

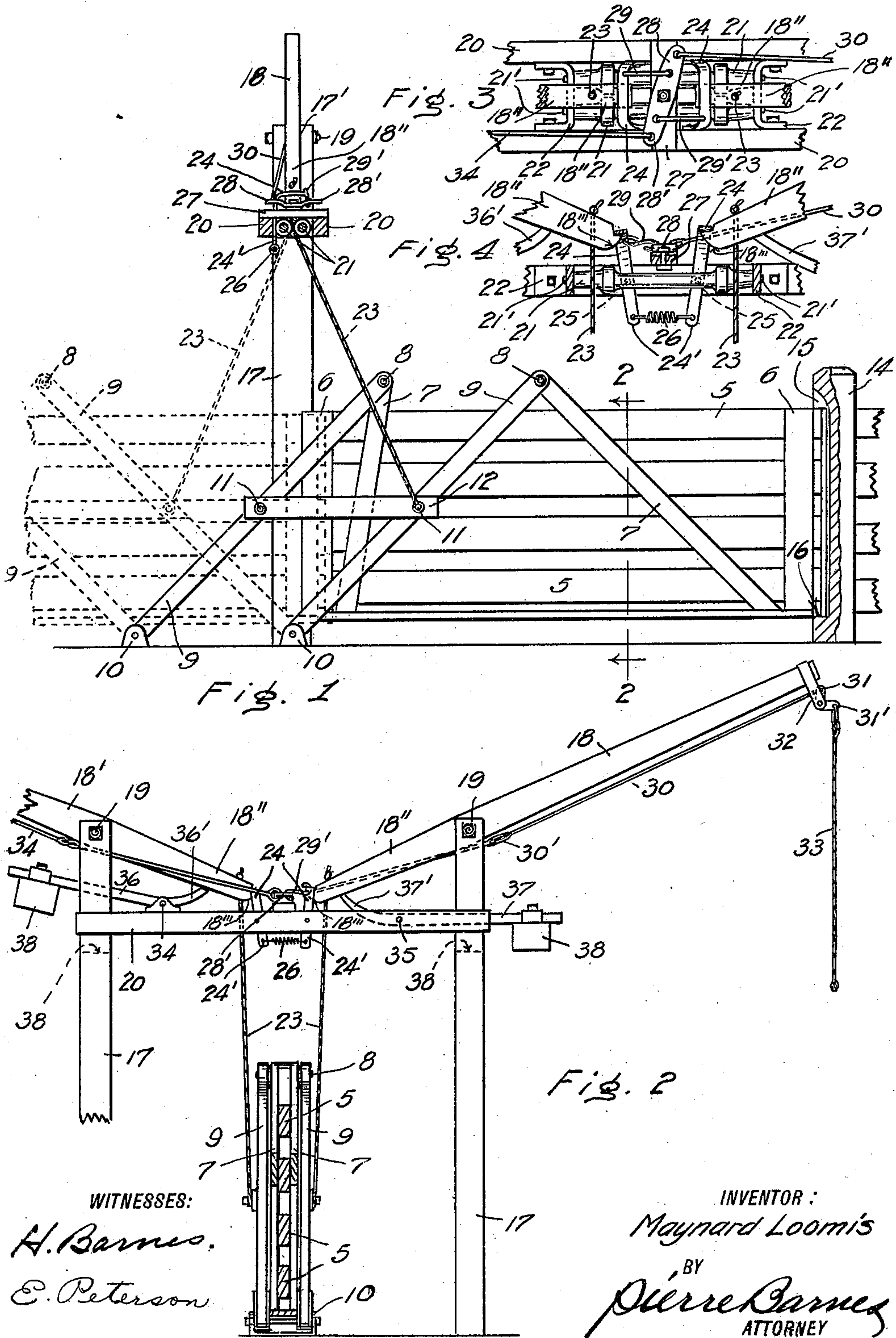
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FARM GATE.

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983,733.

Patented Feb. 7, 1911.



UNITED STATES PATENT OFFICE.

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FARM-GATE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MAYNARD LOOMIS, a citizen of the United States, residing at Burlington, in the county of Skagit and State of Washington, have invented certain new and useful Improvements in Farm-Gates, of which the following is a specification.

This invention relates to farm gates of the class which is illustrated and described in United States Patent No. 860,926 issued to me July 23, 1907.

The object of the invention is to improve the efficiency of farm gates and to render the same easier to operate and more generally useful.

