No. 690,667. Patented Jan. 7, 1902.

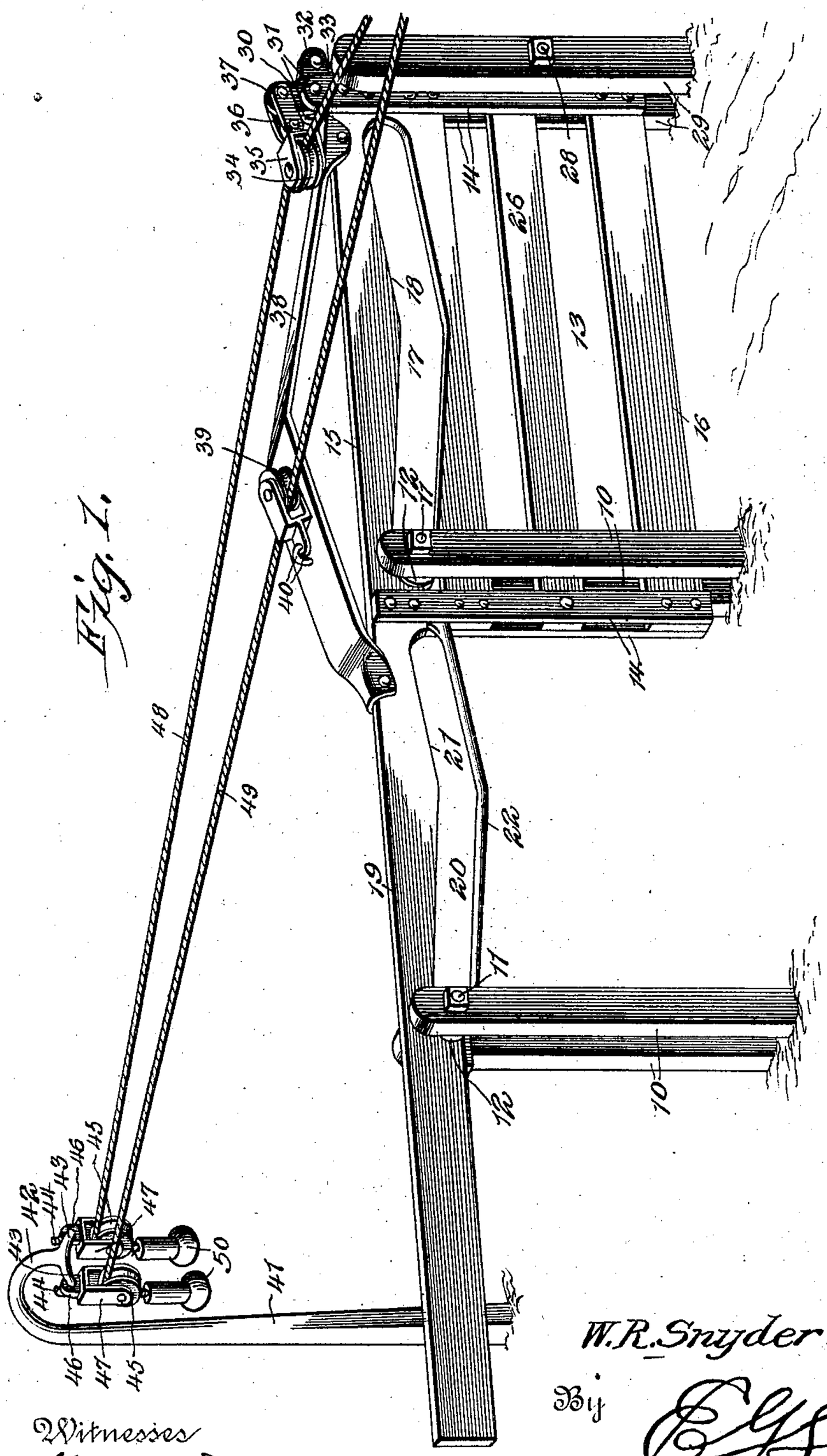
W. R. SNYDER.

GATE.

(Application filed June 13, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



Witnesses
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Fig. 2.

