C. N. JAY.

RAILWAY GATE.

APPLICATION FILED AUG. 8, 1917.

1,247,405.

Patented Nov. 20, 1917.

2 SHEETS—SHEET 1.

Fig 1

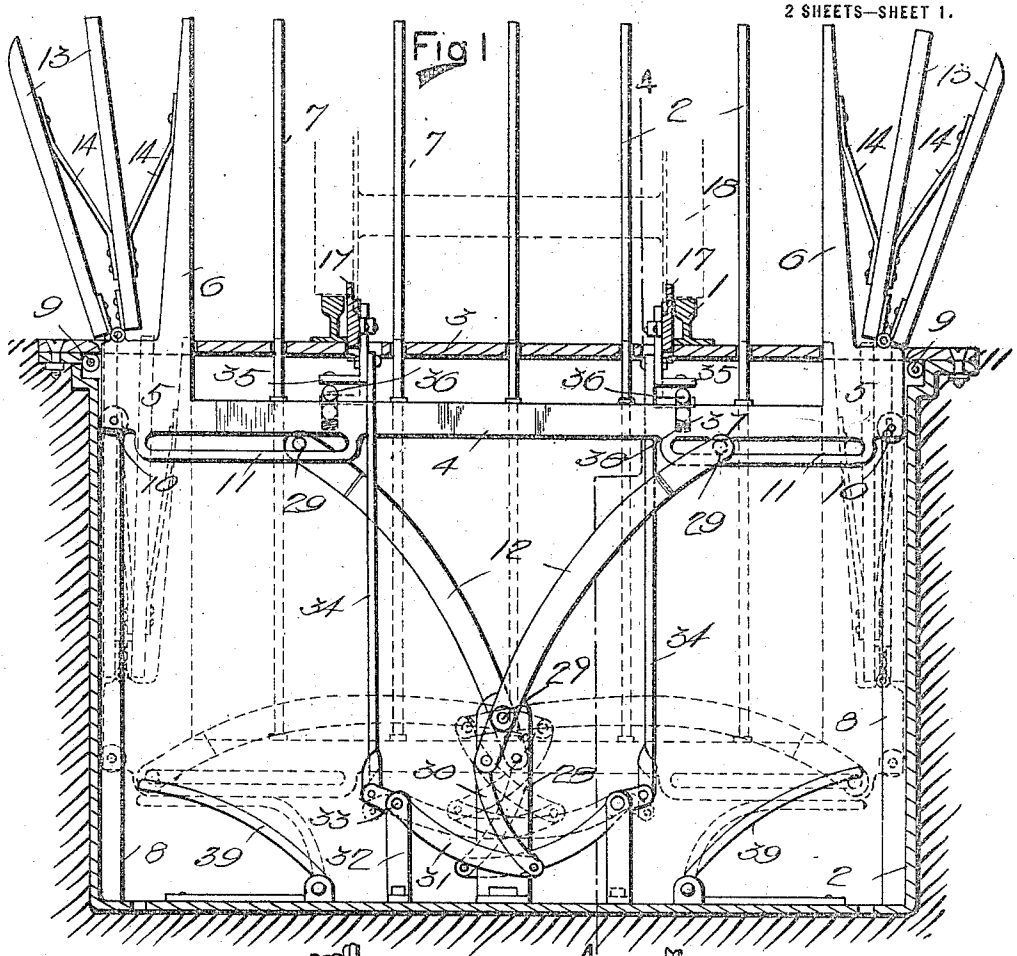
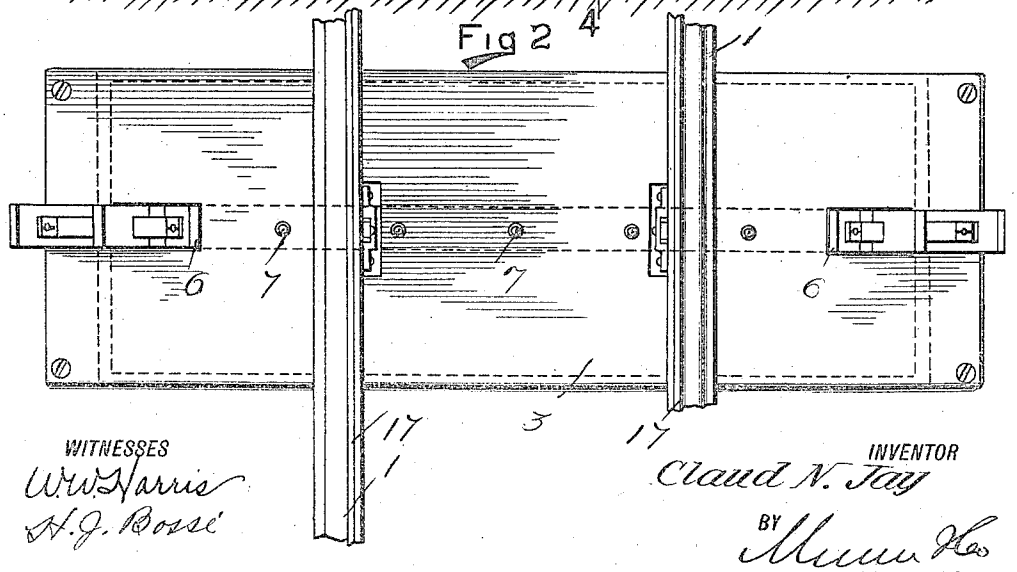