The invention comprises a gate arranged to be opened or closed by swinging in a vertical plane through the instrumentality of a lever, or levers, connected with the gate by lines, together with means for effecting the movements of the gate without shock.

To these ends the invention further consists in the construction and combination of parts, substantially as hereinafter described and claimed.

Of the accompanying drawings, Figure 1 represents a view partly in front elevation and partly in vertical section of an embodiment of my invention. Fig. 2 is a sectional view taken through line 2—2 of Fig. 1. Fig. 3 is a fragmentary plan view of lever locking devices employed in carrying out the invention. Fig. 4 is a longitudinal sectional view taken through Fig. 3.

As in the gate illustrated in the referred to patent, the gate proper is comprised of a rigid frame having horizontal rails 5, vertical members 6, and diagonal braces 7 which extend above the upper of said rails. The braces are likewise pivotally connected from their upper ends by pins 8 to the upper ends of pairs of parallel gate-carriers 9 which are of equal lengths and whose lower ends are pivotally connected to supporting chairs 10. These chairs are positioned to one side of the gate opening and consequently the carriers will be in inclined positions when the gate is in either its closed or open conditions, as respectively shown by full and dotted lines in Fig. 1. Pivotally connected, as by bolts 11, with the carriers at the opposite sides of the gate are horizontally arranged bars 12.

To one side of the gate opening is a fence-post 14 which is desirably recessed, as at 15, to provide a housing for the adjacent end

of the gate when it is closed and affording at the bottom of the recess a shelf 16 whereupon the bottom of the gate is supported when in its closed condition. At the other side of the gate opening is a pair of spaced posts 17 which are slotted at their upper ends, as at 17', to accommodate oppositely arranged levers 18 and 18' between the respective posts and to which the levers are fulcrumed by bolts 19. At a height above the top of the gate sufficient to give clearance for the passage of the gate when it is swung, is rigidly secured to the opposite faces of the said posts a pair of horizontally arranged beams 20. In the space between the beams is a pair of longitudinally arranged rollers 21 having at their ends axles 21' which are journaled in attachments 22 of the beams. Said rollers serve as guides for hoisting lines 23 which make connection between the inner arms 18'' of the levers and the gate, and, desirably, to one of the bolts 11 thereof.

A pair of swinging elements 24 of a substantially inverted U-shape are fulcrumed at 25 to the inner sides of the beams 20 and serve to engage over the ends of the lever-arms 18'' when the latter are sufficiently depressed. At the extremities of the arms 18'' they are cut away to afford a sloping face on each 18''''. To effect such locking actions of the elements 24 an extensible spring 26 is employed to connect the lower ends of arms 24' of said elements for yieldingly drawing the same toward each other with a consequent separation of the upper portions into engageable positions.

Secured to the beams 20 and at about the midlength of the same is a superposed support 27 for a lever which is arranged for horizontal vibratory movements. One of the arms, 28, of this lever, as shown in Fig. 3, is connected by a link 29 with one of the elements 24 while the other arm 28' is connected by a link 29' with the other of said elements 24. To the lever arm 28 there is also connected a drag-link 30 which extends to the end of the lever 18 most remote from the element which is connected by the link 29 with the lever arm 28. Said drag-link is advantageously extended through the slot 17' of the post which accommodates the lever 18 and may be comprised of two parts which are coupled at 30'. The outer end of this drag-link is connected to the upstanding arm 31 of a bell-crank lever which is

fulcrumed to a strap 32 secured to the outer end of the lever 18. The other arm 31' of said bell-crank lever is directed outwardly and to which is secured a pendent rope 33 which furnishes the medium for operating the gate, as will be hereinafter explained. The lever arm 28' is, in like manner, connected by a drag-link 34 with a bell-crank lever (not illustrated in the drawings) carried at the remote end of the arm 18'. This last bell-crank lever is also similarly provided with a pendent rope for operating the gate from that side of the latter.

