

(No Model.)

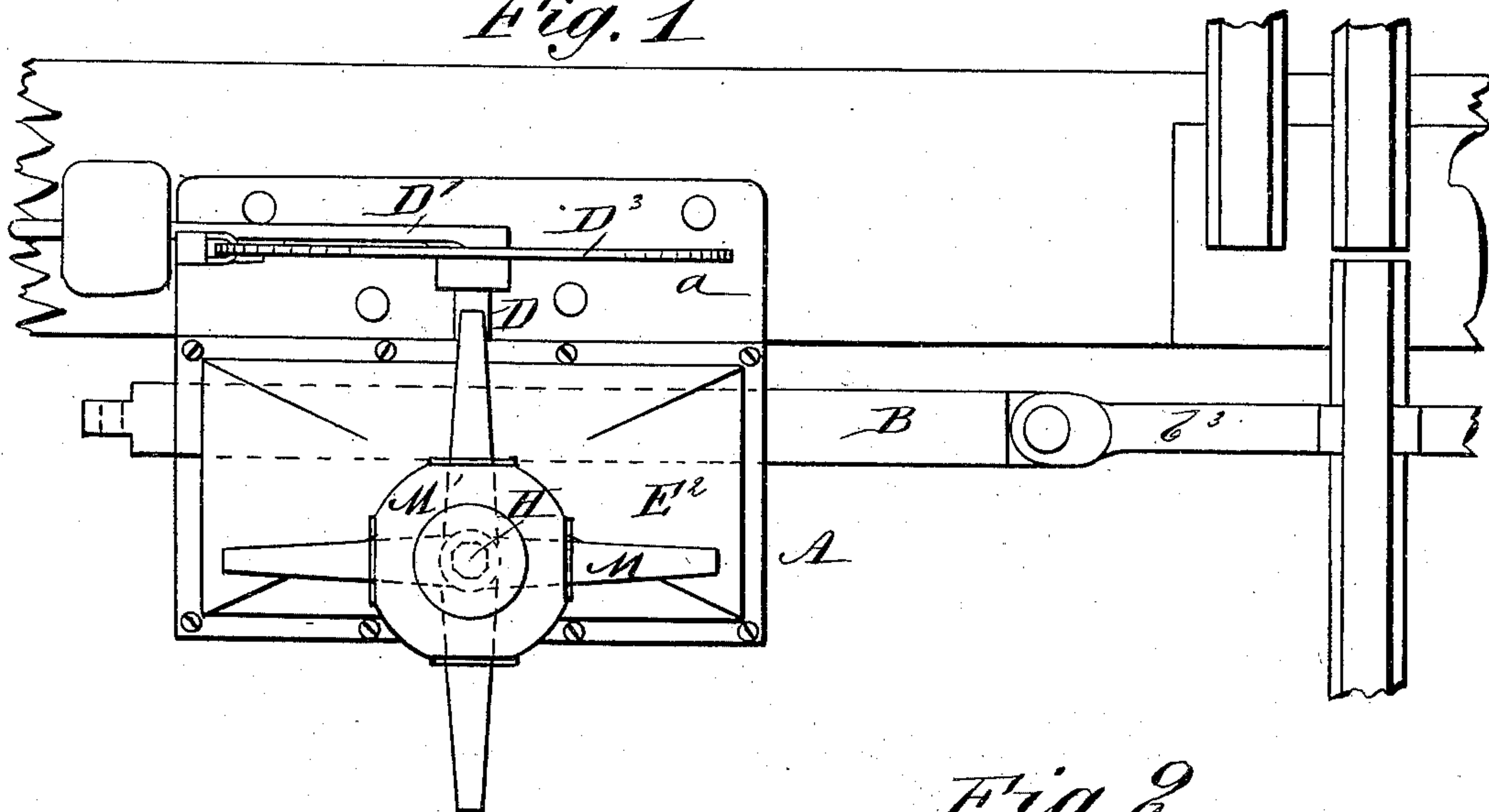
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RAILWAY SWITCH STAND AND SIGNAL.

