(No Model.) 2 Sheets—Sheet 1.

A. DEETS.

CAR BLOCK.

No. 441,539. Patented Nov. 25, 1890.

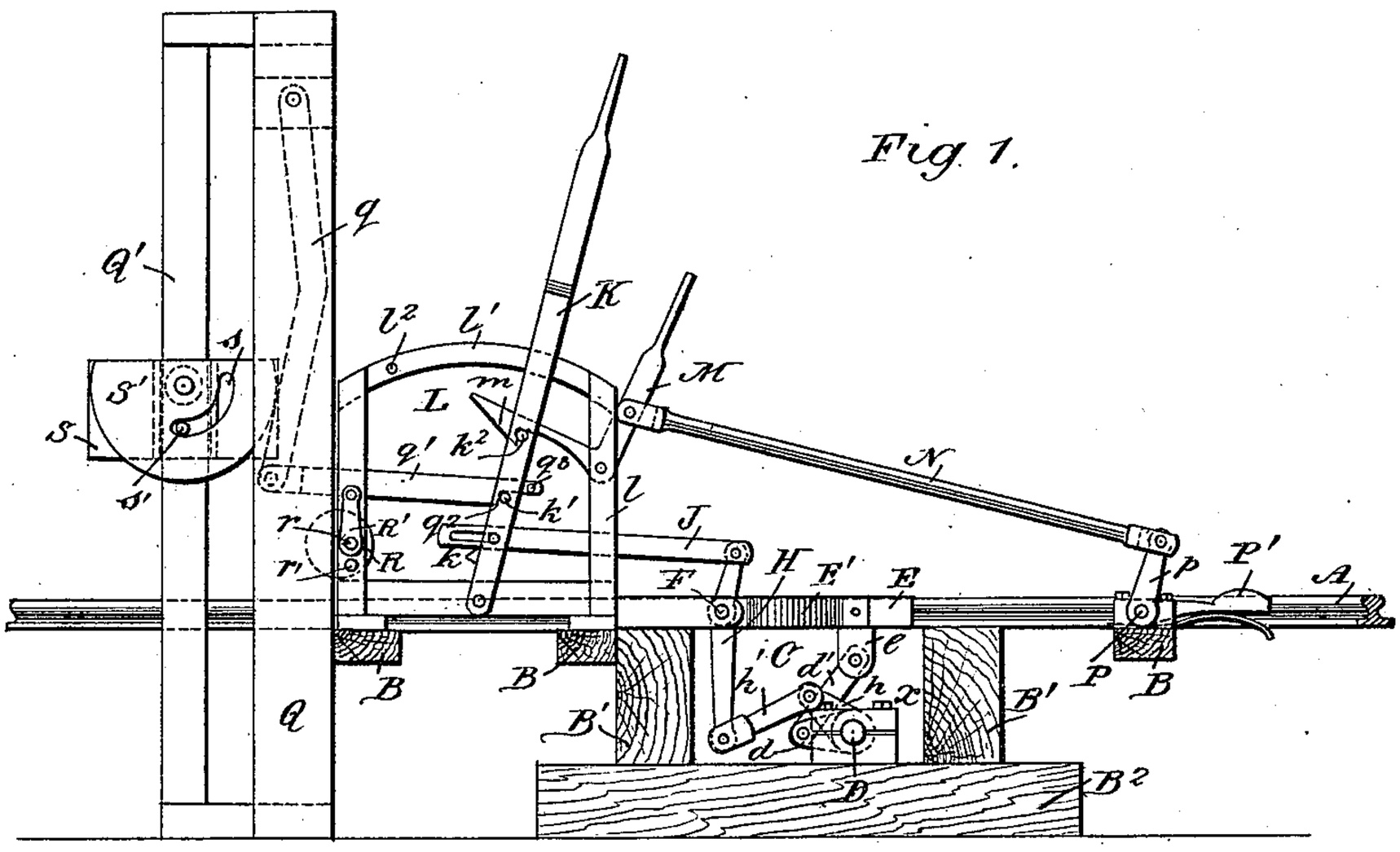

Fig. 1.

