Isaac H. Gustin.
Improvement in Gates.

PATENTED JUL 5 1870

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Figure 1.

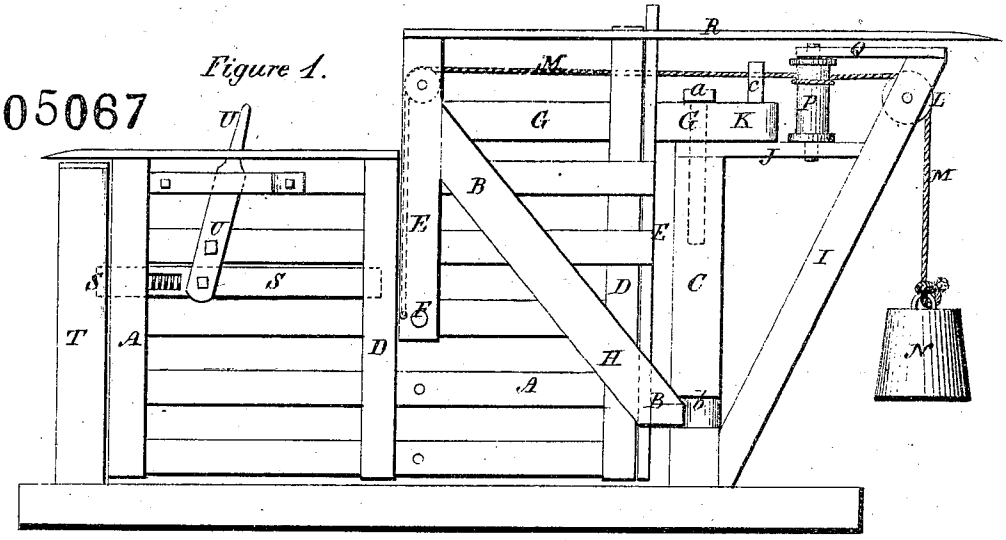


Figure 2.

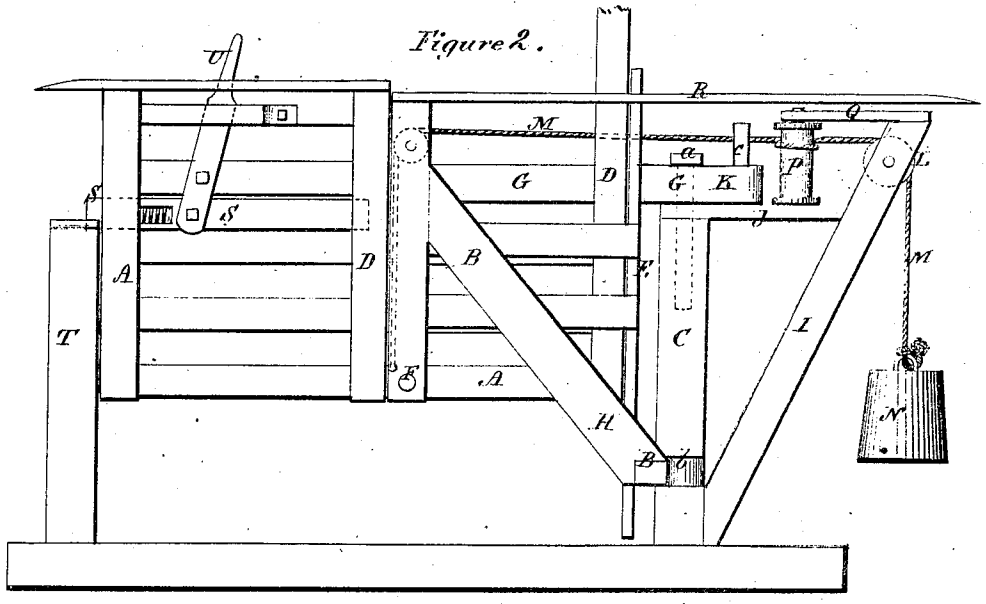
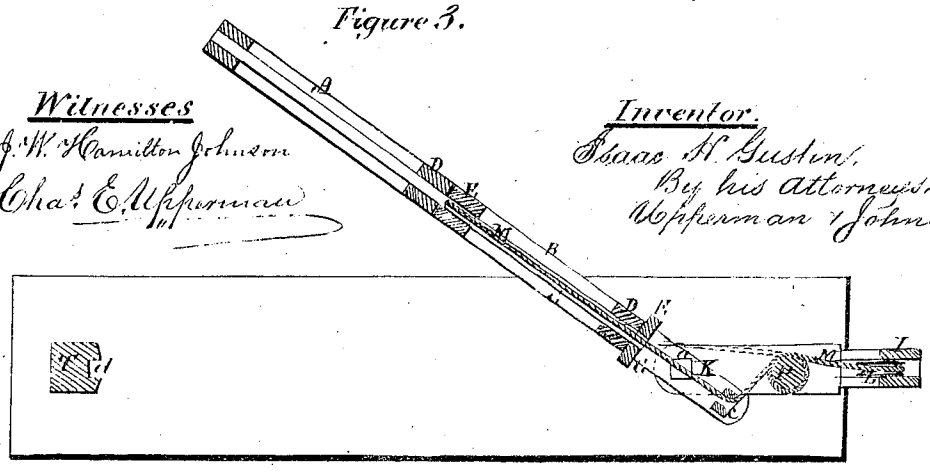


Figure 3.



