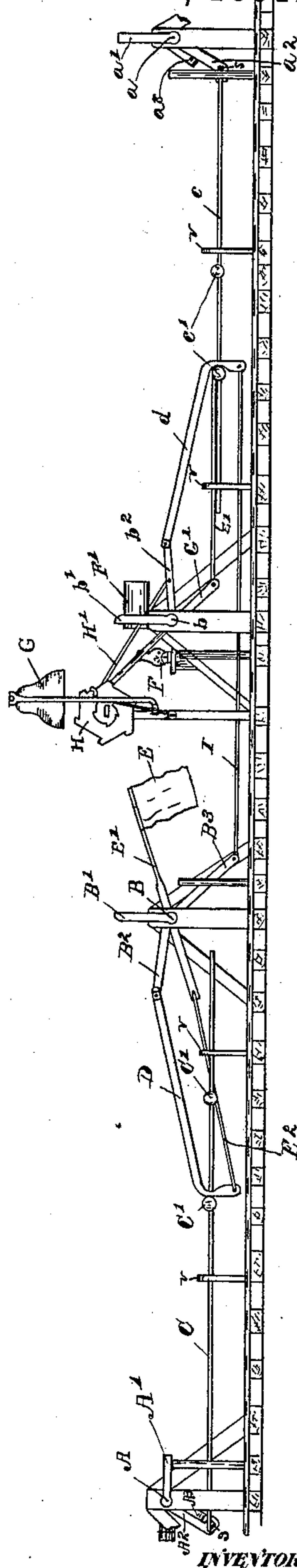


FIG. 2.



WITNESSES.

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2 Sheets—Sheet 2.

No. 464,145.

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FIG. 3.

