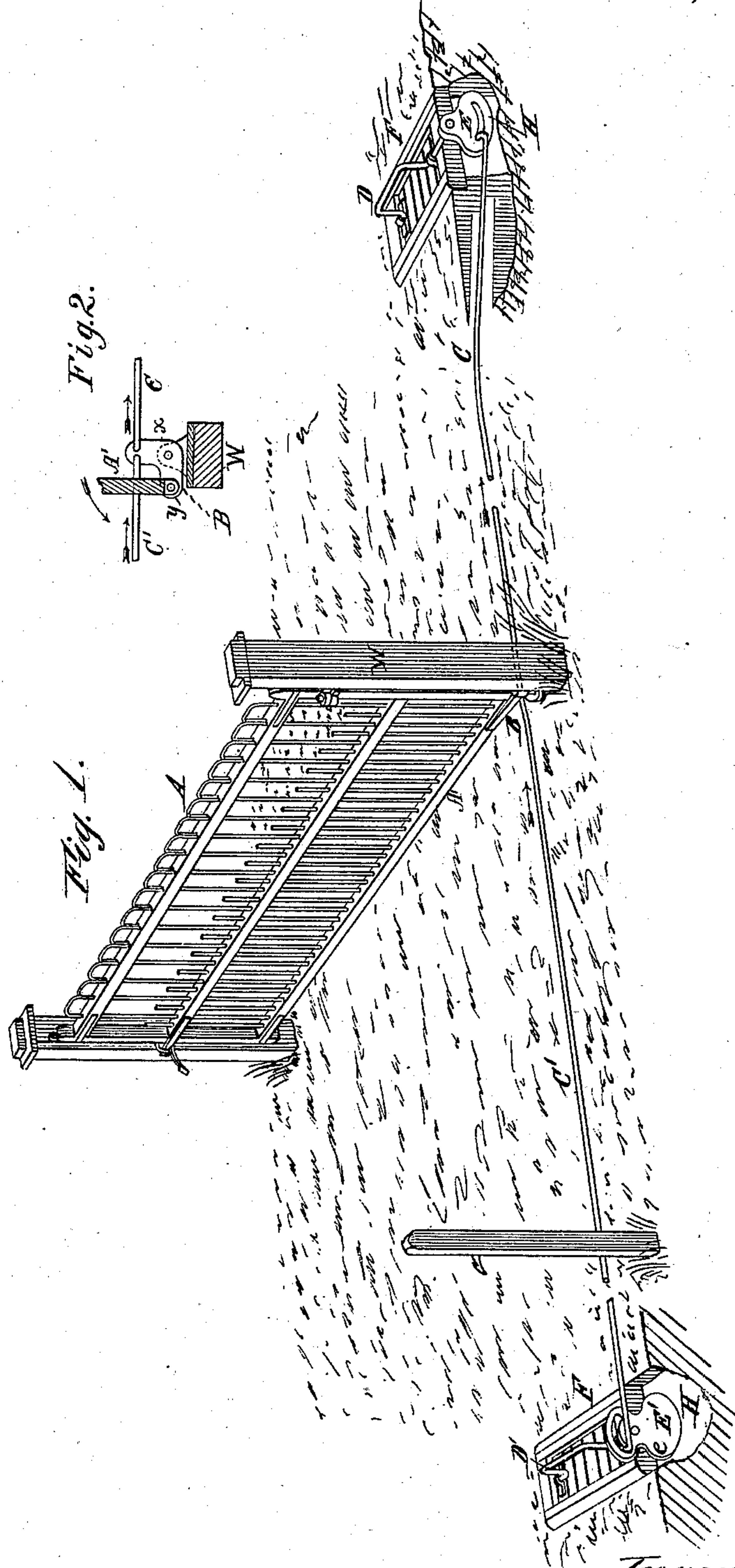


(No Model.)

E. J. B. WHITAKER.
Self Opening Gate.

No. 239,002.

Patented March 15, 1881.



Witnesses:
Charles R. Searle,
J. H. Searle, Jr.

Inventor:
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UNITED STATES PATENT OFFICE.

ELIJAH J. B. WHITAKER, OF BEL AIR, MARYLAND.

SELF-OPENING GATE.

SPECIFICATION forming part of Letters Patent No. 239,002, dated March 15, 1881.

Application filed July 2, 1880. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH J. B. WHITAKER, a citizen of the United States, residing at Bel Air, Harford county, and State of Maryland, have invented certain new and useful Improvements in Self-Opening Gates; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to an improvement in the actuating-cranks of self-operating carriage-gates.