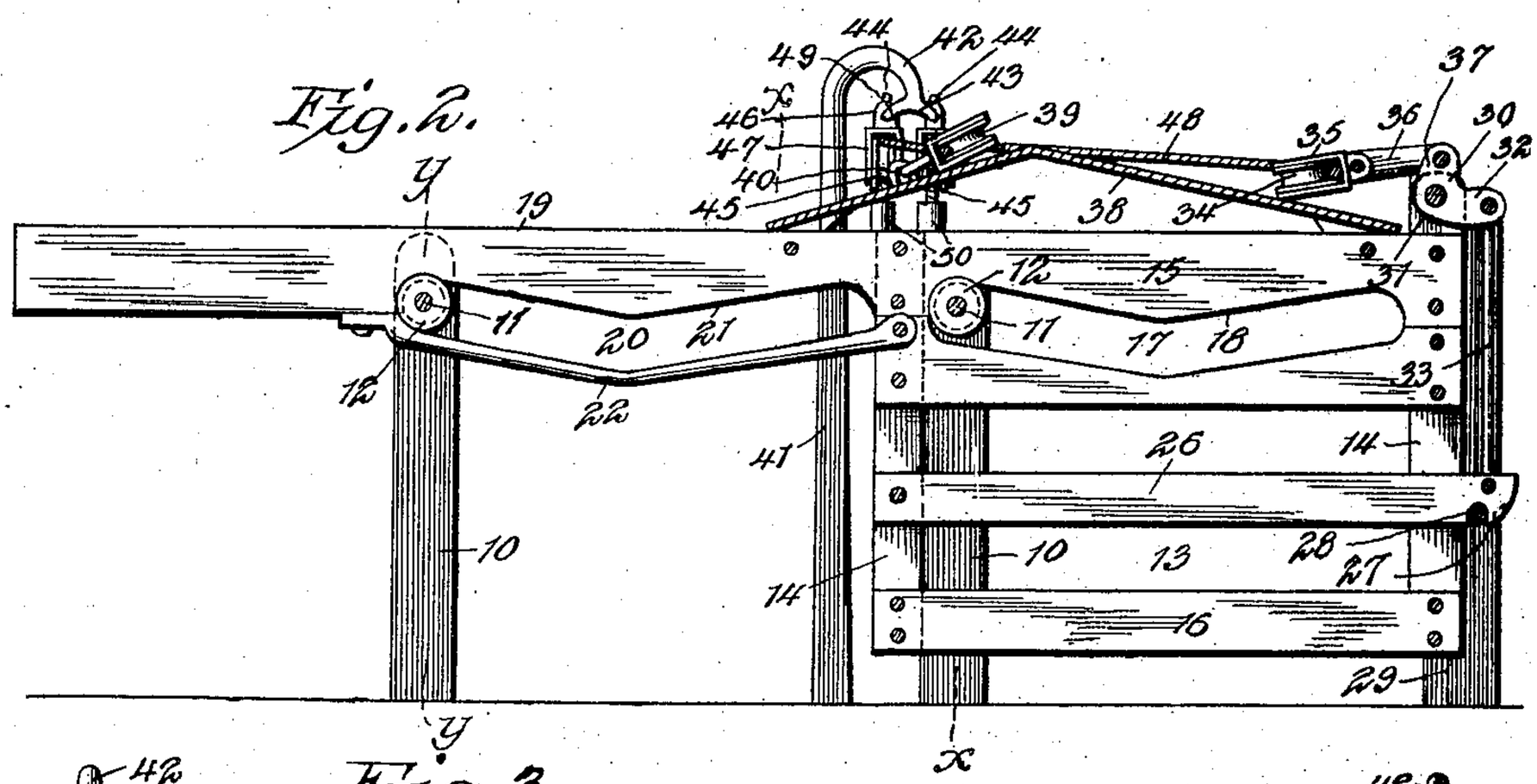
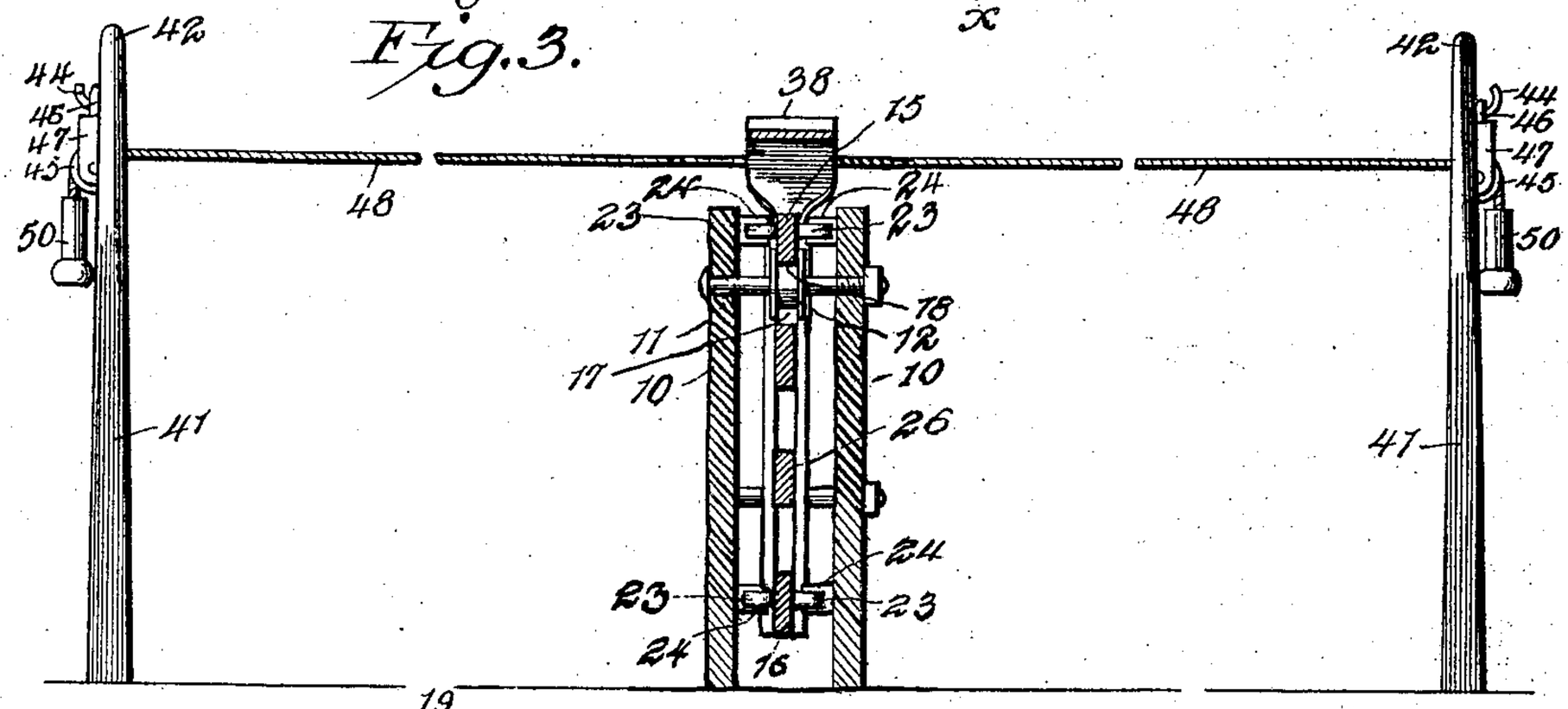


