

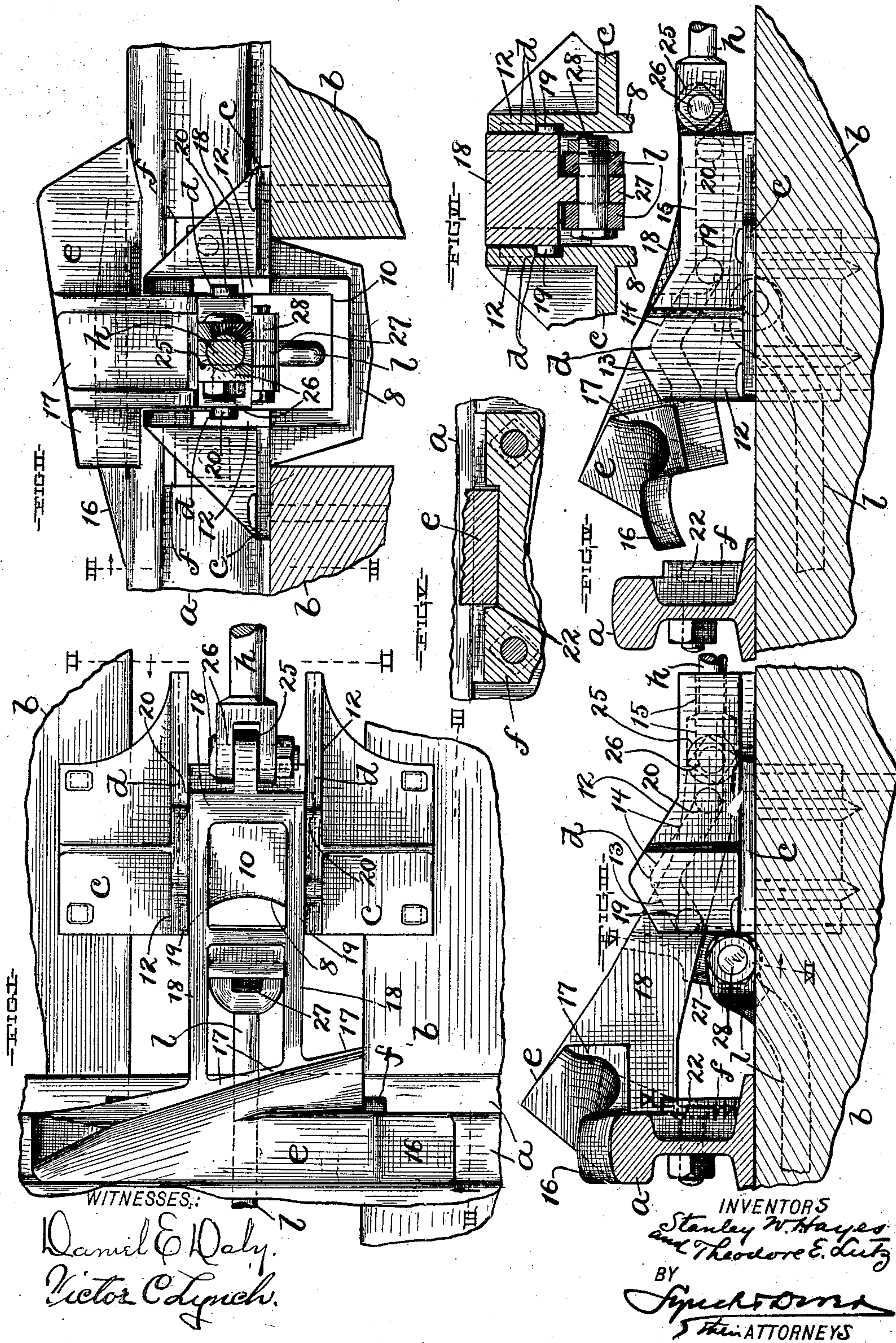
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Patented Feb. 18, 1902.

S. W. HAYES & T. E. LUTZ.
DERAILING DEVICE.

(Application filed Nov. 23, 1901.)

(No Model.)



UNITED STATES PATENT OFFICE.

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DERAILING DEVICE.

SPECIFICATION forming part of Letters Patent No. 693,544, dated February 18, 1902.

Application filed November 23, 1901. Serial No 83,461. (No model.)

To all whom it may concern:

Be it known that we, STANLEY W. HAYES, a resident of Wellesley, in the county of Norfolk and State of Massachusetts, and THEODORE E. LUTZ, a resident of Galion, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Derailing Devices; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

Our invention relates to improvements in car-derailing devices, and more especially pertains to a device of the character indicated which is adapted to lift the wheel of a car from the rail and guide it diagonally off the rail.