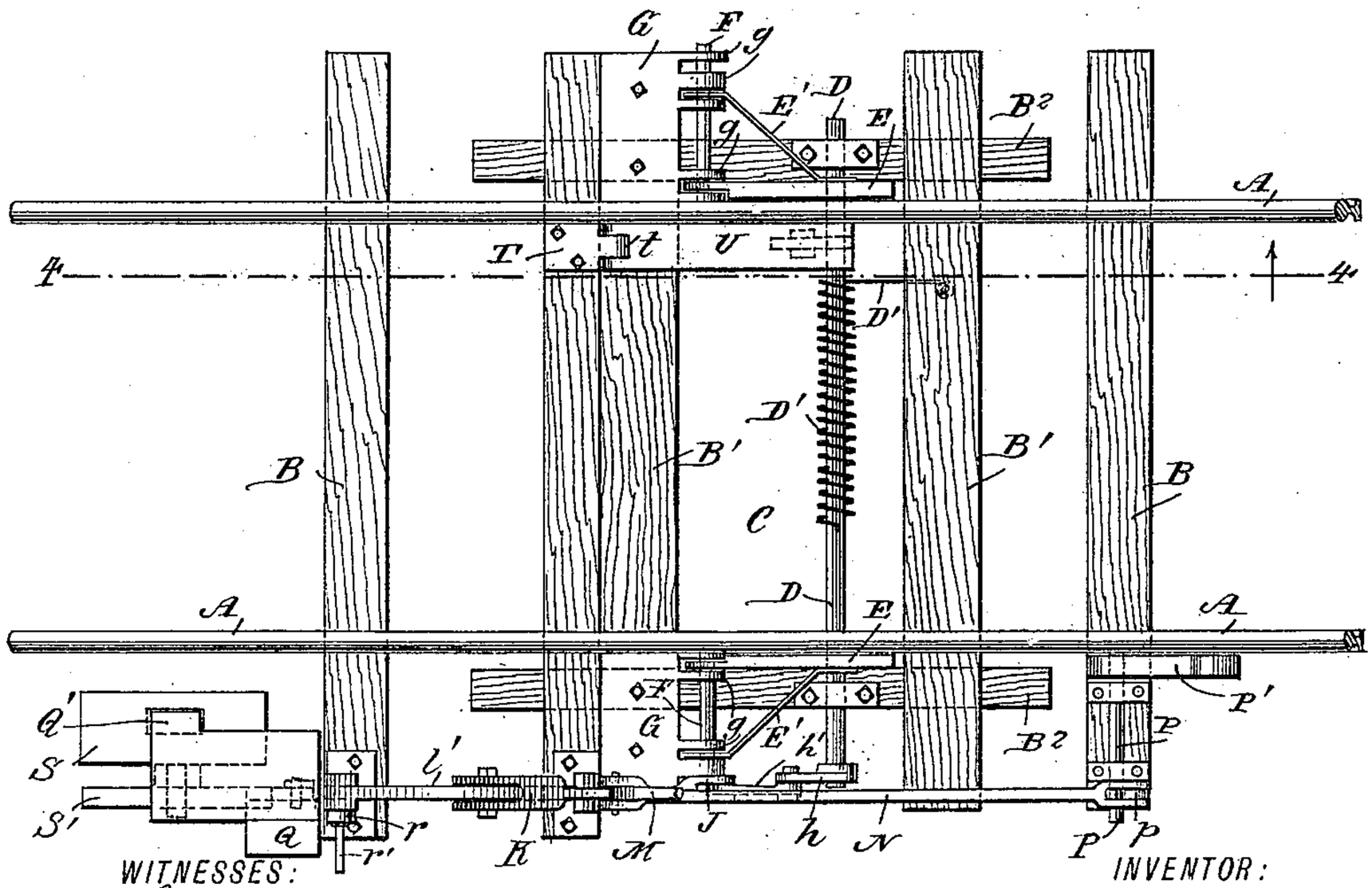

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