Fig. 3.



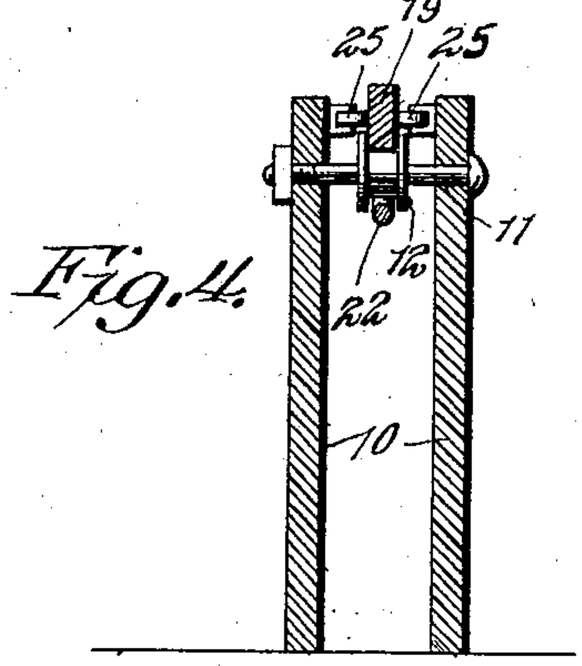


Fig. 4.