Fig 2



WITNESSES

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2 SHEETS—SHEET 2.

Fig 3

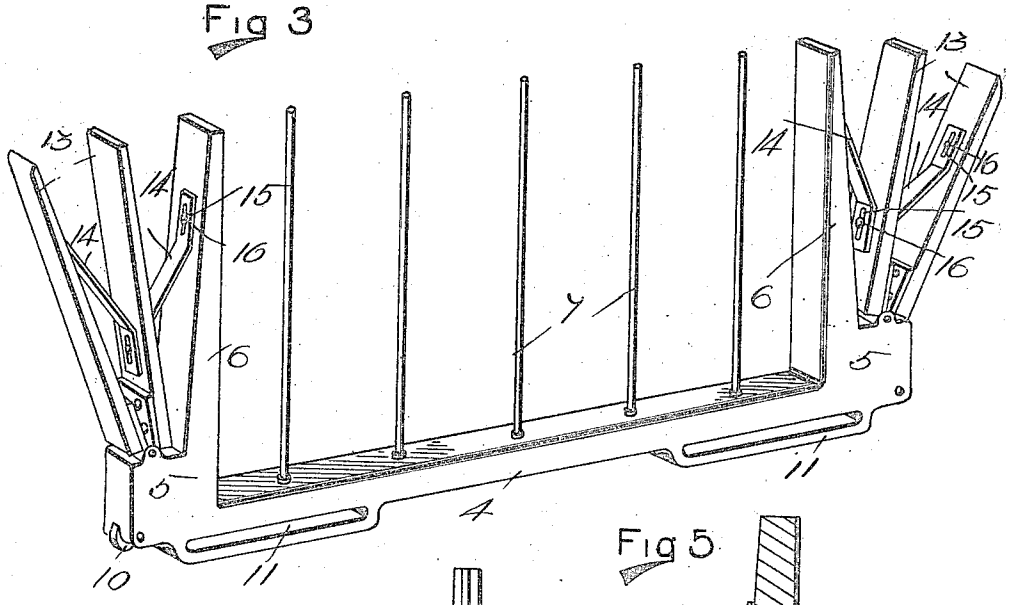


Fig 5

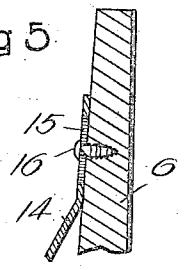
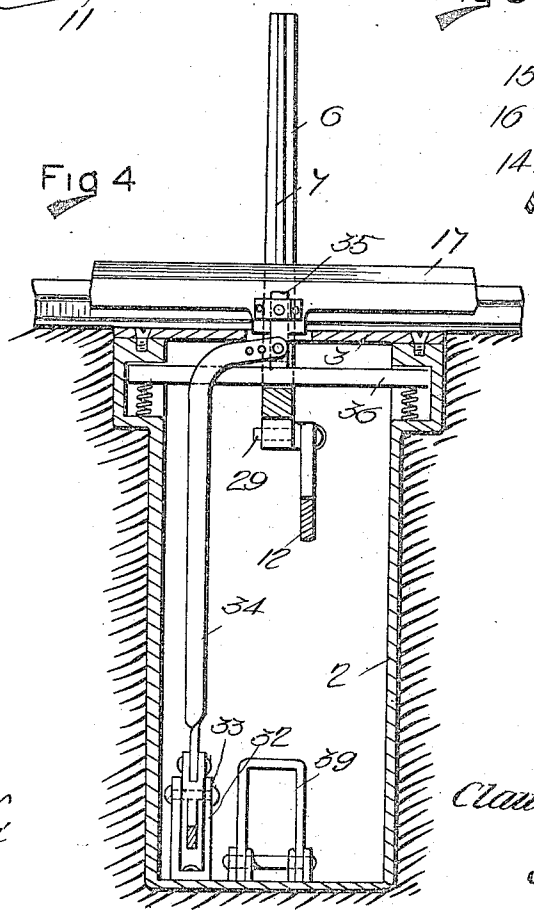


Fig 4



WITNESSES

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RAILWAY-GATE.

