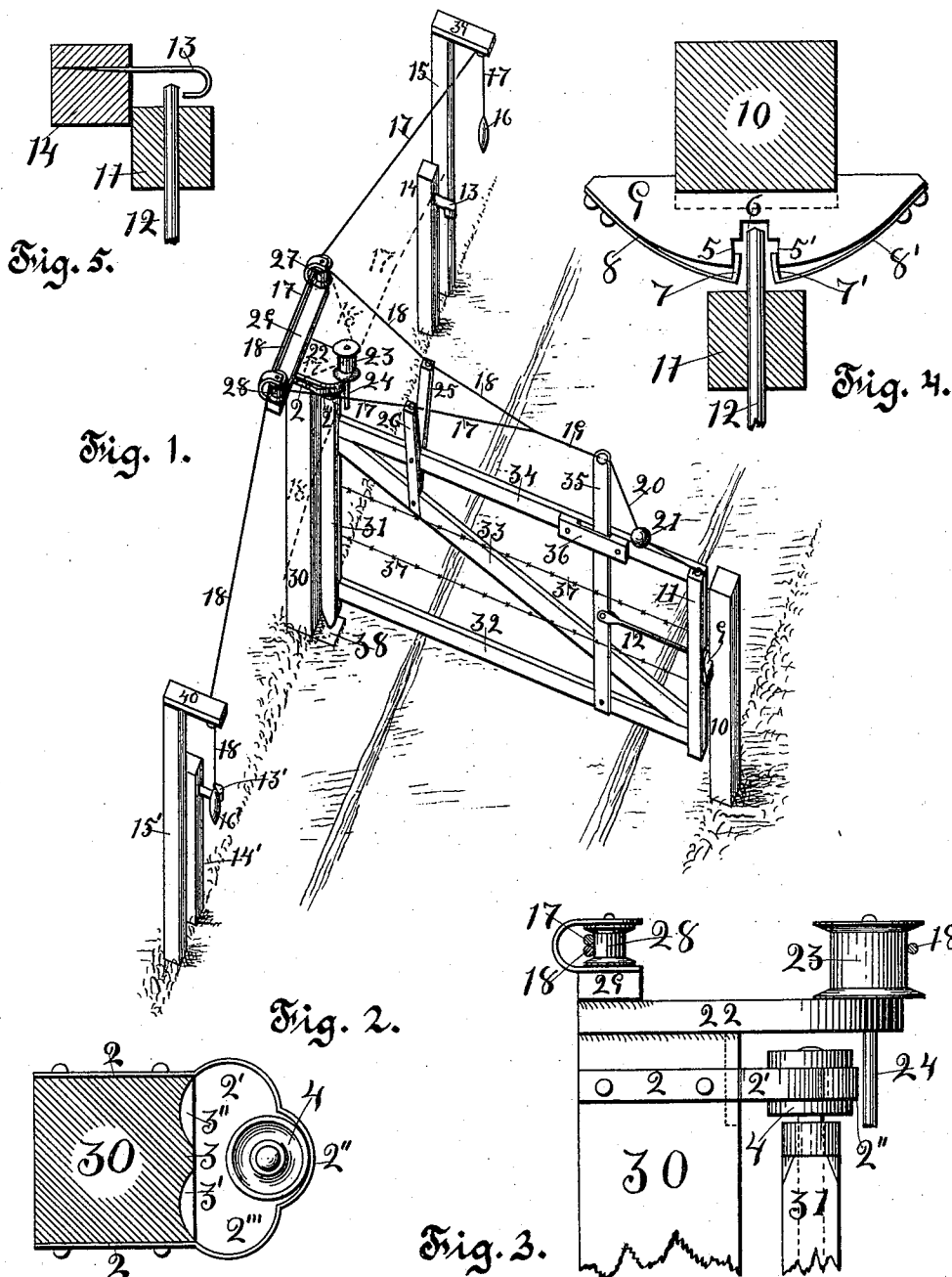


(No Model.)

