E. W. VEST.

GATE.

APPLICATION FILED NOV. 30, 1908.

916,807. **Patented Mar. 30, 1909.**

2 SHEETS—SHEET 1.

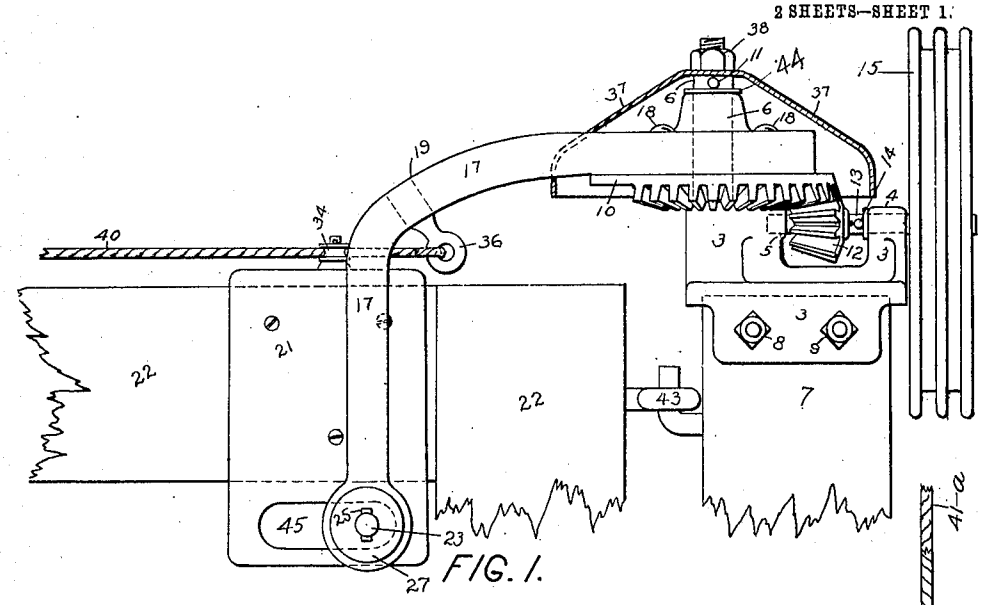


FIG. 1.

