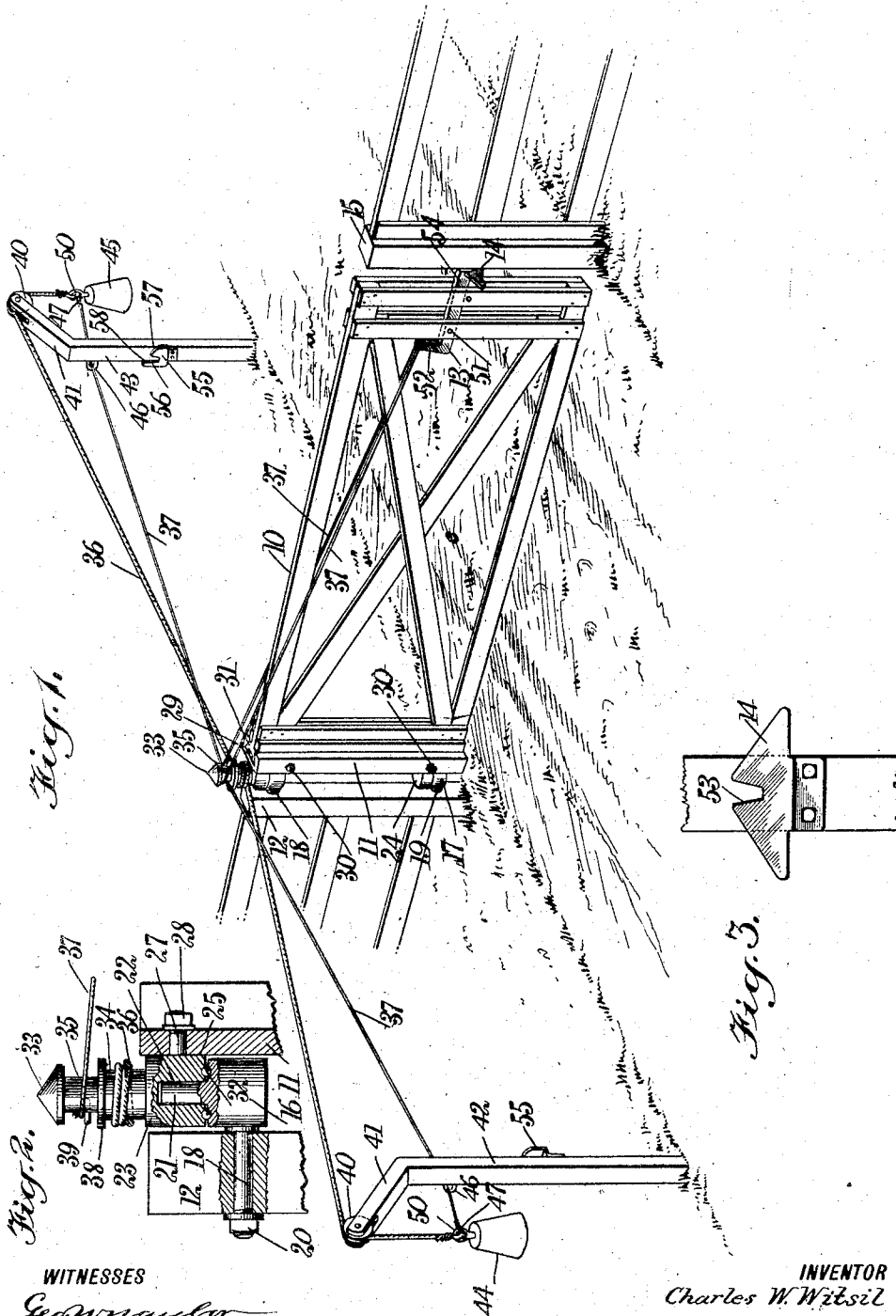


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 MEANS FOR OPERATING GATES.
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MEANS FOR OPERATING GATES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES W. WITSIL, a citizen of the United States, and a resident of Stroudsburg, in the county of Monroe and State of Pennsylvania, have invented a new and Improved Means for Operating Gates, of which the following is a full, clear, and exact description.

The invention relates to means whereby a road gate may be operated by the occupant of a vehicle upon approaching the gate, to cause the gate to move in a direction away from the vehicle, and whereby also when the vehicle has passed through the gate the occupant can close the gate behind him.

An object of my invention is to provide a gate-operating means of the general character indicated, and in the form of attachments that may be applied to ordinary gates without any great modification in the latter, and this stated main object has largely determined the mechanical form of the invention.

Further objects will appear from the specific description hereinafter to be given.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a gate equipped with my improved operating devices; Fig. 2 is a detail side elevation of the upper hinge of the gate with my improved arrangement of drums and appurtenances for the attachment of a pull rope to open and close the gate, and a pull cord for operating the latch, the view showing also portions of the hinge post and the adjacent upright; and Fig. 3 is a front view of the catch plate that I prefer to employ on the gate post for engaging the latch.

