

No. 804,296.

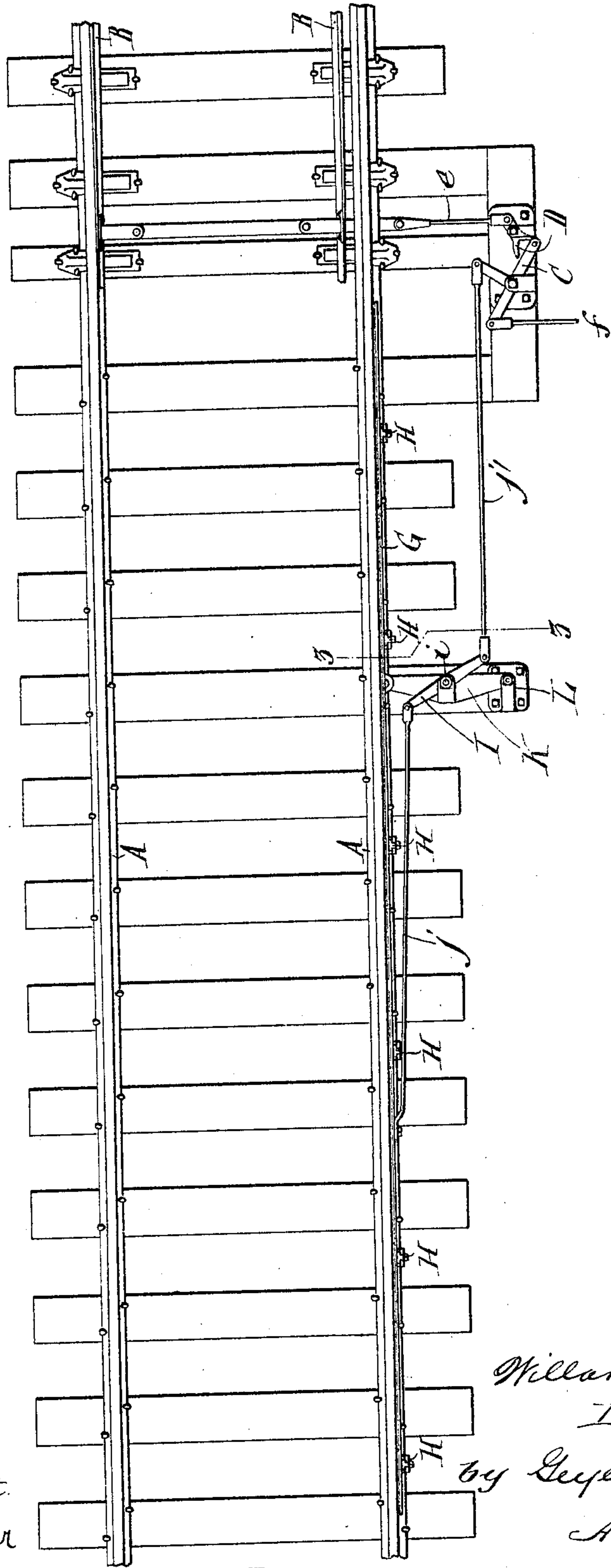
PATENTED NOV. 14, 1905.

