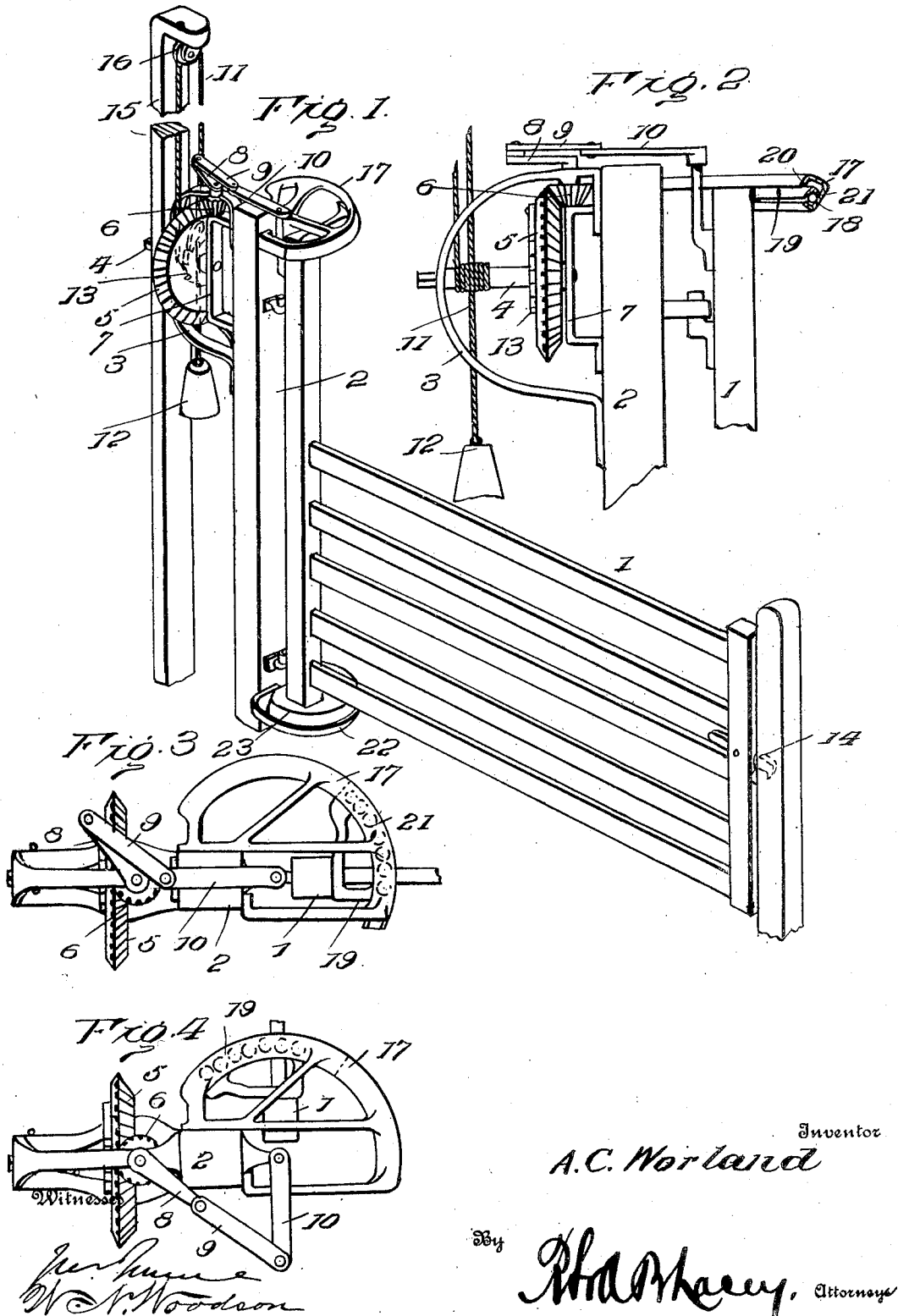


No. 827,771.

PATENTED AUG. 7, 1906.

A. C. WORLAND.
WEIGHT OPERATED GATE.
APPLICATION FILED APR. 7, 1906.



UNITED STATES PATENT OFFICE.

ANDREW C. WORLAND, OF JASPER, INDIANA.

WEIGHT-OPERATED GATE.

No. 827,771.

Specification of Letters Patent.

Patented Aug. 7, 1906

Application filed April 7, 1906. Serial No. 310,567.

To all whom it may concern:

Be it known that I, ANDREW C. WORLAND, a citizen of the United States, residing at Jasper, in the county of Dubois and State of Indiana, have invented certain new and useful Improvements in Weight-Operated Gates, of which the following is a specification.