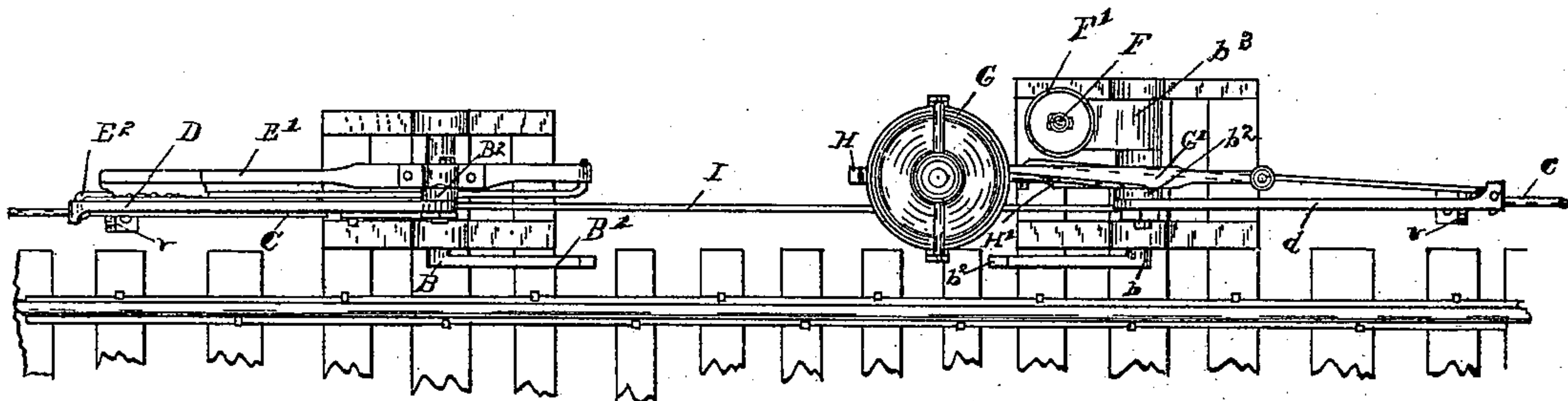
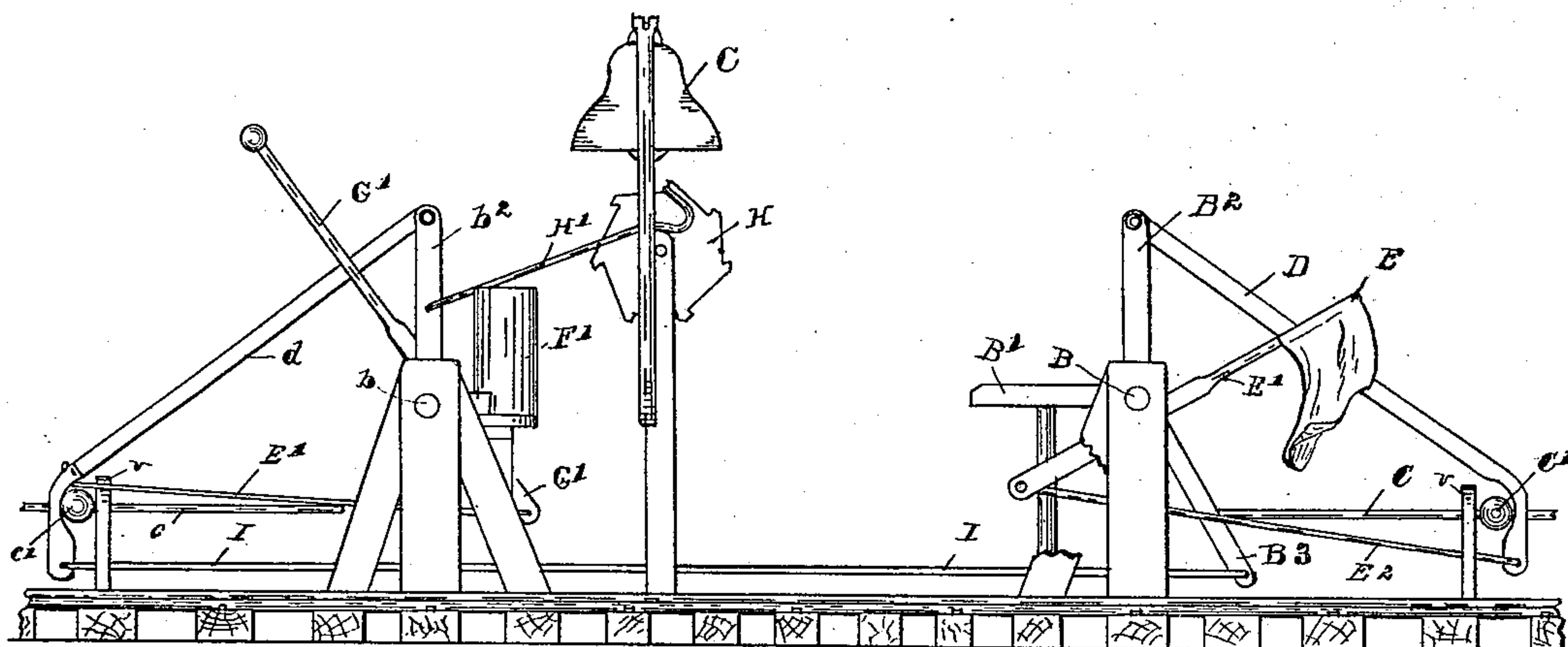