The gate 10 may be of any conventional form, except that I prefer to modify in certain particulars the manner of connecting the upright 11 to which the hinge pins are attached, as hereinafter explained, and the gate is supported on hinge pins from the hinge post 12, and has a latch 13 adapted for latching engagement with a catch 14 on the latch post 15. On the post 12 is secured the fixed member 16 of the upper hinge and the fixed member 17 of the lower hinge, both of which are in the form of blocks preferably cylindrical, and are provided with lateral securing arms 18, 19, which pass through the

post 12, as illustrated clearly in Fig. 2, each of said arms being secured in any suitable manner as by a nut 20. Each fixed hinge member includes also a vertical pin 21, which is received in a socket 22 formed in the mating hinge member 23, 24 of each hinge, said mating member including a block preferably for the most part rounding, and formed with a flat face 25 which lies against the adjacent upright 11 of the gate. The body of each hinge member 23, 24, is provided with a lateral stud or arm 27, having a threaded end that receives the nut 28. The arm 27 passes through the upright 11 of the gate, and in order that my attachment may be applied to ordinary gates with a slight modification, I form the upright 11 in a manner to permit its being bolted to the adjacent rear edge part 29 of the gate, as by bolts 30 or equivalent means. Desirably the rear edge member 29 is made dovetailed, and the member 11 is correspondingly formed to slip over the dovetail edge 29; the member 29 furthermore is grooved vertically in its rear face, as at 31, to accommodate the ends of the lateral arms 27 and securing nuts 28.

It will be observed therefore that the hinge upright 11 is designed to carry the two hinge members that are borne by the gate so that the securing of the upright to the gate, as by the bolts 30, and the described dovetail connection when feasible, at the same time secures in position the hinge members carried by the gate. The mating members 16, 17, having been secured in place on the post 12, the hinge connection of the gate is complete. Desirably, ball bearings 32 are employed between the horizontal opposed faces of the described mating hinge members, as clearly shown in Fig. 2.

Integral with the body of the upper hinge member 23 borne by the gate upright 11, and rising from the top surface of said hinge member is a standard 33, formed with two cylindrical portions 34, 35, of different diameter, which constitute drums for a pull rope 36 for operating the gate, and a pull cord 37 for operating the latch 13. The drum 35 for the pull cord of the latch is advantageously of smaller diameter than the drum 34 for the pull rope for operating the gate, and at the base of the smaller drum 35 there is an annular flange or table 38, which extends beyond the drum 34. Furthermore

the pull cord 37 of the latch is given a turn around the drum 35, or fastened to said drum at a point above a pin 39. By the described arrangement of the drum of smaller diameter, the flange or table 38, and the pin 39, the pull cord 37 for the latch is effectively prevented from winding downward to the drum 34 of the gate-operating rope 36, while the larger diameter of the drum 34 gives an increased leverage for turning the gate on its hinges in response to a pull on the rope 36. A small drum suffices very well for the cord 37, since the drum is simply for the cord to wind on and off without any pull on the drum. The pull rope 36 extends in opposite directions at right angles to the gate opening and parallel with the roadway; the outer ends of the rope pass over idlers 40 mounted on the inclined upper ends 41 of posts 42, 43, the ends of the rope 40 being provided with counterbalance weights 44, 45.

With the described construction, upon a vehicle approaching the gate as from the left of Fig. 1, the driver by a slight pull on the weight 44 will cause the gate 10 to swing in a direction away from the vehicle and swing the free end of the gate toward the post 43. The pull cord 37 of the latch is guided at its ends through suitable eyes 46 or equivalent devices, and the ends of said pull cord are secured as at 47 to the weights 44, 45 respectively, the ends of both the pull cord 37 and the pull rope 36 of the gate being very advantageously united to eyes 50 on the upper end of the weights, the advantage of which arrangement is that the driver may grasp an end of the pull rope 36 and an end of the pull cord 37 simultaneously, first causing the pressure of a finger to pull on the cord 37 sufficiently to rock the latch 13, which latch is preferably in the form of a bell crank fulcrumed as at 51, and having an upright short arm 52, with which the cord 37 is connected, it being understood that the cord 37 runs in two strands from the latch to the drum 35, the respective strands running to a connection with the weights 44, 45, as will clearly appear from Fig. 1.

The catch plate 14 on the gate post 15 desirably has a vertical notch 53, of key-stone shape for engaging the long arm 54 of the latch 13. On the posts 42, 43, catch plates 55 are secured having intermediate the side edges a preferably key-stone shaped notch 56, the near side edge 57 being rounded to act as a cam when the latch 13 strikes that edge, while the far side 58 of each catch plate 55 has an increased height, as clearly shown in Fig. 1, to arrest the latch and prevent the gate from swinging beyond the posts 42 or 43, as will readily be understood.

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

1. The herein-described means attachable to a gate, for operating the same, an upright having means to secure it by its inner face to the hinge end of the gate, said upright carrying upper and lower hinge members on the outer face, upper and lower mating members having means for securing them to a hinge post of the gate, the upper hinge member on the upright having a drum, a gate-operating pull rope winding intermediate its ends on said drum, a second drum above the said rope drum and in fixed relation thereto, and a pull cord on said second drum and having ends attachable to the gate latch.

2. The combination with a hinged gate and its latch, of gate-operating means comprising drums secured adjacent to the hinged end of the gate in fixed relation to each other, a gate-operating rope winding on one of said drums and having ends extending in opposite directions at approximately right angles to the gateway, a pull cord on the second drum, said pull cord having connections with the latch and having ends extending in the same direction as the gate-operating rope, posts along the gateway having means for engaging the latch, and supporting means on said posts for the ends of the rope and cord respectively, the said rope and cord being secured by their ends adjacent to each other for their convenient grasping and successive operation.

3. The herein-described means attachable to a gate, for operating the same, comprising upper and lower hinge members, adapted to be secured to the gate and the hinge post respectively, the upper fixed end of the gate having drums one above the other adapted to receive the operating rope and the latch pull cord, the drums being co-axial with the hinge, and of different diameters and co-axial with each other, a flange between the drums, and a pin on the smaller drum at a point above the flange.

4. In a gate-operating attachment, mating hinge members having means for attaching them to a gate post and gate respectively, the gate member of the hinge having drums of different diameter, a flange between the drums, and a pin on the smaller drum above the flange.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES WESLEY WITSIL.

Witnesses:

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