911,668.

S. McCHESNEY.
GATE OPERATING MEANS.
APPLICATION FILED JUNE 30, 1908.

Patented Feb. 9, 1909.

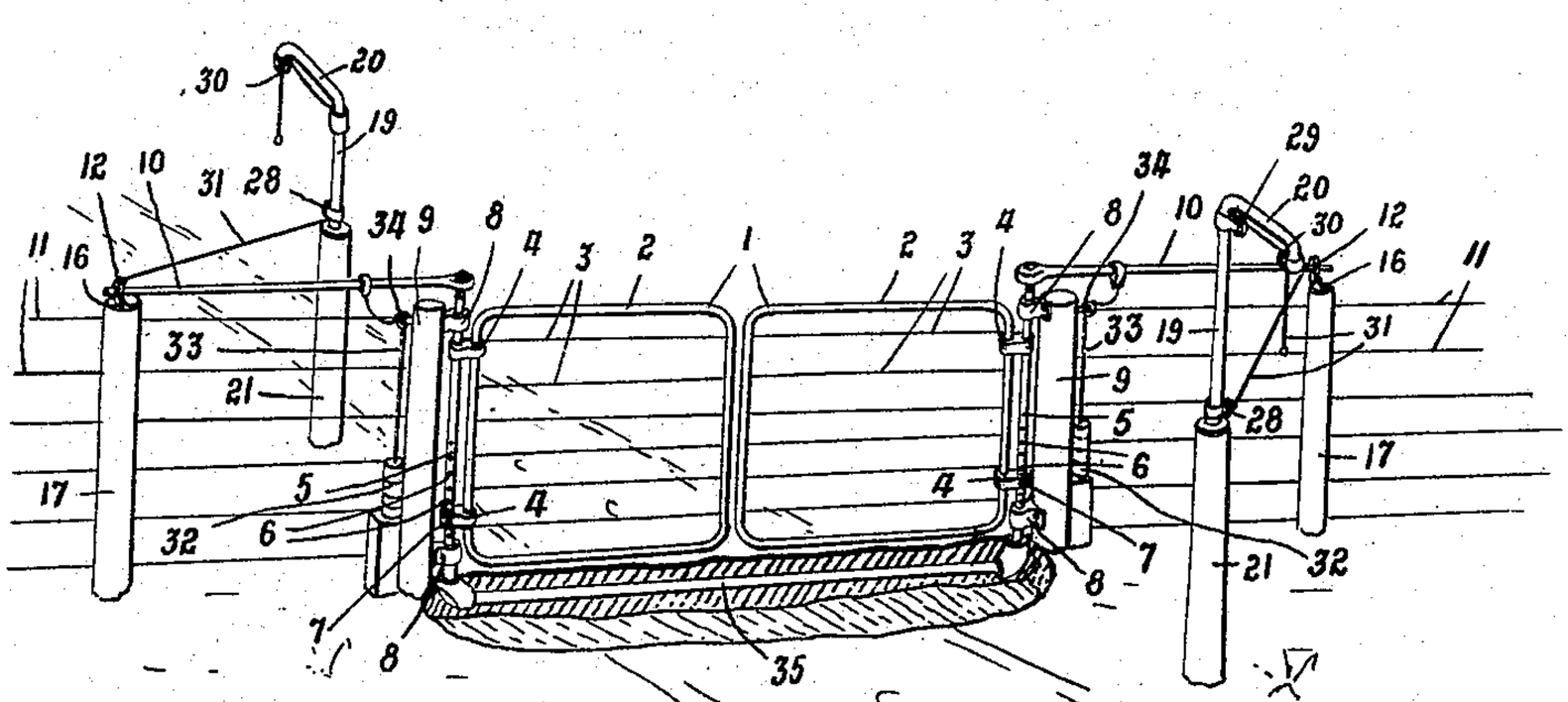

Fig. 1.

