O. L. HUFFMAN.

GATE.

APPLICATION FILED DEC. 15, 1913.

1,153,847.

Patented Sept. 14, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

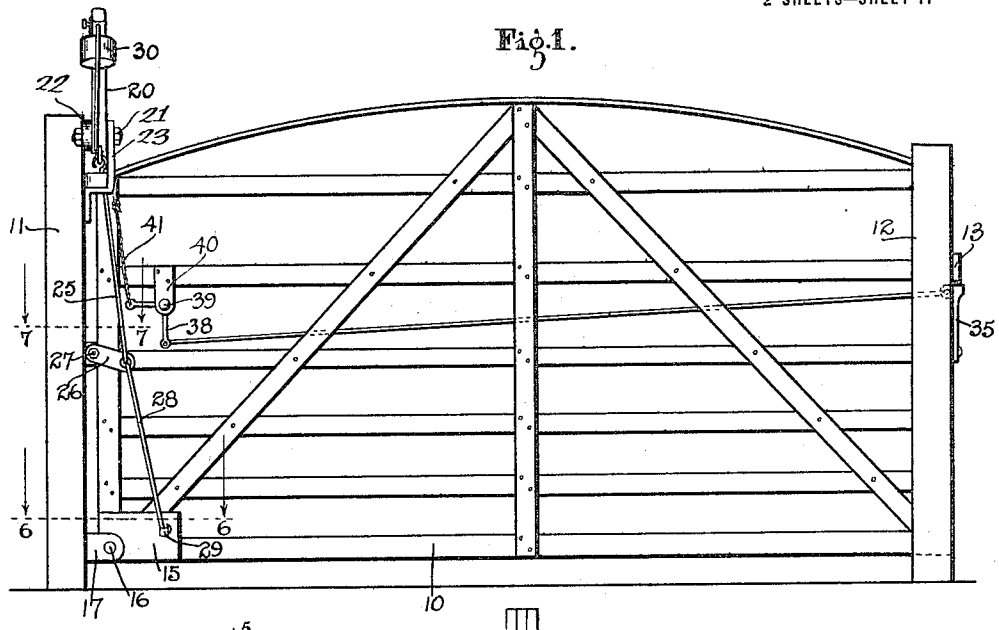


Fig. 4.

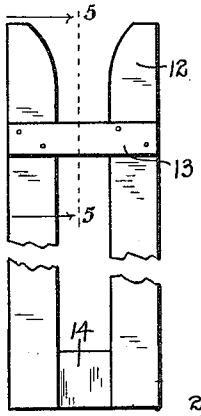


Fig. 5.

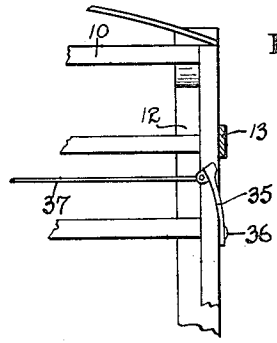


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

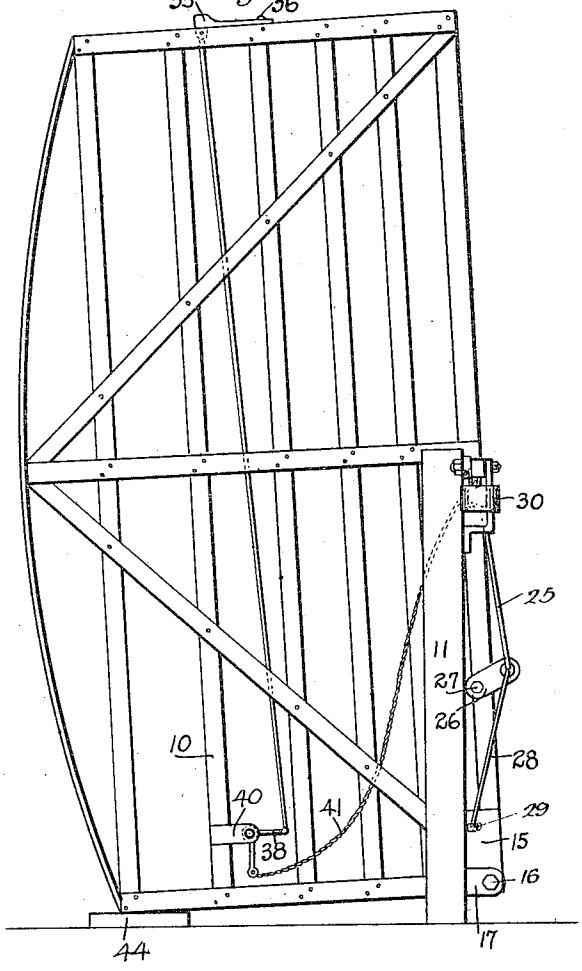


Fig. 6.

