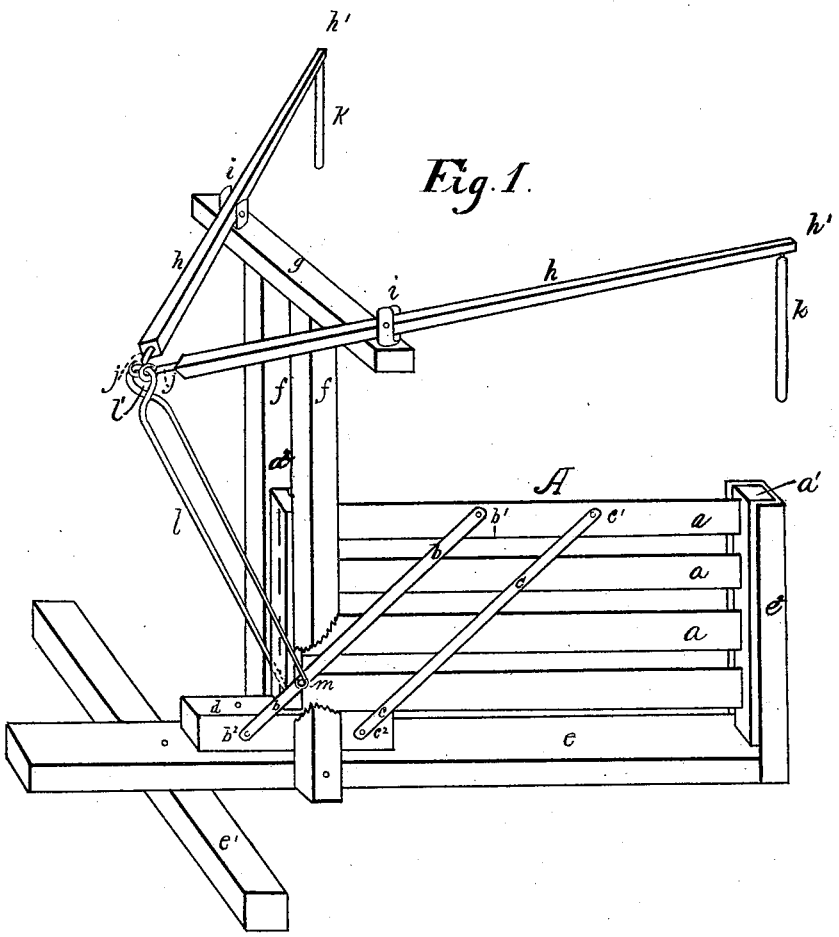
E. W. BEEBE.

Gate.

No. 202,508. **Patented April 16, 1878.**

Fig. 1.



Witnesses.

Caleb Snashall
L. M. Liggatt

Inventor.

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2 Sheets—Sheet 2.

E. W. BEEBE.

Gate.

No. 202,508. Patented April 16, 1878.

Fig. 3.

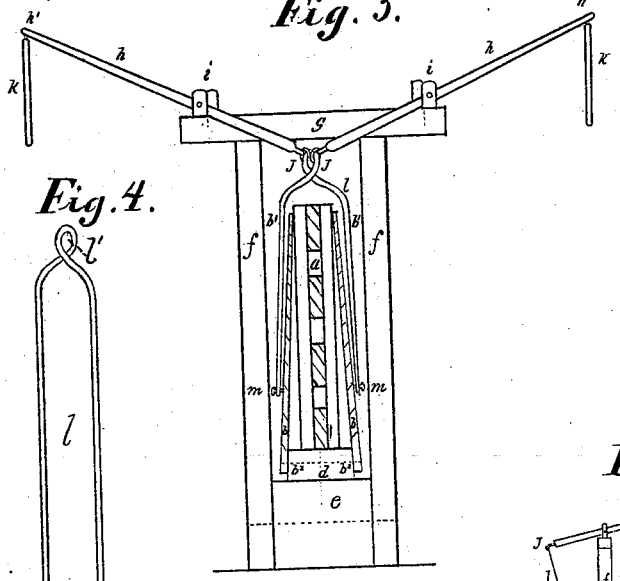


Fig. 5.

Fig. 4.

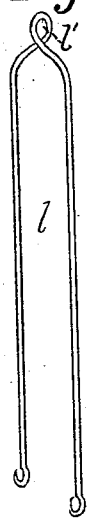


Fig. 6.

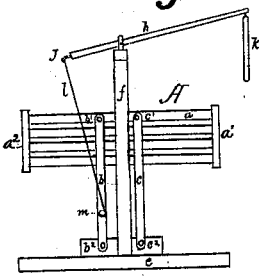
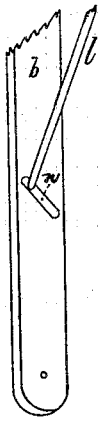


Fig. 7.