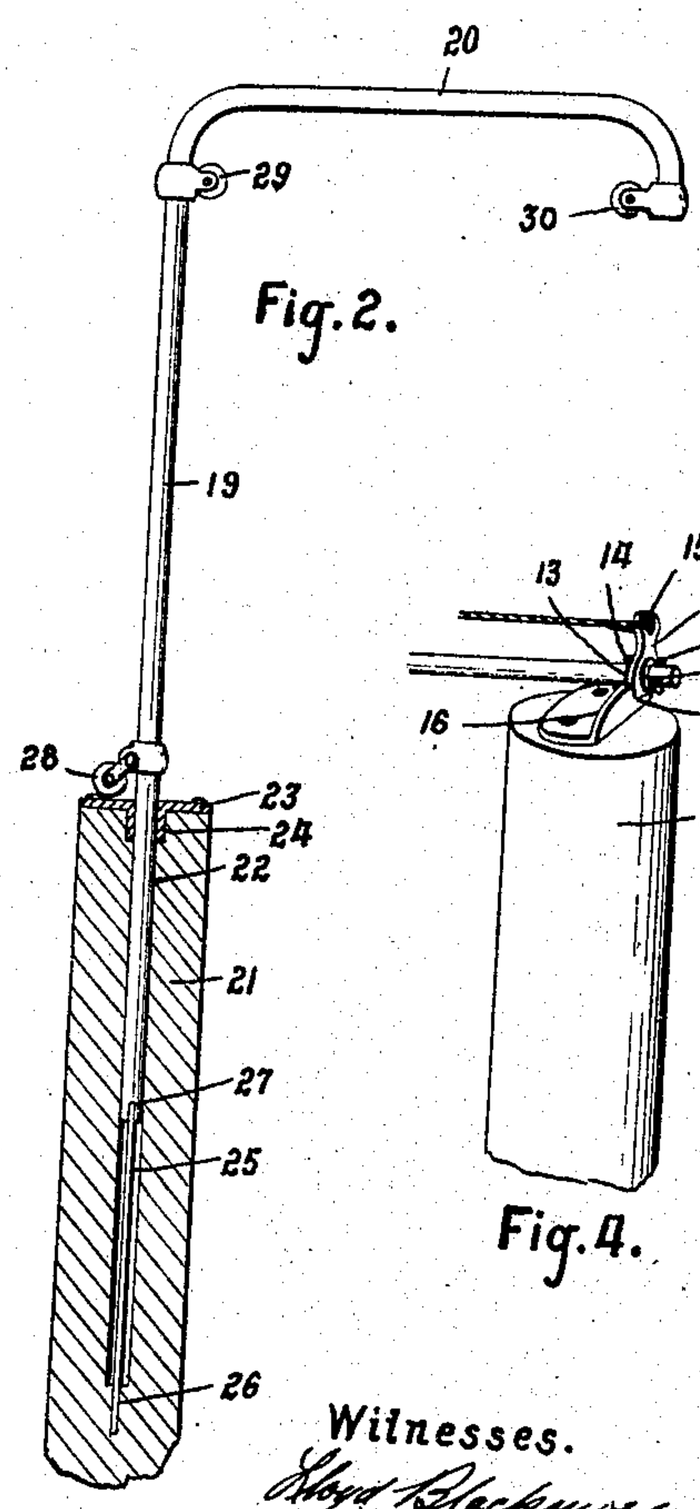

Fig. 2.

Fig. 4.