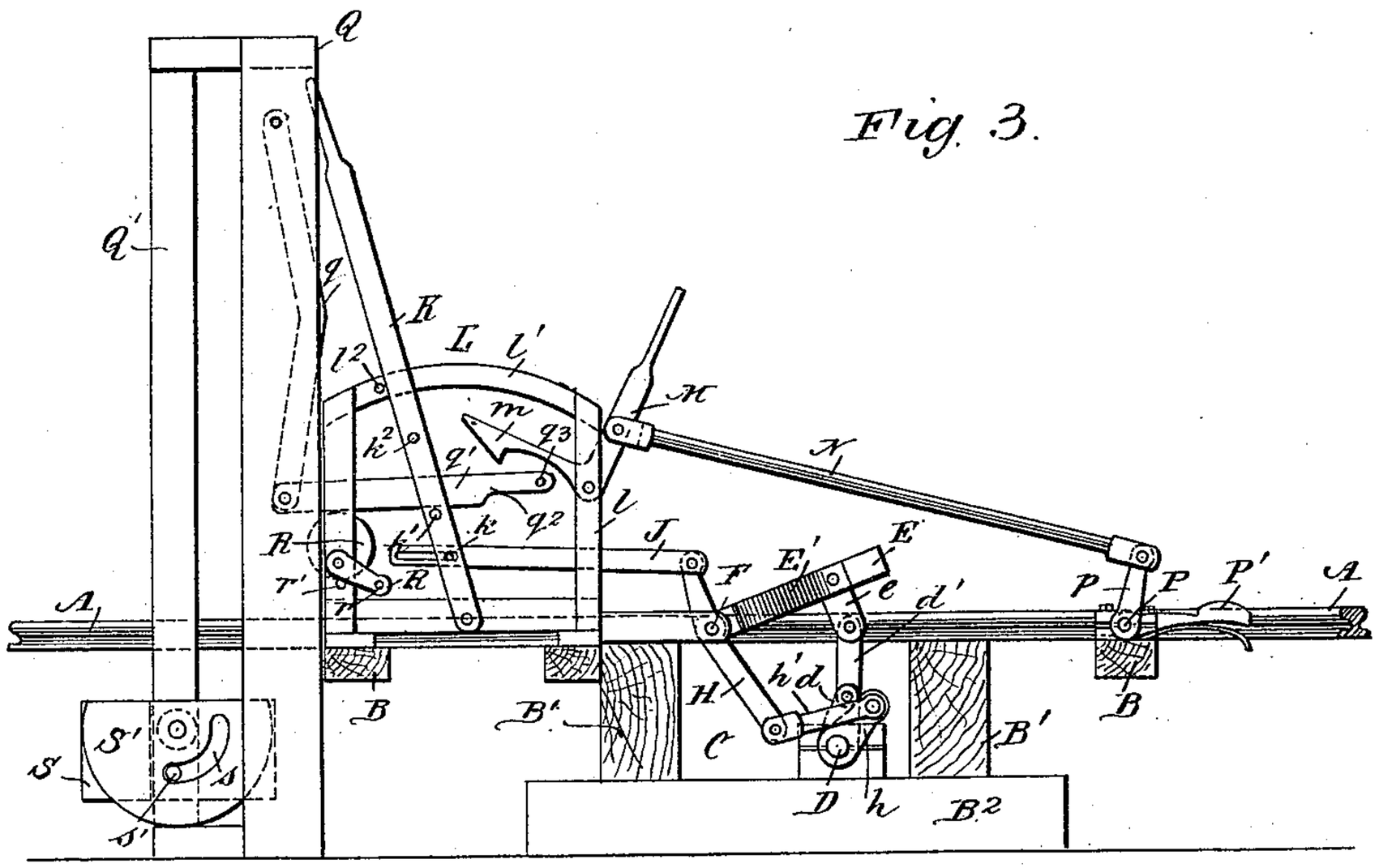
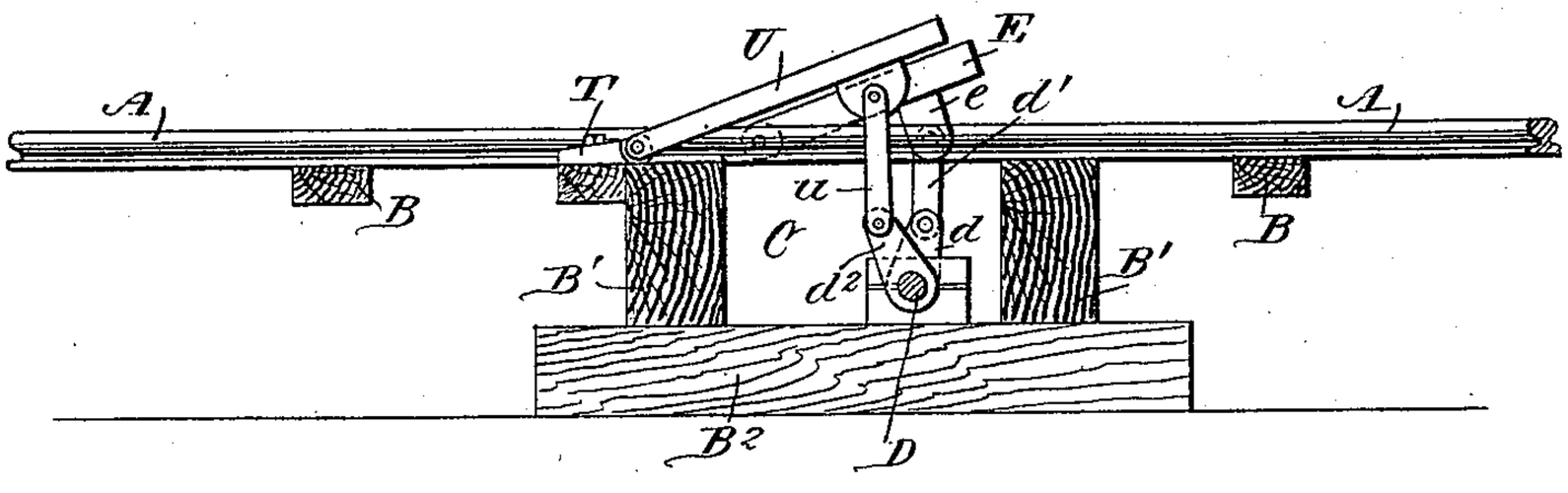