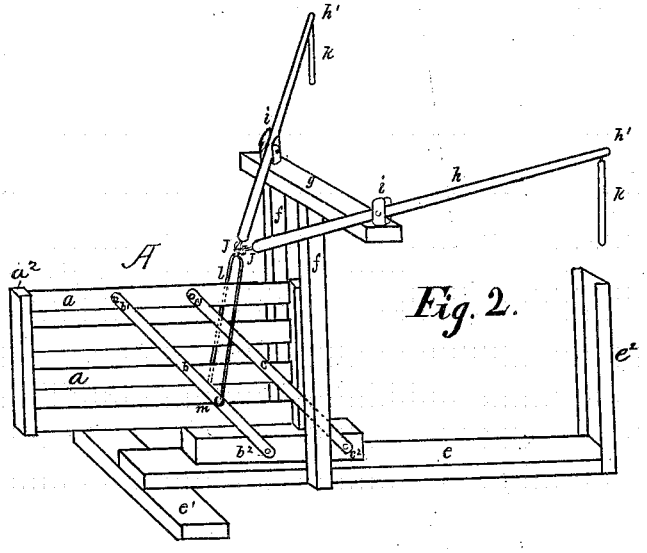


Fig. 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

EUGENE W. BEEBE, OF EVANSVILLE, WISCONSIN.

IMPROVEMENT IN GATES.

Specification forming part of Letters Patent No. **202,508**, dated April 16, 1878; application filed October 26, 1877.

To all whom it may concern:

Be it known that I, EUGENE W. BEEBE, of Evansville, in the county of Rock and State of Wisconsin, have invented a new and useful Improvement in Gates, of which the following is a specification:

My invention relates to that class of gates which are supported on pivoted parallel bars, and are operated by levers connected to such bars and moving the gates, which always maintain a horizontal position in a vertical plane and on the arc of a circle; and its object is to simplify the construction of such gates, and to make them more efficient in operation.

The invention consists, mainly, in placing or arranging the joint of the lifting-rods with the hand-levers in rear of the heel-post of the gate when shut, so that the gate can be drawn past the center of gravity in being opened by a steady pull upon either lever; further, in connecting the lifting-rods to the parallel bars by means of oblique slots in the bars in which the ends of the rods work; and, further, in the combination of the operating-levers extended to the rear of the gate, the connecting-rods, and the oblique slots in the rear pair of parallel bars, all as fully hereinafter explained.

In the accompanying drawings, making a part of this specification, Figure 1 is a perspective view of the gate closed; Fig. 2, a similar view with the gate open; Fig. 3, an elevation of the rear end of the gate; Fig. 4, a view of the connecting-rod; Figs. 5 and 7, views of the parallel bars; and Fig. 6, a side elevation of the gate, showing the same as stopped on the dead-center.

Like letters denote corresponding parts in all the figures.

A represents the gate, constructed, as usual, of horizontal bars *a* and front and rear uprights a^1 a^2. The front and rear parallel bars *c c* and *b b* are pivoted at their upper ends to the upper horizontal bar *a* at points c^1 b^1, which are situated at equal distances from the longitudinal center of the bar *a*. At their lower ends these parallel bars are pivoted to the sides of a block, *d*, as shown at c^2 b^2. This block *d* is secured upon the bed-piece *e*, which has at one end the channeled latch-post e^2, and near the other end a horizontal cross-piece, e^1, which is buried in the ground when the gate is set up for use.

To the sides of the bed-piece *e* are secured the two parallel uprights *f f*, which support the cross-bar *g*, extending at right angles to the line of the gate, and for some distance on each side of these uprights.

The block *d*, to which the parallel bars *b b* *c c* are pivoted, is situated between the uprights *f f*, and the rear post a^2 of the gate rests between such uprights when the gate is closed.

The operating-levers *h* are pivoted in saddles *i* mounted upon the cross-piece *g* near the ends of the same. These levers extend obliquely across said piece *g* nearly or about perpendicular to each other, the staples *j* on the ends of the short arms of the levers meeting above and a short distance to the rear of the upright a^2 of the gate when closed, and in the same vertical plane as the center of the gate, while the long arms *h'* of the levers project obliquely over the center of the roadway, as shown in the drawing. These long arms of the operating-levers may be weighted to counterbalance the gate, and to their ends are attached light wooden handles *k*, by which the long arms of the levers can be pulled down or pushed upwardly, as may be required in the operation of the gate.

The rod *l*, which connects the levers *h* with the parallel bars, is made in the form shown more particularly in Fig. 4. This rod is constructed from a single piece of rod-iron, and is bent at its central point upon itself into the general form of an inverted **U**, and its bent portion is then twisted into an eye, *l'*, as shown.

