

United States Patent Office.

PATRICK O'NEILL, OF MURFREESBOROUGH, TENNESSEE.

Letters Patent No. 111,238, dated January 24, 1871.

IMPROVEMENT IN GATES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, PATRICK O'NEILL, of Murfreesborough, in the county of Rutherford and State of Tennessee, have invented a new and useful Improvement in Gate-operating Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in gate-operating apparatus; and

It consists in the application to the hinged end of the gate of a projecting arm and friction-roller, and in the combination therewith of a pair of plates hinged together and connected by chains with an operating-lever and cords, all so arranged that on approaching the gate from either side and pulling the cord the gate may be raised, unlocked, and swung open by one of the plates acting under the roller and taking the weight off the hinges upon its oblique side; then, on pulling the same rope again, the other plate, similarly acting on the roller, will cause the gate to shut again, all as hereinafter described.

Figure 1 is a horizontal section of a gate provided with my improved apparatus;

Figure 2 is an end elevation; and

Figure 3 is a front elevation.

Similar letters of reference indicate corresponding parts.

The gate A is mounted on loose hinges B, which allow it to be raised, and it is provided with a projecting arm, C, at the rear or hinged end, in which arm is mounted a roller, D.

The arm is so shaped that the roller is supported at some distance from one side of the post E, to which the gate is hinged.

F and G represent a pair of plates, hinged together on a fixed stud, H, projecting from the said post.

They are capable of swinging vertically above and below the horizontal plane of the pivot-stud H, and are connected to the chain I, which works over the guide-pulley K, and is attached to the operating-levers L by the branches M N, one connecting above and the other below the pivot-joint O, so that no matter which way the lever be moved the plates F G will be raised.

These plates are so arranged relatively to the arm C and roller D that the latter will move back and forth over them when the gate opens and closes, and

the stud-pin H is placed nearly or quite as high as the axis of the wheel D is when the gate is closed, so that when the gate opens or closes it must rise for the wheel to pass over the pin.

Cords P, connected to the upper end of lever L, which is mounted on a post, Q, at one side of the gate, are stretched over suitable supports, so that one approaching either side of the gate may have the means of moving the lever to operate the gate.

The said lever being moved either way, and the plates F G thereby raised so that the free ends will be higher than the stud-pin H, the gate will be raised by the one over which the roller D is, and the inclination of the surface of the plate E, on which the roller rests, if closed, will cause the gate to swing open, the said roller running down the plate across the stud-pin, when the gate is about half open, onto the plate G, which, being allowed to fall by letting go the cord P at the proper time, the gate will swing wide open and be held so. Then, by another pull on the cord, the gate will be raised by the plate H and caused to swing shut in the same manner.

The raising of the gate prior to the swinging open disengages the latch R from its catch to admit of the opening.

As a gate arranged on hinges in this manner to rise freely is liable to be raised by hogs and other animals, I have provided the sliding bar S on the gate, and the pin T on the post, to prevent it, and for disengaging it I have attached it to the chain I by a short piece, J, working through a guide, U, so that when the gate is to be opened the said bar S will be drawn back.

It is thrown forward again by a spring, V.

W represents a shelter, placed over the roller C and plates to protect them from snow and rain.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. The combination, with the gate A, of the roller D, hinged plates F G, and operating-chain I, substantially as specified.

2. The pivoted lever L, operated in either direction by cords P P, for operating the gate, through the medium of the branch chains M and N, connected with the chain I, as shown and described.

PATRICK O'NEILL.

Witnesses:

JOHN P. McDONOUGH,
WM. R. GANAWAY.