W. BAUM.
DETECTOR BAR FOR RAILWAY SWITCHES.

APPLICATION FILED SEPT. 7, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

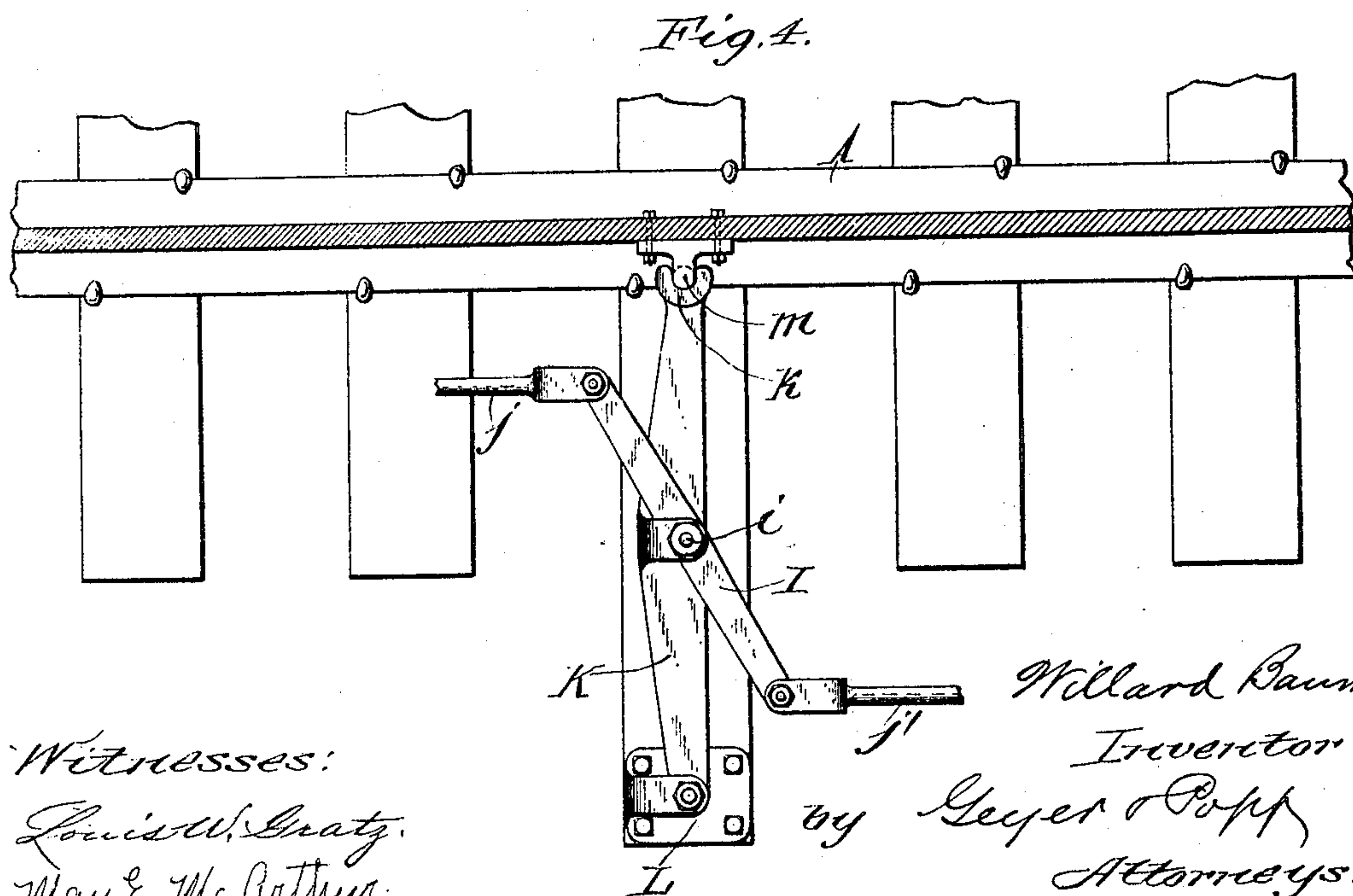
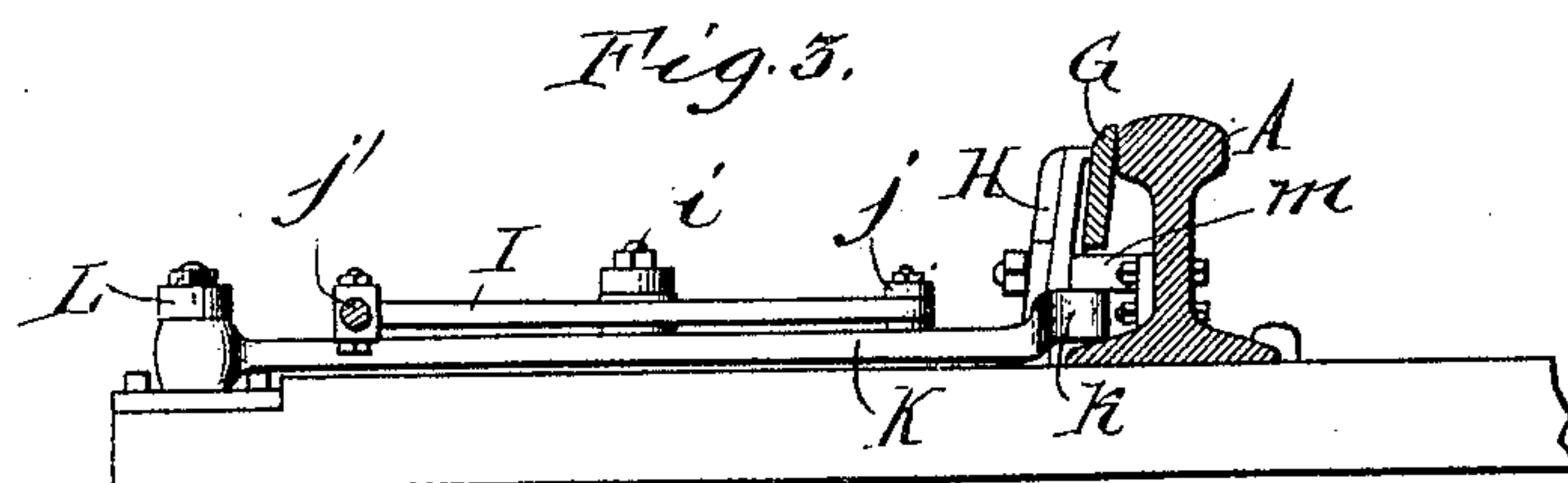
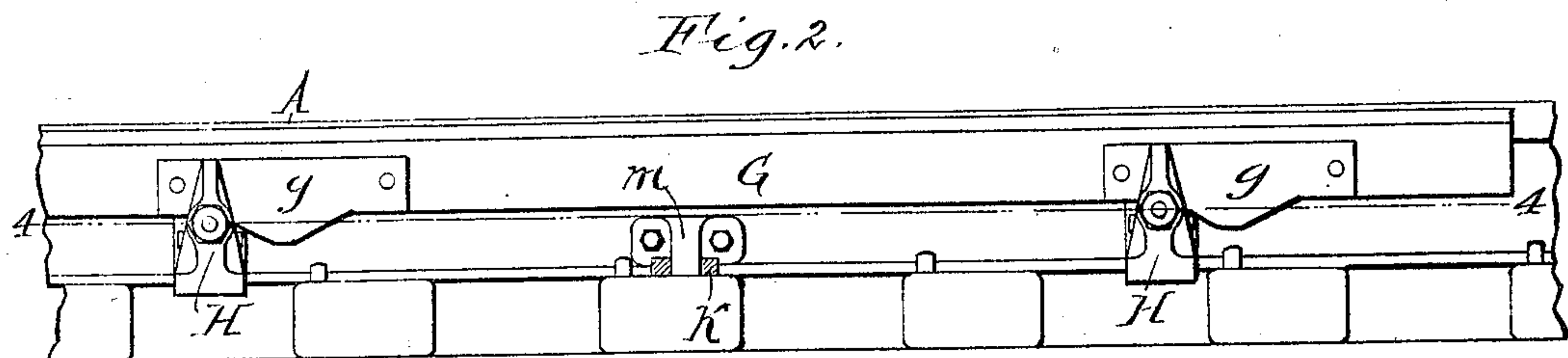


