

No. 633,549.

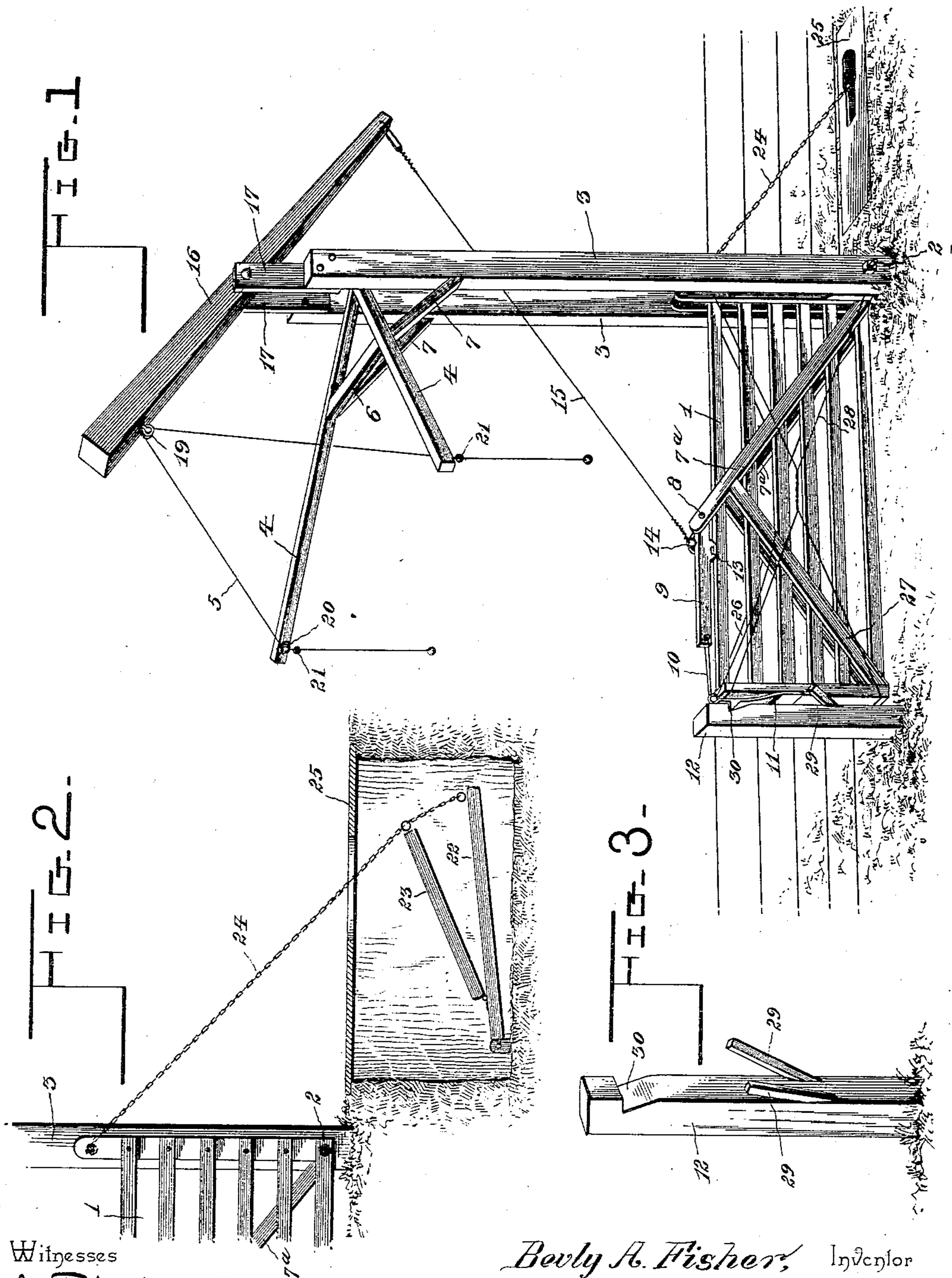
Patented Sept. 19, 1899.

B. A. FISHER.

GATE.

(Application filed Aug. 31, 1898.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

BEVLY ALLEN FISHER, OF HAMILTON, MONTANA.

## GATE.

SPECIFICATION forming part of Letters Patent No. 633,549, dated September 19, 1899.

Application filed August 31, 1898. Serial No. 689,951. (No model.)

*To all whom it may concern:*

Be it known that I, BEVLY ALLEN FISHER, a citizen of the United States, residing at Hamilton, in the county of Ravalli and State of Montana, have invented a new and useful Gate, of which the following is a specification.

The invention relates to improvements in gates.

The object of the present invention is to improve the construction of tilting gates and to provide a simple, inexpensive, and efficient one adapted to be readily opened and closed at a distance from it to avoid dismounting from a horse or leaving a vehicle.

A further object of the invention is to provide simple and effective means for counterbalancing the tilting gate, adapted to assist the rise of the gate to render the operation easy, and capable of cushioning the descent of the gate to avoid any shock incident to a rapid opening and closing movement.

