

No. 725,956.

PATENTED APR. 21, 1903.

C. F. GRANGER.
RAILROAD SWITCH.

APPLICATION FILED FEB. 7, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

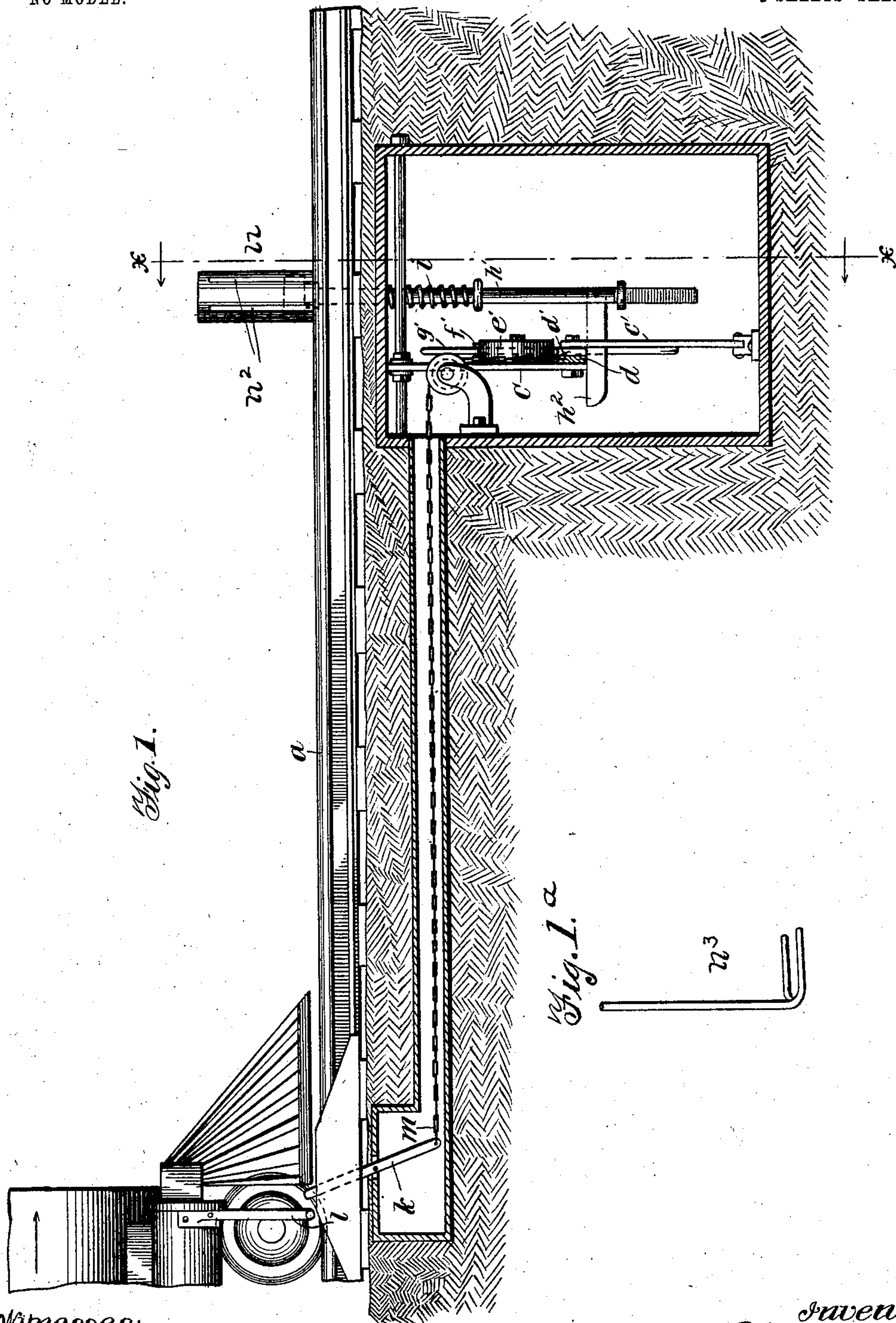


Fig. 1.