Witnesses:
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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DETECTOR-BAR FOR RAILWAY-SWITCHES.

No. 804,296.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed September 7, 1905. Serial No. 277,288.

To all whom it may concern:

Be it known that I, WILLARD BAUM, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Detector-Bars for Railway-Switches, of which the following is a specification.

This invention relates to the class of railway-switches having a so-called "detector-bar" for preventing the operator from throwing the switch while a train is passing over the same. These detector-bars are movable both vertically and longitudinally, and for this purpose they are usually carried by links or clips swinging lengthwise of the track or provided at their lower edges with double inclines adapted to ride over supporting-rollers mounted in brackets secured to the rails. When such detector-bars are used at places where the rails have a tendency to creep or shift longitudinally, the detector-bar, which is normally held against longitudinal displacement by its connection with the switch movement or operating mechanism, is elevated or thrown out of its proper position in case such creeping occurs, rendering the same inoperative.

It is the object of my invention to provide the detector-bar with compensating means which causes it to take part in any creeping of the adjacent rail, so as to maintain the bar in its proper relation to the rail under all conditions and insure its reliable operation at all times.

In the accompanying drawings, consisting of two sheets, Figure 1 is a top plan view of a switch embodying the improvement. Fig. 2 is a fragmentary side elevation of the detector-bar and the adjacent rail, the main lever connected with the rail being shown in cross-section. Fig. 3 is a transverse section, on an enlarged scale, in line 3 3, Fig. 1. Fig. 4 is a horizontal section in line 4 4, Fig. 2, omitting the brackets of the detector-bar.

Similar letters of reference indicate corresponding parts throughout the several views.

A A indicate the rails of the main track, and B B the switch-rails.

