(Model.)

M. W. FOSTER.

GATE

No. 298,076. Patented May 6, 1884.

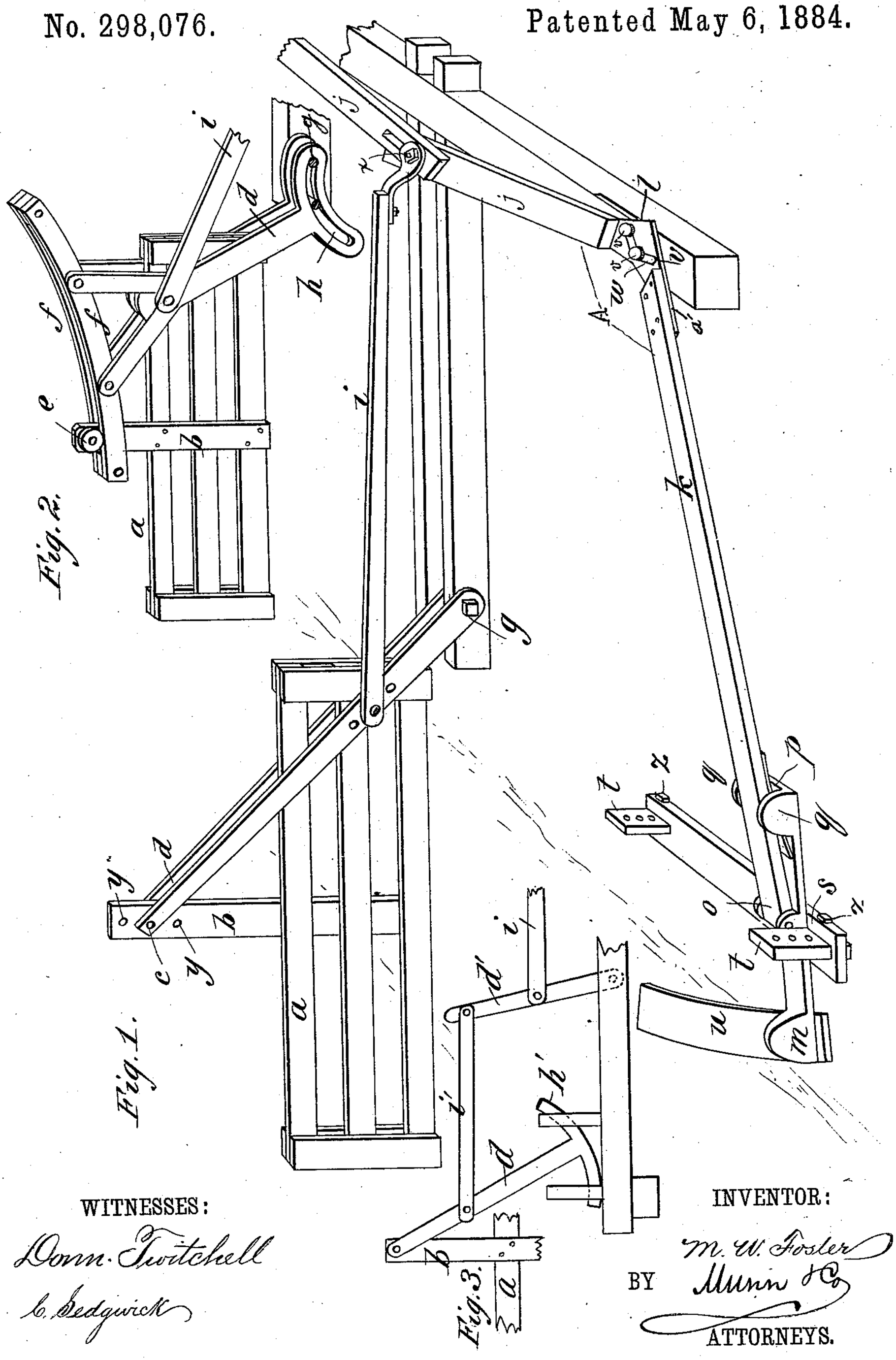

Fig. 2.

Fig. 1.

Fig. 3.

WITNESSES:

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GATE.

SPECIFICATION forming part of Letters Patent No. 298,076, dated May 6, 1884.

Application filed July 5, 1883. (Model.)

To all whom it may concern:

Be it known that I, MARK WILSON FOSTER, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and Improved Gate, of which the following is a full, clear, and exact description.