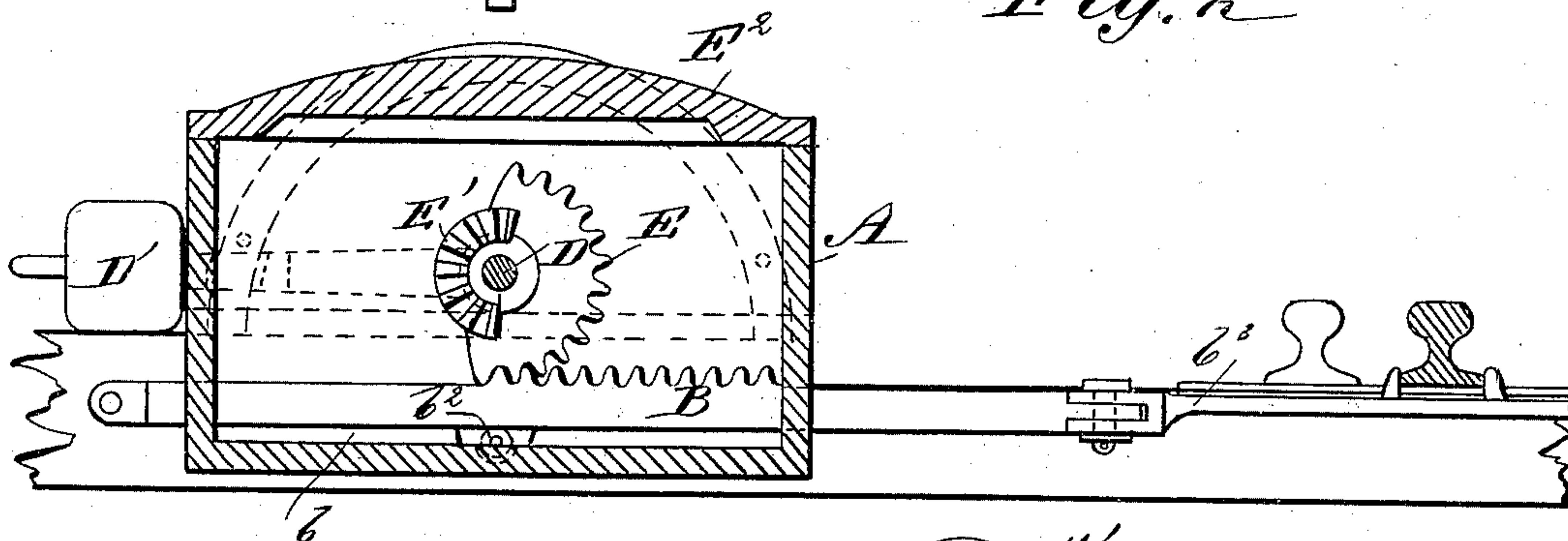
No. 383,209.