The invention consists in the construction and novel combination and arrangement of parts, as hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a tilting gate constructed in accordance with this invention. Fig. 2 is a detail sectional view illustrating the arrangement of the counterbalancing-weights. Fig. 3 is a detail view of a portion of the latch-post, illustrating the arrangement of the inclined arms.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a tilting gate pivoted by a bolt 2 or other suitable fastening device at the bottom of its inner end between a pair of uprights 3 of a supporting-frame, and the said pivot-bolt 2 is preferably provided with an antifriction-sleeve of gas-pipe or other suitable material. The supporting-frame is provided near the upper ends of the uprights with arms 4, disposed substantially at right angles to each other and extending outward toward the center of the roadway in order to support the terminals of an operating-rope 5 in a convenient position near the center of the roadway, so that they may be readily grasped without necessitating a person driv-

ing close to one side of the road. The uprights 3, which are spaced apart to receive the gate, are suitably supported in the ground, and they are also braced at their upper ends by the inner terminals of the arms 4, which are crossed and secured to each of the uprights. The inner portions of the arms are connected by a horizontal bar 6 and are supported by inclined braces 7, extending from the uprights to the arms. By this construction a firm supporting-frame is provided, and the arms are securely braced against downward and inward movement. The gate, which may be constructed of any desired design, is preferably provided with inclined braces 7<sup>a</sup>, extending above the top of the gate and connected by a transverse fastening device 8, which forms a pivot for a bar 9, which extends along the top of the gate toward the free end thereof. The outer end of the bar 9 is connected by a wire 10 or other suitable flexible connection with a resilient latch 11, consisting of a shank secured to the free end of the gate and provided near its top with a catch adapted to engage a suitable recess or keeper of a latch-post 12 to lock the gate against upward movement. The latch is secured to the gate at the lower end of the shank, and the upper end thereof is adapted to be drawn toward the gate to release the same. The inner end or portion of the bar 9 is provided with a depending projection 13, located beyond the braces 7<sup>a</sup> and adapted to support the body portion of the bar above the top rail of the gate, and the said bar 9 is provided at the upper edge of its inner portion with an eye 14, to which is connected a wire 15; but a chain, rope, or any other flexible connection may be substituted for the wire.

The wire extends upward from the bar 9 through the space between the uprights to the rear end of a lever 16, fulcrumed on the supporting-frame preferably between vertical arms 17, which extend upward from the uprights. The arms 17 consist of short pieces secured to the inner faces of the uprights and arranged within the space between them, and they are spaced apart to receive the lever. The lever, which is fulcrumed in rear of its center, has its front portion weighted and provided with a suitable pulley 19, over which passes the operating-rope or connection 5, and

when the front portion of the lever is swung downward it draws rearward on the wire 15, causing the bar 9 to swing upward sufficiently to disengage the latch from the latch-post and  
 5 release the gate. The particular arrangement of the bar 9 is for the purpose of relieving the latch of strain when the gate is closed.

The pulley 19 forms a guide for the central portion of the operating-rope, which extends  
 10 from the lever to similar guides 20 at the outer ends of the arms 4. These guides may be constructed in any other suitable manner, and the ends of the operating-rope depend from the arms to provide handle portions and  
 15 are provided a short distance from their terminals with stops 21, arranged to engage the guides 20 to prevent the ends of the operating-rope from being drawn upward through the same. When either end of the operating-  
 20 rope is pulled, the counterbalancing-lever 16 is actuated and the gate is swung on its pivot and opened and closed. A short quick pull is all that is necessary to open or close the gate.

In order to assist the gate in opening and  
 25 cushion the gate in closing, a pair of weights 22 and 23 are employed, and these weights are connected with the rear end of the gate by a chain 24, preferably secured to the top of the gate between the upper extremities of the in-  
 30 ner or rear end bars by a transverse fastening device. When the gate is closed, the weights are arranged as illustrated in Fig. 2 of the accompanying drawings, and the lower or main weight 22 is located above the sup-  
 35 porting-surface at a slight inclination in order to give the gate a sufficient start in opening, and when the gate closes it cushions the same at the time when the lever 16 is least effective.

40 The weights 22 and 23, which are located beneath the surface in a suitable trench or pit, are connected with the links of the chain at different points, the heavier weight being attached to the lower end of the chain 24, and  
 45 the other weight 23, which is located above the weight 22, is connected with the chain at a point between the ends thereof and continues to act in assisting the upward move-  
 50 ment of the gate after the heavier weight has reached the bottom of the weight-compartment and becomes inoperative. The upper weight 23 assists in counterbalancing the closing movement of the gate before the  
 55 heavier weight becomes effective for this purpose, and by this construction the downward movement of the gate is checked without a sudden jar or strain, which might injure the structure. The chain 24 extends through an  
 60 opening of a platform or cover 25, which extends over the weight-compartment.

The weights may be arranged above the surface of the ground, as the weight-compartment is designed only for use in sections of the country subject to snow-storms and  
 65 freezing, which might render the weights inoperative.

In order to enable the gate to be readily un-

latched by hand, a rope or cord 26 or other suitable flexible connection is attached to the upper end of the latch and extends downward  
 70 at both sides of the gate, passing around an inclined brace 27, as clearly illustrated in Fig. 1 of the drawings. The rope or cord is adapted to be drawn downward to disengage the latch from the latch-post.