Fig. 1. a

n³

Witnesses:

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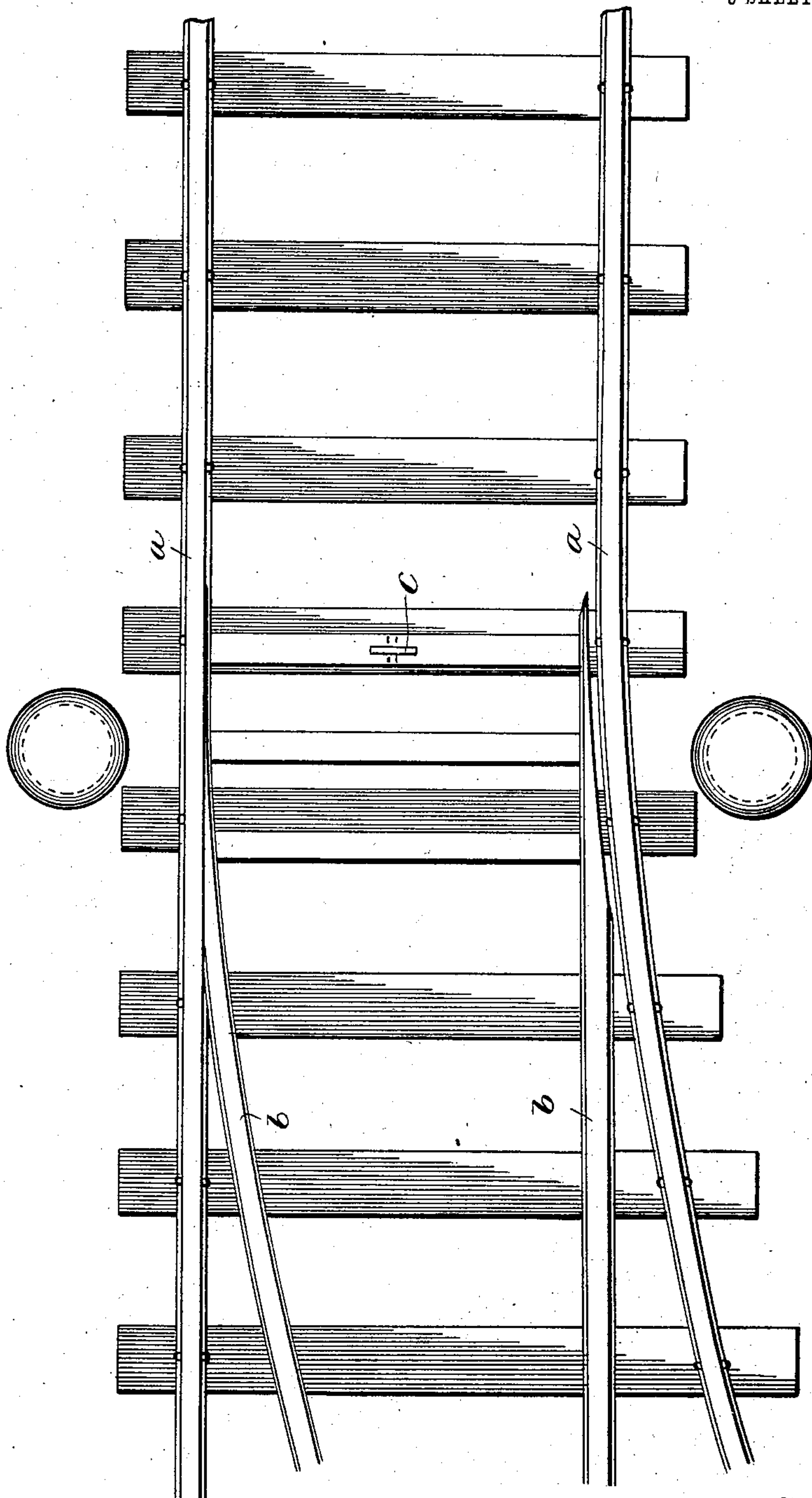
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3 SHEETS—SHEET 2.

Fig. 2.