My invention consists of improved contrivances whereby a carriage-wheel coming in contact with the end of a horizontally-swinging lever, and pushing it along the ground, is made to raise and swing the gate on a lever, or cause it to roll back along a track, the gate being suspended at the middle from the said lever or track for the purpose, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is perspective view of a gate arranged according to my invention, said gate being in this case suspended from the lever to swing back and forth for opening and closing. Fig. 2 is also a perspective view of the gate, which in this case is suspended from the track along which it is to roll back and forth for opening and closing; and Fig. 3 shows further modifications.

The gate *a* is suspended by the hanger *b*, extending upward from it at the middle by the pivot *c* from the levers *d*, or by the roller *e* from the rails *f*, said rails being mounted on the upper ends of the levers *d*. The levers are pivoted to a fulcrum, *g*, either by a simple hole in the end or by curved slots *h*, and they are connected by the rods *i* to the arms *j* of a pair of horizontal levers, A, that are pivoted at *l*, and have the free ends *m* of the other arms, *k*, of said levers A arranged in the wheel-path of the carriage-way, to be pushed along toward the gate by the carriage to swing the levers *d* for opening the gate. It will be observed that the levers A, which are pivoted on the studs *v*, are angle-levers composed of two arms, *k* and *j*, rigidly secured together at their ends by the plates *a'*. When the gate is passed, the wheel pushes the end *m* of the other lever back and closes the gate; and it also pushes the lever by which the gate was opened back to its position for opening the gate again. The ends *m* of the arms *k* are each a short piece pivoted to *k* at *o*, and extending along under *k* a suitable distance to be pressed by a spring, *p*, attached to *k*, and bearing on it between ears *q* to swing up end *m* on the bearing-plate *s* as a fulcrum and hold said end *m* up out of the mud. The plate *s* is a rest along which the arm *k* of lever A is to slide between the uprights *t*, and plate *u* is another rest that end *m* swings on or may roll on, if provided with a roller, which I propose to fit it with. The levers A are pivoted at their fulcrum *l* by two studs *v*, and an angular slot, *w*, contrived to cause sufficient lengthwise movement of the arms *j* of the angle-levers A to cause pivot *x* to move forward and backward in a straight line, to work connecting-rods *i* in a straight course, and to avoid lateral movements of the pivot *x* with the arms *j*. The studs *v* are of less diameter than the width of the slots *w*, so that they can freely move therein, and the slots *w* form an obtuse angle with each other. The hanger *b* has a series of holes, *y*, by which it is connected to the levers *d* or rails *f* to shift the gate up when snow is deep; and the uprights *t* also have holes for shifting the rest *s* up and down by the pins *z* to support the lever-arms *k* above the snow. The object of the slots *h* in the levers *d* is to allow the levers to descend at the same time that the rails rise at the end from which the gate is suspended, so as to reverse the inclination of the rails with less rise of the gate than would otherwise be required.

As shown in Fig. 3, the levers *d* may be fitted with rockers *h'*, on which to turn instead of the fulcrum-pivots, as here shown, the rockers being controlled by straps for keeping them in place, and an intermediate lever, *d'*, may be interposed between levers *d* and arms *j* with two connecting-rods, *i i'*, by which greater swing of levers *d* may be had with less travel of lever-arms *k*.

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

1. The combination, with the levers *d* and gate *a*, suspended therefrom, of the angle-levers A, pivoted on the studs *v*, and connecting-rods *i*, substantially as shown and described.

2. The combination, with the levers A, connecting-rods *i*, levers *d*, and rails *f*, of the gate *a*, said gate being suspended from the rails *f*, and the said levers *d* and levers A be-

ing arranged to raise the gate and cause it to roll along the rails *f*, substantially as described.

3. The combination of the levers A, connecting-rods *i*, levers *d*, and rail *f*, with the gate *a*, said levers *d* being fitted by slots *h* to fulcrum-pins *g*, and said levers *d* and levers A being arranged to operate the gate, substantially as described.

4. The combination, with the levers *d* and gate *a*, suspended therefrom, and the connecting-rod *i*, provided with a pivot, *x*, of the angle-lever A, composed of the arms *j* and *k*, rigidly secured at their ends by the plate *a'*, having angle-slot *w*, and pivots *v*, substantially as shown and described.

5. The combination, with the levers *d*, gate *a*, suspended therefrom, angle-levers A, pivoted on the studs *v*, and connecting-rod *i*, of the end pieces, *m*, pivoted to arms *k*, springs *p*, and ways *s*, substantially as shown and described.

6. The combination, with the levers *d*, gate *a*, suspended therefrom, angle-levers A, pivoted on the studs *v*, and connecting-rod *i*, of the end pieces, *m*, pivoted to arms *k*, springs *p*, way *s*, perforated adjustable uprights *t*, pins *z*, and way *u*, substantially as shown and described.

MARK WILSON FOSTER.

Witnesses:

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A. E. PEARSON.