Edmund Higgins

Farm Gate.

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PATENTED JUL 25 1871

Fig. 1.

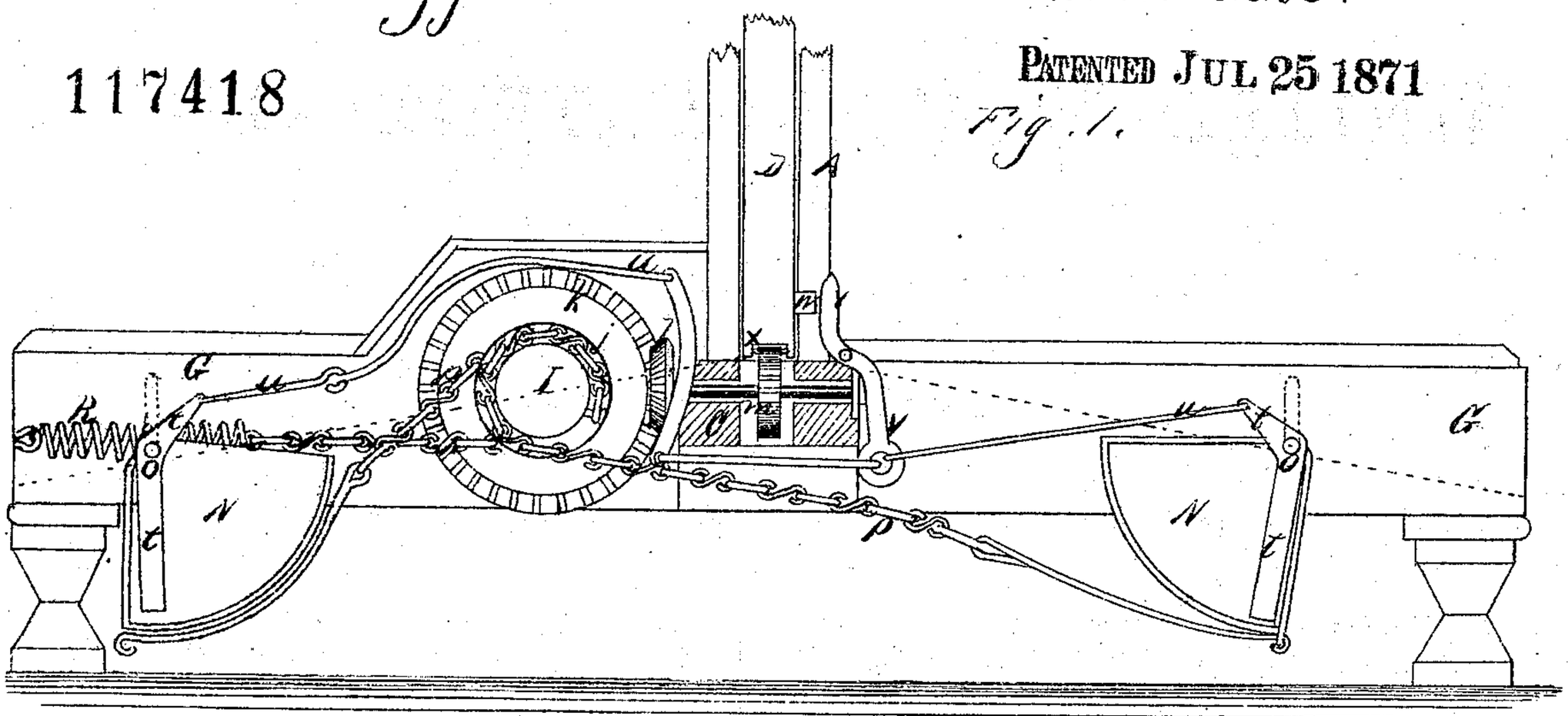


Fig. 2.