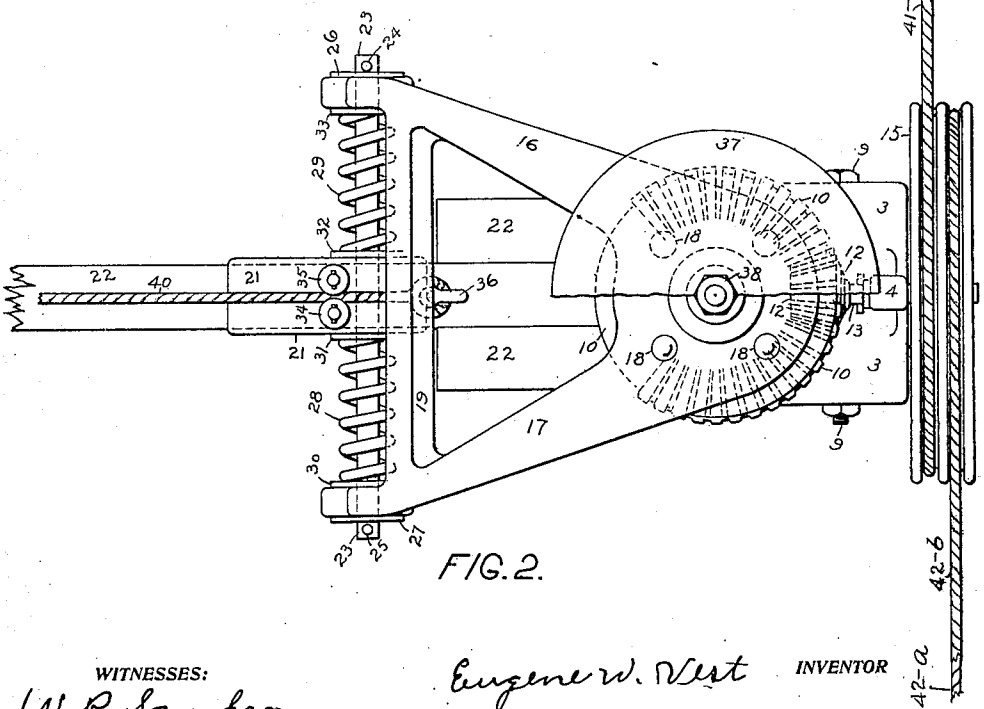


FIG. 2.

WITNESSES:

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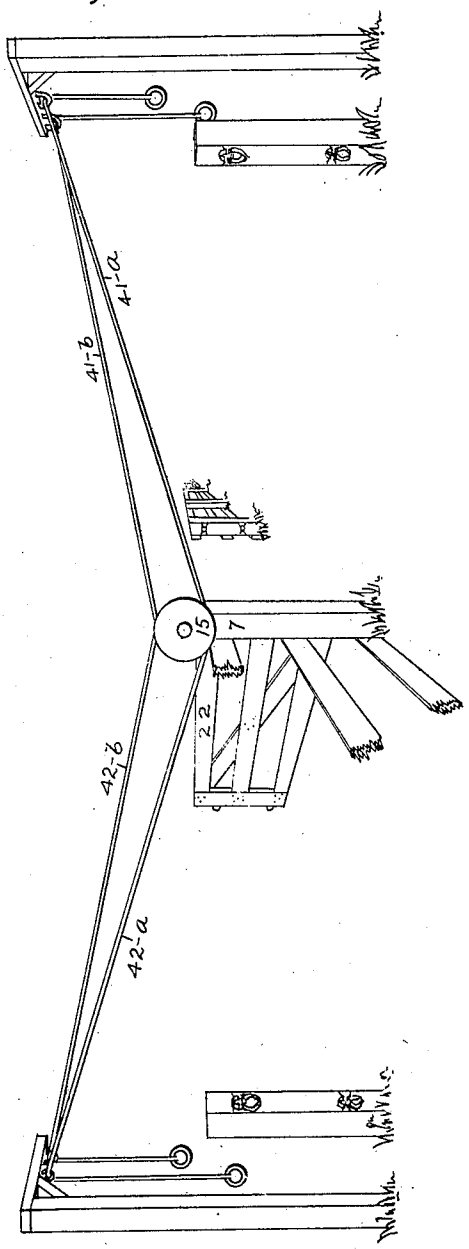


Fig. 4.

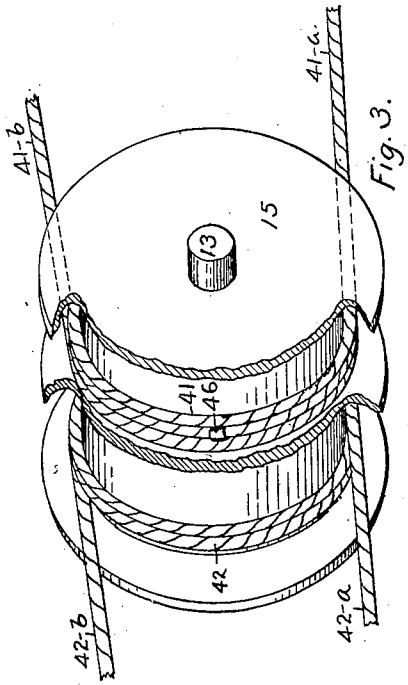


Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

EUGENE W. VEST, OF MULBERRY GROVE, ILLINOIS.

GATE.

No. 916,807. Specification of Letters Patent. Patented March 30, 1909.

Application filed November 30, 1908. Serial No. 465,044.