1,247,405. Specification of Letters Patent. Patented Nov. 20, 1917.

Original application filed June 5, 1917, Serial No. 172,993. Divided and this application filed August 8, 1917. Serial No. 185,047.

To all whom it may concern:

Be it known that I, CLAUD N. JAY, a citizen of the United States, and a resident of Marlow, in the county of Stephens and State of Oklahoma, have made certain new and useful Improvements in Railway-Gates, of which the following is a specification.

This invention is a divisional part of that for which I filed an application for patent in the United States on the 5th day of June, 1917, Serial No. 172,993, relative to a guard for railways adapted to be automatically operated by a moving train, said guard being designed to obstruct the entrance of persons and cattle into restricted territory.

The invention provides a guard which may be used wherever a barrier may be advantageously employed and operable by means of a vertically sliding movement. The invention consists of a guard which is expansible and adapted to cover a relatively wide tract when projected into operative position and which is constructed to occupy a relatively small space when drawn into inoperative or folded position.

While the invention is particularly designed for use as a railway gate it is to be understood that it is susceptible of general application, hence, in adapting the same to any specific use, various changes in the form, proportion and minor details of construction may be resorted to without departing from the nature of the invention.

The drawings show an adaptation of the invention to a railway gate in which—

Figure 1 is a view in elevation of the guard and coöperating means, the full line showing the relation of the parts when the guard is projected and the dotted lines indicating the relation of the parts when the guard is withdrawn into inoperative position.

Fig. 2 is a top plan view of the parts illustrated in Fig. 1.

Fig. 3 is a perspective view of the guard.

Fig. 4 is a transverse section on the line 4—4 of Fig. 1, looking to the right as indicated by the arrows.

Fig. 5 is a detail view of a portion of the guard.

Corresponding and like parts are referred to in the following description and indicated in the several views of the drawing by like reference characters.

The numeral 1 designates the rails of a track or line of railway provided with the invention. The guard for safe-guarding the track and preventing the entrance of persons and cattle into prohibited territory is disposed so as to extend between the rails 1 and for a short distance beyond the sides of the track. In the drawings the guard is illustrated as having a vertical movement and when in operative position, is projected vertically above the road bed, and when out of the way, so as not to offer any obstruction to the passage of a train or car, the guard is disposed or withdrawn below the surface of the road bed, as indicated most clearly by the dotted lines in Fig. 1. The normal or projected position of the guard is shown by the full lines in Fig. 1.

The guard and actuating mechanism are mounted in a casing 2, which is set in an excavation formed in the road bed. The case 2 is preferably closed at its bottom and sides and is open at the top to admit of access thereto for any purpose. When the parts are in place, a cap plate 3 closes the top of the casing and is securely fastened thereto. The casing 2 extends transversely beneath the rails, and to a suitable distance beyond the sides of the track so as to accommodate the guard and operating mechanism.

The guard comprises a beam 4 of a length to extend across the track and beyond the sides thereof a given distance. The ends of the beam 4 are enlarged, as indicated at 5, and are provided with standards 6, which have a vertical disposition.

A plurality of fingers 7 project vertically from the beam 4, and constitute guard elements. The fingers 7 and standard 6 are adapted to operate through suitable openings formed in the cap plate 3. Vertically disposed guideways 8 are formed upon the inner faces of the end walls of the casing 2, and direct the guard in its vertical movements. To reduce the friction between the guard and casing to the smallest amount possible, rollers 9 and 10 are employed. The rollers 9 are mounted in depressions at the top of the end walls of the casing 2 in line with the guideways 8. The rollers 10 are mounted at the outer lower corners of the enlargements 5 of the beam 4.

The opposite end portions of the beam 4 are provided with longitudinal slots 11 to

form sliding connection with operating levers 12 of the operating mechanism. Guard members 13 are hingedly connected at their lower ends to the enlargements 5 of the beam 4, and are disposed so as to swing in the plane of the guard, and thereby admit of such guard covering a greater extent when projecting than when withdrawn into the casing.

Springs 14 connect the member 13 with one another and with the standards 6. The springs 14 are flat and are secured at their lower ends to certain members 13, and having sliding connection at their upper ends with the standard 6, and certain other members 13. When the guard is projected into operative position, the members 13 are moved outwardly at their upper ends into fan shape by means of the springs 14. When the guard is withdrawn into inoperative position, the upper ends of the members 13 are moved inwardly against the tension of the springs 14, and the outer faces of the outermost members 13 are flush with the extreme vertical edges of the enlargement 5, so as to engage the inner walls of the guideways 8.

