



# United States Patent Office.

CHARLES H. EGGLESTON, OF MARSHALL, MICHIGAN.

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## IMPROVEMENT IN GATES.

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

I, CHARLES H. EGGLESTON, of the city of Marshall, in the county of Calhoun, and State of Michigan, have invented certain Improvements in Gates, of which the following is a specification.

My invention relates, in part, to the combination, with a gate, of a vertical hinge-bar, having one of its edges partially serrated, said bar being adjustably secured by means of a key to supporting-brackets on the end of the gate, the centers of motion and gravity being so arranged that the gate will readily open on being unlatched by a slight impulse given by hand, and will close by its own gravity, and can be readily adjusted to swing at any desired height above the ground by simply raising or lowering it on its hinge-bar.

The remaining part of my invention consists in combining with the previously-described arrangement a vibrating step-bearing to receive the bottom pin of the adjusting hinge-bar of the gate; said step being formed in the head of a lever-bar, pivoted at any desired point near the foot of the gate-post, and connected with any ordinary approach-opening mechanism, to be operated by the wheels of vehicles.

Figure 1 is a broken front elevation of gate and hanging connections when shut.

Figure 2 is an end elevation of the gate when open.

Figure 3 is a plan of operating double gates automatically.

Similar letters of reference indicate like parts in all the figures.

A is the hanging post.

B is a broken section of a gate.

C C are hanging brackets bolted or screwed to the end of the gate.

A slotted opening is made or cast in the brackets to receive a flat iron bar, D, in one edge of which notches or serrations are formed, for a distance above and below the position of one or the other of said brackets, as at *d*; and the gate is firmly clamped at any desired height on its hinge-bar by means of a key, *k*, which, on being driven as shown, clamps the bracket within any one of the depressions, forming a shoulder to support the gate should the key get a little loose.

For the purpose of changing the center of gravity in the gate when fully opened, to a greater or lesser extent, as shown by the position of the gate in fig. 2, I do not form the upper journal pin *p* and lower step-pin *p'* in a line parallel with the edges of the bar D, but set them in a line more or less diagonal, and hang the bar to the post, so that when the gate is shut and viewed in front, the posts, stiles, and hinge-bars will present true vertical and parallel lines; and the gate, when pushed sufficiently open by hand, will be self-shutting and latching, whether connected with approach-opening mechanism or not.

For an ordinary field or other gate to be opened

simply by hand, I usually hang the adjusting hinge-bar D to the post by eye-bolts *b*, a proper shoulder being formed at the bottom of the bar to support the weight of the gate and yet permit free motion. But when it is designed to operate the gate automatically, the lower pin *p'* of the hinge-bar is suitably stepped in the head of a vibrating arm or lever, E.

The lever E is pivoted at any required point by a bolt, through a lining piece, *l*, to the foot of the post, in such manner that when the "wheel-iron" connecting-rods (seen at R broken) are jointed to said lever, and the wheels of a vehicle pass over either of the cranks, the gate will be raised and unlatched, and the foot of the bar D and attached gate be carried over, and change the center of gravity for opening or shutting, as the case may be.

Should the operating-rods be placed and connected with the wheel-crank iron above ground, then the vibrating lever will be pivoted proportionally higher above the ground line *x*, and the fulcrum-bolt will be at some point between the lower end where the rods connect and the foot-step; but should the crank-irons and rods be required to work below ground in casings, then the lever must be pivoted at its extreme lower end, and the rods connected at some intermediate point.

Where double gates are used, I transmit the operating movement from one side to the other by means of two intermediate bars, F. The bars work inside a casing, *e*, which extends from post to post and is sunk, so that its cover will be flush with the roadway. The inner ends of said bars lap past each other, and are pivoted together through slots, as shown at *n*, the outer ends being connected at *j* with the vibrating levers E. At or about the points *o*, or center of each bar, they are pivoted to the casing bottom in such manner, that when the lever connected with the wheel-irons is vibrated, it will communicate a simultaneous and equal vibration to the lever operating the contiguous gate, as clearly shown in fig. 3, where *e'* shows the sunken casings for the rods R.

I do not deem it necessary to describe or illustrate the wheel-irons, as their construction, arrangement, and mode of operation are well understood, being of the kind in general use.

I am aware that it is not new to vertically adjust gates on a serrated or notched bar, as in my case, and therefore I do not claim this feature; but I am not aware that hanging bars, on which the gate can be adjustably secured at any desired height from the ground, have ever before been combined with approach-opening or other devices for changing the gate's center of gravity, as in my arrangement, which gives automatic gates the advantage of being readily raised above obstructions of snow or ice in winter, and renders their

erection more easy, inasmuch as the hanging bar and its vibrating step can be set at a mere approximate height to suit and conform with the connections, and the gate adjusted afterwards to the proper height above the ground, all in a simple, inexpensive, and efficient way.

I am aware that in automatic gates the lower journal has been stepped in a lever or plate turning on a vertical pivot; but with this arrangement there is no lifting of the gate, and consequently no self-acting latch. By hanging the lever-step E on a horizontal pivot, as in my case, the gate is first lifted and unlatched, and then made to swing by gravity.

I claim as my invention—

1. The lever E, which forms the step for the lower journal of the gate when hung on a horizontal axis,

whereby, as the said lever is vibrated, the gate is first raised and unlatched and then made to open or close by gravity, substantially as described.

2. In combination with the subject of the first clause, the serrated hanging bar D, adjustable gate with brackets C, the wedge i, post A with eye-bolts b, and the mechanism for operating the gate, when all the parts are constructed and arranged and operate substantially as described.

3. The pivoted linked bars F, in combination with the vibrating levers E for operating double gates, substantially as set forth.

CHARLES H. EGGLESTON.

Witnesses:

A. R. BALL,

OTTO LEE JOHNSON.