The switch-operating mechanism or so-called "switch-movement" forms no part of my invention and may be of any suitable or well-known construction. The movement shown in the drawings consists of a double bell-crank C, coöperating with the usual forked lever or escapement-jaw D, which is connected with the switch-rails by a rod *e*.

f is the rod connecting the bell-crank with the customary hand-levers or other switch-operating devices located in the tower and not shown in the drawings.

G is the detector-bar, which may be of any well-known construction and guided or supported on one of the rails A in any suitable manner. In the construction illustrated in the drawings the same is provided at its lower edge with the usual double inclines *g* and supported and guided in the customary brackets H, secured to the base of the rail and having rollers upon which the bar runs. The detector-bar is caused to take part in the movements of the switch-operating mechanism by any suitable connection, the preferred means shown in the drawings consisting of a lever I and rods *j j'*, connecting the arms of said lever with the detector-bar and the central arm of the bell-crank C, respectively. The lever I is carried by a movable support, which is connected with the adjacent track-rail in such manner as to follow any creeping motion or longitudinal displacement thereof. This support preferably consists of a horizontally-swinging lever K, pivoted at its outer end to a bracket L, secured upon one of the ties and having its inner end connected with the side of the rail by a fork *k*, carried by the lever and straddling an upright pin or stud *m*, secured to the web of the rail. The arms of the upper or supplemental lever I are of equal length, and its fulcrum *i* is located centrally on the main lever K, as shown in the drawings.

The operation of the device is as follows: When no creeping of the rails takes place, the main lever K acts as a fixed support for the supplemental lever I, and the detector-bar G coöperates with the switch movement or operating mechanism the same as in ordinary switches in which the lever I is pivoted directly to one of the ties. When, however, the rails creep, the inner end of the main lever K follows this movement of the contiguous rail and carries the supplemental lever I with it. During this movement the outer end of the supplemental lever is held stationary owing to its connection with the switch-movement, and it therefore swings on the adjacent end of the connecting-rod *j'* as a fulcrum. The result is that the inner end of the supplemental lever advances in the same measure as the inner end of the main lever K, causing the detector-bar to move in unison with the creeping rail and always maintaining the bar

in its proper position or adjustment relative to the rail. For example, assuming the rails to creep four inches, the inner end of the main lever K will move that distance with the rail. This causes the central pivot of the supplemental lever I to travel but two inches, owing to its being located midway between the ends of the main lever; but since the outer end of the supplemental lever is held stationary by the switch-movement, as above described, its inner end is caused to travel four inches, being the same distance that the inner end of the main lever moves.

While the improvement is herein shown in connection with a mechanical switch-movement, the same is obviously applicable to pneumatic and other switch-movements of various kinds.

I claim as my invention—

1. The combination of a track-rail, switch-operating mechanism, a detector-bar cooperating with said track-rail and connected with said switch-operating mechanism, and compensating means for causing the detector-bar to move with said rail in creeping, substantially as set forth.

2. The combination of a track-rail, a detector-bar cooperating therewith, switch-operating mechanism, means for connecting the detector-bar with the switch-operating mechanism, and compensating means cooperating with said connecting means for causing the detector-bar to move with the rail in creeping, substantially as set forth.

3. The combination of a track-rail, a detector-bar cooperating therewith, switch-operating mechanism, a connection between the detector-bar and the switch-operating mechanism including a lever, and a movable support for said lever engaging the track-rail to

move therewith in creeping, substantially as set forth.

4. The combination of a track-rail, a detector-bar cooperating therewith, switch-operating mechanism, a main lever fulcrumed upon a fixed support and connected with the rail to move therewith in creeping, a supplemental lever fulcrumed between its ends upon said main lever, and means for connecting the arms of said supplemental lever with the detector-bar and the switch-operating mechanism, respectively, substantially as set forth.

5. The combination of a track-rail, a detector-bar cooperating therewith, switch-operating mechanism, a main lever fulcrumed at its outer end upon a fixed support and having its inner end connected with the rail, a supplemental lever pivoted centrally to the main lever at a point midway between the ends of the latter, and means for connecting the arms of the supplemental lever with the detector-bar and the switch-operating mechanism, respectively, substantially as set forth.

6. The combination of a track-rail provided at its side with an upright pin or stud, a detector-bar, switch-operating mechanism, a main lever fulcrumed upon a fixed support and provided with a fork which engages with said pin, a supplemental lever carried by said main lever, and connections extending from the supplemental lever to the detector-bar and the switch-operating mechanism, respectively, substantially as set forth.

Witness my hand this 1st day of September, 1905.

WILLARD BAUM.

Witnesses:

C. F. GEYER,

E. M. GRAHAM.