It is essential to the proper working of automatic gates that the actuating-cranks shall be free to yield to the pressure of the wheel of a vehicle going to or from the gate, and it has been found desirable also to adjust the cranks so that they shall be free to yield in both directions, in order to guard them against breakage from accidental blows. Heretofore, however, even when thus adjusted, serious inconvenience has often resulted from the liability of the cranks to become locked by frost after rain or snow in winter.

The object of my invention is to guard the cranks from all rigidity, leaving them free to yield or turn upon their pivots in both directions at all times and in all seasons.

It consists in combining with the pivotal bearings for the cranks an open grating placed under the same and covering a pit or drain beneath, so as to prevent any accumulation of rain or snow water about said bearings, which by freezing might impede or arrest the turning of the crank, or so lock it as to render it liable to be broken when struck by the carriage-wheels from either direction.

In the accompanying drawings, Figure 1 is a view in perspective of a self-operating gate with its cranks and rods. Fig. 2 is a detached plan view of the hinged plate by means of which the gate is thrown open, the adjacent portions of the gate and post being shown in section.

A is the gate, arranged to be opened or closed by means of a plate or quadrant, B, Fig. 2. This plate is hinged to the gate-post W, near the foot thereof, (see at *x*, Fig. 2,) and the lower inner corner of the gate is, in turn, hinged or pivoted to said plate at a point, *y*,

removed from the hinge *x* of the plate, upon one side thereof, so that when the plate is caused to turn upon its pivot this lower corner of the gate is so swung out from the post as to cause the outer end of the gate to be lifted from its latch and to swing open by its gravity.

C C' are the rods by means of which the pivot-plate B of the gate is actuated, the rod C' being made to actuate the plate by pushing it and the rod C by pulling it, as indicated by the arrows in Figs. 1 and 2.

D D' are double cranks, each of which is pivoted in suitable bearings and fitted at one end with a weighted lever, E, secured to its axis, and operating to counterbalance the crank and maintain it in an upright position, as shown in the drawings. Where the crank is designed to open the gate by pulling the rod actuating the pivot-plate B, the end of the lever is slotted below the axis of the crank in a direction transverse to the length of the lever, the slot being also slightly curved in an arc described about the pivot of the lever, (see lever D at right of the drawing;) but where the gate is opened by pushing the rod the lever is made to project above the axis of the crank, the counterbalancing-weight hanging below it, as shown at D' at the left hand of the drawings.

The rod C, extending from the pivot-plate B of the gate, is connected to the levers E by pins projecting from the end of each rod and playing freely in the slots in the levers. When the cranks D D' are in their elevated position the levers E E' will be in a vertical position, and if the gate be closed the pin at the extremity of the rod C will bear against the end of the slot next to the gate, and in the rod C' against the end of the slot removed therefrom. If, now, a carriage-wheel or other force strikes the crank D in a direction from the gate, the crank will turn and yield freely in that direction, for the slotted lever E will swing freely toward the pin in the end of the rod and the pin will play freely through the slot; but if said crank D be struck in a direction toward the gate it will, as it yields and turns in that direction, cause the lever to swing against the pin, and, engaging it, will draw it and the rod c so as to move the pivot-plate and cause the gate to open. On the other hand, if the opposite crank, D', be turned over toward the gate, the upper arm of the lever, swinging in

the same direction, will force the pin and rod C' toward the gate and so actuate its pivot-plate as to throw the gate open. If, however, when the gate is closed and said crank D' be
5 struck or pushed in the opposite direction, it will freely yield to the pressure, for the slot in the lever will in that case allow it to be swung over the pin without engaging it. In either case, so soon as pressure is removed
10 from the crank D or D' the counterbalance-weight of the lever E will cause the crank to assume its proper vertical position and bring the end of the slot in the lever to bear against the pin of the connecting-rod.

15 When the gate is opened instead of closed the action of either crank D D' to close it is similar to that above described, excepting that if the cranks be struck in a direction toward the gate they will yield to the blow and merely
20 swing the lever, but if struck from the gate the levers engaging the pins will operate to close it.

The pivot-bearings of the cranks D D' are secured upon open gratings F F, which are
25 placed over drains or sinks H, capable of re-

ceiving and carrying off all water which may fall upon the grating about said pivot-bearings from rain or the melting of snow. Hence any accumulation of water about the bearings, which by freezing would serve to impede or
30 lock the cranks D D' and thus lead to their being broken if then struck by a carriage-wheel, is prevented and the cranks left free to turn under all conditions.

What I claim as my invention, and desire
35 to secure by Letters Patent, is—

The combination, with the journals or bearings of a counterbalanced crank for operating a self opening and closing carriage-gate, of an open grating upon which said journals are
40 supported over an open drain or sink, substantially as and for the purpose herein set forth.

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

E. J. B. WHITAKER.

Witnesses:

J. F. ACKER, Jr.,

DAVID A. BURR.