Fig 4.



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UNITED STATES PATENT OFFICE.

ANDREW DEETS, OF PLYMOUTH, PENNSYLVANIA.

CAR-BLOCK.

SPECIFICATION forming part of Letters Patent No. 441,539, dated November 25, 1890.

Application filed July 18, 1890. Serial No. 359,128. (No model.)

To all whom it may concern:

Be it known that I, ANDREW DEETS, of Plymouth, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Car-Block, of which the following is a full, clear, and exact description.

My invention relates to improvements in car-blocks, and is specially intended to block or trig mining-cars which are operated upon a grade, although it may be used in connection with any cars which run upon a grade.

The object of my invention is to provide a device which may be automatically set or tripped by the passage of the cars over it, and which may also be operated by hand.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

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 side elevation of the device, embodying my invention as applied to a track and with the device locked. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation showing the blocks raised so as to engage the wheels of a car; and Fig. 4 is a vertical section on the line 4 4 of Fig. 2, showing the means for automatically setting the device.

The track-rails A rest upon suitable ties B in the usual manner, and arranged at a convenient point beneath the rails is a pair of thicker ties B′, which rest upon suitable supports B^2, thus forming a recess C beneath the rails and between the ties B′.

Mounted in suitable bearings on the supports B^2, so as to extend transversely beneath the rails A and through the recess C, is a shaft D, having a spiral spring D′ thereon, one end of the spring being fixed to the shaft and the other end to one of the ties B′, so that the cranks *d* on the shaft will be held normally in an elevated position. The cranks *d* are fixed to the shaft D at a point just outside vertical lines dropped from the rails A, and pivoted to the outer ends of the cranks *d* are connecting-rods *d′*, which are pivoted at their upper ends to the depending ears *e* of the blocks E. The blocks E are arranged adjacent to the rails A and just outside the same, said blocks being pivoted at one end to the shafts F, which are mounted in the ears *g* of the plates G, said plates being bolted to one of the ties B′ on the outer sides of the rails A. The blocks E are braced by the braces E′, which are attached at one end to the blocks and which are held between the ears *g* at their other end and encircle the shafts F. The blocks E should be near enough to the rails A so that when the free ends of the blocks are raised, as shown in Fig. 3, they will engage the wheels of a car running on the rails A and trig the same.