The extreme members 13 travel upon the rollers 9 both when the guard is withdrawn into the casing or projected from the casing into operative position. The springs 14 yieldingly connect the members 13 with the standards 6, and also limit the outward movements of the members when the guard is projected. The end portions of the springs 14 are formed with longitudinal slots 15, which receive suitable fastenings 16. In this manner provision is had for movement of the springs as also to limit the outward movement of the members 13.

Depressible rails 17 are disposed adjacent the rails 1 and preferably upon the inner sides thereof, and may be of any length and mounted in any desired way. The rails 17 normally project a short distance above the treads of the rails 1 so as to be engaged by the wheels 18 of the trucks and be depressed thereby.

Suitable operating means are provided between the depressible rails and guard to admit of the latter being withdrawn within the casing 2, when the rails 17 are depressed. This mechanism comprises the levers 12, which are pivotally connected at 27 to a bracket 28, projecting vertically from the bottom of the casing 2. The levers 12 are disposed upon opposite sides of the plan of the guard so as not to interfere with the vertical movements thereof. The upper ends of the levers 12 are inwardly offset and are provided with pins 29, which enter the slots 11 of the beam 4, thereby providing pivotal and sliding connection between such levers and beam. The upper arms of the lever 12 are exceedingly long, whereas the lower arms are short, thereby providing for comparatively great length of movement of the guard as compared with the relatively slight movement of the depressible rails 17.

Links 30 pivotally connect the lower ends of the levers 12 to the inner ends of other levers 31, which are mounted upon standards 32 at 33. The levers 31 are disposed in a general horizontal position and operate vertically. Links 34 pivotally connect the outer ends of the levers 31 with L irons or brackets 35 connected to the depressible rail 17. The connection between the links 34 and irons 35 and between such irons and the depressible rails is adjustable, to admit of adapting parts as occasion may require.

The links 34, levers 31 and standards 32 are located at one side of the casing 2, and the upper ends of the links 34 are bent laterally so as to make connections with the irons 35.

Rods or bars 36 are disposed near the ends of the casing 2, and are mounted in vertically disposed recesses 37 formed therein. Expansible helical springs 38 located in the recesses 37 support the rods 36 and admit of such rods having a downward movement when the rails 17 are depressed. The horizontal members of the L irons or brackets 35 rest upon the rods 35 and are preferably secured thereto. The rods or members 36 in conjunction with the springs 38 yieldably support the rails 17 and may serve as stops to limit the upward movement of the guard when projected.

To prevent shock when the guard reaches the limit of its downward movement, buffers 39 are located at the bottom of the casing 2, and these buffers engage opposite ends of the guard. The buffers 39 preferably consist of springs of substantially V form, such springs being secured in any convenient manner to the bottom of the casing.

In the operation of the invention, the parts being assembled substantially as disclosed in the drawings and hereinbefore specified, the guard is normally projected and the end portions comprising the members 13 are spread. When a train or car approaches the guard, the wheels of the trucks engage the rails 17 and depress them, and this action moves the angle irons or brackets 35 and the rods 36 downward with the result that the outer ends of the levers 31 are depressed and their inner ends elevated, thereby operating the lever 12 and withdrawing the guard within the casing 2. As the guard descends into the casing the outermost members 13 are pressed inward and ride upon the rollers 9, the guard assuming the position when fully lowered into the casing, shown by the dotted lines in Fig. 1. After the rails 17 are relieved of the weight of action of the train or car, the rails 17 are again elevated into normal po-

sition by the action of the springs 38, thereby resetting the mechanism and projecting the guard or gate into operative position.

It will be observed that the operation of the guard is automatic both when depressed and projected, the guard being lowered into the casing by the action of the train or car, and projected into operative position by the action of the springs in the manner stated.

I claim:—

1. A guard for railways comprising a beam, guard elements projecting from the beam, members pivotally connected to end portions of the beam and adapted to move in the plane of the guard, and springs forming connecting means between the members and the outermost elements of the guard.

2. A guard for railways, comprising a beam, standards at the ends of the beam, guard fingers projecting from the beam intermediate the standards, guard members exterior to the standards and pivoted at their lower ends to the guard and adapted to swing outward at their upper ends in the plane of the guard, and springs connecting the guard members to one another and to the respective standards.

3. A guard of the character specified comprising a beam having its end portions enlarged, guard fingers projecting from the beam in the same direction, standards at the ends of the beam in the plane of the fingers, members hingedly connected to the enlargements of the beam, and springs forming connecting means between the members and standards and serving to normally hold the members spread at their outer ends.

4. Protective means for railways, comprising a casing disposed in the road bed beneath the track and a guard movable vertically in said casing and embodying a main portion and end portions, the latter consisting of guard members pivoted at their lower ends to the main portion and adapted to spread at their upper ends when the guard is projected and to move inward when the guard is withdrawn within the casing, and springs connecting the guard members to one another and to the respective ends of the main portion.

CLAUD N. JAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."