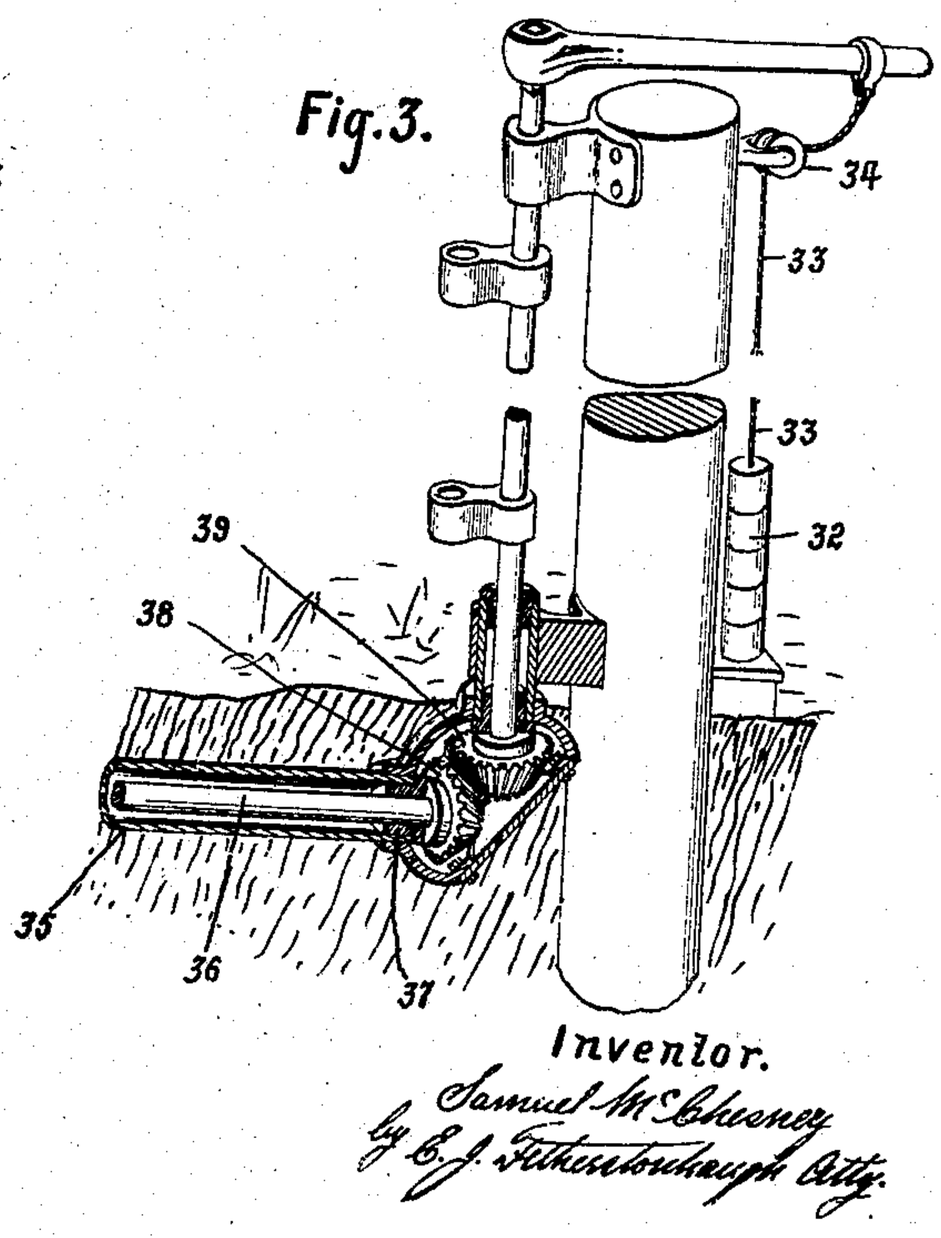

Fig. 3.

Witnesses.
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UNITED STATES PATENT OFFICE.

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GATE-OPERATING MEANS.

No. 911,668. Specification of Letters Patent. Patented Feb. 9, 1909.

Application filed June 30, 1908. Serial No. 441,224.

To all whom it may concern:

Be it known that I, SAMUEL McCHESNEY, of the town of New Liskeard, in the Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Gate-Operating Means; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates to improvements in gate operating means, as described in the present specification and illustrated in the accompanying drawings that form part of the same.

The invention consists essentially of the novel arrangement and construction of parts, whereby the gate is held in its open position by the vehicle driver, during the passage of said vehicle, by the retention of the opening line and automatically closed on the release of said line.

The objects of the invention are to insure the closing of the gate after the passage of the vehicle through the gateway, to devise a simple and easy means of opening a gate without descending from a vehicle and to provide a device secure in its operation from the inclemencies of the weather.