Fixed to one end of the shaft D is a crank *h*, which is pivoted to the connecting-rod *h′*, said rod being pivoted to the lower end of the lever H. The lever H is mounted vertically between projecting ears of one of the plates G, and is pivoted on the shaft F so as to rock on the shaft. The lower end of the lever is connected with the rod *h′*, as described, and the upper end of the lever is pivoted to the rod J, which extends parallel with the rails A, and is pivoted at its opposite end to the lever K by the pin *k*, which extends through a slot in the rod. The lever K is pivoted at its lower end to the lower portion of the rack L, said rack being composed of the bifurcated vertical strips *l* at the ends, and the curved strip *l′* connecting said members and forming the top of the rack, the said strip having near one end a laterally-extending stop l^2 to limit the movement of the lever K. The lever K is bifurcated at its lower end and straddles the curved strip *l′*. The lever K is provided with a transverse pin *k′*, to engage the shoulder of the rod *q′*, as described below, and with a transverse pin k^2 above the pin *k′* to engage the hook of the bell-crank lever M.

The bell-crank lever M is pivoted at its elbow between two of the members *l* of the rack L, and is provided near its forward end with a depending hook *m*, adapted to engage the pin k^2 of the lever K, and the rear portion of the lever is connected by a pitman N with the crank *p*, which is fixed to the outer end of the shaft P, said shaft being mounted in suitable bearings upon a tie B, and extending at right angles to the rails A. The inner end of the shaft P, next the rail A, is provided with a spring-pressed lever P′, which extends

parallel with the rail A and which is held normally by the spring, so as to be engaged by a car-wheel traveling over the rail. When the bell-crank M is in engagement with the lever K, the lever is held forward, the lever H is tilted by means of the connecting-rod J, the shaft D is rocked by means of the connecting-rod h' and the crank h, and the blocks E are held beneath the surface of the rails A; but when the lever P′ is depressed the crank p and pitman N tilt the lever M and release the lever K, thereby allowing the lever to swing back, and the spring D′ of the shaft D raises the cranks d and the blocks E.

Two vertical supports Q and Q′ are mounted adjacent to one of the rails A and to the rack L, said supports being connected at the top by a suitable plate. A bent arm q is pivoted at the top to the inner side of the support Q, and its lower end is pivoted to the horizontal rod q', which has near its opposite end a shoulder q^2, adapted to engage the pin k' of the lever K. The rod q' projects through said lever, and is provided at the end with a lateral stop q^3 to prevent it from being disengaged from the lever. A wheel R is eccentrically pivoted in the rack L below the rod q', so as to align with the rod, said wheel being provided with a suitable crank r, by which it may be turned, and by turning the wheel so that it will bear against the rod q' the rod is raised, thus releasing the shoulder q^2 from engagement with the pin k'.

A vertically-sliding block S is mounted on the support Q′, and pivoted on the outer side of the said block, so as to align with the bent arm q, is a semicircular block S′, having a segmental slot s therein, through which projects a pin s', which is fixed to the block S, thereby limiting the movement of the semicircular block. When the block S is above the lower end of the bent arm q, the curved block S′ may be turned so as to bear against the arm, as shown in Fig. 1, thereby locking the arm, the rod q', and the lever K in position and preventing the blocks E from being raised.

A plate T, having a projecting ear t, is fixed to a tie B adjacent to one of the ties B′, and pivoted to the projecting ear t and extending parallel with the rail A is a lever U, which is connected by a depending rod u with a crank d^2 on the shaft D. The lever U is on the inner side of the rail A, and is sufficiently close to the rail to be operated by a wheel passing over the rail.

The device operates as follows: When the block S and curved block S′ are in an elevated position, so as to engage the arm q, the device is locked and cannot be automatically worked; but by turning the block S′ so that it and the block S will drop to the bottom of the support Q′ the device is ready for operation. As a car comes down over the rails A the forward wheels strike the lever P′, thereby rocking the shaft P and crank p, and by means of the pitman N releasing the bell-crank M from the lever K. The spring-shaft D then raises the blocks E in the manner already described, and the blocks engage the wheels of the car and trig the same. When the blocks are in an elevated position, as shown in Fig. 3, they do not prevent a car from running in the opposite direction, as one of the wheels of the car strikes the lever U before it reaches the block E, thereby depressing the lever and the connecting-rod u and oscillating the shaft D by means of the crank d^2. When the shaft D is oscillated in this manner, the cranks d are depressed, thus depressing the blocks E and bringing them into a position parallel with the rails. The crank h is depressed at the same time, thereby actuating the connecting-rod h' and the lever H; but the rod J slides on the pin k without setting the device, so that after the cars have passed the blocks E spring back into place.

