

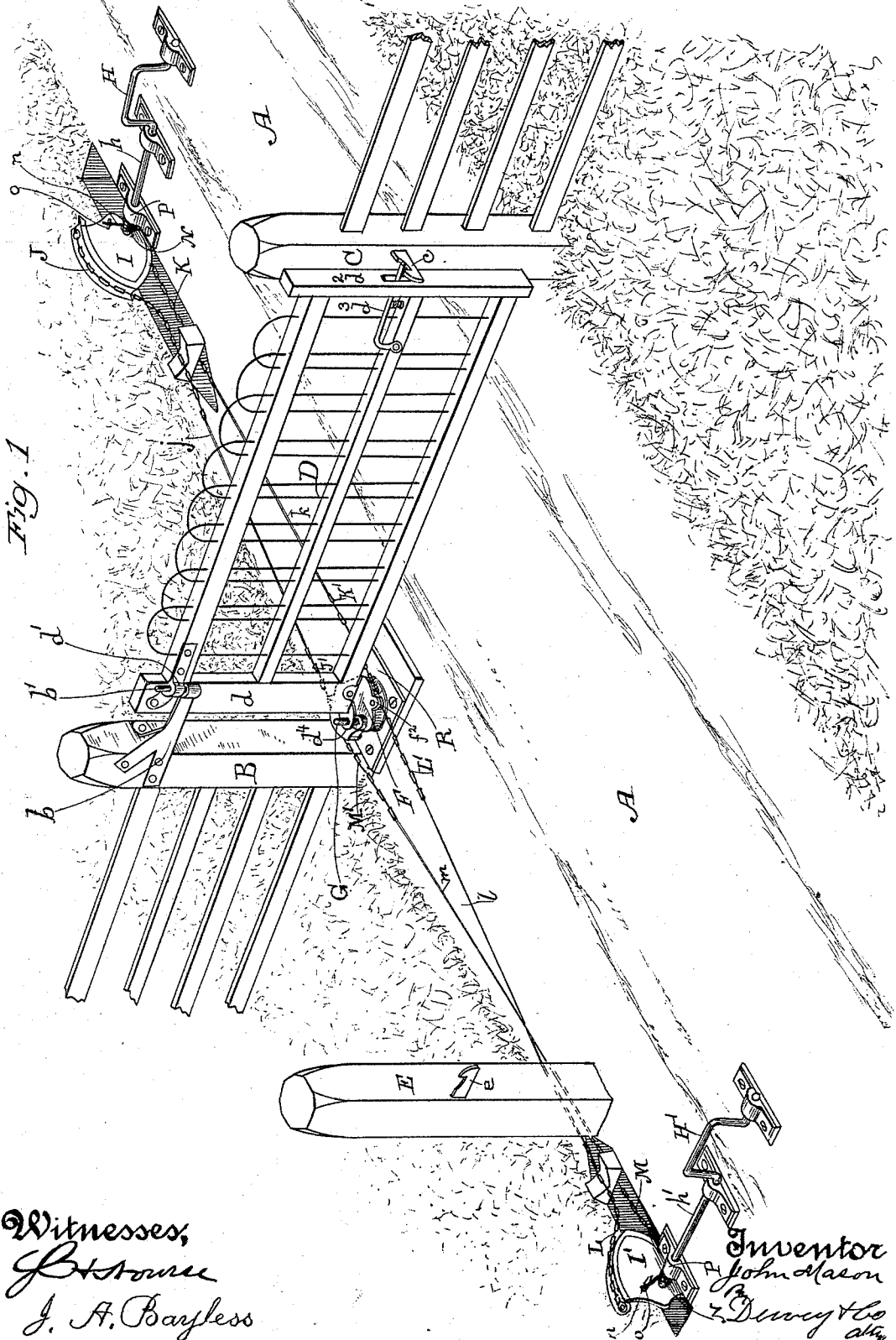
(No Model.)

2 Sheets—Sheet 1.

J. MASON.
GATE.

No. 518,743.

Patented Apr. 24, 1894.