The primary object of our invention is to provide improved means for properly guiding the wheel-derailing block of the derailing device during the actuation of the said block and to render the derailing device simple and durable in construction and reliable in its operation.

With this object in view and to the end of realizing other advantages hereinafter appearing the invention consists in certain features of construction and combinations of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure I is a top plan of our improved car-derailing device with the wheel-derailing block in its operative position upon the rail. Fig. II is a right-hand side elevation relative to Fig. I, partly in section on line II II, Fig. I. Fig. III is a left-hand side elevation relative to Fig. II, partly in section on line III III, Figs. I and II. Fig. IV is a view corresponding with Fig. III, except that in Fig. IV the wheel-derailing block is in an inoperative position. Fig. V is a vertical section on line V V, Fig. I. Fig. VI is a section on line VI VI, Fig. I.

Referring to the drawings, *a* designates a rail of the railway-track, and *b* and *b* two ties which extend in under and are instrumental in supporting the said rail. The ties *b* and *b* are instrumental also in supporting the stand of our improved derailing device, which stand comprises a base *c*, which rests upon and is

rigidly secured to the ties *b*, preferably a short distance from the outer side of the rail *a*. The base *c* has its central portion 8 depressed or depending between the ties *b* and *b*, so that a recess 10, which extends longitudinally of and below the top of the said ties and is open at the top and ends, is formed in the said central portion of the said base *c*.

Two upright parallel walls 12 and 12 are formed upon and preferably integral with the base *c* at opposite sides, respectively, of the central depending portion 8, which walls are arranged longitudinally of and parallel with the ties *b*, and consequently at a right angle to the rail *a*. The walls 12 are preferably braced upon their outer sides in any approved manner.

Each wall 12 is provided in its inner side with a guideway-forming groove *d*, which extends longitudinally of and from end to end of the wall and has two inclined upwardly-converging portions 13 and 14, which meet at their upper ends and are arranged a suitable distance from the outer end of the said wall, and another portion 15, which extends in a horizontal plane from the lower end of the outer inclined portion 14 to the outer end of the wall. The guideways *d* of the walls 12 are parallel.

The wheel-derailing block *e* is movable laterally of the rail *a* and during its actuation is placed into its operative position upon the head of the rail or removed from the said head, and thereby rendered inoperative, according as the said block is actuated in the one or the other direction. The block *e* extends longitudinally of the said rail *a* a suitable distance and has its forward end provided with a wheel-lifting incline 16 and is provided with a wheel-flange guide 17, extending diagonally relative to the rail and shaped and arranged as required to render it capable of effecting the derailment of a wheel which has traveled up the incline 16 into engagement with the said guide 17; but the shape of the derailing-block constitutes no part of the subject-matter claimed in this specification, and suffice it to state, therefore, that any approved form of wheel-derailing block may be employed.

The block *e* is provided upon its inner side

with a laterally-projecting arm 18, which extends between and longitudinally of the guideway-containing walls 12 and 12, and has two cylindrical lugs or members 19 projecting laterally and horizontally from opposite sides, respectively, of and integral with the arm 18 and arranged in line and a suitable distance from the outer or free end of the arm. The lugs or members 19 and 19 engage the guideways formed in the different walls 12 and 12, respectively, and are arranged and adapted to travel endwise of the inclined portions 13 and 14 of the respective guideways.

The arm 18 is provided also with two cylindrical trunnions or members 20 and 20, projecting laterally and horizontally from opposite sides, respectively, of and integral with the said arm and arranged in line. The trunnions or members 20 are located at or near the outer or free end of the arm 18, between the free extremity of the said arm and the members 19. The trunnions or members 20 and 20 engage the guideway formed in the different walls 12 and 12, respectively, and are arranged and adapted to travel endwise of the horizontally-arranged portions 15 of the respective guideways.

The guideways *d* are of course open at one or both ends of the walls 12 to accommodate the assemblage of the parts.