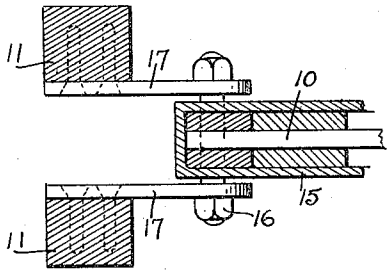
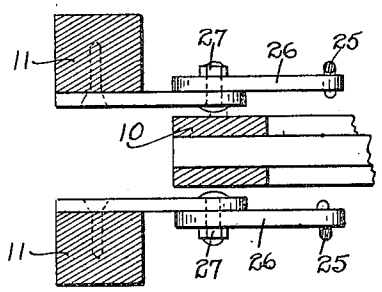


Fig. 7.



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Application filed December 15, 1913. Serial No. 806,840.

To all whom it may concern:

Be it known that I, ORLA L. HUFFMAN, a citizen of the United States, and a resident of Albany, county of Delaware, and State of Indiana, have invented a certain new and useful Gate; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

The object of this invention is to enable a gate to be opened by up-ending the same instead of oscillating it horizontally or the like, and to render the opening and closing movement easy and simple for the person operating the gate, and also easy on the gate construction so as not to subject any part to undue strain or cause the gate to have other than a slow regular movement, while either opening or closing. Along with the foregoing is combined means for unlatching the gate.

The chief feature of the invention consists in fulcruming the gate at the lower rear corner thereof so that it can be up-ended and in mounting on the rear posts suitable levers projecting at right angles from the gate and connected by suitable means with the gate near its fulcrum, whereby the depression of the levers will up-end the gate and cause the connection between the levers and the gate to pass over and to the rear of the fulcrum of the gate, whereby the gate will stand open and in a substantially vertical position and whereby another movement of the lever will return the gate to close the same.

Along with the foregoing is a further arrangement of the connection between the levers and the gate which connection is divided into two sections linked to an arm pivoted to the gate post so that the section thereof which is connected with the levers will always be substantially vertical and have a straight pull and not tend to dislocate the levers or subject them to lateral strain. Furthermore, such arrangement enables the lower section of such connection to have better angles of pull than if the connection was entirely rigid throughout the length thereof.

Still another feature is the provision of weights on the levers adjustable and arranged so that they will carry the gate over the dead center as it is opening or closing and will give to the movement of the gate steadiness and regularity and avoid irregularity and sudden movements thereof and to keep it from closing with a shock.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a side elevation of the gate closed. Fig. 2 is a front elevation of the gate open with the levers broken away between their ends. Fig. 3 is a side elevation of the gate open. Fig. 4 is an elevation of the front gate posts viewed from a point to the right-hand of them as they appear in Fig. 1, and they are broken away between their ends. Fig. 5 is a vertical section on the line 5—5 of Fig. 4, but with the gate in place and closed with the latch pulled back so that the gate is ready to be raised and opened. Fig. 6 is a section on the line 6—6 of Fig. 1. Fig. 7 is a section on the line 7—7 of Fig. 1.

Herein the drawings show a gate 10 of ordinary construction so that the details thereof need not here be set forth. There is a pair of parallel rear gate posts 11 which are spaced apart, substantially as shown in Fig. 2, and which are not connected with each other from top to bottom. There is a pair of front gate posts 12 which are connected between their ends by a cross latch bar 13 on the outside or right-hand side, as shown in Fig. 1, so that there will be left ample room between the front posts for the front end of the gate to settle in. There is also a connection 14 at the bottom of the front gate posts and located between them to support the front end of the gate when it is closed. The upper ends of the front posts are beveled at their inner corners to facilitate the guiding of the front part of the gate in between said posts when the gate is being closed.

The gate has secured to each side thereof at its lower rear corner a metal plate 15 which is shown here to be rectangular, and a fulcrum pin 16 extends through both metal plates and the intermediate gate and is mounted in arms 17 extending from the rear posts inward, as shown in Fig. 1. This is the only fulcrum of the gate or only point where the gate is fulcrumed or connected with the gate posts. When the gate is hinged or connected with the gate posts near

their upper ends, any leaning of the posts will cause the gate to drag badly at the front end so that it can hardly be opened or it will otherwise shift the position of the gate in closing and opening so that it is difficult to operate the same. But with the one connection between the gate and rear posts being located near the bottom of said posts where there is appreciably no change of position due to the posts leaning, the difficulty referred to is entirely obviated or negligible.

The gate is mounted as has been explained so that it can be up-ended or turned up rearward between the rear gate posts, as shown in Figs. 2 and 3, turning on its fulcrum 16 and after the center of gravity of the gate while opening has passed over the fulcrum 16, the weight of the gate will hold it open, as shown in Fig. 3.

The means for operating the gate consists of levers 20 extending in opposite directions from the rear gate posts and the gate, as shown in Fig. 2. There is one lever fulcrumed to the upper part of each rear gate post and both levers are similarly made and mounted and connected with the gate so that either one can be used to operate the gate, depending upon the direction one approaches the gate. These levers extend beside the roadway.