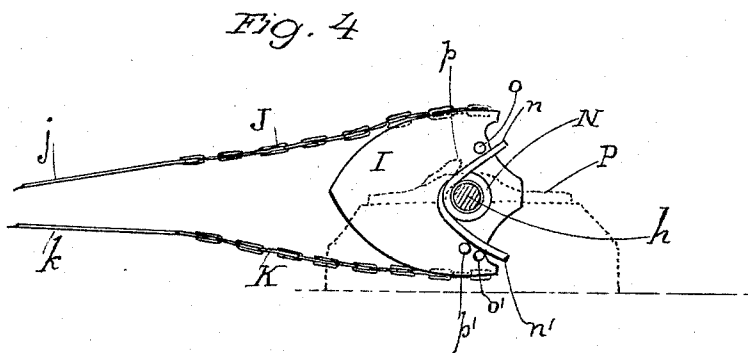
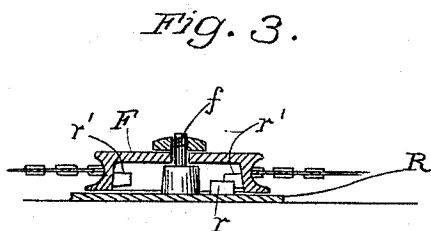
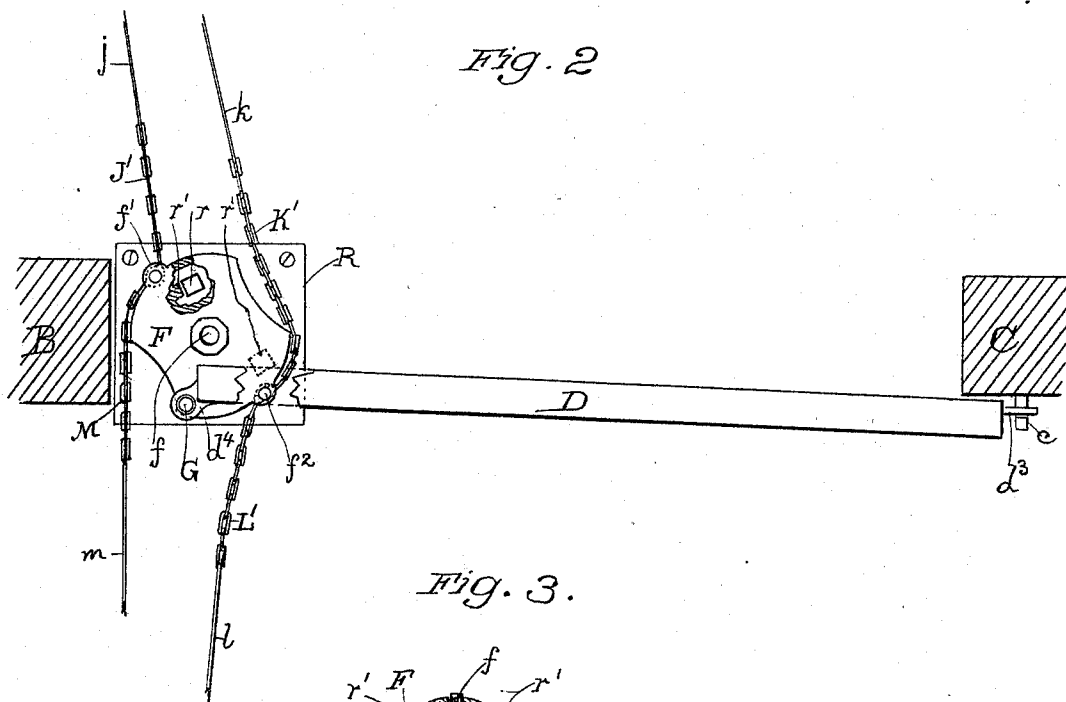
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2 Sheets—Sheet 2.

J. MASON.
GATE.

No. 518,743.

Patented Apr. 24, 1894.



Witnesses,
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UNITED STATES PATENT OFFICE.

JOHN MASON, OF PETALUMA, CALIFORNIA.

GATE.

SPECIFICATION forming part of Letters Patent No. 518,743, dated April 24, 1894.

Application filed July 26, 1893. Serial No. 481,550. (No model.)

To all whom it may concern:

Be it known that I, JOHN MASON, a citizen of the United States, residing at Petaluma, Sonoma county, State of California, have invented an Improvement in Gates; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of gates in which a variable or swinging pivot is employed for the inner upright of the gate, through the movement of which, the gate is first tilted to relieve it of its latch, and is then adapted to swing by gravity to an open or closed position.

My invention consists in the novel construction and arrangement of the variable pivot, and the means for operating it, which I shall hereinafter fully describe.

The object of my invention is to provide means for easily and effectively operating a gate through power transmitted from cranks in the roadway, adapted to be run down by the wheels of a passing vehicle, said means being of simple and economical construction, not liable to get out of order, and adapted to be operated by the exercise of small power.

Referring to the accompanying drawings for a more complete explanation of my invention,—Figure 1 is a perspective view of my gate. Fig. 2 is a plan. Fig. 3 is a vertical cross section of the pulley F. Fig. 4 is a detail showing the connection of spring N with the cam I.

A is the road-way, at one side of which is the hinge post B, and at the other side is the latch post C. To the former is secured, near its top, the bracket b, having at its inner extremity the vertical pin b'.

D is the gate, having the inner upright d, to which, near its top, is secured the socketed bracket d' which fits down freely over and is thus hinged upon the pin b'. The other upright d² of the gate has a spring controlled latch d³ which engages a catch c on the latch post C, in the ordinary manner. Beside the road is a post E having a catch e with which latch d³ engages when the gate is open.