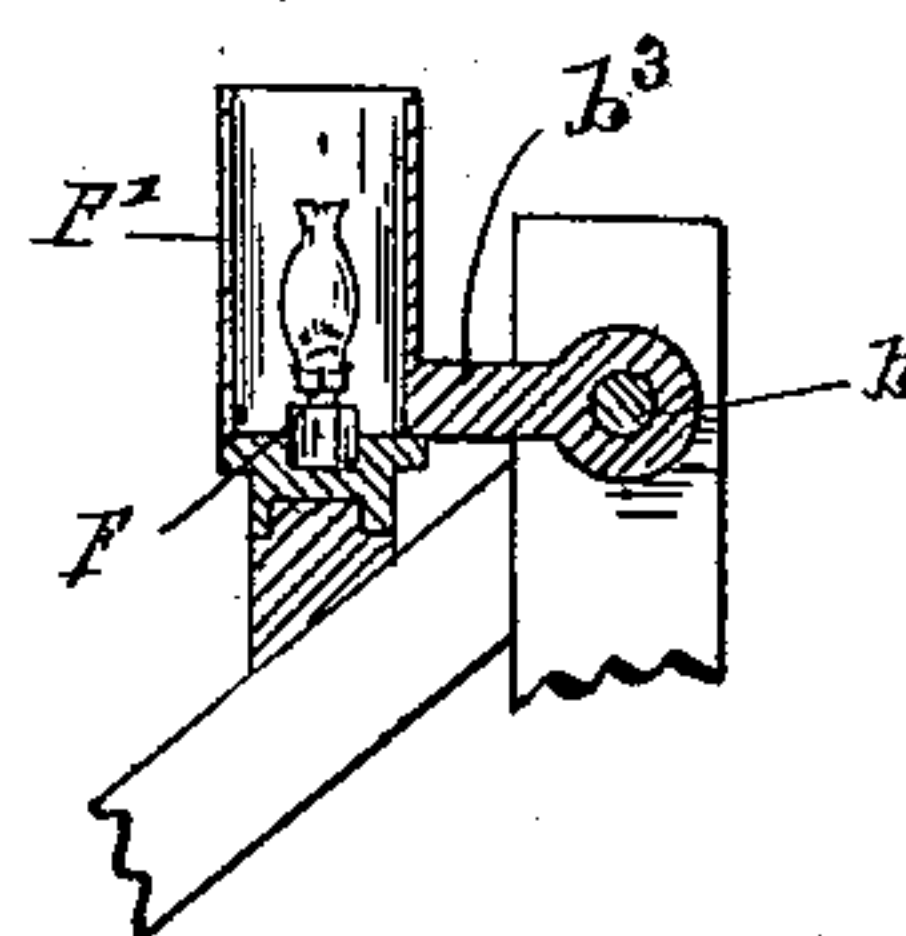
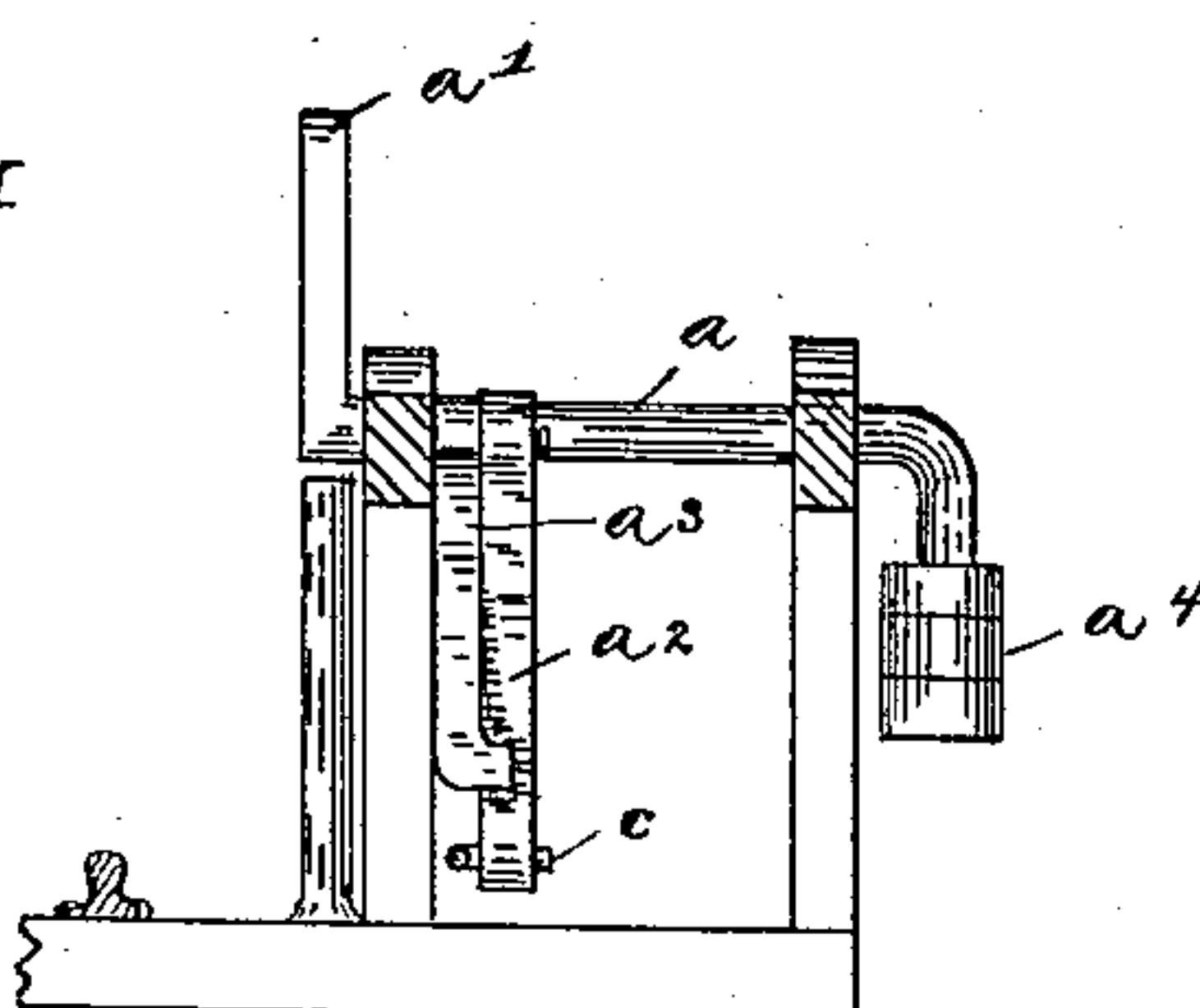