The lever 20 is fulcrumed on a pin 21 which is mounted in a horizontally extending metal bar 22 secured to the inner face of the post 11 near its upper end and projecting outwardly and said pivot pin 21 is mounted also in the upper end of a diagonal brace 23 which is connected with the post below the top thereof, as shown in Fig. 2. Therefore, the lever 20 is fulcrumed between its ends for the purpose of giving to the inner end thereof vertical movement to operate to a sufficient extent the connections between the levers and the gate. This connection consists of an eye bolt 24 secured to and extending downward from the inner end of the lever, a rod or section 25 pivoted thereto at its upper end and at its lower end pivoted to the end of a movable arm 26 which at its other end at 27 is pivotally mounted on the gate posts so as to oscillate vertically. The connection is completed by the lower section 28 which is pivoted at its upper end to said arm 26 and at its lower end to a pin 29 which is secured to the plate 15 on the gate at several inches distant to the front of the fulcrum 16 of the gate, as shown in Fig. 1. This connection is made so that when the gate is closed, the two sections 25 and 28 will be substantially in alinement with each other, as shown in Fig. 1, and will thus give a straight pull on the gate when the outer end of one of the levers 20 is depressed or pulled downward. The pin 29 is also located on a higher plane than the pivot 16 so that when the gate is thrown open, it will pass above the plate 16 and toward the rear, as shown in Fig. 3, and this is for the purpose of enabling the gate to be closed by said levers. It is to be noted that by using the arm 26, the upper section 25 of said connection does not change position very much, but pulls on the lever in substantially the same direction during the operation. This is to prevent any appreciable lateral movement of said section 25 of the connection and to avoid, therefore, lateral strain on the lever which would be inclined to pull the lever out of position or twist it around on the gate post. Also this arm 26 changes appreciably the direction of pull of the lower section 28 on the gate or pin 29, as that section has considerable vibratory movement from the position shown in Fig. 1 to that shown in Fig. 3, and that movement passes over the fulcrum 16 and thus gives correspondingly greater annular pull in starting the gate, either to open or close it.

There is a weight 30 mounted by a set screw 31 on each lever 20 on its outer end and the purpose of this weight is to give regularity to the movement of the gate and to facilitate the starting of the gate, either to open or close it, and above all to carry the gate across its dead center as it is being opened or closed.

When the gate is closed, it is latched by a spring latch 35 which is secured at 36 to the front part of the gate, as shown in Fig. 5, in position to engage or catch under the catch bar 13 on the front posts. It is released by a wire 37 which is connected to the upper end of the latch so as to draw it inward and said wire extends to a bell crank lever 38 fulcrumed at 39 in arms 40 secured and extending from one of the longitudinal bars of the gate, as shown in Fig. 1. The other end of the bell crank lever is connected with a rope 41 which passes through the eye 24 at the inner end of the lever and over a pulley 42 at the outer end of the lever and hence down from the lever to render it accessible.

When one approaches the gate, he pulls down on the outer end of the rope 41 which withdraws the latch, as shown in Fig. 5, and releases it. Further downward pull on said rope 41 draws downward the outer end of the lever 20 and up-ends the gate, moving it to the position shown in Figs. 2 and 3. With the weights 30 properly adjusted substantially the same pull necessary to unlatch the gate will up-end it and as the gate approaches the dead center, or vertical position, the weights 30 will cause it to continue its movement past the dead center when said weights will retard its movement, due to gravity and also the gate to come to rest in the entirely open position shown in Fig. 3, upon a block 44. It remains in that posi-

tion by gravity until a person pulls down on the cord 41 depending from the end of a lever 20 and that throws the gate back from the open position shown in Fig. 3 to that shown in Fig. 1.

As the gate opens and settles back to the position shown in Fig. 3, the section 28 of the connection passes over the fulcrum 16 and moves to the somewhat lower position, as shown in Fig. 3, which correspondingly lifts or elevates the outer ends of the levers so as to enable the downward pull of the rope 41 at the outer end of the levers to start the gate on its closing movement and the gate will not close with an accelerating movement, but slowly and regularly because of the weights 30. The gate, when closed, is maintained upright chiefly by the front gate posts as the front end of the gate stands between those posts while the rear end of the gate does not stand between the rear posts, although it does stand between the arms 26 and their connection 27 with the gate post which would prevent any appreciable lateral movement of the gate.

The invention is:

1. A gate, a pair of rear posts spaced apart, means extending inwardly from the lower part of said posts to which the lower rear corner of the gate post is fulcrumed, a lever mounted on the upper part of each rear gate post and extending at a right angle from the gate, a flexible connection between said lever and the gate at a point inside of the fulcrum thereof, and means connected with said gate posts for engaging said connection about midway its length thereof and holding the same at such point inward away from the gate posts.

2. A gate, a pair of rear posts spaced apart, means extending inwardly from the lower part of said posts to which the lower rear corner of the gate post is fulcrumed, a lever mounted on the upper part of each rear gate post and extending at a right angle from the gate, an arm pivoted to the rear gate posts between their ends and extending inwardly, a connection between said lever and the inner end of said arm, and a connection between the inner end of said arm and the gate at a point inward from the fulcrum of the gate.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

ORLA L. HUFFMAN.

Witnesses:
J. H. WELLS,
O. M. MCLAUGHLIN.

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