My invention contemplates new and useful improvements in gates, and particularly that type of gate which is operated by a weight to both open and close it.

For a full description of the invention and the merits thereof reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a perspective view of my improved gate. Fig. 2 is a detail view illustrating the upper portion of the gate and the means for opening and closing the same. Figs. 3 and 4 are top plan views illustrating the different movements of the actuating means.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 designates the gate, and 2 the post to which it is hinged at one end to swing in a horizontal plane. To the post 2 is secured a hanger or bracket 3, in which a horizontal shaft 4 is journaled. The shaft 4 carries a miter-gear 5, meshing with a bevel-pinion 6, rotatable in a horizontal plane and journaled, preferably, between the upper end of the bracket 3 and the upper end of an inner bracket or hanger 7, secured to the post 2. On the same shaft as the pinion 6 is a crank 8, connected by a link 9 to an arm 10, secured to the gate 1. An actuating-cable 11 winds around the shaft 4, and to one end of said cable is secured a weight 12. A crank-actuated pawl-and-ratchet device 13 is connected with the shaft 4 and miter-gear 5 in such manner as to wind up the weight-actuated cable 11 on the shaft.

In the practical operation of the gate it is to be understood that it is held in both closed and opened positions by any suitable latch 14, which may be so constructed as to effect the release of the free end of the gate in any desired manner either from the ground or at a distance from a vehicle. When the latch 14 is opened, the weight 12 will be permitted to exert its gravitative action upon the shaft 4 and turn the same. This turning of the shaft 4 will turn the miter-gear 5, and

as the latter meshes with the pinion 6 the latter and the crank 9 will also be turned a partial revolution to effect the opening of the gate through the arm 10, as illustrated in Fig. 4. As before stated, when the gate is pulled open through the crank 8 and arm 10 the said crank will have moved only a portion of its complete revolution, the gate being then secured in the open position by its latch. To close the gate again, is it only necessary to unlatch it from its open position, and the weight will then continue to move the shaft 4 and bring the crank 9 farther around to complete its revolution, which will manifestly draw open the arm 10 in the reverse direction and close the gate. These two movements or actions are illustrated in Figs. 4 and 3, respectively.

If desired, an extended support or upright 15 may be employed, the same being provided with a pulley 16 at its top, from which the actuating-cord 11 passes, so that the said weight-actuated cord may have a wider range of action before it needs rewinding upon the shaft.

In connection with the actuating mechanism before described I have preferably hinged the gate 1 to the post 2 with antifriction-hinges, so as to minimize friction to the greatest possible extent. In addition to the ordinary knuckle-hinges by which the gate is directly supported on the post I have provided, as illustrated in the drawings, upper and lower pairs of ball-bearing antifriction devices. The upper pair comprises a member 17, secured to the post 2 and provided with an outer overhanging and beveled segmental-shaped race 18, and a lower member 19, provided also at its outer edge with a complementary beveled race 20 on the inner side of the race 18. In these two races are antifriction-balls 21. The antifriction device for the lower portion of the gate is substantially the same, except that the parts are reversed, the member embodying the outer race 22 being attached to the gate and that carrying the inner race 23 being attached to the post. By these means the downward and outward pull or strain of the gate is resisted and the gate mounted to turn with a minimum of friction.

Having thus described the invention, what is claimed as new is—

1. A weight-operated gate comprising a supporting-post, a gate hinged to said post, a bracket secured to the upper end of the post,

a horizontal shaft journaled in said bracket and provided with a ratchet-and-pawl device, a miter-gear mounted on said shaft to turn in a vertical plane, a beveled pinion
5 mounted in said bracket to turn in a horizontal plane and meshing with said gear, a crank movable in a horizontal plane and connected to said pinion, a pivot-arm secured to the gate, a link connecting said crank and arm
10 and a weight-actuated cord winding around said shaft.

2. A weight-operated gate, comprising a supporting-post, a gate hinged to said post, a
15 bracket secured to the upper end of the post, a horizontal shaft journaled in said bracket and provided with a ratchet-and-pawl device,

a miter-gear mounted on said shaft, a bevel-pinion meshing with said gear, a crank movable in a horizontal plane and connected to said pinion, a pivot-arm secured to the gate, 20 a connection between said crank and arm, a weight-actuated cord winding around said shaft and an upright extending above the post and provided at its upper end with a pulley over which the cord passes. 25

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW C. WORLAND. [L. s.]

Witnesses:

GEORGE J. ROELLE,
JOHN STEINHAUSER.