W. WILSON.
ROAD GATE.

No. 576,709.

Patented Feb. 9, 1897.



WITNESSES:

C. D. Epling
A. J. Taylor

William Wilson, INVENTOR

BY *J. A. Vaughan*
his ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM WILSON, OF FREMONT, NEBRASKA.

ROAD-GATE.

SPECIFICATION forming part of Letters Patent No. 576,709, dated February 9, 1897.

Application filed May 9, 1896. Serial No. 590,921. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WILSON, residing at Fremont, in the county of Dodge and State of Nebraska, have invented a new and useful Improvement in Road-Gates, of which the following is a specification.

My invention relates to swinging gates operated by the driver without alighting through the medium of handled cables or lines attached to the gate and supporting-posts, and has for its objects, first, to combine with the use of operating-lines a tilting action to facilitate swinging the gate against the wind without having so great a run of line as is usually necessary to give the desired purchase; second, to provide an easy and smooth working pivoting giving the desired tilt, and, third, to provide an automatic, strong, and positive spring-catch for the locking-bolt. I attain these objects, with others more fully hereinafter set forth, through the medium of mechanism illustrated by the accompanying drawings, in which—

Figure 1 is a perspective view of the gate complete set up on a road ready for use. Fig. 2 is a plan of the triform pivoting-eye as attached to the hanging-post and the top of the pivot-stile of the gate. Fig. 3 is an elevation of the top of the hanging-post with connected parts. Fig. 4 is a plan of the catch when closed, and Fig. 5 is a plan of the catch to lock the gate open.

Similar numerals refer to similar parts throughout the several views.

The closure is a vertical rectangular frame consisting of the bottom rail 32, the top rail 34, the lock-stile 11, the pivot-stile 31, and the inclined brace-bar 33, on which is stretched either smooth or barbed wire, as shown.

The horizontal bolt 12 passes loosely through the stile 11 and enters the notch 6 in the striking plate or block 9. The other end of the bolt is pivoted to the vertical lever 35, which is pivoted at its lower end to the bottom rail and oscillates in the keeper 36 on the top rail, above which the lever extends, and has the line 20 connected to its top end and to the top of the lock-stile, with the weight 21 suspended at the center of the line which draws on the lever and impels the bolt into the notch.

The pivot-stile is pivoted at its lower end in the mud-block 38, so that it can tilt, and its

top end, having a vertical journal carrying the friction-roller or guide-wheel 4, may follow the triform guide or eye 2, attached near the top of the hanging-post. This eye 2 I prefer to make from a metal bar bent to form the three contiguous loops, 2' and 2'' of which are in line parallel with the roadway, and 2''' at right angles thereto or in line with the closed gate, the straight end portions disposed on opposite sides of the hanging-post and bolted thereto; and the hanging-post has adjacent to the eye the concavities 3' and 3'' to complete the curves of the loop 2' and 2'' and form the vertical ridge 3 to control the movement and location of the wheel 4.

The cap 22 is attached on top of the hanging-post and projects to cover and protect the triform eye and guide-wheel, and supports the deflecting-pulley 23 above and in line with the closed gate.

The pulley-bar 29 is fastened across the cap, ranging parallel with the roadway, and projects an equal distance each way from the hanging-post and has at its ends the vertically-pivoted pulleys 27 and 28 to carry the operating-lines 17 and 18.

At a suitable distance from the gate at the side of the road are placed the tall posts 15 and 15', having the cap-arms 39 and 40 to support pulleys to carry the operating-lines and bring the handles 16 and 16' in convenient position to be grasped by the driver.

The stop-posts 14 and 14' are set so that the lock-stile impinges against them when the gate is swung open, and are provided with the spring-hooks 13 and 13' to engage the bolt 12. (See Fig. 5.)