The arrangement of the parts hereinbefore described is such that the trunnions or members 20 of the arm 18 are at the inner ends or outer ends of the horizontal portions 15 of the guideways *d*, according as the wheel-derailing block is actuated into its inner or operative position (shown in Fig. III) or into its outer or inoperative position, (shown in Fig. IV;) that the inclined portions 14 of the guideways *d* extend upwardly from the inner ends of the horizontal portions 15 of the guideways toward the rail *a* and connect the said portions 15 with the upper ends of the inclined portions 13 of the guideways; that the said inclined portions 13 extend downwardly from the upper ends of the inclined portions 14 of the guideways toward the rail; that the wheel-derailing portion of the block *e* is largely below the top of the rail in the inoperative position of the said block, as shown in Fig. IV; that the lugs or members 19 are at the lower ends of the inclined portions 14 of the guideways in the said inoperative position of the said block; that during the first portion of the actuation of the block *e* from its inoperative position to an operative position the members 19 travel up the inclined portions 14 of the guideways and lift the block the distance required to render the block capable of being lowered and brought into its operative position upon the rail; that during the last portion of the actuation of the block *e* into an operative position the members 19 travel adown the inclined portions 13 of the guideways, so as to bring the said block into the proper position upon the rail, and that the said members 19 are at the lower ends of the inclined

portions 13 of the guideways in the operative position of the said block. A bar *f* is placed against the inner side of the web of the rail *a*. The bar *f* is rigidly secured to the rail in any approved manner and preferably fits snugly between the head and the base of the rail. The bar *f* projects laterally beyond the inner side of the head of the rail, and the wheel-derailing block *e* has the dimensions and arrangement required to render it capable of engaging a recess 22, formed in and arranged longitudinally of the upper side of the said bar. The bottom of the recess 22 is arranged to form a seat for the block *e* and affords bearing for the said block below the wheel-flange-guiding portion of the block. The end walls of the recess 22 are arranged to prevent displacement of the block *e* longitudinally of the rail and avoid strain upon the block-guiding means during the operation of the block.

The arm 18 of the block *e* is provided at its outer or free end with an ear 25, to which a rod *h* is pivoted, as at 26. The arm 18 at a point between its ends and preferably at its under side is provided with an ear 27, to which a rod *l* is pivoted, as at 28. The rod *l* extends, preferably, from the arm 18 to and under and transversely of the rail *a*.

One of the aforesaid rods is used as a member of the mechanism for operating the wheel-derailing block, whereas the other of the rods is employed as a member of the locking mechanism of an interlocking system. It will be observed, therefore, that the arm 18 of the wheel-derailing block has two rod connections conveniently arranged. It will be observed also that the arrangement and construction of the parts are such that the assemblage of the parts is rendered convenient, and the construction is such that the derailing device is rendered simple, durable, strong, and reliable in its operation. It will be observed also that the trunnions or members 20 turn somewhat during the actuation of the block *e* from an inoperative to an operative position, or vice versa, and that the engagement of the said members 20 with the horizontal portions 15 of the guideways is adequate to hold the outer or free end of the arm 18 of the block down and prevent the said end of the arm from being tilted upwardly by the weight of the block during the actuation of the block from its inoperative to an operative position.

What we claim is—

1. A derailing device of the character indicated, comprising a stand having a guideway, and a wheel-derailing block provided with an arm having a member engaging the aforesaid guideway, and the trend of the said guideway and the arrangement of the parts being such that the derailing-block is placed in an operative or inoperative position according as its arm is actuated along the aforesaid guideway in the one or the other direction.

2. A derailing device of the character indicated, comprising the following: a stand adapted to be rendered stationary and provided

with parallel guideways having, respectively, two upwardly-converging portions 13 and 14 meeting at their upper ends, and a wheel-derailing block having an arm extending longitudinally of the guideways and provided with laterally-projecting members arranged in line and engaging the aforesaid guideways, and means for actuating the said arm longitudinally, substantially as and for the purpose set forth.

3. A derailing device of the character indicated, comprising a stand adapted to be rendered stationary and having two parallel guideways arranged a suitable distance apart laterally; and a wheel-derailing block having an arm extending between and longitudinally of the guideways and provided with two laterally-projecting members arranged in line at opposite sides, respectively, of the arm, and the trend of the said guideways and the arrangement of parts being such that the derailing-block is placed in an operative or inoperative position according as its aforesaid arm is actuated along the aforesaid guideways in the one or the other direction.

4. A derailing device of the character indicated, comprising the following: a stand adapted to be rendered stationary and provided with a guideway *d* having a portion 15 thereof arranged in a horizontal plane and two inclined portions 13 and 14 converging upwardly and meeting at their upper ends with one of the said inclined portions connecting at its lower end with the inner end of the horizontally-arranged portion, and a wheel-derailing block having an arm extending alongside of the said guideway and provided with two laterally-projecting members 19 and 20 arranged a suitable distance apart longitudinally of the arm and engaging the said guideway, and means for actuating the said arm longitudinally, substantially as and for the purpose set forth.

