

C. S. SHUTE.
RAILWAY FENCE AND GATE.
APPLICATION FILED DEC. 5, 1908.

933,857.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.

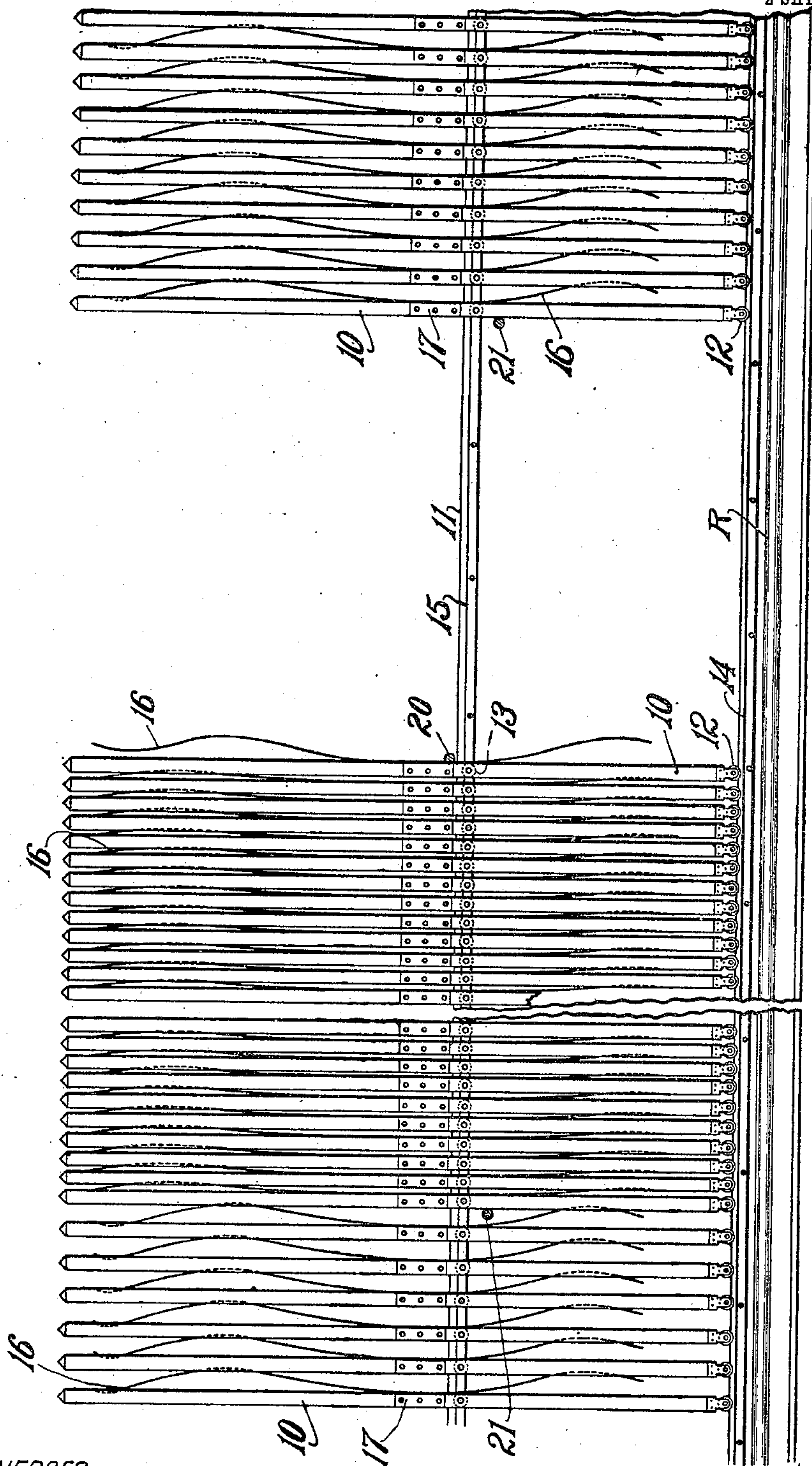


FIG. 1.