Arms 25 and 26 are supported on the brace-bar 33, to which they are bolted, and are also bolted to and extend above the top rail 34 to support eyes to carry the operating-lines in a plane agreeing with the pulleys 27 and 28 and the top end of the lever 35. They are so disposed on the gate that when the gate is closed the eyes are inside of a triangle of which the pulleys 27 and 28 and the top end of the lever 35 are the angles, or in such position that they bend the operating-lines toward each other to take them out of the head room of an approaching team and to give the lines the right direction of draft to tilt and swing the gate. A single vertical arm supporting both

eyes closer together or a single eye carrying both lines may be substituted for these arms and still keep within the scope of my invention.

5 The operating-lines and their connections are placed high with reference to the pivoting of the gate for reasons as follows: first, to place them out of reach of stock or other disturbing elements, and, second, to provide
10 the necessary leverage to tilt the gate. For the former reason the lock-stile may extend up level with the top of the lever 35 and a coil-spring be substituted for the line 20 and weight 21, giving the same action to the bolt.

15 The deflecting-pulley 23 is pivoted on top of the projecting end of the cap 22, and turns on a vertical journal 24, extending down through the cap to form a guard to prevent the lines, if accidentally slackened, from being drawn under the cap into the guide and
20 guide-wheel. The pulley 23, as located, bends the line by which the gate is closed, giving the right direction of draft to tilt and swing the gate. (See broken lines and dotted figures in Fig. 1.) In other words, the move-
25 ments of the different parts of the gate are of the same kind for closing as for opening.

The catch device to stop and lock the gate closed consists of the striking-block 9, fast-
30 ened to the locking-post 10, and presenting an inclined face at each side and a central notch 6 to engage the end of the bolt 12, and the springs 8 and 8', screwed to the out ends of the inclined faces and having at their free
35 ends the lips 7 and 7' to rest against and slide on the shoulders 5 and 5', formed on the sides of the mouth of the notch. When the gate closes, the end of the bolt depresses one of the springs and its lip slides into the
40 notch, allowing the projecting end of the bolt to pass in and impinge upon the opposite lip and stop the gate, the shoulder back of the said lip taking the shock and preventing injury to the spring. By this means very light
45 and yielding springs can be used.

The operating cables or lines are inserted as follows: The short single line 19 is attached to the top of the lever 35. The branch 18
50 passes through the eye at the top of arm 25, thence around pulley 27 to pulley 28, and then to a pulley on arm 40 on post 15', then down to the weight-handle 16', which is heavy enough to take up the slack in the line. Branch 17 runs through the eye at top of the
55 arm 26 to pulley 28, to pulley 27, and to a pulley on arm 39 to handle 16. The lines 17 and 18 move together around the pulleys 27 and 28 in the same direction.

In operation draft on line 18 by the handle
60 16' draws the lever 35 against the action of the weight 21, lifting the bolt 12 out of the notch 6. When the lever strikes the opposite end of the keeper 36, the lock end of the gate generally rises slightly and the tendency
65 of the drawn line to straighten between the lever 35 and the pulley 27 draws on the arm 25, tilting the pivot-stile and shifting the

guide-wheel 4 from loop 2'' to loop 2' of the eye, the gate swings open away from the operator, and the spring-catch 13 on the stop-
70 post 14 engages the bolt 12 and retains the gate open. As the gate swings open, the deflecting-pulley 23 engages and bends the line 17, as indicated by the broken lines, so that
75 now, by drawing on the line 17, the bolt is released from the spring-catch 13, the guide-wheel shifts back to loop 2'', and the gate closes without a continued hard pull. The bolt, which always protrudes at least part
80 way through the lock-stile, depresses the spring 8 and stops against the lip 7' on spring 8', then slides to its full extent into notch 6, which is designed to be less in width than the space between the lips to take up lost motion
85 and prevent rattling. The operation is the same, only reversed, for opening the gate the other way.