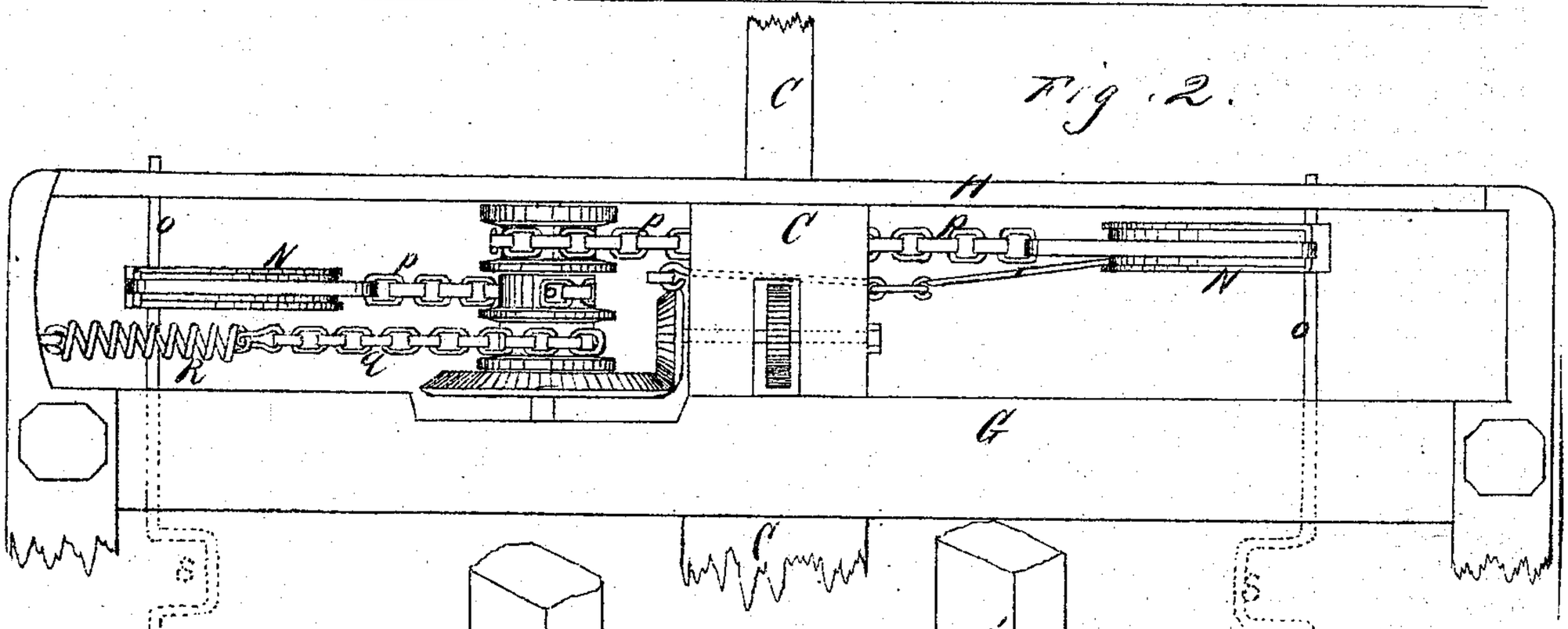
