

No. 671,641.

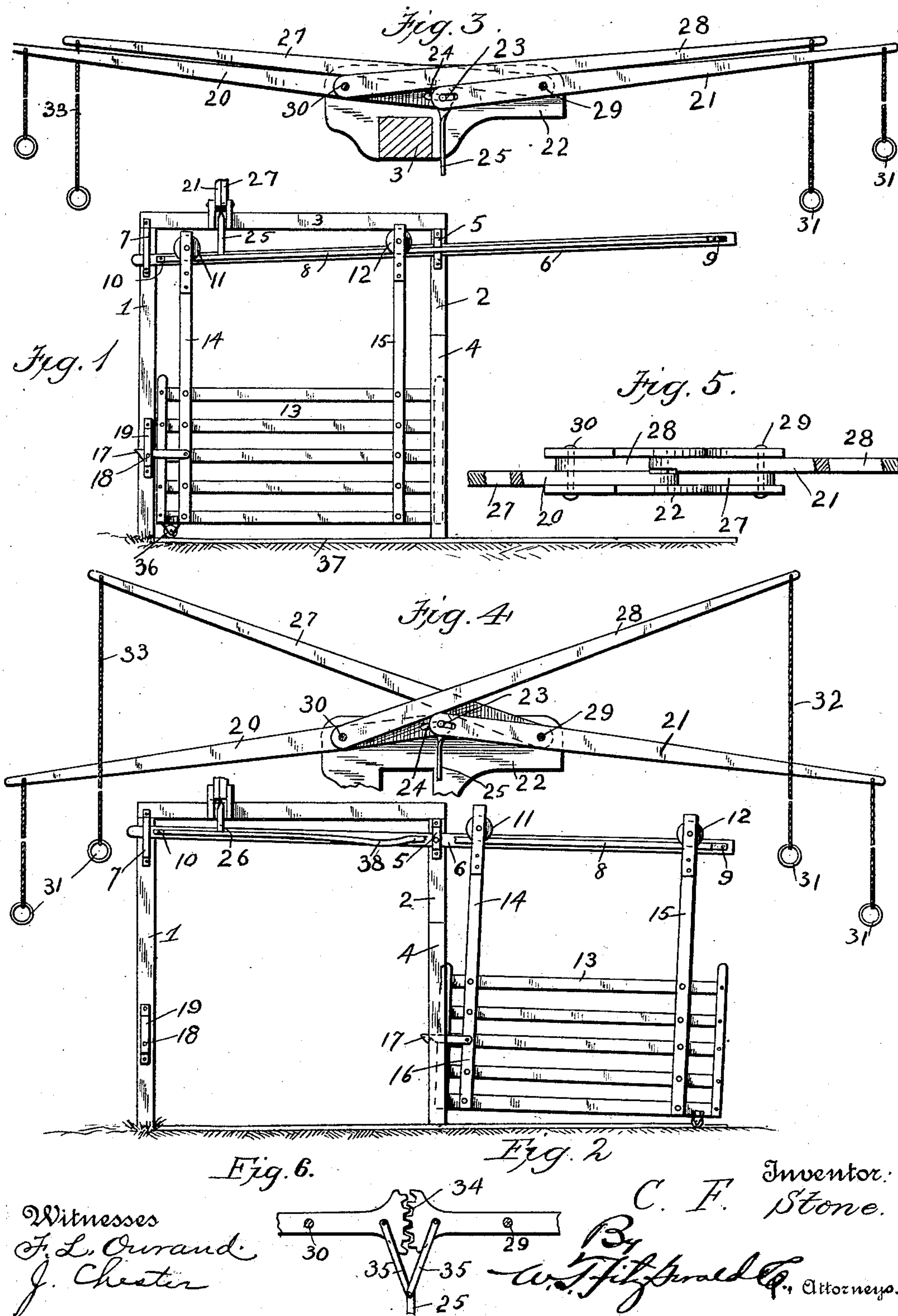
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C. F. STONE.

GATE.

(Application filed Aug. 14, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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GATE.

SPECIFICATION forming part of Letters Patent No. 671,641, dated April 9, 1901.

Application filed August 14, 1900. Serial No. 26,837. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. STONE, a citizen of the United States, residing at Lebanon, in the county of Laclede and State of Missouri, have invented certain new and useful Improvements in Gates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in gates, and more particularly to that variety thereof termed a "sliding" gate; and it consists of certain novel features of combination and construction of parts, as will be hereinafter fully described and claimed.