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

1. In a road-gate the combination of a tilting and swinging closure having its pivot-stile pivoted at a point at its lower end, and its upper end pivoted in a guide-wheel adapted to roll and shift laterally in a triform eye at-
95 tached to the hanging-post; said eye consisting of two loops extending oppositely and parallel with the road, and a third loop extending in line with the closed gate to receive the guide-wheel and support the gate level and
100 upright when closed; an operating-line running parallel with and from a point on the roadside to and around a pulley beyond the pivot-stile, the end returned and attached to an arm projected upward from the closure,
105 whereby by draft on the line, the closure is tilted and the guide-wheel shifted to the farther loop so that the gate normally swings open and by the line is drawn open away from the operator; and a like oppositely-arranged
110 line to tilt and close the gate and open it in an opposite direction in the same manner substantially as described.

2. In a gate having a tilting and swinging closure the combination of the pivot-stile 31,
115 pivoted at a point at its lower end, its top end having the guide-wheel 4, to roll and shift laterally in the triform eye on the hanging-post; said eye, consisting of the loop 2'' to receive the wheel and support the closure plumb
120 and level when closed; the adjacent oppositely-disposed loops 2' and 2'' ranged parallel with the roadway to receive the guide-wheel when the closure is tilted to open; the cap 22, projecting from the hanging-post above
125 the triform eye to protect the eye and guide-wheel and support the deflecting-pulley 23 to bend the closing-line; the operating-lines 17 and 18 connected to the top of the closure and running divergently on opposite sides of
130 the deflecting-pulley to and in opposite directions around the pulleys 27, and 28, on the bar 29 set parallel with the roadway on the hanging-post, the handled ends of the lines

running through pulleys on the posts 15 and 15'; and connected to said lines a spring-actuated latch on the closure to engage a notch on the locking-post 10 and hooked catches on the stop-posts 14 and 14', substantially as described.

3. In a road-gate the combination of the tilting and swinging closure consisting of the top rail 34, bottom rail 32, pivot-stile 31, lock-stile 11, brace-bar 33, and the vertically-projecting arms 25 and 26, footed on the brace-bar and bolted to the top rail; the vertical lever 35, pivoted to the bottom rail to oscillate limitedly in the keeper 36 on the top rail and having the horizontal bolt 12 pivoted thereon to slide loosely through the lock-stile 11; the line 20, one end fastened to the top end of the lever, the other end to the top end of the lock-stile and having the intermediate weight 21; the pivot-stile pivoted in the mud-block 38, at its lower end and having at its top end the guide-wheel 4; with the triform eye consisting of a metal bar the central portion bent to form the loop 2'', adjacent portions each side bent to form the loops 2' and 2''' and the ends 2, 2, bolted to the sides of the hanging-post so that the eye embraces the guide-wheel; the projecting cap 22 to support the deflecting-pulley 23 on the vertical journal 24 projecting down through the cap as a guard to the eye and guide-wheel; the bar 29

on the hanging-post its ends projecting each way parallel with the road and having at its ends the pulleys 27 and 28; the operating-lines 17 and 18 connected to the lever 35, and running divergently through eyes on the vertical arms and at opposite sides of the deflecting-pulley, to and in opposite directions around the pulleys 27 and 28, their handled ends over pulleys on the posts 15 and 15'; with the locking-post having the striking-block 9 having the notch 6 and shoulders 5 and 5', with the spring striking-plates 8 and 8' having the lips 7 and 7', and the stop-posts 14 and 14' having the spring-hooks 13 and 13' to engage the bolt 12 substantially as described.

4. In a catch to engage a gate latch or bolt the combination of the striking-block 9, with the attached spring striking-plates 8 and 8', having the lips 7 and 7' projecting into a notch in the block and supported against the lateral impact of the latch by the shoulders 5 and 5' in the notch, and the intermediate notch 6 of less width than the distance between the lips substantially as described.

Signed at Blair, in the county of Washington and State of Nebraska, this 5th day of May, 1896.

WILLIAM WILSON.

Witnesses:

A. J. TAYLOR,
J. S. ROBERTS.