To all whom it may concern:

Be it known that I, EUGENE W. VEST, a citizen of the United States, residing at Mulberry Grove, in the county of Bond and State of Illinois, have invented certain new and useful Improvements in Gates, of which the following is a specification.

This invention pertains to gates and has for its object to provide a new and novel mechanism, whereby gates that are hung on hinges may be opened and closed by the simple drawing or pulling of a rope or lever and whereby one will not be obliged to dismount from a horse or vehicle in order to open the same and close the same after passing through. I am aware that there are a number of inventions along this line, wherein the gate itself forms a part of the invention, but my object is to provide a mechanism that may be utilized in connection with any gate that is hung on hinges and adapted to swing thereon.

A further object is to provide a mechanism whereby any gate that is hung on hinges may be opened either way, or opened and shut, from either side thereof.

The mechanism consists principally of gearings connected with a casting adapted to be secured to the top of the post to which the gate is hinged, together with an arched connection ingeniously secured to the gate and a drum, over which operate ropes or cables extending in either direction at right angles to the fence, and so adjusted as to be accessible to one riding upon a horse or in a vehicle. I have provided a hood as a covering for the gearings, adapted to protect the same from weather exposure.

In the drawings, Figure 1 is a side view of the apparatus attached to broken-away portions of the post and gate and showing a section of the hood; Fig. 2 is a top plan view of the same; Fig. 3 is a perspective view of the drum, showing the manner in which the ropes or cables are attached thereto; and Fig. 4 shows an end view of the drum, with the ropes or cables extending at right angles to a broken-away portion of a fence, and also showing a gate partially ajar.

I have shown a casting 3, secured to the top of the post, 7, by means of the bolts, 8 and 9. Cast integral with the casting, 3, are the bearings, 4 and 5, for the ends of the shaft, 13, carrying the beveled pinion gear, 12; and also cast integral with the same is the stud, 6, carrying the horizontal beveled gear, 10. Secured to the top of the beveled gear, 10, by the rivets, 18, are the arched arms, 16 and 17, connected by the web, 19. A saddle casting, 21, is adapted to engage the top board, 22, of the gate. This casting is provided with a horizontal oblong slot, 45. At the center of the web, 19, connecting the arms, 16 and 17, is provided a link, 36, in which is fastened a rope, 40, passing between the pulleys, 34 and 35, secured horizontally to the top of the casting, 21. Coil springs, 28 and 29, encircle the shaft, 23, the former being anchored between the washers, 30 and 31, on one side of the gate, and the latter being anchored between the washers, 32 and 33, on the other side of the gate. The shaft, 23, passes through the horizontal slot, 45, in the casting, 21, and is held in that position by the washers, 26 and 27, secured in their positions by the pins, 24 and 25. To the shaft, 13, carrying the beveled gear, 12, is also secured the drum, 15, to which are attached two ropes, 41 and 42, encircling the drum, 15, and reaching in opposite directions, at right angles to the fence and to the gate when closed. I have shown a pin, 14, passing through the shaft, 13, by means of which the same may be held in its position in the bearings, 4 and 5.

It will be noticed that the gate, 22, operating on the hinge, 43, rotates at a different center from the arms, 16 and 17, connected with the gage, 22, and for that reason it is necessary to provide a self-adjustment for the connecting parts; and to that end the horizontal oblong slot, 45, is provided, wherein the shaft, 23, may glide backward and forward as the gate is opened and closed.