Witnesses
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Inventor.
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ISAAC H. GUSTIN, OF MIDDLETOWN, INDIANA.

Letters Patent No. 105,067, *dated July* 5, 1870.

IMPROVEMENT IN GATES.

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

To all whom it may concern:

Be it known that I, ISAAC H. GUSTIN, of Middletown, in the county of Henry and State of Indiana, have invented a new and useful Improvement in Gates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing of the same, which makes part of this specification, and in which—

Figure 1 represents an elevation of a gate, embracing my improvements.

Figure 2, a similar view, showing the gate partly elevated, to pass over snow, and for other purposes.

Figure 3 represents a horizontal section, showing the gate partly open, to illustrate the object of my roller-attachment to the weighted rope.

The difficulties experienced in the use of a weighted rope, in connection with a fixed pulley, and an arm swinging in the arc of a circle by the opening and closing of the gate, to operate upon said rope with sufficient leverage to close said gate, are, among others, a constant tendency to cut and wear out the rope, by pulling it obliquely against the fixed post of the pulley, and the increased power required in overcoming the resistance of the weight in opening the gate, because, in doing so, the friction of the rope against the side of the fixed post is nearly equal to the weight to be elevated.

It is the object of my improvement to overcome these disadvantages, and

It consists in the employment of a roller, located and arranged, between the swinging arm of the gate and the fixed pulley of the weighted rope, around which the latter is passed in such manner that, whatever may be the position of the swinging arm and its rope, whether in opening or closing the gate, the former will always be drawn over the pulley in a direct line, and thus prevent any abrasion whatever upon the rope, and greatly lessen the effort required to open the gate, which must necessarily render the rope more durable, and the gate more easily and conveniently opened.

In the accompanying drawing—

A represents the gate, supported upon and carried by a crane or swinging section, B, hinged to one of the posts C, so as to turn thereon.

The gate is secured to its crane, so as to be adjusted and held above the ground, for the purpose of passing over snow, and allowing sheep to pass out, to separate them from cattle.

In adjusting the gate in this manner, it is raised and lowered by guide-posts D thereof, and guide-posts E of the swinging crane, and secured by a pin, F, passing through the lower end of the outer part of the crane and the boards of the gate.

The hinged supporting section B is secured to the main post C by a bolt, *a*, passing through a horizontal timber, G, into the top of said post, and by the foot of the oblique bracing-boards H, fitting into and resting upon a shoulder, *b*, near the bottom of said post, and upon these bearings it turns in opening and closing the gate.

A bracing-post, I, extends upward obliquely from the foot of the main post C, and is secured near the top of the latter by a board, J, and the arm K of the supporting-timber G of the crane projects in rear of the latter, and rests upon said connecting-boards J.

The oblique bracing-post extends above the connecting-board J, to receive a pulley, L, over which a rope, M, passes, the front end of which is attached to the lower board of the gate, near the middle of its length, and to its other end the weight N is secured, so as to be suspended in the rear of said oblique post.

This weighted rope effects the closing of the gate, and assists in raising it, when required to be adjusted above the ground.

The weighted rope thus arranged is connected by a stud or pin, *c*, to the end of the swinging arm K, so that the latter acts upon the weight as a lever, when the gate is opened.

To prevent the rope from being drawn obliquely against the fixed post I by the action of holding-pin *c*, I arrange a vertical roller, P, between the end of the swinging arm K and the pulley, round which roller the rope is wound once, so that it will always maintain a straight line in passing over the pulley in raising and lowering the weight, while that part held by the stud *c* will draw directly from the side of the vertical roller P, and the latter, being mounted in bearings in the connecting-board J, and a cap-board, Q, secured to the upper end of the oblique bracing-post, it must turn as the cord is drawn over it, in opening and closing the gate from either direction, thus effectually saving the rope from being cut and worn out, and causing the gate to turn more readily.

The rope is attached to the holding-stud *c*, which is open at its top for that purpose, so that it may be disconnected from it, in which case it will be released from the swinging arm, and act upon the gate to hold it open, because the rope will then act upon the roller from its connection with the gate, in front of its hinge *a*, as shown in dotted lines in fig. 3.

To protect the rope from being rotted by rain, a covering-board, R, is secured to the top of the crane, so as to extend rearward over the pulley, and thus form a shelter, which keeps it comparatively dry.

The gate is provided with a spring latch, S, the

end of which fits into a groove, *d*, in the side of the front post T, and the latch may be withdrawn by a vertical pivoted arm, U, so as to be convenient for horsemen by grasping the upper end of said arm, which extends through the top board for that purpose.

Having described my improvement,

I claim—

The arrangement of the vertical roller P, in combination with the weighted rope M, round which it passes, and the swinging arm K of the gate, to which it is attached, substantially as herein shown and described.

ISAAC H. GUSTIN.

Witnesses:
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