WITNESSES

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INVENTOR

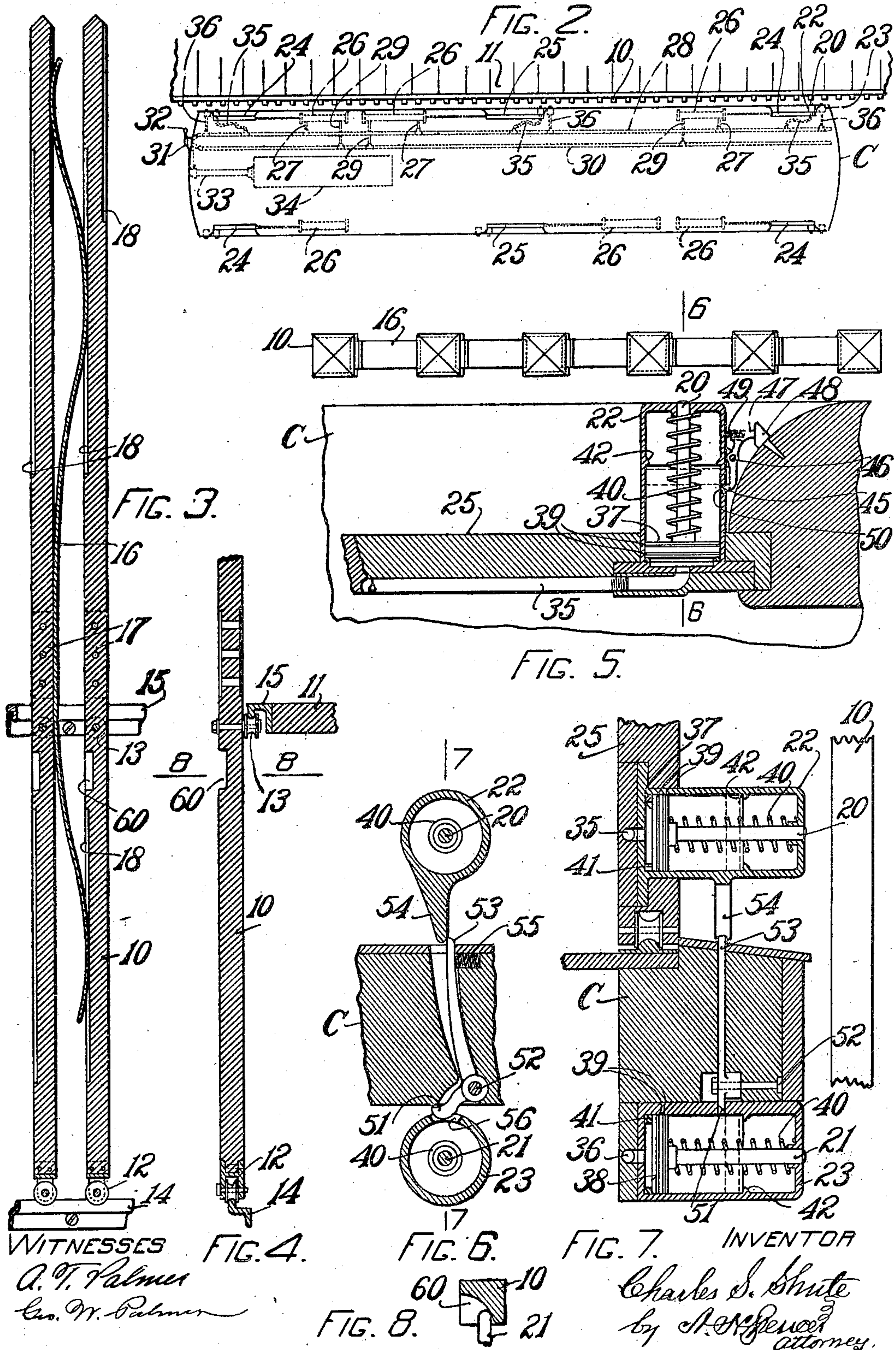
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UNITED STATES PATENT OFFICE.

CHARLES S. SHUTE, OF BOSTON, MASSACHUSETTS.

RAILWAY FENCE AND GATE.

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Specification of Letters Patent. Patented Sept. 14, 1909.

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To all whom it may concern:

Be it known that I, CHARLES S. SHUTE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Railway Fences and Gates, of which the following is a specification.

This invention relates to movable fences for forming protection along the edges of platforms or the like where it is necessary, at times, to provide gateways.

The especial object is to provide in such a fence, laterally movable portions adapted to form a gateway at any point thereof, the fence being rather a succession of gateways, which normally form a fence, any combination of the contiguous elements thereof being independently movable laterally, while intermediate devices are provided to return them to normal position when the actuating means are withdrawn.