Fulcrumed to pins 34 and 35 which are supported by the beams 20 are levers 36 and 37 having their outer arms extending through the slots of the respective posts to receive weights 38 which serve to normally raise the other arms 36' and 37' into positions to be encountered by the inner arms of the levers 18 and 18' in the ultimate movements thereof in the closing or opening of the gate so as to act counter to the weight of the gate and overcome or at least reduce the momentum thereof so as to obviate the slamming of the same. The pivots 34 and 35 of said levers 36 and 37 are positioned at different elevations in order that said levers will engage the respective levers 18' and 18 to successively bring the respective weights 38 into action to assist in the opening and retard the violent closing of the gate. The levers 36 and 37 are, however, constrained by the interference to their movements by the bottom 38 of the post slots, see Fig. 1, so that the power of the weights 39 are applied to the levers 18 and 18' in the beginning and in the ending of each opening and closing movement of the gate and whereby the opening of the gate is facilitated as well as preventing the slamming of the gate, as aforesaid.

The operation of the gate may be described as follows: To open the gate, that is to say, to cause it to be swung by the carriers 9 from the position as shown by full lines in Fig. 1, to that indicated by dotted lines in this view; or to close the gate by a reverse movement, the rope 33 attached to one of the levers 18 or 18', as for example the rope of lever 18, is pulled downwardly. With such action and through the office of the bell-crank lever 31—31' thereof and the attached drag-link 30 the lever 28 is actuated to cause the movement of the links 29 and 29' such that the elements 24 will be withdrawn from their engagement with the lever arms 18'' so that a continued pull upon the line, and assisted by the power of the counter-weighted levers 36 and 37 the lever arms 18'' will be raised to exert a pull upon the lines 23. Such a pull upon these lines will draw the gate upwardly and toward the plane of posts 17, in the path of

an arc as constrained by carriers 9 and when the gate has reached or nearly reached the summit of its travel by releasing the rope 33, the momentum of the gate and associated parts will serve to cause the gate to travel beyond such plane and the remainder of the gate's travel will be accomplished by gravity. When near the end of its travel the lever arms 18'' will be drawn downwardly by the gate supporting lines 23 and successively encountering the counter-weighted levers 36 and 37 will effect the gradual stoppage of the gate's motion.

Near the termination of the downward movement of the lever arms 18'' the sloping faces 18''' will strike the elements 24 to swing them toward each other against the power of the spring 26 which, however, will assert itself to effect the engagement of the elements with said lever arms at the conclusion of their downward motion to lock the levers 18 and 18'. When the levers 18 and 18' are thus locked, the unbalanced power of the longer arms thereof as well as the power of the counterweighted levers 36 and 37 are rendered inoperative and when the gate is thus uninfluenced its weight will afford protection against its being raised by dogs, pigs, etc., from any lifting force which they are able to apply thereupon.

Having described, my invention, what I claim, is—

1. The combination with a gate, the carriers therefor, the gate-controlling levers, connecting lines between each lever and the gate, and a post for supporting the fulcrums of each of said levers, of beams connecting said posts, a pair of tiltable elements connected with the beams and arranged to engage said levers when the gate is in its closed condition, a spring tending to effect said locking engagement of said elements, and dual means which may be selectively utilized to disengage said elements from the levers and then operate the latter to effect the opening of the gate.

2. The combination with a gate, the carriers therefor, the gate controlling levers, connecting lines between each lever and the gate, supplementary means to assist said levers in the opening or closing of the gate as well as acting to retard the ultimate movements of the gate in closing or opening, and a post for supporting the fulcrums of each of said levers, of beams connecting said posts, a pair of tiltable elements connected with the beams and arranged to connect said levers when the gate is in its closed condition, a spring tending to effect said locking engagement of said elements, and dual means which may be selectively utilized to disengage said elements from the levers and then operate the latter to effect the opening of the gate.

3. The combination with a gate, the car-

riers therefor, the gate-controlling levers, connecting lines between each lever and the gate, supplementary means to assist said levers in the opening or closing of the gate, as well as acting to retard the ultimate movements of the gate in closing or opening, and a post for supporting the fulcrums of each of said levers, of beams connecting said posts, rollers carried by said beams for guiding the lines connecting the levers with the gate, a pair of tiltable elements connected with the beams and arranged to engage said levers when the gate is in its closed condition, a spring tending to effect said locking engagement of said elements, and dual means which may be selectively utilized to disengage said elements from the

levers and then operate the latter to effect the opening of the gate.

4. In a gate of the class described, a pair of manually operable levers, lines connected with said levers and with the gate, a pair of tiltable elements and arranged to engage said levers when the gate is in closed position, and means which may be utilized to disengage said elements from the levers and then operate the latter to effect the opening of the gate.

Signed at Seattle, Washington, this 18th day of November, 1909.

MAYNARD LOOMIS.

Witnesses:

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E. PETERSON.