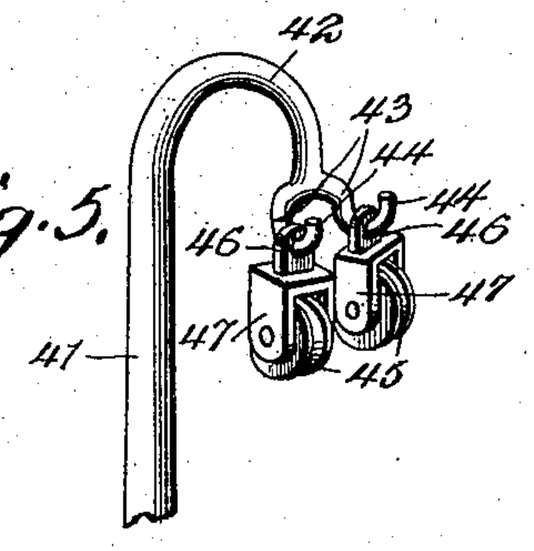


Fig. 5.

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UNITED STATES PATENT OFFICE.

WILLIAM R. SNYDER, OF PUYALLUP, WASHINGTON.

GATE.

SPECIFICATION forming part of Letters Patent No. 690,667, dated January 7, 1902.

Application filed June 13, 1901. Serial No. 64,452. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. SNYDER, a citizen of the United States, residing at Puyallup, in the county of Pierce and State of Washington, have invented a new and useful Gate, of which the following is a specification.

The present invention relates to gates, and more particularly to sliding gates. One of the objects thereof is to provide a simple structure of this character which is easily operated and when moved partly to either its open or closed position will automatically complete such movement.

A further object is to construct a gate of the above character which will be moved bodily and without any tilting or lateral movement and to provide means for guiding the gate so that the friction will be reduced to a minimum.

Another object is to provide novel operating means whereby a person without alighting from a vehicle may open and close the gate to permit of a passage through the same.

In the accompanying drawings there is shown the preferred embodiment of this invention, which is also described in the following specification. It will of course be understood that such changes may be made from the construction shown and described as are within the scope of the appended claims.

In the drawings, Figure 1 is a perspective view of the improved gate. Fig. 2 is a vertical longitudinal section through the same. Fig. 3 is a vertical transverse section through the front supporting-post on the line X X of Fig. 2. Fig. 4 is a similar section through the rear supporting-post on the line Y Y of Fig. 2. Fig. 5 is a detail perspective of the upper portion of one of the pulley-supporting posts.

In carrying out this invention two posts are employed, which comprise spaced upright standards 10, connected contiguous to their upper ends by tie-bolts 11. Rotatably mounted upon each of these bolts is a grooved supporting-roller 12, which rollers are located in alinement. The gate (designated as a whole by the reference-numeral 13) is slidably supported upon the posts in the following manner: This gate consists of a rectangular panel composed of vertical bars 14, which are connected at their upper and lower ends by horizontal bars 15 and 16. The upper bar 15 is made of two sections, the adjacent edges of which are cut away to form a longitudinally-disposed slot 17. This slot declines from its opposite ends to its central portion, and the upper edge 18 thereof forms a track which has therefore reversely-inclined portions. The upper section of the bar 15 projects for a considerable distance beyond the rear edge of the panel and constitutes a guide-bar 19. The under face of this guide-bar is cut out, as at 20, the edge 21 of said cut-out portion being of the same shape as the track 18. A keeper-rod 22 is secured to the bottom edge of the guide-bar contiguous to the ends of the cut-out portion 20. The gate is suspended between the standards 10, and the rollers 12 are located, respectively, in the slots 17 and 20, the ends of said slots constituting stops that abut against the rollers to limit the sliding movement of the gate. The upper edges thereof will therefore be slidably mounted in the grooves of said rollers. Antifriction-rollers 23 are secured in brackets 24, that are arranged on the inner faces of the forward standards contiguous to their upper and lower ends, and these rollers are arranged to bear against the opposite side faces of the gate to prevent lateral movement of the same and at the same time reduce the frictional engagement to a minimum. A pair of antifriction-rollers 25 are in like manner secured to the inner faces of the rear standards and bear against the opposite side faces of the guide-bar.