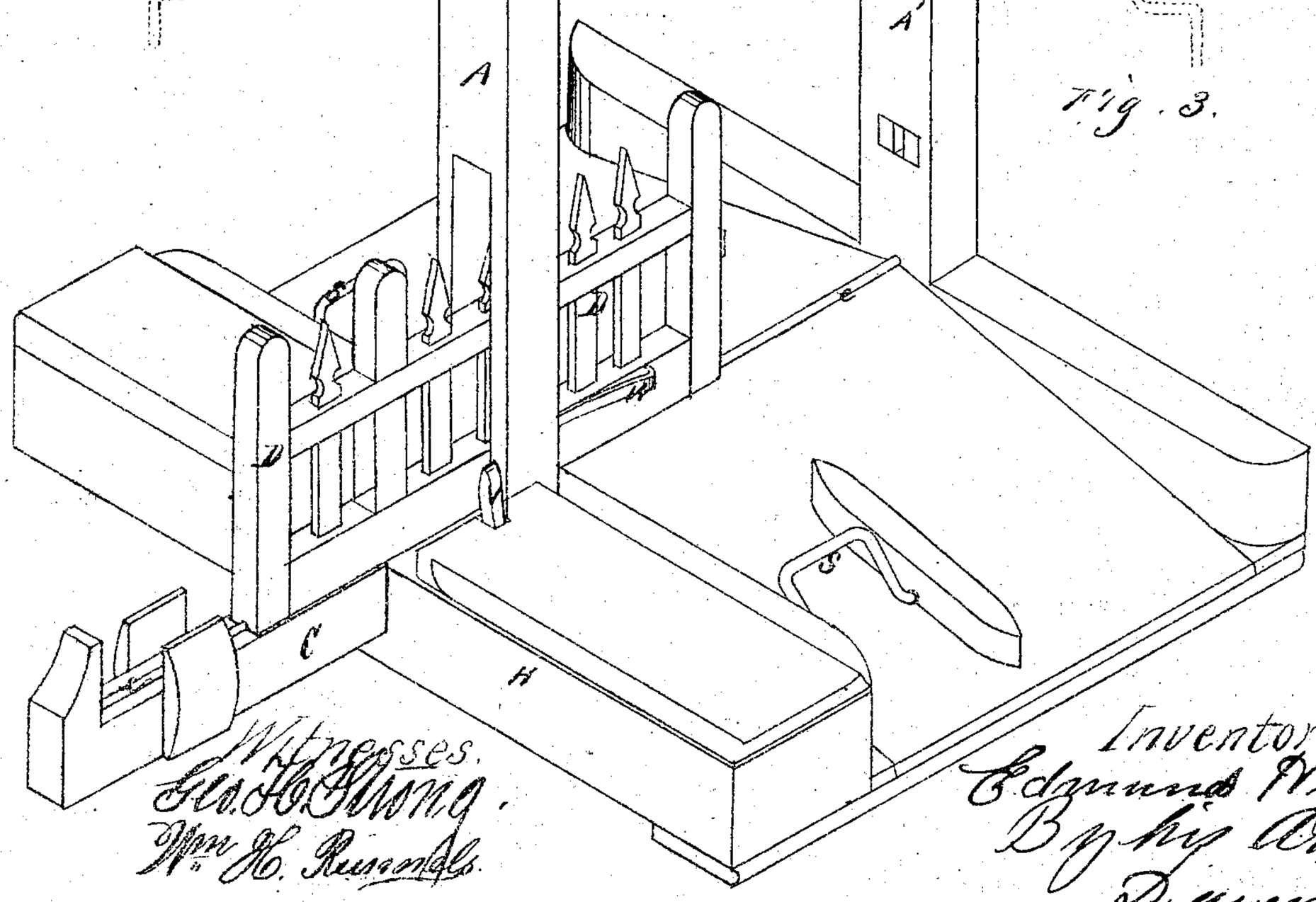