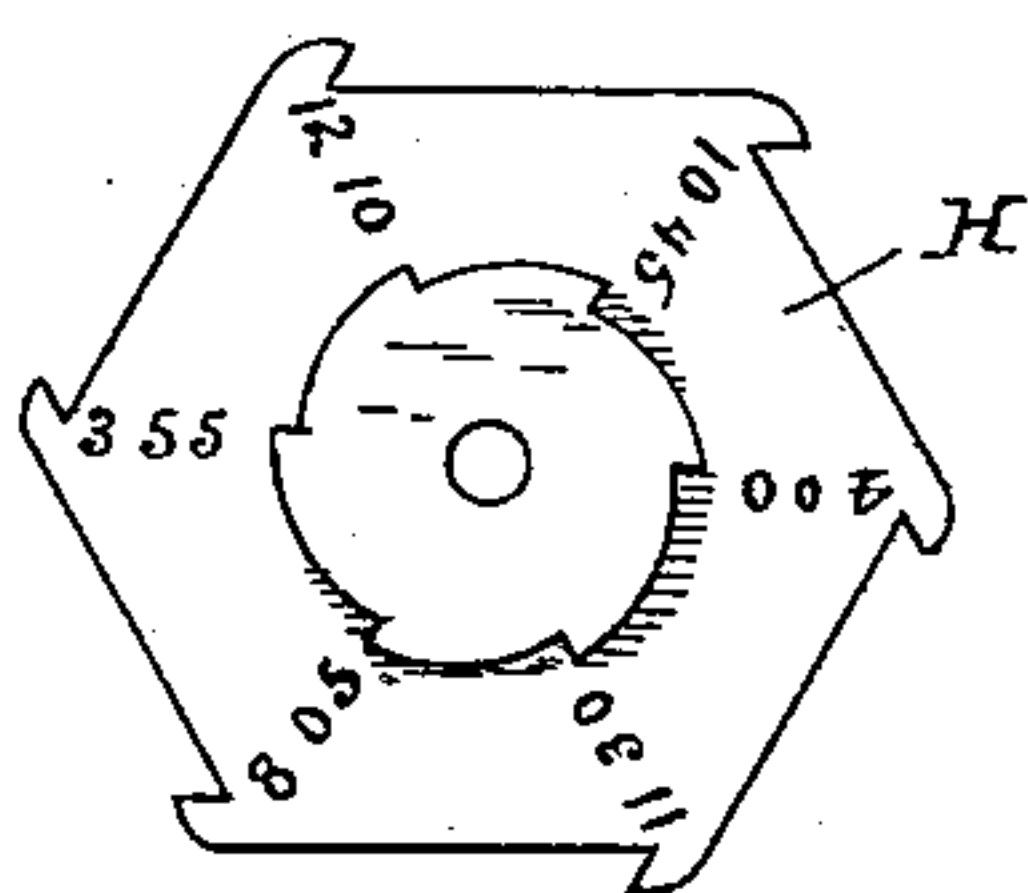
FIG. 4.



