

GATE.

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2 SHEETS--SHEET 1.



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2 SHEETS—SHEET 2.

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Fig. 2.

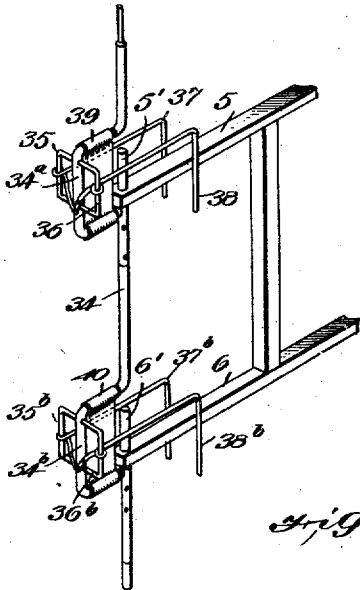


Fig. 3.

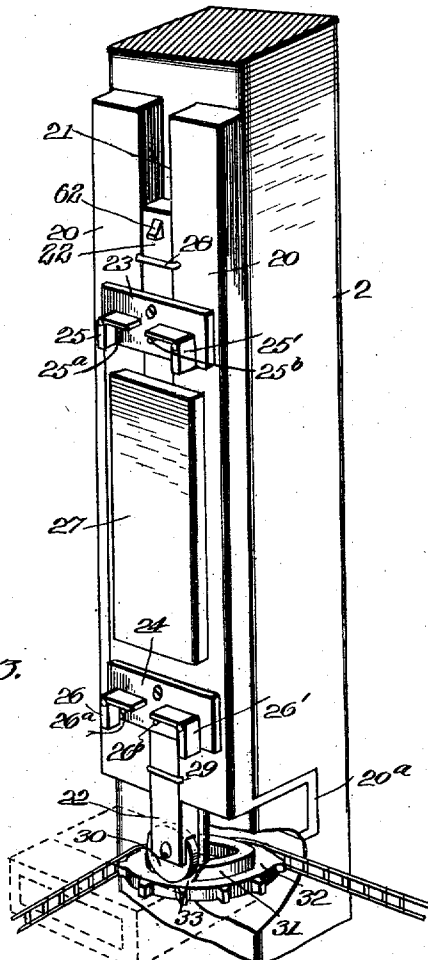


Fig. 4.

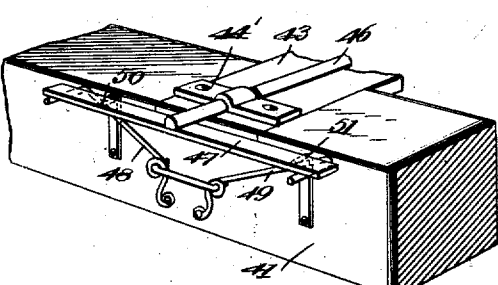
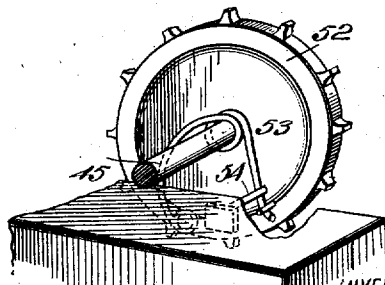


Fig. 5.



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GATE.

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To all whom it may concern:

Be it known that I, GEORGE M. WEST, a citizen of the United States, and a resident of Lamont, in the county of Grant and State

5 of Arkansas, have made certain new and useful Improvements in Gates, of which the following is a specification.

My invention relates to gate operating devices and it consists in the combinations, constructions and arrangements herein described and claimed.

10 An object of my invention is to provide improved devices for opening or closing a gate, to be operated by the approach or departure of the vehicle.

15 A further object of my invention is to provide a novel form of latch for holding the gate and novel mechanism for releasing the same.

20 A further object of my invention is to provide a novel form of actuating spring which is of simple construction but which serves to keep the gate in its normally closed position.

25 Other objects and advantages will appear in the following specification and the novel features of the device will be particularly pointed out in the appended claims.

30 My invention is illustrated in the accompanying drawings forming part of this specification, in which similar reference characters indicate like parts in the several views and in which—

35 Figure 1 is a perspective view showing the gate and the actuating devices; Fig. 2 is a perspective view showing the rear end of the gate and the springs for operating the same; Fig. 3 is a perspective view of a portion of one of the uprights, showing the catches and the operating mechanism; Fig. 40 4 is a perspective view of a portion of the gate operating devices, and Fig. 5 is a perspective view showing a sprocket wheel used on the gate operating devices.