5. A derailing device of the character indicated, comprising the following: a stand adapted to be rendered stationary and provided with parallel guideways and a wheel-derailing block having an arm extending longitudinally of the guideways and provided with two laterally-projecting members arranged in line at opposite sides, respectively, of the said arm and engaging and adapted to travel along the aforesaid guideways during the actuation of the said derailing-block, and means for holding the outer or free end of the arm down during the actuation of the said block, and the trend of the aforesaid guideways and the arrangement of parts being such that the block is placed in an operative or inoperative position according as its aforesaid arm is actuated in the one or the other direction.

6. A derailing device of the character indicated, comprising the following: a stand adapted to be rendered stationary and provided with two parallel guideways arranged a suitable distance apart laterally and comprising,

respectively, a portion arranged in a horizontal plane and inclined portions, and a wheel-derailing block having an arm extending between and longitudinally of the aforesaid guideways and provided with two laterally-projecting members arranged in line at opposite sides, respectively, of the said arm and adapted to travel in engagement with and along the inclined portions of the said guideways during the actuation of the said derailing-block, which arm has two other laterally-projecting members arranged in line at opposite sides, respectively, of the said arm and engaging and adapted to travel along the horizontal portion of the guideways, and means for actuating the said arm longitudinally, all relatively arranged and operating substantially as and for the purpose set forth.

7. A derailing device of the character indicated, comprising a stand adapted to be rendered stationary and comprising two upright walls arranged a suitable distance apart laterally and connected together at the bottom and having two parallel guideways formed in the different walls, respectively, and a wheel-derailing block having an arm extending between and longitudinally of the aforesaid walls and provided with means engaging the aforesaid guideways, and the trend of the said guideways and the arrangement of parts being such that the derailing-block is placed in an operative or inoperative position according as the aforesaid arm is actuated in the one or the other direction.

8. A derailing device of the character indicated, comprising a wheel-derailing block having a laterally-projecting arm provided with two rod connections arranged a suitable distance apart longitudinally of the arm, and means for guiding the shank during the actuation of the block, substantially as and for the purpose set forth.

9. The combination, with a rail of a railway-track, of a derailing device arranged at a side of the rail and comprising the following: a stationary stand having two walls arranged a suitable distance apart longitudinally of and a suitable distance from the said side of the rail and provided with guideways, a wheel-derailing block having an arm extending longitudinally of and between the aforesaid walls and having members engaging the said guideways, which arm has an ear at its outer or free end, and has another ear nearer the rail, and the trend of the aforesaid guideways and the arrangement of parts being such that the derailing-block is placed in an operative position upon the rail, or removed from the rail according as the aforesaid arm is actuated longitudinally in the one or the other direction.

10. The combination, with a rail of a railway-track and a pair of ties extending in under and instrumental in supporting the said rail, of a derailing device comprising the following: a stand mounted upon and secured to

the said ties, which stand has its central portion depressed between the ties and is provided with two guideways arranged at opposite sides, respectively, of the said depressed portion and extending longitudinally of the ties, a wheel-derailing block having a shank or arm extending longitudinally of the aforesaid walls and provided with members engaging the said guideways and means for actuating the said arms longitudinally, and the trend of the aforesaid guideways and the arrangement of parts being such that the derailing-block is placed in an operative or inoperative position according as the aforesaid arm is actuated in the one or the other direction.

11. The combination, with a rail of the railway-track and a wheel-derailing block rendered inoperative or operative according as it is actuated upon or from the said rail, of a bar alongside of the web of and secured to the rail, which bar is provided with a seat arranged below the sweep of the derailing-block and in position to afford bearing to the said

block when the block is in its operative position. 25

12. The combination, with a rail of a railway-track and a wheel-derailing block which is rendered operative or inoperative according as it is actuated upon or from the said rail, of a bar arranged alongside of the web of and secured to the rail, which bar is provided, in its upper end, with a recess whose bottom wall is arranged to form a seat for the aforesaid block when the latter is in its operative position, and whose opposite end walls form abutments arranged to prevent displacement of the said block longitudinally of the rail in opposite directions, respectively, when the block is in its aforesaid operative position. 30 35 40

Signed by us at Cleveland, Ohio, this 12th day of November, 1901.

STANLEY W. HAYES.
THEODORE E. LUTZ.

Witnesses:

C. H. DORER,
TELSA SCHWARTZ.