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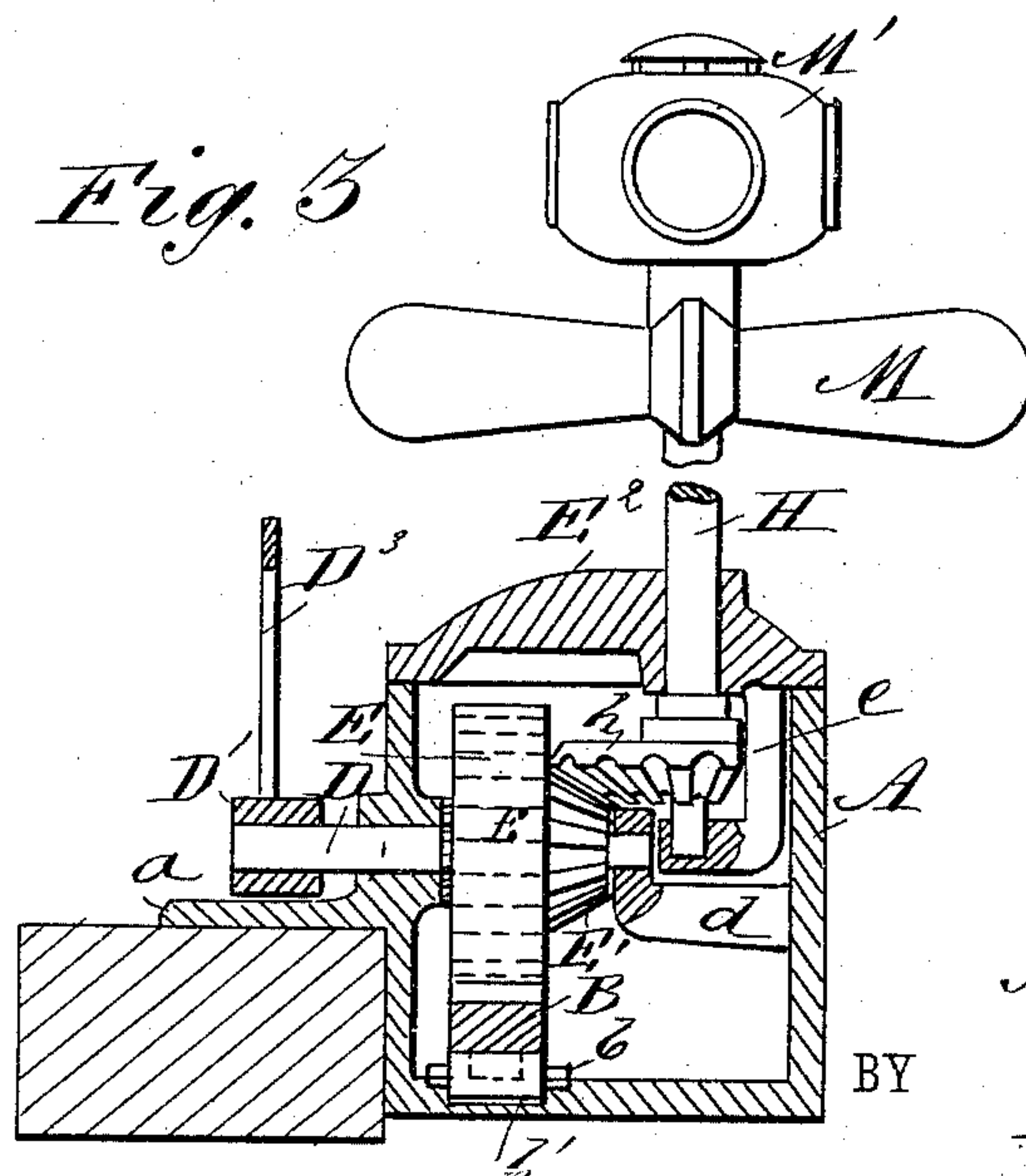
*Fig. 1*



*Fig. 2*



*Fig. 5*



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# UNITED STATES PATENT OFFICE.

NATHANIEL W. BOYD, OF STEELTON, PENNSYLVANIA.

## RAILWAY SWITCH-STAND AND SIGNAL.

SPECIFICATION forming part of Letters Patent No. 383,209, dated May 22, 1888.

Application filed February 24, 1888. Serial No. 265,106. (No model.)

*To all whom it may concern:*

Be it known that I, NATHANIEL W. BOYD, of Steelton, in the county of Dauphin and State of Pennsylvania, have invented a new and Improved Railway Switch-Stand and Signal, of which the following is a full, clear, and exact description.

My invention relates to an improvement in automatic switch-stands and signals, and has for its object to provide a simple and positive device, which will not readily get out of order, and which may be conveniently and economically manufactured and readily connected to a switch-rail.

The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a plan view of the device attached to a switch. Fig. 2 is a longitudinal vertical section through the device, and Fig. 3 is a transverse vertical section through the same.

In carrying out the invention, A represents a metal box preferably rectangular in shape, which is secured to a single sleeper by an attached and integral flange, *a*, and which may be provided upon the under face of the overhanging portion with legs or other suitable supports. The object of attaching the box or casing to a single sleeper is to provide for a uniform settlement, for if the casing was supported upon parallel sleepers the one would be liable to settle to a greater extent than the other, and thereby interfere with the action of the operative parts.

In the bottom of the casing at one side parallel and spaced ribs *b* are provided, and in the ends a slot, *b'*, is produced, aligning the afore-said ribs and the space intervening the same. In the bottom of the box, extending transversely the ribs and between the same, a friction-roller, *b<sup>2</sup>*, is provided, as shown in Fig. 2. Upon the ribs and roller a racked bar, B, is placed, free to slide thereon, which bar, projecting through the slots *b'*, as shown in Fig. 2, may be connected to the switch-bar *b<sup>3</sup>* by either a horizontal or vertical connection, as illustrated in Figs. 1 and 2.

