



# UNITED STATES PATENT OFFICE.

JOHN LEE, OF MASSILLON, OHIO.

## IMPROVED SELF-ACTING GATE.

Specification forming part of Letters Patent No. 48,698, dated July 11, 1865.

*To all whom it may concern:*

Be it known that I, JOHN LEE, of Massillon, Stark county, in the State of Ohio, have invented certain new and useful Improvements in Self-Acting Gates for Farm-Gates, Carriage-Gates, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference thereon marked.

In the drawings similar characters refer to like parts.

In the drawings, Figure 1 is a side elevation, the red lines showing the gate as it appears when open. Fig. 2 is a cross-section through line *x x*. Figs. 3, 4, and 5 represent variations of construction of the sliding bearing.

To enable others to make and use my invention, I will describe its construction and operation.

My invention consists in an improved construction of gates for farms or house-yards, and somewhat resembles the gate which was patented to Hurxthall and Lee, October 2, 1860.

My invention chiefly consists in pivoting the upper horizontal balance-rail to a sliding bearing, so that the pivot of the upper rail shall be beyond the pivot of the lower rail, and shall approach the lower pivot as the gate approaches the vertical position. By this means I am enabled to balance the gate better, so that a lighter operating-weight will be required; and am also enabled to construct my gate with vertical pickets, so as to preserve a uniform appearance with the posts of the fence; and am also enabled to fold the gate up closely between the centers of the upper and lower rails, so that the gate shall be flush with the front edge of the post.

My invention also consists in hinging the rod or bar attached to the balance-weight to the upper surface of the top rail, as shown, so as to relieve the gate from any jar or reaction as it reaches the vertical position.

It also consists in the improved mode of operating the latch-bar; also, in the improved mode of opening and closing the gate by the action of the vehicle passing through, all of which will more fully hereinafter appear.

In the drawings, A represents the ground,

or ground-sill, if one is desired; B and B', the gate-posts; C, the lower gate-rail, having a fixed journal, *c*, which turns in the bottom of post B.

D is the upper gate-rail, turning on a pivot, *d*, which is a fixed stud projecting from the sliding block E.

F are the vertical pickets, secured at their ends by loose screws to the upper and lower rails.

G is the latch-bar, provided with two or more slots, *a*, through which pins *b* on the pickets pass to support said bar.

F' is the last picket, and is provided with two inclined slots, *4*, working upon pins *e*, projecting from the upper and lower rails. There is a projecting heel from the lower end of this picket, which is operated by the cast-iron lever and brace P, so as to throw up the picket, and thus draw back the latch-bar and permit the gate to rise. *f* is a spring operating picket F'.

H is the weight or weight-box, for I may make use of a single large stone or piece of metal, or I may use a wooden box filled with stones, as shown in drawings. The arm H' of the weight-box is hinged at *i* to the upper side of the top rail.

P is a P-shaped piece of cast-iron, (see Fig. 2,) and is secured to the heel of the lower rail by screw I and center bolt, *c*, and its nut 1. There is a square shoulder formed upon that part of the bolt *c* which passes through piece P, so that turning the piece turns the bolt. The projecting arm 2 strikes under the heel of the picket F' and raises it up. There is a slot, 3, in the arm of piece P, in which the screw or stud I works, so that the arm shall operate upon the under or upper side of the stud, so as to throw the gate up or down.

K K are posts placed at the side of the road, each in the line with the post B, and about twelve feet on each side of it, and serve as the bearings for the devices for operating the gate by the action of the vehicle.

L L' are horizontal shafts, the outer end of each of which is provided with a quarter-segment bevel-wheel, *l*. The inner end of shaft L is made fast in the collar of center bolt, *c*, and the inner end of the shaft L' is in like manner made fast to the piece P. The outer ends



of both of these shafts are pivoted in the studs M of the posts K.

N are vertical shafts provided with quarter-segment bevel-wheels *m*, meshing with wheels *l*, and have their bearings in studs M and O.

Q is a stud projecting from the shaft N, and is about eighteen inches above the ground, and is intended to be operated by the front wheel of the passing vehicle.

R is a similar stud, higher up on the shaft, and is intended to be operated by the hand if the wheel should miss the stud Q.

It will be noticed that the sliding block E, to which the top rail is pivoted, may be constructed in several ways, as shown in Figs. 3, 4, and 5; but I prefer the beveled block E, as shown in Fig. 3.

It will be understood that I contemplate using my gate either as a field-gate to be operated by the hand applied directly to the gate or as a carriage-gate to be operated by the wheel or hand applied to the studs Q or R. When the gate is used as a common field-gate I dispense with the shafts L, posts K, &c., and throw up the gate or close it by catching hold of the latch-bar.

The operation of my invention is as follows: As a vehicle approaches it is guided so that the front wheel shall strike against stud Q, (if the wheel miss the driver can apply his hand to the stud R.) This gives a quarter-turn to the shafts N, which turn the horizontal shafts L L', which turn the piece P so as to make it turn the gate up from its horizontal to its vertical position, as shown in red lines. As the gate rises the sliding block E descends, so as to approach the pivot *c* and maintain the leverage gained by placing the bearing beyond

the center of gravity. As the gate reaches its vertical position the weight H strikes against the post or stone Z placed in or on the ground, so as to break the jar by allowing the lower end of the rail to separate from the weight a short distance. After the vehicle has passed the gate the wheel strikes against the other stud, Q, upon the other shaft, N, so as to make the piece P operate upon the gate so as to throw down and close it.

It will be seen that by hinging the weight as described its weight does not operate against the returning of the gate until after the lower end of the rail has been moved up to it and some momentum in favor of the shutting force is gained.

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

1. The sliding block E and pivot *d*, or their equivalent, constructed and operating as set forth.
2. Hinging the weight H to the top of the upper rail, in the manner described, or its equivalent.
3. Operating the latch-bar G by means of the picket F' and slots 4, or their equivalent, as set forth.
4. The cast-iron piece P, or its equivalent, operating as described.
5. The combination and arrangement of shafts L and N and lever Q, or their equivalent, operating as described.

JOHN LEE.

Witnesses:

V. C. CLAYTON,  
JO C. CLAYTON.