The staples *j* on the short arms of both levers hook into this eye *l'*, and the two arms of the connecting-rod *l* run from these staples obliquely down to near the bottom of the gate, where they are attached to the rear parallel bars *b*. The manner in which I attach the arms of the connecting-rod to the rear parallel bars is by means of an oblique slot, *n*, Fig. 7, which is cut in each bar *b*, preferably below the longitudinal center of such bar. The end of each arm of the connecting-rod is turned at right angles to the body of the arm,

to engage with its slot, and may have its extreme end enlarged or otherwise formed to lock it in the slot.

As a modification of the means for securing the connecting-rod to the rear parallel bars, I provide such bars with knobs *m*, situated below the longitudinal center of the bars, and the ends of the arms of the connecting-rod have hooks or eyes which work on such knobs.

By having the operating-levers situated so that the connecting-rod runs obliquely down to the gate when it is closed, Fig. 1, it will be seen that when, in operating the gate, it reaches the dead-center, Fig. 6, the points b^2 *m* and the staples *j* will not be in the same vertical line, and the gate can be thrown off of the dead-center by pulling down on the handles *k*, which will open the gate, or by pushing up on such handles to close the gate; and by attaching the connecting-rod to the rear parallel bars sufficient leverage is given to close the gate again after being opened, and at the same time the relative position of the operating-levers to the other parts of the gate can be retained.

In gates of this kind, as heretofore constructed, with the connecting-rods attached to the front parallel bars, or to both sets of parallel bars, the levers are arranged so that the ends of their short arms are always brought in line with the connection with the parallel bars and the point of pivoting such bars to the base-block when the gates reach the central point of their movement, and, after such gates have been in use some time, and the pivots have become rusty or otherwise clogged, the gates are liable in being worked to stop on the dead-center, and persons riding are often obliged to dismount to open or close such gates. But it will be seen that this inconvenience cannot occur with my gate, since it can always be moved off the dead-center by either pulling or pushing on the handles to the levers. The manner of attaching the arms of the connecting-rod to the rear parallel bars also greatly assists in making the operation of the gate easier, especially when it happens to stop on the dead-center, as shown in Fig. 6. If, for instance, the gate should stop on the dead-center while being closed, the handle *k* would be pushed upwardly, and the ends of the arms to the connecting-rods would thus be forced to travel downwardly in the slots, and the point of bearing would be changed, so that the closing of the gate would require much less force to be exerted than when the pivot is fixed.

By twisting a small eye, *l'*, in the upper portion of the connecting-rod, and by bringing the staples or hooks on the short arms of the levers together in this eye, the levers will be made to exert their lifting-power equally on both sides of the gate, thus equalizing the strain, and the eye *l'* will always retain the levers in the proper position.

The handles on the ends of the long arms of the levers hanging over the center of the roadway, they can be conveniently reached by persons riding, driving, or on foot without turning from the center of the roadway.

In addition to the means already described for preventing the gate from stopping and becoming immovable on the dead-center, I have designed, if it should be found necessary, to attach the parallel bars to one side of the balanced center of the gates, or in any other way to make one end of the gate longer or heavier than the other.

My gate is operated, like others of its class, by pulling down upon the long arms of the levers. It will be seen, however, that my gate can be opened all the way by a steady pull upon either lever, and does not require a quick pull to throw the gate by its momentum past the center, as heretofore, since the levers and connecting-rod are situated, as before explained, so that the gate is drawn in this direction past the dead-center. When my gate is closed, however, a quick motion is required to give the gate sufficient momentum to carry it over the center; but it has the advantage that, when it does stop on the center in closing, the lever being operated can be pushed upwardly and the gate can be easily forced off the center and closed.

Having thus fully described my gate, and explained some of its advantages, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The external position of the joint of the lifting-rods with the hand-levers, in relation to a transverse vertical plane passing through the lower hinge of the rear parallel bars, in virtue of which the force communicated through the hand-levers to elevate and retract the gate may, after the parallel bars have attained to a vertical altitude, be continued so as to carry the gate beyond the dead-center.

2. In a gate supported upon parallel bars and operated by hand-levers connected to the parallel bars by rods, the connecting of the rods to the parallel bars by means of oblique slots in such bars, in which the ends of the rods work, substantially as described.

3. In a gate supported upon parallel bars, the combination of the operating-levers extended to the rear of the gate, the connecting-rods, and the oblique slots in the rear set of parallel bars, substantially as described and shown.

Evansville, Wisconsin, October 22, 1877.

EUGENE W. BEEBE.

Witnesses:

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L. M. MYGATT.