75 The inclined brace 27 extends upward from the front of the gate and is connected to the upper portion of the inclined brace 7<sup>a</sup>, and the gate is further supported by diagonally-disposed wires 28, connected with the corners  
 80 of the gate and twisted at the center, as shown.

The gate is guided in closing by means of a pair of upwardly-diverging arms 29, mounted on the latch-post, as clearly illustrated in Fig. 3 of the accompanying drawings, and extend-  
 85 ing laterally from the opposite corners of the post. These arms are adapted to guide the latch into engagement with the recess or keeper 30, and they support the gate against lateral movement when it is closed.

90 The invention has the following advantages: The gate, which is simple and comparatively inexpensive in construction, is partially counterbalanced by the weighted lever, which is located above it, and the operating-  
 95 rope or other flexible connection, which slides through the guides of the arm and the lever, is arranged in an exceedingly simple manner, and either end may be drawn downward to open and close the gate. The weights, which  
 100 may be located beneath the surface of the ground in order to protect them from the weather and prevent them from becoming frozen and inoperative, assist the opening of the gate and cushion the same in closing.

105 Changes in the form, proportion, and minor details of construction, such as varying the character of the flexible connections and the guides, may be resorted to without departing from the spirit or sacrificing any of the advan-  
 110 tages of this invention.

What is claimed is—

1. The combination of a supporting-frame, a tilting gate pivotally mounted on the sup-  
 115 porting-frame and provided with a latch, a weighted lever fulcrumed on the supporting-frame and located above the gate, the front portion of the lever being heavier than its rear portion and located in advance of the supporting-frame, a latch cord or rope ex-  
 120 tending from the latch to the rear end of the lever, and an operating-rope connected with the front or weighted end of the lever, substantially as described.

2. The combination of a supporting-frame  
 125 provided with oppositely-disposed arms, a tilting gate, a lever fulcrumed between its ends on the supporting-frame and disposed longitudinally of the gate, its front end being weighted and its rear end being connected  
 130 with the gate, guides mounted on the arms and on the weighted end of the lever, and a continuous operating-rope extending from the front end of the lever to the outer ends

of the arm and loosely arranged in the said guides, said rope being provided at its ends with stops arranged to prevent the rope from being drawn upward entirely through the guides of the arms, substantially as described.

3. The combination of a supporting-frame, a tilting gate having inclined braces extending above the gate and connected by a fastening device to form a pivot, a latch arranged at the front of the gate, a bar mounted on the said pivot and extending along the top of the gate and connected with the latch, and operating mechanism attached to the bar and adapted to operate the latch and tilt the gate, substantially as described.

4. The combination of a supporting-frame, a tilting gate provided with a latch, a horizontal bar pivoted at its inner end to the gate and extending along the top thereof, said bar being provided at its upper edge with an eye, and having a depending lug at its lower edge to bear against the gate, and operating mechanism connected with the eye of the bar, substantially as and for the purpose described.

5. The combination of a tilting gate, a pit arranged in rear of the gate and having a cover provided with an opening, a cable or chain extending rearward from the gate through the opening of the said cover into the pit and having its upper end attached to the back of the gate, a main weight hinged at one end within the pit and connected to the lower end of the chain or cable, and a supplemental hinged weight located above the main weight and connected with the cable or chain at a point between the ends thereof, substantially as described.

6. The combination of a supporting-frame, a tilting gate, separate weights connected with the back of the gate and adapted to facilitate the opening of the same and to cushion the closing of the gate, and a weighted lever fulcrumed on the supporting-frame at a point above the gate and connected with the same, substantially as described.

7. The combination of a tilting gate, the hinged weights 22 and 23, a chain extending

from the gate and having the weights attached to it at different points, a supporting-frame, a lever fulcrumed on the supporting-frame and located above the gate and having one end weighted and its other end connected with the said gate, and operating mechanism connected with the weighted end of the lever, substantially as described.

8. The combination with a tilting gate, of a post arranged at the front end of the gate and provided between its ends with inclined diverging arms extending upward from the post in the direction of the rear end of the gate to guide the same in closing, substantially as described.

9. The combination of the uprights spaced apart, a tilting gate pivoted between the uprights, the arms 4 arranged at an angle to each other and having their inner ends crossed and secured to each of the uprights, the bar 6 connecting the arms, inclined braces extending from the uprights and supporting the arms, a lever fulcrumed at the upper ends of the uprights and connected at one end with the gate, and an operating-rope supported by the arms and connected with the other end of the lever, substantially as described.

10. The combination of a supporting-frame, a tilting gate, a lever fulcrumed on the supporting-frame, located above the gate and having one end connected with the same, and a continuous operating cord or rope loosely connected at its center with the lever and having its end portions guided by the supporting-frame, said end portions being provided below the frame with stops, whereby either end may be drawn downward to oscillate the lever for opening the gate, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BEVLY ALLEN FISHER.

Witnesses:

A. F. HOBBS,

F. H. DRINKENBERG.