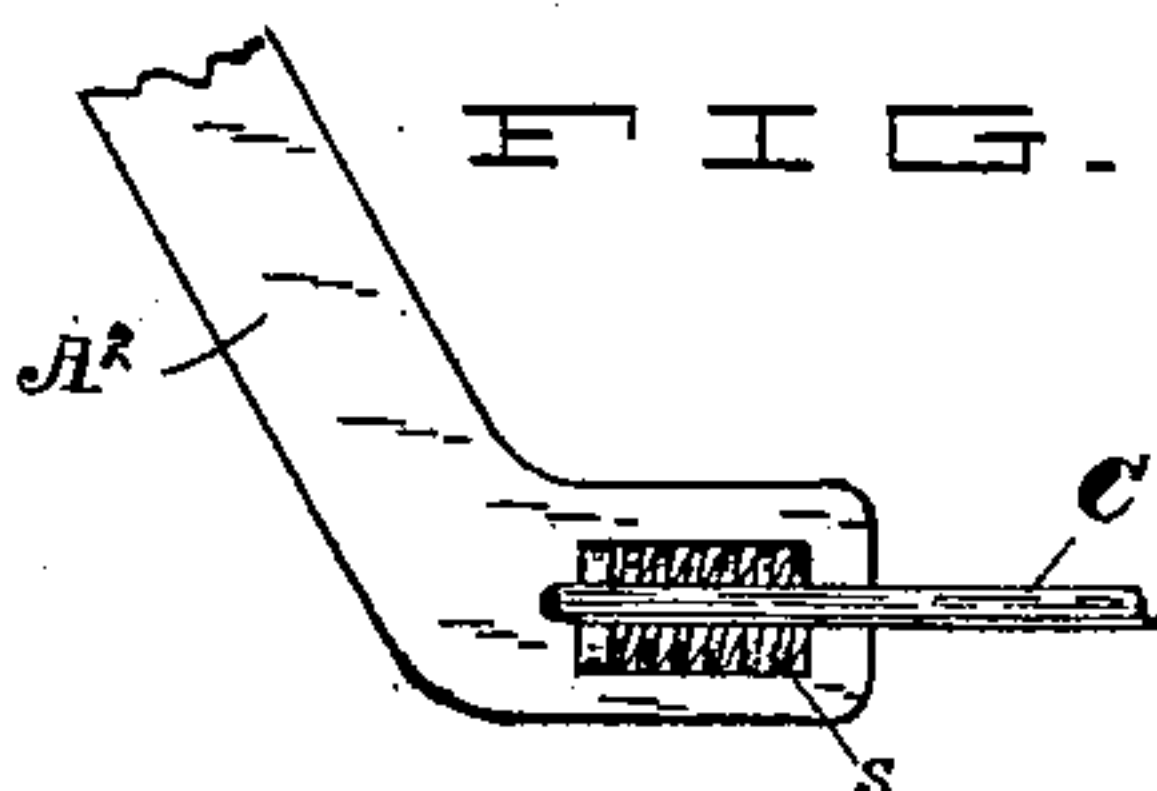
F I G . 5

F I G. 5.

FIG. 7.



F H G. X.



WITNESSES.

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INVENTOR.

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UNITED STATES PATENT OFFICE.

HARVEY W. RAGSDALE, OF TRAFALGAR, INDIANA.

SIGNAL FOR RAILWAY-CROSSINGS.

SPECIFICATION forming part of Letters Patent No. 464,145, dated December 1, 1891.

Application filed April 13, 1891. Serial No. 388,652. (No model.)

To all whom it may concern:

Be it known that I, HARVEY W. RAGSDALE, a citizen of the United States, residing at Trafalgar, in the county of Johnson and State of Indiana, have invented certain new and useful Improvements in Signals for Railway-Crossings, of which the following is a specification.