The special adaptation shown in the accompanying drawings, which form part of this specification, illustrates my invention applied to the platforms adjacent to depressed tracks, where there is great liability of accidents caused by patrons being crowded or pushed into the track-pit. These fences must be continuous while there are no trains on the adjacent tracks, but must be adapted to form gateways opposite the car doors of the train when it has been brought to a stop at the station. The variation in length of cars and the difficulty attending the precise stopping of a train practically prohibit the use of fixed gates, and means must be provided whereby these gateways are always formed opposite the car doors. As this brings the car into the problem as an element, I prefer to mount the actuating means thereon, although I do not limit myself to car-actuated fence-gates, since separate means, independent of the car, can be provided for operating the fence members.

In the drawings:—Figure 1 is an elevation along a platform showing my fence with a temporary gate-way formed therein, the operating means being merely indicated. Fig. 2 is a plan view in diagram showing the actuating means attached to a car. Fig. 3 is a sectional elevation of two pickets and an interposed spring. Fig. 4 is a transverse section of the lower portion of one of the pickets shown in Fig. 3. Fig. 5 is a partial sectional plan view of a car door showing

the preferred actuating means. Fig. 6 is a partial section on line 6—6 of Fig. 5. Fig. 7 is a section on line 7—7 of Fig. 6. Fig. 8 is a detail on line 8—8 of Fig. 4.

Referring to Figs. 1, 3 and 4 my fence consists of a succession of equally-spaced laterally movable pickets 10, arranged along the edge of platform 11, each being held in place by a pair of rollers 12, 13, guided by guard rails 14, 15 secured to the platform and its support. Roller 12, rotatably attached to the lower extremity of picket 11, is grooved to fit over the head or tread of guard rail 14, while roller 13, similarly grooved, is fitted to run on the under side of the tread of guard rail 15, thus preventing the picket from being raised or lowered. To maintain the pickets in vertical position, I secure a leaf spring 16 to each picket, at 17, its free ends being adapted to enter the various grooves 18 in the pickets, (see Fig. 3,) thereby providing a check against edgewise movement as an assistance to rolls 12, 13. The tension of the springs serves to maintain the pickets vertically at some pre-determined distance apart adequate to permit of a sufficient lateral grouping or collapse of several of the pickets to form the required gate-way, as seen in Fig. 1.

The operating means shown in Fig. 2 consists of a series of plungers 20, 21, within compressed-air cylinders 22, 23, Figs. 6 and 7, and adapted to engage with the pickets 10 either to move them or hold them stationary, as required. The car C is shown with two end doors 24 and one center door 25 on each side, all operated by air cylinders 26, to open and close same while the car is at rest. The necessary piping is indicated in dotted lines for one side only, the other being similarly equipped if required. The opening ends of cylinders 26 are connected by tubes 27 to a manifold pipe 28, and the closing ends of cylinders 26 by tubes 29 to a similar manifold pipe 30. Pipes 28 and 30 unite in a three-way valve 31, operated by handle 32, which is connected by conduit 33 with the source of air-supply, as the tank 34, secured to the under side of the car-floor, see Fig. 2. Cylinders 22 and 23 are shown as single acting, (Figs. 5 and 7) the former being mounted on a door 25, near its free end. As it moves with the door, the connection 35 with manifold pipe 28 is shown as being flexible. Cylinder 23 is mounted underneath the car.

and is stationary with respect to same; consequently its connection 36 with pipe 28 may be rigid. Within cylinders 22 and 23 and rigidly connected to plungers 20, 21 are the
 5 pistons 37, 38, provided with packing rings 39, and pressed inwardly by springs 40 against their seats 41.

In operation, when car C has been brought to a stop, the various cylinders 26 are operated to open doors 24, 25, by admitting air
 10 from reservoir 34 to manifold pipe 28. At the same time air from said manifold pipe enters cylinders 22, 23 through connections 35 and 36, pressing pistons 37, 38 outwardly
 15 against the action of springs 40 until said pistons seat against ridges 42, integral with cylinders 22, 23. By this means, plungers 20, 21 are projected through the line of pickets 10, (Fig. 1), and, as doors 24 and 25
 20 open, plunger 20 catches the nearest picket and carries it and its neighbors along, side-wise, against the action of springs 16, until the condition shown in Fig. 1 obtains. Meanwhile plunger 21 has served as an abut-
 25 ment to hold the rear pickets in position, and the next plunger 21 ahead serves the same purpose for its adjacent picket, forming the abutment against which the intervening pickets collapse. When door 25 starts to close,
 30 air is shut off in manifold pipe 28 and auxiliary means must be provided to retain the plungers 20, 21 in their extended position until the completion of the closing, during which time the collapsed pickets 10, under
 35 the influence of springs 16, are following plunger 20 back to their normal position.