In the practical operation of the apparatus, one desiring to open the gate, pass through the same, and close it again would approach the same from one side, draw the rope or cable, 42, which would rotate the drum, 15, and the pinion beveled gear, 12, toward him. The beveled gear, 12, meshing with the beveled gear, 10, rotates the beveled gear, 10, in the opposite direction, thereby throwing the arms, 16 and 17, attached to the gate, 22, away from him and opening the gate in that direction. After passing through the gate, he would draw the rope or cable, 41, rotating the same mechanism in the opposite directions, thereby returning the gate to its original position. Each cable, 41 and 42, should encircle the drum, 15, at least two and one-half times, in order that the drum,

15, may be rotated at least one and one-fourth times around, to effectively raise the latch, as hereinafter described, and open the gate to a position at right angles to the fence. In order to prevent the cables, 41 and 42, from slipping upon the drum, 15, I have attached them at the center thereof to the drum, 15, by a staple, 46. In case it is desired that the gate should be opened toward the operator, he would draw the cable, 41^a or 42^a, according to which side of the gate he was on; and in order to close the gate again while remaining on the same side thereof, he would draw the cable, 41^b or 42^b, the mechanism being so adjusted, as described above, as to operate the gate to the positions desired. It will thus be observed that the gate may be opened to or from the operator and closed by him from either side of the fence, the operator either passing through the gate while ajar or remaining on the same side of the fence, as desired or as occasion may require.

I have also provided for the raising or drawing of the latch of a gate, in order to release the same before the gate begins to open. This I accomplished by connecting the rope or cable, 40, to the latch at the front end of the gate and attaching the same to the link, 36, at the center of the web, 19, connecting the arms, 16 and 17, the said rope or cable passing between the pulleys, 34 and 35. The gate being latched will, of course, refuse to open when the cable, 42, is drawn, until the latch is released; but the arms, 16 and 17, will move as the cable, 42, is drawn, carrying with them the link, 36, and drawing on the cable, 40, attached to the latch, which will release the latch; then the gate is free to open in the direction desired.

The coil springs, 28 and 29, encircling the shaft, 23, on either side of the gate will serve to hold the gate, 22, in proper alinement with the rest of the mechanism. The hood, 37, is held in position by means of the stud 6, on the end of which is secured a nut, 38. A pin, 11, extending through the stud, 6, directly above the washer, 44, serves to hold the arms, 16 and 17, and the beveled gear, 10, in proper position.

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

1. In a gate, a frame adapted to be secured to the top of a post to which a gate is hinged, provided with bearings for a horizontal shaft upon which is secured a beveled pinion gear and a drum, and provided further with a perpendicular stud upon which is mounted a hood, arched arms and a horizontal beveled gear meshing with the pinion beveled gear upon the horizontal shaft, a saddle plate adapted to engage the top portion of a gate and provided with an oblong horizontal slot adapted to receive a shaft extending horizontally through the same; the said drum encircled with ropes with ends reaching in opposite directions at right angles to the fence and gate, substantially as described.

2. In a gate, a frame adapted to be secured to the top of a post to which a gate is hinged, provided with bearings for a horizontal shaft upon which is secured a beveled pinion gear and a drum, and provided further with a perpendicular stud upon which is mounted a hood, arched arms and a horizontal beveled gear meshing with the pinion beveled gear upon the horizontal shaft, a saddle plate adapted to engage the top portion of a gate and provided with an oblong horizontal slot adapted to receive a shaft extending horizontally through the same; the said drum encircled with ropes with ends reaching in opposite directions at right angles to the fence and gate, the link secured to the web connecting the arched arms, the rope leading to the gate latch therefrom, the pulleys through which the same passes, and the coil spring encircling a shaft passing through the slot in the saddle, substantially as described.

3. In a gate, a frame adapted to be secured to the top of a post to which a gate is hinged, provided with bearings for a horizontal shaft upon which is secured a beveled pinion gear and a drum, and provided further with a perpendicular stud upon which is mounted a hood, arched arms, a horizontal beveled gear connected with the arms and meshing with the pinion beveled gear upon the horizontal shaft, and connections between the arched arms and the gate; the said drum encircled with ropes with ends reaching in opposite directions at right angles to the fence and gate, substantially as described.

In testimony whereof I have affixed my signature, in presence of two witnesses.

EUGENE W. VEST.

Witnesses:
ALONZO M. MURPHY,
W. R. SAMPSON.