It will be seen by this construction that when the gate is moved in either direction and the roller has passed the apex of the tracks gravity will cause the gate to continue the movement either to its open or closed position. At the same time, because of the two guideways, the entire gate will rise and fall simultaneously and no tilting movement will take place. A further advantage in this construction resides in the fact that in both its opening and closing movements the gate is raised considerably, so that there is little liability of its coming into contact with any obstruction that may be thereunder.

For the purpose of locking the gate in closed

position a latch 26 is pivoted to the rear vertical bar 14 and extends longitudinally of the gate, projecting beyond the front edge of the panel thereof. This latch has a depending hook 27, that is arranged to engage over a bolt 28, secured to and bridging the space between a pair of vertical spaced standards 29. The means for operating this gate is as follows: A bell-crank lever 30 is pivoted to a pair of upstanding lugs 31, located at the front end of the gate, and one arm 32 of this lever is connected to the free end of the latch 26 by means of a rod 33. A horizontally-disposed pulley 34 is mounted in a yoke 35, and this yoke is pivotally connected, through the medium of a link 36, to the other arm 37 of the bell-crank. A substantially V-shaped brace-plate 38 is secured to the top bar of the gate, and a horizontally-arranged pulley 39 is pivotally secured, by means of a pair of interlocked eyes 40, to the same. On the opposite sides of and some distance from the gate are located posts 41, having overhanging offset brackets 42, the terminals of which are forked to form a pair of arms 43, that are provided with hooks 44. Pulleys 45 are movably suspended from these hooks by means of eyes 46, that are secured to the yokes 47, embracing the same. An operating-cord 48 passes through one of the pulleys of each post and through the pulley 34, that is secured to the bell-crank. Another cord 49 passes through the other pulleys and through the rear pulley 40 of the gate. These cords are provided at their ends with suitable handle-knobs 50.

The manner of operating the gate will be obvious. Assuming that it is in closed position and it is desired to open the same, it is only necessary to pull upon one end of the cord which passes through the forward pulley of the gate. The first result of the strain thus brought to bear upon this pulley will be to move the bell-crank lever, thereby raising the latch and unlocking the gate. Upon a continued movement the gate will be drawn backwardly and will ride upwardly on the rollers until the highest point has been reached, whereupon the gate will gravitate to its full-open position, as already described. On the other hand, to close the gate it is only necessary to pull upon the other cord, whereupon the gate will be drawn forward until the rollers have again passed the highest position, and the gate will automatically close. In this position the latch will ride over the locking-bolt 28, and the gate will thus be automatically relocked. By this construction it will therefore be seen that a very simple gate is provided which embodies all the advantages set forth in the preliminary portion of the specification.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. The combination with supporting-standards each comprising spaced uprights connected at their upper ends by a rod, of supporting-rollers journaled upon the connecting-rods of the standards, and a sliding gate comprising spaced longitudinal bars connected by spaced upright bars, one of said longitudinal bars extending beyond one end of the gate and being provided in its lower face with cut-out portions, one of which is located between and terminates short of the vertical bars, the other of said cut-out portions being located in the projecting end of the bar, said cut-out portions forming reversely and correspondingly inclined tracks which rest upon the peripheries of the supporting-rollers, the ends of the cut-out portions constituting stops that abut against the periphery of the rollers to limit the sliding movement of the gate and keepers secured beneath the cut-out portions of the top bar.

2. The combination with supporting-standards, of a gate slidably mounted upon the standards, a longitudinally-disposed brace secured to the top of the gate, a movable locking-catch carried by the gate, a pair of pulleys located at the top of the gate, one of the pulleys being pivoted to the brace and the other having a pivotal connection with the locking-catch, and operating-cords for the gate passing through the pulleys.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM R. SNYDER.

Witnesses:
E. L. SWOPE,
H. H. BLACKBURN.