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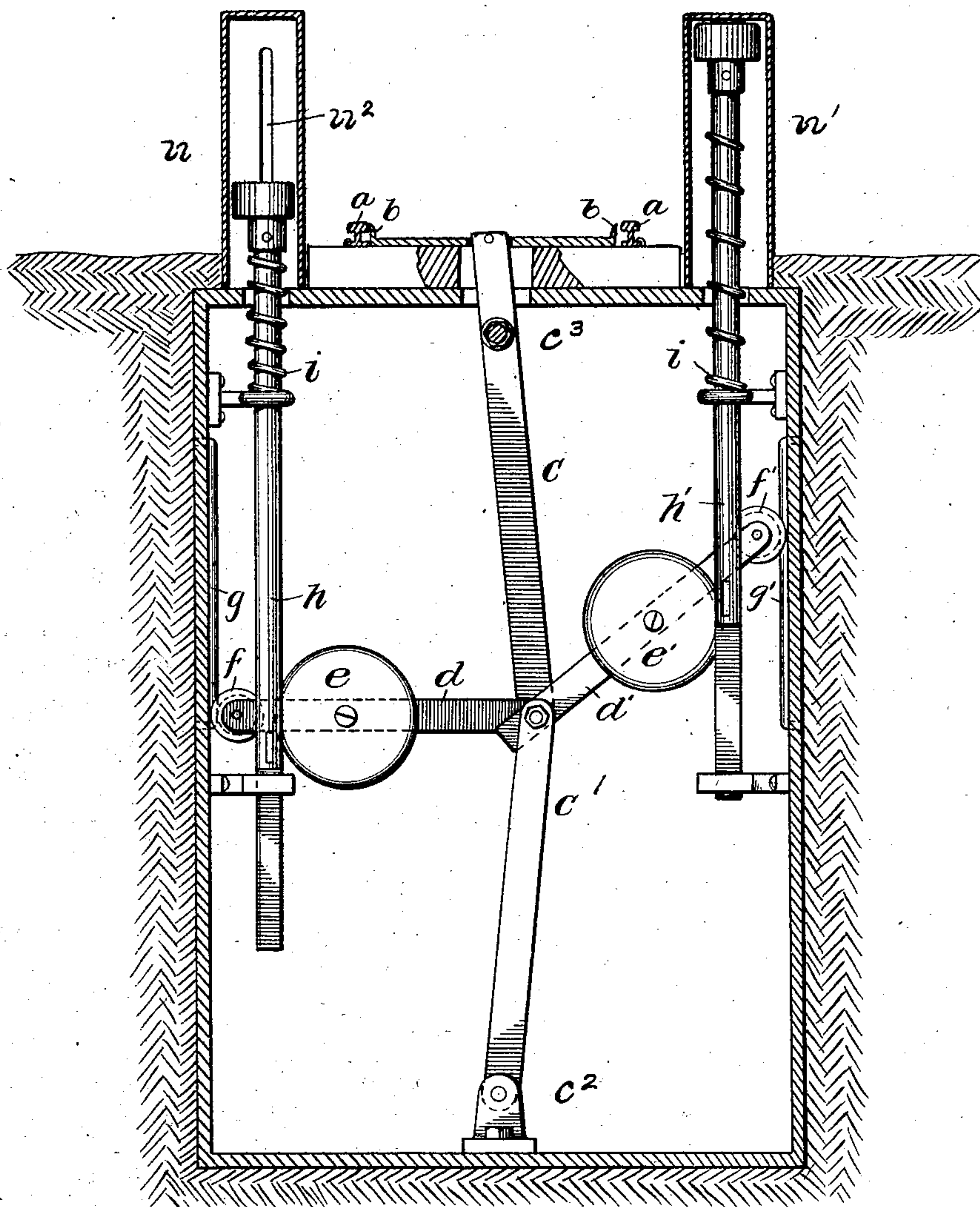
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3 SHEETS—SHEET 3.

Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES F. GRANGER, OF HOLYOKE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO E. L. ALDERMAN, OF HOLYOKE, MASSACHUSETTS.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 725,956, dated April 21, 1903.

Application filed February 7, 1903. Serial No. 142,335. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. GRANGER, a citizen of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Railroad-Switches, of which the following is a specification.

The object of the improvement is the production of a railway-switch adapted to be operated by hand and also adapted to be operated from an open to a closed adjustment by a vehicle—a locomotive, for instance—approaching the switch on the fixed tracks.

In the accompanying drawings, Figure 1 is a side elevation with some of the parts broken away or absent. Fig. 1^a is a view of the operating-lever. Fig. 2 is a view from above, a plan view, of a portion of the tracks. Fig. 3 is an elevation partly in section on the plane denoted by the dotted line *x x* of Fig. 1.

The particular object of the invention is to provide a safety adjustment for a railroad-switch whereby if a switch from the main track to a siding is left open it will be closed by a train approaching on the main track before the switch is reached.