The object of my said invention is to produce a device by which the approach of trains may be plainly signaled at railway-crossings both by day and by night, and persons approaching the crossings thus warned.

It further consists in providing, in connection with such signals, an indicator which will be caused each time a train passes to display the time at which the succeeding train is to arrive.

This invention will first be fully described, and then pointed out in claims.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation of apparatus embodying my said invention, the several parts being in the positions they occupy when the crossing is clear; Fig. 2, a similar view showing the several parts in the positions they occupy after the train has reached the place where it first comes in contact with the arm on the rock-shaft through which it is enabled to operate the invention and before it has passed the crossing; Fig. 3, a top or plan view, on an enlarged scale, of the mechanism immediately adjacent to the crossing; Fig. 4, a side elevation of the same from the opposite side to that shown in Figs. 1 and 2; Fig. 5, a detail view, on an enlarged scale, of the indicator device; Fig. 6, a transverse section looking toward the right from the dotted line 6 6 in Fig. 1; Fig. 7, a detail sectional view through the lamp, also on an enlarged scale; and Fig. 8, a detail sectional view illustrating the connection between the rods and arms more plainly.

In said drawings the portions marked A *a* represent rock-shafts, which are connected to the mechanism of the signaling and indicating devices, and which are operated in one direction by the passing train and in the other direction by weighted arms attached thereto; B *b*, rock-shafts which operate the mechanism

in the reverse direction to that in which it is operated by the rock-shafts A *a*; C *c*, rods or wires running from arms on the rock-shafts A *a* to near the signaling mechanism; D *d*, connecting rods or links connecting the rock-shafts B *b* to the rods C *c*; E, a flag; F, a light; G, a bell; H, the indicator-disk carrying inscribed thereon the times the trains regularly pass, and I a rod connecting the two sides or divisions of the apparatus together, so that they will operate simultaneously.

The rock-shafts A and *a* are mounted upon appropriate frame-work a considerable distance from the crossing, said distance being sufficient so that after a train coming in either direction reaches one of them there will be time for any person or team crossing the track to pass entirely across and out of the way of danger before the train reaches the crossing. They are provided with arms or projections A' *a'* with which the train in passing will come in contact, thus forcing said rock-shaft over. Mounted upon these rock-shafts are loose arms A² *a*², which hang downwardly, and to the ends of which the outer end of the rods C *c* are connected. Rigid arms A³ *a*³ extend down from these rock-shafts alongside the loosely-mounted arms. The ends of these are bent to one side and extend across the faces of said loosely-mounted arms, so that when the shaft is rocked in one direction said arms and the rods connected thereto are pulled thereby, while this construction permits the rock-shafts to resume their former position without affecting the position of said rods. Said rock-shafts also have other arms A⁴ *a*⁴, which are weighted and thus restore said rock-shafts to their former position. Posts P are preferably set at convenient points, and serve as stops to limit the movement of the arms and rock-shafts.

The rock-shafts B *b* are mounted in a similar manner as are the rock-shafts A *a*, and they are provided with arms or projections B' *b'* with which the train will come in contact as it passes, and thus operate to move the mechanism back into the position from which it has been moved by the operation upon the rock-shaft A or *a*. Said rock-shafts are respectively provided with arms B² *b*², to which the connecting rods or links D *d* are

connected, and one of them carries the signal-flag and the other the hammer for the bell. One of them B is also provided with an arm B³, to which one end of the connecting-rod I is attached.

The rods or wires C c extend from arms on the rock-shafts A a to points close to their respective sides of the crossing. They are supported at intervals by bearings v. These rods are several hundred feet long in actual practice, but in the drawings they are shown very short for convenience. They are also shown raised for plainness; but in practice they might be laid down close alongside the rails. Near the crossings they are provided with enlargements or projections C' c', (preferably adjustably secured thereon by set-screws,) which engage with the lower ends of the connecting rods or links D d, said links being otherwise loosely connected thereto. Springs s (see Fig. 8) are arranged to form a buffer connection and take up a portion of the shock of the impact of the moving train.