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

1. A car-block comprising oscillating blocks arranged parallel with the rails of a railroad-track, a spring-pressed shaft beneath the rails, connected with the blocks by a crank mechanism, a locking device for holding the blocks in a depressed position, and a releasing device operated by contact with a car, substantially as described.

2. A car-block comprising blocks pivoted at one end and arranged parallel with the rails of a railroad-track, a spring-pressed shaft arranged beneath the rails and connected with the blocks by a crank mechanism, a locking device to hold the blocks in a depressed position, a lever pivoted parallel with one of the rails and adapted to set the locking device by contact with a car-wheel, and a releasing device adapted to be automatically operated by contact with the car, substantially as described.

3. A car-block comprising a spring-pressed shaft extending transversely beneath the rails of the track, blocks arranged parallel with the rails, said blocks being pivoted at one end and connected with the shaft by a crank mechanism, a rack arranged adjacent to the track, a lever pivoted in the rack and connected with the spring-shaft by a lever mechanism, and a locking device for holding the lever and shaft in a locked position, substantially as described.

4. A car-block comprising a spring-pressed shaft located beneath the rails of the track, blocks pivoted at one end and extending parallel with the rails, a crank mechanism connecting the blocks and spring-shaft, a rack arranged adjacent to the rails, a lever pivoted in the rack and connected by a lever mechanism with the spring-shaft, and a bell-crank pivoted in the rack and provided at one end with a hook adapted to engage a pin on the rack-lever, substantially as described.

5. A car-block comprising a spring-pressed shaft extending beneath the rails of the track,

blocks extending parallel with the rails above the shaft, said blocks being pivoted at one end and connected with the spring-shaft by a crank mechanism, a rack arranged adjacent to the track, a lever pivoted in the rack and connected with the spring-shaft by a lever mechanism, a bell-crank pivoted in the rack and provided at one end with a hook adapted to engage a pin on the rack-lever, and a shaft extending transversely to the rails, said shaft having at its outer end a crank connecting by a pitman with the bell-crank and at its inner end a lever extending parallel with and adjacent to one of the rails, substantially as described.

6. A car-block comprising a spring-pressed shaft extending transversely beneath the rails, blocks extending parallel with the rails and pivoted at one end, said blocks being connected with the spring-shaft by a crank mechanism, a rack arranged adjacent to the rails, a lever pivoted in the rack and connected with the spring-shaft by a lever mechanism, a bell-crank pivoted in the rack and provided at one end with a hook adapted to engage a pin of the rack-lever, means for automatically releasing the bell-crank, and a lever pivoted at one end and extending parallel with one of the rails, said lever being connected with the spring-shaft by a crank mechanism, substantially as described.

7. In a car-block, the combination, with the rack and the lever pivoted therein and adapted to operate the blocks, as described, of vertical supports arranged adjacent to the rack, a bent arm pivoted at its upper end to one of the supports, a horizontal rod pivoted to said arm at one end and provided at the other with a shoulder to engage a pin of the rack-lever, a vertically-sliding block mounted on one of the supports, and an oscillating block pivoted to the sliding block and adapted to engage the bent arm and lock the device, substantially as described.

8. In a car-block, the combination, with the rack and the lever pivoted therein and connected with the blocks, as shown, of vertical supports arranged adjacent to the rack, a bent arm pivoted at one end to one of the supports, a horizontal rod pivoted to the free end of the bent arm and provided at its other end with a shoulder and pin to engage the rack-lever, means for locking the said arm and rod in position, and a crank-wheel pivoted eccentrically beneath the horizontal rod and adapted to raise the same from engagement with the pin of the rack-lever, substantially as described.

ANDREW DEETS.

Witnesses:
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LEWIS R. BARNEY.