To insure the retention of plunger 20 I provide a catch 45, Fig. 5, pivotally mounted on cylinder 22 at 46, the free end 47 of which
 40 is adapted to impinge against a fixed stop 48 in the door-jamb, while the door is closed, but as soon as the door starts to open, the end 47 leaves the stop 48, and a coiled spring 49 forces the catch through opening 50 in
 45 cylinder 22. Catch 45 is cam-shaped so that piston 37 will push it out of its path during the outward movement, it immediately springing back behind the piston to prevent the return of same. As the door completes
 50 its closing movement, the end 47 strikes the stop 48, causing catch 45 to release piston 37, which then returns to its seat 41 through the action of spring 40. A similar catch 51 piv-
 55 otated at 52, adjacent to cylinder 23, performs the same function for piston 38, see Figs. 6 and 7. The free end 53 is engaged by a lug 54 on cylinder 22, at the latter end of its movement, to release piston 38, the coiled spring 55 performing the same function for
 60 catch 51 as does spring 49 for catch 45.

In construction, the opening 50 and opening 56 in cylinder 23 would be snug fits for their respective catches 45 and 51, so as to minimize the amount of air wasted before
 65 the pistons are locked, or if desired, the

catches might be suitably housed within special recesses on the cylinders and suitable packing be employed to prevent the escape of air, although this latter means is not considered indispensable. 70

Referring to Fig. 5 it may be noted that if pistons 20, 21 should be directly opposite a picket 10 when car C stops, piston 20 would abut against it and, in moving, slide across its face, dropping into the adjacent space
 75 and catching the next picket. In such case it is desirable to insure the retention of the first mentioned picket by plunger 21. For this purpose I prefer to cut away a portion of the pickets 10 which is opposite plunger
 80 21, as shown at 60 in Figs. 3, 4 and 8, in order that said plunger may positively engage said picket as seen in Fig. 8.

While I have shown a single spring 16 interposed between each pair of pickets, more
 85 may be employed if desired and other forms of springs adopted, the main objects sought being first, the supporting and suitable spacing of the pickets in upright position, and second, a disposition of the tension tending
 90 to bring the plungers 20 opposite the center of pressure of the picket. These, with the necessary elastic arrangement of the pickets form the essential features of my invention.

Auxiliary devices such as cushions within
 95 cylinders 22, 23, to receive the shock of returning pistons 37, 38 under the action of springs 40, may be provided if desired.

I claim as my invention:—

1. In railway platform fences, a succession
 100 of laterally movable upright pickets, means for maintaining them in the desired spaced position, to form a fence, and means for collapsing or grouping a series of said pickets, by a sidewise movement away from others,
 105 to form a gateway at a point not predetermined.

2. In railway platform fences, a succession of laterally movable upright pickets, elastic
 110 means for maintaining them in proper spaced position to form a fence, and means for collapsing or grouping a series of adjacent pickets by their sidewise movement away from the others, to form a gateway
 115 wherever the car door may stop.

3. In railway platform fences, a succession of laterally movable upright pickets, interposed springs alternating therewith, serving as yielding spacing devices, means for retaining said springs in proper edgewise po-
 120 sition and means for opening gateways at desired points by sidewise movement of a series of pickets serving to compress such springs.

4. In railway platform fences, a succession
 125 of laterally movable upright pickets, rollers secured thereto and guide-rails forming supporting tracks for the lateral movement of the pickets, springs serving to automatically space the pickets and restore them after be- 130

ing collapsed, and means mounted on the car for opening a gateway between adjacent pickets.

5 5. In railway platform fences, a succession of laterally movable upright pickets normally spaced apart, interposed springs adapted to yield under lateral displacement of a series of pickets and to restore them to normal position when pressure is released, 10 in combination with suitably actuated plungers in pairs carried on the car, adapted to project between adjacent pickets, and respectively serving to hold certain pickets stationary and to laterally displace others, so 15 as to open a gateway.

6. In railway platform fences, a succession of laterally movable upright pickets nor-

mally spaced apart, interposed springs adapted to yield under lateral displacement of a series of pickets and to restore them to 20 normal position when pressure is released, in combination with pressure cylinders in pairs with suitable connections carried on the car, pistons within such cylinders and plungers adapted to project therefrom between adja- 25 cent pickets, and respectively serving to hold certain pickets stationary and to laterally displace others so as to open a gateway.

In testimony whereof I have affixed my signature, in presence of two witnesses.

CHARLES S. SHUTE.

Witnesses:

A. H. SPENCER,

GEO. W. PALMER.