In the drawings, Figure 1 is a perspective view of the gates closed, showing the position of the operating means before the opening thereof. Fig. 2 is an enlarged perspective detail of the looped arm, showing the post supporting said arm in vertical section. Fig. 3 is an enlarged perspective detail of the hinge and hinge supports with the gear connections. Fig. 4 is an enlarged perspective detail of the latch.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 are the gates here shown as formed of the frames 2 and the web 3, though any suitable form of gate may be used. 4 are hinge blocks fixedly mounted on the ends of the frames 2 and supporting said gates. 5 are the hinge posts extending through the other ends of the hinge blocks 4, the lower pair of said hinge blocks sliding on said hinge posts, as also the upper pair, the said posts having a vertical row of lateral holes 6 therethrough towards the upper end, the pins 7 being inserted at any suitable height on said posts according to the particular hole in each post the pin may be through, thus the gate may be raised or lowered on said posts in the event of its being necessary to clear obstructions, such as ice and snow on the road beneath said gate. 8 are hinge bearings rigidly secured to the posts 9 at each side of the gateway at the top and the bottom thereof and in which said hinge posts 5 are journaled. 10 are levers rigidly secured to the tops of the hinge posts 5 respectively, and extending along in alinement with the fence 11 from said gateway, the preferable arrangement in securing said levers to said hinge posts being to square the top of the latter, and mount the levers, having a correspondingly squared hole, thereon, thus any movement of said levers from their position of alinement with said fence will affect the position of the gates 1, for the gates being supported by the hinge blocks 4 and the said hinge blocks being bound to turn with said hinge posts, the slightest rotation of the said hinge posts, produced by the movement of the levers 10, will swing said gates into an open position to the extent of the movement of said levers.

12 is a cam lever journaled in proximity to the outer end of the levers 10, and secured in place thereon by the washers 13 to each side of said cam lever, and having the split pins 14 inserted through suitable orifices through the lever 10. The cam lever 12 is squared at the bottom thereof, and has the eye 15 projecting upwardly therefrom.

16 is a latch plate secured to the post 17 immediately under the cam lever 12, and having the step 18 against which the cam lever 12 contacts when the gates are in their closed position. 19 are vertical arms having the loops 20 at the top ends thereof, very much similar in shape to the davits used in lowering ships' boats. 21 are posts, each one arranged at the side of the road immediately in front of the approach to said gates from each direction, the said posts having the vertical holes 22 therein arranged from the top ends and the caps 23, said caps having central holes, and downwardly extending flanges 24 from the edges of the holes forming bearing surfaces. The vertical arms 19 are inserted at their lower lengths into the holes 22 and freely turn in said posts.

25 are flat springs having their lower ends inserted in a cross cut 26 at the bottom of the vertical holes 22 in the post 21, and their upper ends inserted in the cross cut 27

in the bottom of the arms 19. 28 are pulleys journaled from said arms 19 adjacent to the caps 23.

29 are pulleys supported by the arms 19 at the bend forming the loops 20 and suitably journaled. 30 are pulleys journaled at the extreme tip of said loops.

31 are lines extending over the pulleys 30, 29 and 28, and secured to the eyes 15 of the cam lever 12, consequently any pull on one or the other of the lines 31 will rotate the cam lever on the lever 10 and raise the same over the step 18, when the lever 10 may be drawn around and the gate opened.

32 are weights suspended at the end of the cords or cables 33, the latter being secured at their upper ends to the levers 10 intermediate of the length of said levers and passing over suitable pulleys 34 secured to the fence 11 or posts 9. The said weights are supported above the ground on suitable posts or brackets, so that they only exert a pull on the levers 10 after said levers have been moved a certain distance.

35 is a conduit between the gates under the roadway. 36 is a shaft extending along in said conduit and journaled in the bearings 37.

38 are bevel gear wheels at the ends of the shaft 36, and 39 are bevel gear wheels at the lower ends of the hinge posts 5. The bevel gear wheels 39 co-act with the bevel gear wheels 38, and consequently communicate any movement of rotation of one of the posts 5 to the other post 5, therefore, both gates will swing in unison no matter from which direction the vehicle may be approaching.