F is an open-bottom hollow pulley centrally pivoted by a pin or bolt f, said pulley lying in a horizontal plane and adapted to oscillate over a suitable foundation plate R on which is a fixed stop r with which lugs r'

on the pulley come in contact to limit its oscillation. This pulley is provided near its rim on one side with a vertical pin G, upon which is fitted the socketed bracket d⁴ secured to the lower end of the inner upright d of the gate.

In the road-way, at a suitable distance from the gate, is a crank H, the end of the shaft h of which has secured to it the double cam I, the faces of which are grooved in order to guide the chains or cables. One of these chains J is secured to the upper rear extremity of the cam, and the other K is secured to the lower rear extremity. The chain J has connected with it a wire j, the other end of which joins a chain J' which is secured to the pulley F at the point j'. The chain K has connected with it a wire k, the other end of which joins a chain K' which is secured to pulley F at the point f², which point is opposite to that at which the chain J' is attached. Similarly, on the other side of the gate, in the road-way, is a crank H', the shaft h' of which carries a double cam I' to which are secured at opposite extremities the chains L and M. The former chain L, joins a wire l, which is connected with a chain L' attached to pulley F at f², and the chain M has a wire m, connected with a chain M', attached to pulley F at f'.

The spring for returning and controlling the crank shafts and their cams is constructed and arranged as follows: It is a coil spring N, fitted to encircle the shaft, just within the cam. It has one end n which projects upwardly and bears against a pin o on the cam. It has another end n' which extends downwardly and bears against another pin o' on said cam, the bearings in the two instances being opposite. These free ends n and n' of the spring are limited in their return by fixed stops p and p', the former of which is cast with the boxing cap P of the shaft, and the latter projects from said boxing lower down. Suitable covers, which it is unnecessary to show, will be fitted over the cams.

The operation of my gate is as follows: Suppose a vehicle approach from the side on which the crank H is located. The wheel runs down this crank. This causes the cam I to turn downwardly, and thereby to pull upon the connections K k K', whereby the

pulley F is oscillated and its pin G moved forward, which has the immediate effect of tilting the latch end of the gate upwardly in a vertical plane, and this lifts the latch from
 5 the catch. Continued movement of the pulley F carries its pin through an arc of a circle, which has the effect of throwing the lower hinge out of the perpendicular plane of the upper hinge, whereby the now free gate will
 10 swing open by gravity, until its latch engages the catch on the side post E, and in this position the two hinges will again be in the same vertical plane. As soon as the vehicle wheel leaves the crank H, the latter will
 15 spring back to a vertical position under the influence of the lower end n' of spring N, bearing on the pin o' of the cam I, and said end is limited by the lower stop p' . When the vehicle has passed the open gate, its wheel runs
 20 down the crank H' which will turn its cam I' backwardly and through the connections L, L', the pulley F will be returned, with the effect of first relieving the gate of its catch, and then allowing it to swing to a closed position by gravity. As the vehicle returns,
 25 the opposite connections are called into play.

It will be noticed that on account of the shape of the cams I and I', and their location relatively to the cranks, the shorter leverage
 30 of the cams is first called into action when the wheel strikes the crank, thereby enabling the crank to exert its greatest power to operate it, and to start the gate; then as the longer leverage of the cam comes into action, the
 35 power of the crank is eased up as the gate opens. It is also to be noted that the entire pull of the connections is directed wholly upon the gate, by reason of the parts being free of the fixed hinge post, thereby rendering
 40 the operation of the gate much easier.

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

1. The gate having the stationary hinge connection above, in combination with the 45 horizontally oscillating pulley F with its pin forming a variable hinge connection below, said pulley having an open bottom and provided with the lugs r' on its inner surface; the foundation plate R on which the pulley F 50 oscillates, said plate having the fixed stop r with which the lugs r' come in contact to limit the oscillation of the pulley; and means for oscillating said pulley to throw the hinge connections out of the same perpendicular plane 55 whereby the gate swings by gravity, substantially as herein described.

2. The swinging gate having the stationary hinge connection above, and an oscillating pulley with a pin forming a variable connection for the gate below, in combination with 50 cranks in the roadway; the double or pointed cams on the crank shafts, and fixed thereon so that their points extend in a plane at right angles to the plane of the cranks; and the 65 chain connections from said arms to the oscillating pulley, substantially as herein described.

3. In a gate, the crank shaft having the cam with connections to operate the gate, in combination with the coil spring N, on the shaft 70 just within the cam, said spring having the ends n and n' the pins o and o' on the cam side against which said ends bear oppositely; the fixed stop p on the boxing cap of the cam 75 shaft for limiting the return of the spring end n , and the lower fixed stop p' on the boxing, for limiting the return of the spring end n' , substantially as herein described.

In witness whereof I have hereunto set my 80 hand.

JOHN MASON.

Witnesses:

S. H. NOURSE,
 J. A. BAYLESS.