Through an aperture in the side of the casing facing the sleeper to which said casing is attached a horizontal rock-shaft, D, is projected, having attached to its outer end a weighted hand-lever, D', which lever is made to slide and be guided by a segmental bar, D<sup>3</sup>, in which bar near the extremities apertures are produced adapted to receive a padlock, as shown in Fig. 1, or equivalent locking device, whereby the lever D' may, when desired, be prevented from being raised or the operative parts of the device manipulated.

Upon the inner end of the rock-shaft D a segmental spur-gear, E, is keyed or otherwise secured, which gear is made to mesh with the teeth of the reciprocating rock-bar B, the teeth upon said bar being formed upon the upper face and at the center only, as illustrated in Fig. 2. Integral with the hub of the spur-gear E a segmental bevel-pinion, E', is provided, having the teeth of the latter facing in an opposite direction to the teeth of the former. The inner extremity of the rock-shaft D is journaled in a bracket, *d*, secured to the inner side of the casing.

The casing A is provided with a top or cover, E<sup>2</sup>, neatly fitting the same, which cover is attached in any suitable manner and provided about the center of the under surface and at one side with a pendent L-shaped bracket, *e*, in which one end of a signal-shaft, H, is journaled.

The signal-shaft H is provided at its inner end with a bevel-pinion, *h*, adapted to mesh with the pinion E' upon the horizontal rock-shaft, as shown in Fig. 3. The signal-shaft is projected vertically upward through a suitable aperture in the cover, the upper and outer end of said shaft being preferably made octagonal. Upon the said octagonal end of the shaft a preferably four bladed or winged semaphore-signal, M, is properly located and secured, and above said signal a lantern, M', is fixed, the colored sides of the lantern being made to register with the corresponding colored wing of the day-signal.

It will be observed, as heretofore stated, that great advantages are obtained by mounting the signal upon a single tie, as the single tie will settle regularly, and the rock-bar will consequently have at all times the same throw. It will be further observed that the gearing, and



in fact all the principal operative portions, are inclosed in a perfectly tight case, which prevents dirt, snow, ice, and other obstructions from interfering with the freedom of motion.

- 5 The device may be set upon either side of the track, or with either side presented to the track. In operation, when the lever makes a one-half revolution, the signal-shaft is given but a quarter-turn. It will also be observed  
10 that my stand can be set upon either side of the track and either side of the stand can be set to the track; or, if found desirable, the device may be placed between two tracks and operate switches and signals in both tracks by  
15 using connecting-rods of proper length.

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

1. In a railway switch-stand and signal, the  
20 combination, with a covered casing, a bar reciprocating longitudinally in the base of said casing, and a rock-shaft journaled transversely above the rock-bar, provided with a spur gear and a beveled pinion upon the inner end and  
25 a weighted arm upon the outer end, of a vertical signal-shaft provided with a beveled pinion within the casing and a day and night signal upon the upper outer end, substantially as and for the purpose herein set forth.

- 30 2. In a railway switch-stand and signal, the

combination, with a covered casing provided at the base with longitudinal spaced ribs and a transverse friction-roller, a rack-faced bar sliding upon said ribs and friction-roller, and a rock-shaft journaled transversely above the rack, provided with a spur-gear and bevel-pin  
35 ion upon the inner end and a weighted arm upon the outer end, of a vertical signal shaft carrying a bevel-pinion at its lower end and having a polygonal upper and outer end and a day and night signal secured thereon, substan-  
40 tially as and for the purpose herein set forth.

3. In a railway switch-stand and signal, the combination, with a single tie, a covered cas-  
45 ing secured thereon, provided at the base with longitudinal spaced ribs and a transverse friction-roller, a rack-faced bar sliding upon said rib and roller, and a rock-shaft journaled transversely above the rack, provided with a  
50 spur-gear and bevel-pinion upon the inner end and a weighted lever upon the outer end, of a vertical signal-shaft carrying a bevel-pinion at its lower end, having a polygonal upper and outer end and a day and night signal secured thereon, substantially as shown and described.

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Witnesses:

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