In the accompanying drawings, *a* denotes fixed tracks.

b denotes shiftable tracks properly connected together.

c c' denote pivotally-connected toggle-levers, one of which, *c'*, may be pivotally supported in a suitable chair, as *c²*. The upper end of the lever *c* is connected with the shiftable tracks, and this lever is pivoted at a point between its ends, as at *c³*. *d d'* denote levers pivotally connected to said toggle-levers at their pivotal connection, carrying adjutably thereon the weights *e e'* and provided with friction-wheels *f f'*, bearing against track-supports *g g'*, which allow said weighted levers their necessary movement and at the same time prevent them from falling unduly outward.

The letters *h h'* denote shifting-rods designed for use in shifting the shiftable tracks by hand. Each has a hook *h²* or the like underlying the weighted lever, with which it co-operates. These shifting-rods lie normally

in their down adjustment, being kept there by their gravity. When one of the weighted levers is in its downward adjustment, then by pulling up on and raising its appurtenant shifting-rod, as shown at *h'* in Fig. 3, that weighted lever is raised, its fellow is lowered, and the shiftable tracks are moved accordingly. The raising of the lever *d'* by the rod *h'* moves the shiftable track to the position shown in Fig. 3, opening the switch to the siding. By reference to Fig. 3 it will be seen that the pivotal point of the toggle-levers *c c'* passes by the center in the extreme positions of the levers *d d'*, the construction being such as to permit of this break, and the shiftable tracks are thus securely locked in either of their positions. The weights *e e'* aid in maintaining the position of the toggle-levers *c c'*. When one of the shifting-rods *h'* has been raised and the tracks shifted, it will drop by its own weight, and I provide a spring *i*, which acts as a buffer and maintains the upper ends of the rods in a position where they can be readily grasped. The switch will only be operated by an oncoming train when it has been carelessly left open. One of the weights *e* is connected by the chain *m* with a pivoted lever *k*, which occupies the position shown in Fig. 1. When the switch is open, its upper end projects into operative relation with a projection *l*, carried by the vehicle, as a locomotive. This projection *l* coming in contact with the upper end of the lever *k* throws it forward, drawing the chain *m* up over the pulley and raising the weight *e*. The operation is exactly as if the shifting-rod *h* were raised by hand, dropping the lever *d'* and reversing the position of the parts from that shown in Fig. 3, closing the switch to the siding and giving a clear main track.

In order to prevent tampering with the switch mechanism through the rods *h h'*, I prefer to inclose the ends of these rods in suitable tubes *n n'*, these tubes being slotted, as at *n²*, to receive the prongs of the operating-lever *n³*. (Shown in Fig. 1^a.)

I claim as my invention—

1. In combination; the fixed tracks; the connected shiftable tracks, the toggle-levers, one of them taking hold of the shiftable

tracks; and the weighted levers pivotally connected to said toggle-joints at their pivotal connection.

2. In combination; the fixed tracks; the
5 connected shiftable tracks; the toggle-levers, one of them taking hold of the shiftable tracks; and the adjustable weighted levers pivotally connected to said toggle-levers at their pivotal connection.

3. In combination; the fixed tracks; the
10 connected shiftable tracks; the toggle-levers, one of them taking hold of the shiftable tracks; the weighted levers pivotally connected to said toggle-levers at their pivotal
15 connection; and supports for said weighted levers.

4. In combination; the fixed tracks; the
20 connected shiftable tracks; the toggle-levers, one of them taking hold of said shiftable tracks; the weighted levers pivotally connected to said toggle-levers at their pivotal connection and carrying friction-wheels; and the tracks for said friction-wheels.

5. In combination; the fixed tracks; the
connected shiftable tracks; the toggle-levers, 25 one of them taking hold of said shiftable tracks; the weighted levers pivotally connected to said toggle-levers at their pivotal connection; and the shifting-rods adapted to cooperate with said weighted levers. 30

6. In combination; the fixed tracks; the
connected shiftable tracks; the toggle-levers, one of them taking hold of said shiftable
35 tracks; the weighted levers pivotally connected to said toggle-levers at their pivotal connection; the shifting-lever set alongside one of the fixed tracks and adapted to be operated by a projection from a vehicle moving on said fixed tracks; and a connection from
40 said shifting to one of said weighted levers.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES F. GRANGER.

Witnesses:

ADDISON L. GREEN,
MABEL L. JUDD.