On the approach of a vehicle, the driver, wishing to open the gates, pulls on the end of the line 31, and as above explained, the said line is connected to the eye 15 on the upper side of the cam lever 12. The pull on the eye turns the cam lever on the lever 10, and lifts the same over the step 18. A further pull on the line 31 will swing the gates to their open position in unison through the gear connections one with the other, as above explained. This enables the vehicle to pass through the gates, and the driver still retains hold of the line 31 and thus rotates the vertical arms 19 in the posts 21 against the action of the springs 25 secured to the bottom of said arms. The loops 20 in the arms 19 are thus swung around, and enables the driver to hold the line 31 until the rig passes through the gate. On the release of the line by the driver after the rig has passed through the gate the first action of the parts is for the vertical arm 19 to return to its normal position through the action of the spring 25 at the bottom thereof. The weights 32, drawing on the levers 10, will gradually close the gates until they are again locked by the springing of the cam levers 12 behind the steps 18. It will be noticed that the weights 32, being supported a little above the ground, so that their supporting cords are normally slack, enable the said gates to be easily started when opening. At the same time on the closing of the gates, the said weights cease to act when the gates are nearly closed, and thereby prevent severe jarring of the gates.

Although I have described the gear connections as being placed in a conduit underground, and which is the preferable form, it must be understood that these same connections can be as readily made over head. Furthermore, the several details of construction may be altered at will, such as the substitution of different forms of springs for the weights; the essential features being the gates working in unison, and normally locked to their closed position, and the arrangement of the line opening said gates, whereby the driver need only pull on it once and may hold it while passing through the gates, the several parts returning to their normal position automatically on the release of said line.

What I claim as my invention is:

1. In gate operating means, the combination with the gate-way posts and gates, of operating levers rigidly connected with said gates and substantially in alinement therewith, bearings secured to said gate-way posts, vertical hinge posts journaled in said bearings and rigidly secured at their upper ends to said levers respectively, and having vertical rows of lateral orifices therethrough towards the upper ends thereof, hinge blocks rigidly secured to said gates and having orifices therethrough for said hinge posts, pins extending through said hinge blocks and through one of said orifices in each of said posts, a post arranged to one side of a road-way at each approach to the gate-way, said posts having vertical holes therein from the top end, caps on said posts forming a bearing, vertical arms inserted in said holes in the approach posts and turning freely in said bearings and having looped upper ends, pulleys arranged on said vertical arms, cables extending over said pulleys and secured to the other ends of said levers, weights suspended from said levers intermediate of the length thereof on the opposite sides of the fence to said vertical arms respectively, a conduit containing suitable bearings, a shaft journaled in said bearings, a bevel gear mounted on each end of said shaft, and a bevel gear mounted on the lower end of said hinge posts, and co-acting with the aforesaid gears.

2. In gate operating means, the combination with the gates suitably supported of an operating lever extending therefrom, a cam mounted on said operating lever, a latch plate having a suitable stop engaging said cam, vertical arms rotatably supported in

posts in proximity to said gates, pulleys secured to said vertical arm, an operating line passing through said pulleys and secured to said cam.

3. In gate operating means, the combination with the gates suitably supported of an operating lever extending therefrom, a cam mounted on said operating lever, a latch plate having a suitable stop engaging said cam, a post arranged to one side of the roadway at each approach to the gateway, said posts having vertical holes therein through the top end, caps on said posts forming a bearing, vertical arms inserted through the bearings in said caps and extending part way into the vertical holes in said posts and having looped upper ends, flat springs having one end thereof fixedly secured to the lower end of said vertical arms and the other end thereof fixedly secured in the bottom of the holes in said posts, pulleys arranged on said vertical arms, and lines extending through said pulleys and secured to said cam.

Signed at New Liskeard, Prov. of Ontario, Canada, this 19th day of May 1908.

SAMUEL McCHESNEY.

In the presence of—

R. P. RICHARDSON,

VERA PILLMAN.