One object of my invention is to enable the operator to utilize gravity in opening and closing the gate, thereby reducing the labor involved in the operation to a minimum.

A further object is to provide means whereby the simple operation of movement of the lever will open or close the gate, as the case may be.

The preferred embodiment of my invention will be fully set forth in the following specification and illustrated in the accompanying drawings, of which—

Figure 1 is a side elevation showing my improved gate complete ready for use in a closed position. Fig. 2 is a similar view thereof, showing the gate in an open position. Fig. 3 is a detail view showing the operating or controlling levers in the position occupied thereby when the gate is closed. Fig. 4 is a similar view showing the position occupied by the controlling-levers when the gate is open. Fig. 5 is a bottom plan view showing the relative position of the controlling-levers. Fig. 6 shows a modified construction for operatively connecting the inner ends of two of the controlling-levers employed to operate my gate.

In order to refer conveniently to the several features of my invention and their cooperating accessories, numerals will be employed, of which 1 and 2 indicate uprights or posts properly seated in the ground or secured in any preferred way and connected at their upper ends by the cross-beam 3, while 4 designates an auxiliary or guiding post, be-

tween which and the post 2 the gate is adapted to move, the object of the auxiliary post being to hold the post against swinging outward.

Upon the post 4 I secure the bracket 5, which may consist of a loop of strap-iron or the like bent outward from the post and adapted to receive between it and the post the balanced lever or track 6, one end of the lever being adapted to be confined by the bracket 7, secured to the post 1, while the other end of the track or lever is left free for a purpose hereinafter set forth.

Upon the outer track 6 I secure the track proper, 8, one end, 9, of which is secured to the free end of the track by suitable bolts, while the other end, 10, is similarly secured to the opposite ends of the track near a point where said track is confined by the bracket 7. The track proper is bent outward at each end, so that the track will lie parallel with the track 6, though slightly separated therefrom, the separation being of sufficient extent to cause the track to miss or pass by the bracket 5, and thus provide a continuous track or way upon which the supporting-rollers or grooved wheels or pulleys 11 and 12 freely reciprocate during the opening and closing of the gate.

The gate proper, 13, may be constructed in any preferred way and provided with the vertically-extending posts 14 and 15, the former having rotatably mounted thereon in any suitable way the grooved wheel 11, while the latter is provided with the grooved wheel 12. By this arrangement the gate may be caused to travel freely from one end to the other of the track 8, as will be obvious by reference to Figs. 1 and 2.

Inasmuch as the gate 13 passes between the post 2 and the auxiliary post 4 it will be prevented from casually swinging outward, as by the wind or cattle rubbing against the same, while the inner end 16 of the gate is provided with the latch 17 of the usual or any preferred construction designed to cooperate with the keeper 18, which latter consists of a rod extending from the bracket 19 into the post 1, thereby insuring that the free end of the latch 17 will pass between the bracket 19 and the post, thereby holding this end of the gate from being pressed outward.

In order to enable the gate to be readily opened or closed by a simple operation of a lever extending to a convenient point where it may be grasped by the operator while in a vehicle or standing upon the ground, I provide the system of levers illustrated in Figs. 3, 4, and 5, comprising the main lever-sections 20 and 21, each so pivoted in the outer ends of the bracket 22 that the inner ends of said levers will extend inwardly and overlap each other and be operatively connected together by the rivet or bolt 23, it being understood that suitable slots 24 are provided in one or both of said ends adapted to compensate for the upward and downward movement of said ends. Between the levers thus pivotally secured together I dispose the upper end of the link 25, the lower end 26 of which extends downward into pivotal engagement with a contiguous part of the track 6, and it is obvious that a downward pull upon the outer ends of either of the levers 20 or 21 will elevate the inner ends thereof and cause the link to draw upward upon the track 6, while a reverse movement of said levers will cause said end of the track to be depressed or lowered. Designed to cooperate with the levers 20 and 21 are the auxiliary levers 27 and 28, the former being pivotally connected to the outer end of the bracket 22 by the same bolt 29 which pivotally secures the lever 21 in place, while the lever 28 is pivotally secured by the same bolt 30 which secures the lever 20 to said bracket.