45 In carrying out my invention, I provide a main frame which consists of the uprights 1, and 2, and a hollow bottom sill 3 disposed beneath the roadway. The frame thus constructed may be joined at the top by a rod 50 4 or this rod may be left off if desirable. The gate proper consists of the usual top and bottom pieces 5 and 6 respectively, the end pieces 7 and 8 and the cross pieces 9. To the front end 8 are secured retaining members 10 and 11 in which the latch mem-

bers are pivoted at 12' and 13' respectively to the cross members 9. An upright rod 14 is pivotally connected to both of these rods 12 and 13 and terminates at its top in a plate 15. 60

Extending from the horizontal cross member 9 and secured to the top member 5 is a support 16 having a yoke 17 to which are pivotally attached the rods 18 and 19, 65 the latter being provided with respective depending links 18' and 19' to which the plate 15 is loosely attached.

On the inside of the upright 2 is a member 20 provided with a slot 21 in which a 70 slidable rod 22 is disposed. The lower part of the member 20 is bent in a U-shape as shown at 20^a. The sliding bar 22 bears the cross pieces 23 and 24 to which are pivotally attached the L-shaped catches 25—25' and 75 26—26', respectively. The upper catches 25—25' are limited in their movement in one direction by the pins 25^a and 25^b, while the lower catches are limited by the pins 26^a and 26^b. On the outer surface of the 80 member 20 is a stop plate 27. The staples 28 and 29 form additional guiding and retaining members for the sliding rod 22.

At the lower end of the rod 22 is journaled a cam wheel 30. This cam wheel is ar- 85 ranged to ride on a circular cam surface 31 carried by a sprocket wheel 32 journaled between the upper and lower arms of the U-shaped portion of the plate 20. The cam surface 31 is cut away at 33 to permit the 90 roller and its bar 22 to descend thereby bringing the catches into the position shown in Fig. 3.

In Fig. 2, I have shown the construction of the rear end of the gate proper. From 95 this figure it will be seen that the upper and lower bars 5 and 6 are pivotally mounted on the extensions 5' and 6', respectively which are secured to a common rod 34 which has the two U-shaped bends 34^a and 34^b adjacent 100 the ends of the respective members 5 and 6. On one side of the upper U-shaped bend 34^a is a U-shaped member 35 which extends laterally from the member 34^a while on the opposite side of the member 34^a, is a similar 105 U-shaped member 36. A spring 37 has one end secured to the middle portion of the bent part 34^a and is passed around the outer part of the laterally extending portion 35, and is then bent downwardly to engage one 110 side of the top part 5 of the gate proper. A spring 38 is similarly attached to the

member 36. At the lower bend 34^b there are similar parts 35^b, 36^b and 37^b, 38^b corresponding to the parts 35, 36, 37 and 38.

The operating devices for the gate are shown in Fig. 1 and a detail portion thereof in Figs. 4 and 5. A description of one will suffice for both. It consists of the parallel base strips 41 having the cross plates 42 and 43 secured thereto. Mounted in bearings 44 on each of the cross plates are the U-shaped members 45 and 46. The end of the member 46 is prolonged and passed through a bearing 44' and to its outer end is secured a bar 47 whose normal position is at right angles to the plane of the member 46. The ends of the bar 47 are pressed upwardly by a pair of springs 48 and 49, see Fig. 4, which are secured to the base member 41. Pins 50 and 51 secured to the base member 41 limit the upward movement of the respective springs 48 and 49. One side of the member 45 is prolonged through a bearing 44' and bears on its outer end a sprocket wheel 52 similar to that shown in Fig. 5. Attached to the outside of the member 41 and terminating under a pin on wheel 52 is a spring 53 which is wound around the end of the member 45, and which is engaged by an arm 54 on the base member 41 so that when the wheel is turned, the spring will be wound up and tend to turn the wheel to its original position. The bottom of the rod 34 bears a sprocket wheel 55. Each of the sprocket wheels 52, 32 and 55 has a sprocket chain connected with it, the different sections of sprocket chain being connected together by the respective pull-rods 56, 57, and 58. The outside rods 56 and 58, see Fig. 1, are preferably inclosed in conduits 59 and 60, while the central rod runs through the center hollow sill 3.

From the foregoing description of the various parts of the device the operation thereof may be readily understood.

The normal position of the members 45 and 46 is an upright one as shown in Fig. 1. Let us suppose that a vehicle is approaching from the right. The wheel passes over the U-shaped member 46 but does not have any effect as far as the operation of the gate is concerned. When the wheel meets the member 45, however, the U-shaped part is turned downwardly thereby rotating the sprocket wheel 52 and pulling on the rod 58. This causes the rotation of the wheel 32. The cam wheel 30 rides up on the portion 31 of the wheel 32 thereby lifting the bar 22 and the catches 25—25' and 26—26'. At the same time the wheel 55 is rotated so as to relieve the tension of the springs 37 and 37^b on one side of the gate and to increase the tension of the springs 38 and 38^b on the other side. As soon as the catches 25—25' and 26—26' have been lifted far enough to clear the rods 12 and 13 the gate