The connecting rods or links D d are connected to the arms B² b² at their upper ends and extend down to the rods C c, which pass through their other ends, as shown. They are operated by the enlargements C' c' on said rods as said rods are forced back and forth by the operation of the rock-shafts A a, and they thus operate to rock the rock-shafts B b. To the extreme lower end of the link c one end of the cross-rod I is connected, as shown.

The staff E' of the flag E is loosely mounted on the rock-shaft B, which thus serves as a pivot therefor. A connecting rod or link E² connects the lower end of this flag-staff to the lower end of the link D, and thus the flag is thrown forward or backward when the remainder of the mechanism is operated, being thrown forward across the crossing by the approach of the train and backward by its departure.

The light F is mounted upon or near the frame-work of the rock-shaft b. An arm b³ on said rock-shaft carries a tubular hood F', which is adapted to cover said light when thrown in one direction and to be removed from and display said light when said rock-shaft is thrown in the other direction. It is so arranged as to be moved to display the light by the approach of the train and to cover the light by its departure.

The bell G is mounted upon a standard near to or connected with the frame-work supporting the other mechanism. A bell-hammer shaft G' is mounted upon the rock-shaft b, which thus serves as a pivot on which it may swing. A connecting-rod E' connects the lower end of this bell-hammer shaft with the lower end of the link d. The operation is, when the rock-shafts are moved, that this bell-hammer shaft will be swung on its pivot, and the upper or hammer end will come in contact with the bell, ringing the same.

The indicator H is a disk appropriately

mounted, preferably on the same standard which carries the bell, and it has inscribed on its face the times at which the several trains regularly pass the point where it is located. It is provided with as many projections as there are trains. A rod H', appropriately bent, is connected with the arm b² and rests upon the edge of this disk. As a train approaches the movement of said arm pulls said rod back, and as it passes the crossing said arm forces said rod forward, rotating the disk and throwing that side of it which carries the inscription showing the time of the succeeding train to the front.

The rod I simply connects the two sides of the apparatus. It is attached at one end to the arm B³ and at the other to the lower end of the link d.

The general operation of this invention will be briefly described as follows: An approaching train comes in contact with one of the arms or projections A' or a', rocking the rock-shaft A or a, and through it the arm A³ or a³, moving the loosely-mounted arm A² or a², thus pulling the rod C or c, and through the links D and d rocking the rock-shafts B and b, thus throwing the flag over across the crossing and swinging the hood F' from over the light. At the same time it swings the bell-hammer shaft G', thus ringing the bell, and draws back the rod H', ready upon the succeeding movement to push the indicator-disk forward. When the train has reached the crossing, it comes in contact with the arm or projection B' or b', and all this mechanism is thus operated in the reverse direction, which throws the flag back out of the way of the crossing, throws the hood over the light, and pushes the indicator-disk forward, and these parts remain in these positions until another train approaches, when the operation is repeated.

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

1. The combination, in a signaling device for railway-crossings, of a rock-shaft b, situated alongside the crossing, rock-shafts at a distance therefrom, connections between said rock-shafts, a lamp F near said crossing, and a hood F', carried by an arm b³ on the rock-shaft b, which is adapted to be thrown to expose said light as the train approaches and to cover said light as it departs, said several parts being arranged and operating substantially as shown and described.

2. The combination, with a signaling device for railway-crossings, of an indicator-disk mounted near the crossing and having the times of the trains which pass inscribed at points on the face and provided with a projection for each inscription, and a rod connected with the moving mechanism of the signaling devices and engaging with said disk, whereby it is moved forward each time a train passes, thus displaying the time of the succeeding train, substantially as set forth.

3. The combination of the rock shafts A *a*
and B *b*, the rods or wires C *c*, the links D *d*,
the flag E, and the light F, said several parts
being appropriately connected together and
5 operating substantially as described, and
forming a signaling apparatus for railway-
crossings.

In witness whereof I have hereunto set my
hand and seal, at Indianapolis, Indiana, this
6th day of April, A. D. 1891.

HARVEY W. RAGSDALE. [L. S.]

Witnesses:

CHESTER BRADFORD,
FRANK W. WOOD.