By reference to Fig. 3 it will be observed that the levers 27 and 20 and the levers 28 and 21 are lying snugly in contact with each other, this being the position of said levers when the gate is in a closed position. When it is desired to open the gate, a downward pull upon the free end of the lever 20 or 21 by means of the operating-handle 31 will result in elevating the link 25 and also the end of the track 6, to which said link is attached. The elevation of the inner end of the lever 21 will also cause the simultaneous elevation of the inner end of the lever 20 and a corresponding elevation of the outer ends of the levers 27 and 28, inasmuch as the inner end of each of the levers will be brought to bear upon the lower side of the upper levers near their pivot-point, as clearly shown in Fig. 4. When the levers, therefore, are in that position shown in Fig. 4 the track 6 will be elevated at that end thereof to which the link 26 is connected, the result being that an inclined plane is presented by the track 8, which will cause the gate 13, by its own weight, to run downward upon said track to the outer free end thereof until the wheel 12 strikes the inwardly-directed end of said track, and thereby stops further movement of the gate when thus disposed in an open position.

If preferred, the slots 24 may be dispensed with or replaced by the segmental toothed ends or heads 34, as shown in Fig. 6, in which

case the link 25 should be pivoted to an auxiliary link 35, extending from each of the heads 34 downward to the link proper, 25, as will be readily understood by reference to said view.

After the person has passed through the gate and it is desired to close the same a grasp upon one of the handles 32 or 33 will cause the lower edge thereof to engage the inner end of the lever immediately beneath it, thereby forcing the link 25 downward and depressing that end of the track, the result being that the gate will readily roll down said inclined plane thus presented into a closed position. It will be understood that the bracket 22 may be secured to the cross-beam 3 in any preferred way at a point thereon over the point where it may be desirable to attach the link to the track 6.

My improved gate will be found very desirable and efficient, and the parts thereof may be very cheaply and expeditiously manufactured and disposed in their respective operative positions by almost any person, whether skilled or unskilled in the work.

In Fig. 1 I have shown that the end of the gate may be supported by the wheel 36, which may be connected to the gate-frame in any preferred way and is designed to run upon the track 37, located across the roadway and in the path traveled by the gate. The object of the supporting-wheel 36 is to enable the gate to be readily opened by a person on horseback without the necessity of dismounting or pulling the levers, as all that is necessary to be done is to grasp the gate and force it open, when he can pass through and release the gate, when it will move into a closed position.

If deemed desirable, a suitable handle may be attached to the frame to enable the gate to be more readily grasped by the rider, thereby enabling him to lift slightly upon the gate, and thus readily release the latch.

In Fig. 4 I have shown that the track may be slightly curved, as indicated by the numeral 38, the object being to dispose the wheel 12 on the same level with the wheel 11 in case the standards 14 and 15 are of the same length. I desire, therefore, to reserve the right to make the track with a curved bar or keeper 38 or extend it straight across, as shown in Fig. 1. If the track is left straight, then it may be desirable to make the standard 15 a little longer than the standard 14, but if the curved bar or keeper 38 is provided said standard should be made of the same length, thereby insuring that the gate will be held in a truly horizontal position.

It will be understood that the several parts of my invention may be made of any preferred material deemed most suitable for the purpose and that the form of gate proper may be varied to suit all of the different situations where a gate may be desirable, and while I have described the preferred construction to be adopted in producing the several features

of my improved gate it will be understood that I desire to comprehend all substantial equivalents and substitutes which may be considered to fall fairly within the scope of my invention.

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

1. The herein-described gate comprising
10 suitable supporting-posts having the cross-bar 3; a track pivotally secured to said posts; controlling-levers mounted upon a bracket attached to said cross-bar and operatively connected to said track, said levers comprising
15 the lower levers 20 and 21 each pivoted to the outer end of said bracket and having slotted inner ends adapted to receive a bolt 23 and a pair of auxiliary levers pivoted with said lower levers to said bracket and each
20 resting on the inner end of one of the lower levers whereby a downward pull upon one of the lower levers will open the gate and a pull upon one of the upper levers will close the same all combined substantially in the manner specified and for the purpose set forth.

2. The herein-described gate comprising suitable supporting-posts having the top beam 3 adapted to hold the upper ends of said posts together; a track pivoted to said posts; controlling-levers arranged in pairs and mounted
30 upon a suitable bracket attached to said beam and operatively connected to each other and to said track and with each other whereby a downward pull upon one lever will move the opposite lever downward, in combination
35 with a pair of upper levers each pivoted to the bracket at the same pivot-point of the lower levers whereby when said lower levers are turned downward the auxiliary levers will be moved upward and the gate opened, the
40 gate being closed by a pull upon one of the auxiliary levers, all combined substantially as specified and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES F. STONE.

Witnesses:

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