will swing open under the influence of the springs at the rear. The movement of the wheels 52, 32 and 55 with their connecting sprocket chains and rods causes the movement of the sprocket 52^x on the opposite side of the gate in the direction in which the vehicle is going. This causes the nearest or innermost U-shaped member 45^x to swing downwardly toward the farther or outer member 46^x. The latter bears a catch 61^x which the end of the member 45^x cams aside far enough to engage in a bottom notch so as to be retained by the latter. Thus the gate will be held open against the tension of the springs while the vehicle is passing through. The wheels of the vehicle ride over the member 46^x thereby releasing the member 45^x and the gate under the tension of the springs 37—37^b and 38—38^b will return to its original position. As the gate swings shut, the bars 12 and 13 rotate the respective catches 25 and 26, but are stopped by the catches 25' and 26', the catches 25 and 26 return to their original positions as soon as the bars 12 and 13 have cleared them. As the wheel passes over the member 46^x, (or 46, if the vehicle should be coming from the opposite direction), the bar 47 on the end of the U-shaped member presses down one of the springs so that when the vehicle has passed the member 46 is brought into an upright position by the spring which has thus been put under tension.

In case a horse-back rider should approach the gate, he may open the same by manipulating the rods 18 or 19 depending on the direction in which he is going. By the raising of the handle of either of these rods, the rods 12 and 13 may be lowered sufficiently to pass under the depending ends of the catches 25—25' and 26—26', so that the gate may be pushed open and the passenger may pass through. The springs will return the gate to its normal position. The latches, of course, may be operated by any one on foot who wishes to pass through the gate, by raising the member 22 by the thumb catch at 62.

From Fig. 1, it will be seen that the rods 18 and 19 which are pivoted to the member 17 are prevented from coming in contact with the post 2 by the chains 18^x and 19^x. The chains, however, are held taut by the springs 18^y and 19^y at the inner ends of the rods. These rods are inclined inwardly so that the handles on their outer extremities can easily clear the post 2, as the gate is swung in either direction.

I claim:

1. In a gate and means for operating the same, a main frame comprising side posts, a rotatable rod secured to one of said side posts, a vertically slidable rod mounted on the other of said side posts, a gate-frame pivotally mounted on the first named rod,

sprocket wheels for operating both of said rods, springs carried by said rotatable rod and arranged to bear on each side of said gate-frame for opening and closing the same, catches carried by said slidable rod, and means for simultaneously operating both of said sprocket wheels for turning said rotatable rod, and for raising said slidable rod.

2. In a gate and means for operating the same, a main frame comprising side posts, a rotatable rod secured to one of said side posts, a vertically slidable rod mounted on the other of said side posts, a gate-frame pivotally mounted on the first named rod, sprocket wheels for operating both of said rods, one of said sprocket wheels being secured to said rotatable rod and the other of said sprocket wheels being provided with a cam surface arranged to engage the lower end of said slidable rod, springs carried by said rotatable rod and arranged to bear on each side of said gate-frame for opening and closing the same, pivoted catches carried by said slidable rod, means for simultaneously operating both of said sprocket wheels for turning said rotatable rod and for raising said slidable rod, means for retaining the gate in an open position against the tension of the springs and for releasing the gate and permitting it to return to its normal position.

3. In a gate and means for operating the same, a main frame, a gate-frame pivoted thereto, springs disposed on each side of said frame and arranged to bear against the same, a slidable rod, pivoted latches carried by said rod, pivoted arms on said gate arranged to be engaged by said latches, a cam wheel carried by said slidable rod on its lower end, a sprocket wheel provided with a cam surface adapted to engage said cam wheel for lifting the latches clear of said arms, a U-shaped operating member provided with a sprocket wheel, and sprocket

connections between said wheel and said first named sprocket wheel for operating the latter.

4. In a gate and means for operating the same, a main frame, a gate frame pivotally secured thereto, springs for causing the opening and closing of said gate-frame located on each side thereof, latches for said gate-frame, a cam member for operating said latches, and a sprocket wheel for operating said springs, gate operating devices on either side of said gate-frame, and connections between the latter, said parts being so arranged that a movement of the operating device in one direction will cause the tension of the springs on one side of the gate-frame to be diminished and on the other side of the gate-frame to be increased.

5. In a gate and means for operating the same, a main frame, a gate frame pivoted thereto, springs disposed on each side of said frame and arranged to bear against the same, latches carried by said frame, arms carried by said gate arranged to be engaged by said latches, a cam wheel carried by said frame and arranged to operate said latches, U-shaped operating members, a cam operating member and connections between said U-shaped operating member and said cam operating member for actuating the latter.

6. In a gate and means for operating the same, a main frame, a gate frame pivoted thereto, springs disposed on each side of said frame and arranged to bear against the same, pivoted latches carried by said main frame, a cam for operating said latches, a U-shaped operating member provided with a sprocket wheel and a sprocket chain for operating said cam member and for swinging the gate frame against the tension of the springs.

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Witnesses:

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JNO. TEMPLE.