Fig. 3.



Witnesses.
Ed. H. Ellis.
Wm. H. Reynolds.

Inventor.
Edmund Higgins
By his Attys
Dewey & Co.

UNITED STATES PATENT OFFICE.

EDMUND HIGGINS, OF SACRAMENTO, CALIFORNIA.

IMPROVEMENT IN GATES.

Specification forming part of Letters Patent No. 117,418, dated July 25, 1871.

To all whom it may concern:

Be it known that I, EDMUND HIGGINS, of the city and county of Sacramento, State of California, have invented an Improved Self-Opening Farm-Gate; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements without further invention or experiment.

My invention relates to that class of farm-gates which is caused to open automatically by the approach or through the medium of an approaching vehicle or passer, and close behind it or him by the same means; and it consists in a novel arrangement of mechanism by which the gate is caused to slide to one side, in a line with the fence, far enough to clear the gate-way, and resume its position after the vehicle has passed, by the passage of the wheels over a lever or other suitable operating obstruction.

In order to more fully illustrate and explain my invention, reference is had to the accompanying drawing forming a part of this specification, in which—

A A′ represent the gate-posts or vertical side timbers of the gate-frame, and C a horizontal bed-timber which passes across the gate-way, into which the lower ends of the posts A are mortised. This bed-timber can be buried in the earth, or, if a floor-way is used, form a part of the flooring. The lower end of the vertical post A has a mortise passing through it, in a line with the bed-timber C, of sufficient height and width to permit the gate D to slide freely through it. The length of the bed-timber is equal to nearly twice the length of the gate D, and this extra length extends to one side of the post A. Upon the upper face of this timber is a single track, *e*, along which the gate D is moved back and forth in being opened and closed, small friction-rollers at each end of the gate bearing upon the track. Upon one side of the gate are laid two parallel timbers, G H, transversely to the track-timber C, and passing across nearly in a line with the mortised gate-post A. The space between these two parallel timbers serves to contain the machinery which operates the gate; this is shown more clearly at Figs. 1 and 2. I is a triple carrying-shaft, having three flanges, *j*, which divide the shaft into three parts. At one end of this shaft is a large bevel-wheel, *k*, which engages with a pinion, *l*. The shaft upon which the pinion *l* revolves passes horizontally through the bed-timber C, and also carries a toothed wheel, *m*, which revolves vertically in a mortise in the timber C below the post A. The under edge of the gate D is provided with pin or other equivalent teeth *x*, as shown, with which the toothed wheel *m* engages, and by which means the gate is caused to slide along the track *e*, through the mortised post A, when the shaft I is caused to revolve. N N are two hollow quadrants, which are suspended between the two timbers G H upon a shaft, *o*, the attachment being made at the angle formed by their two straight sides. One of these quadrants is placed upon each side of the gate. A chain, *p*, is attached to the lower corner of these quadrants, and extends thence to the shaft I, each one passing around the drum between two separate partitions. Another chain, *q*, passes around the third section of the shaft I, and has its opposite end attached to a spiral or other spring, R, which is fixed to the timbers in a suitable manner. The shaft *o*, upon which the quadrants N are suspended, extends through the inner timber G, and is there formed into a crank or loop, *s*, one at each side of the roadway. Fixed to the shafts *o*, so as to operate inside the hollow quadrants, is a rigid arm, *t*, which moves in one direction independently of the quadrants, but when moved in the opposite direction carries the quadrant with it. To the upper end of this arm is attached a wire, *u*, which connects with the lower end of a lever-bar, *v*. This lever-bar is pivoted to the timber C, so as to stand vertically along the outside of the post A, so that when the upper end of the bar *t* is thrown back the rod *u* will cause the lever-bar to press in the latch *w* and allow the gate to slide to its closed position.

Upon approaching the gate with a vehicle upon either side the wheel is caused to run over the crank or loop *s*, which causes the shaft to turn the quadrant N in a direction from the gate. This movement causes the chain *p* to wind up the shaft I, which, through the pinion *l*, revolves the vertical wheel *m*. The revolution of this wheel causes the gate, as before explained, to be moved along the track to one side of the gate-way, extending the spring R at the same time. After passing through the gate-way the wheel of the vehicle is again caused to depress the lever on the opposite side in an opposite direction, which causes the

arm *t* to draw upon the wire *u*, and through it cause the lever-bar *v* to unlatch the gate, when the tension of the spring R will close it, as before mentioned.

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

1. The extended bed-timber C provided with the track *e*, and the gate D with its rollers *f*, in combination with the quadrants N N, chains *p p*, triple carrying-shaft I, bevel-wheel K, and pinion *l*, all constructed and arranged substantially as and for the purpose described.

2. The triple-shaft I, with its bevel-wheel *k* for operating the pinion *l*, and vertical-toothed wheel *m*, in combination with the rack *x* on the under edge of the gate, substantially as above described.

3. The hollow quadrant N, connected with the shaft I by chains *p*, in combination with the arm *t*, substantially as and for the purpose described.

4. The spring R and chain *q*, in combination with the triple carrying-shaft I, constructed and arranged substantially as and for the purpose set forth.

5. The arm *t*, rigidly secured to the shaft *o*, in combination with the connecting-wire *u* and lever-bar *v*, substantially as and for the purpose above described.

In witness whereof I have hereunto set my hand and seal.

EDMUND HIGGINS. [L. S.]

Witnesses:

EDW. CADWALADER,

L. H. FOOTE.