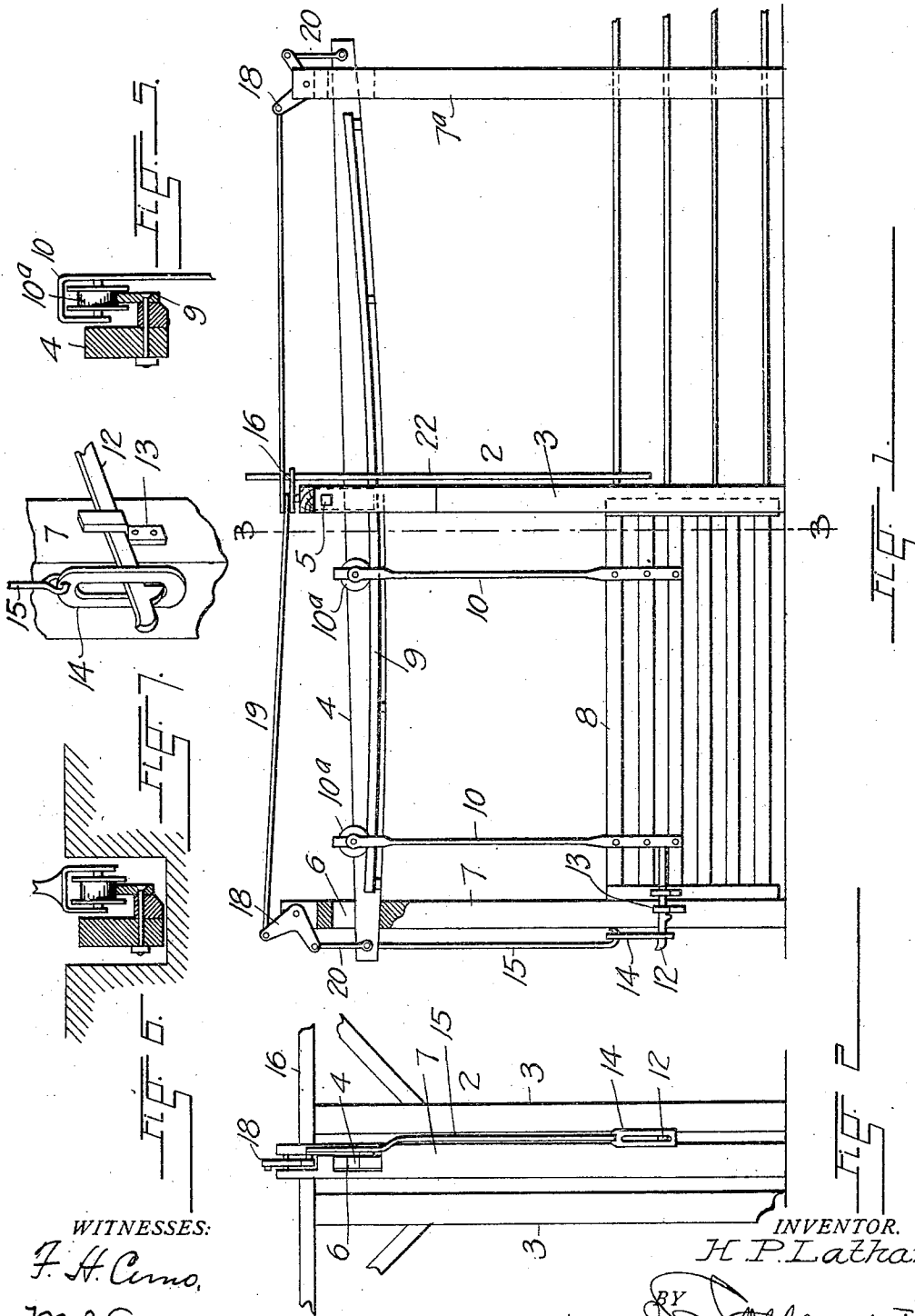


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GATE AND DOOR.
APPLICATION FILED FEB. 23, 1909.

935,374.

Patented Sept. 28, 1909.
2 SHEETS—SHEET 1.



WITNESSES:
F. H. Corno,
M. L. Geary.

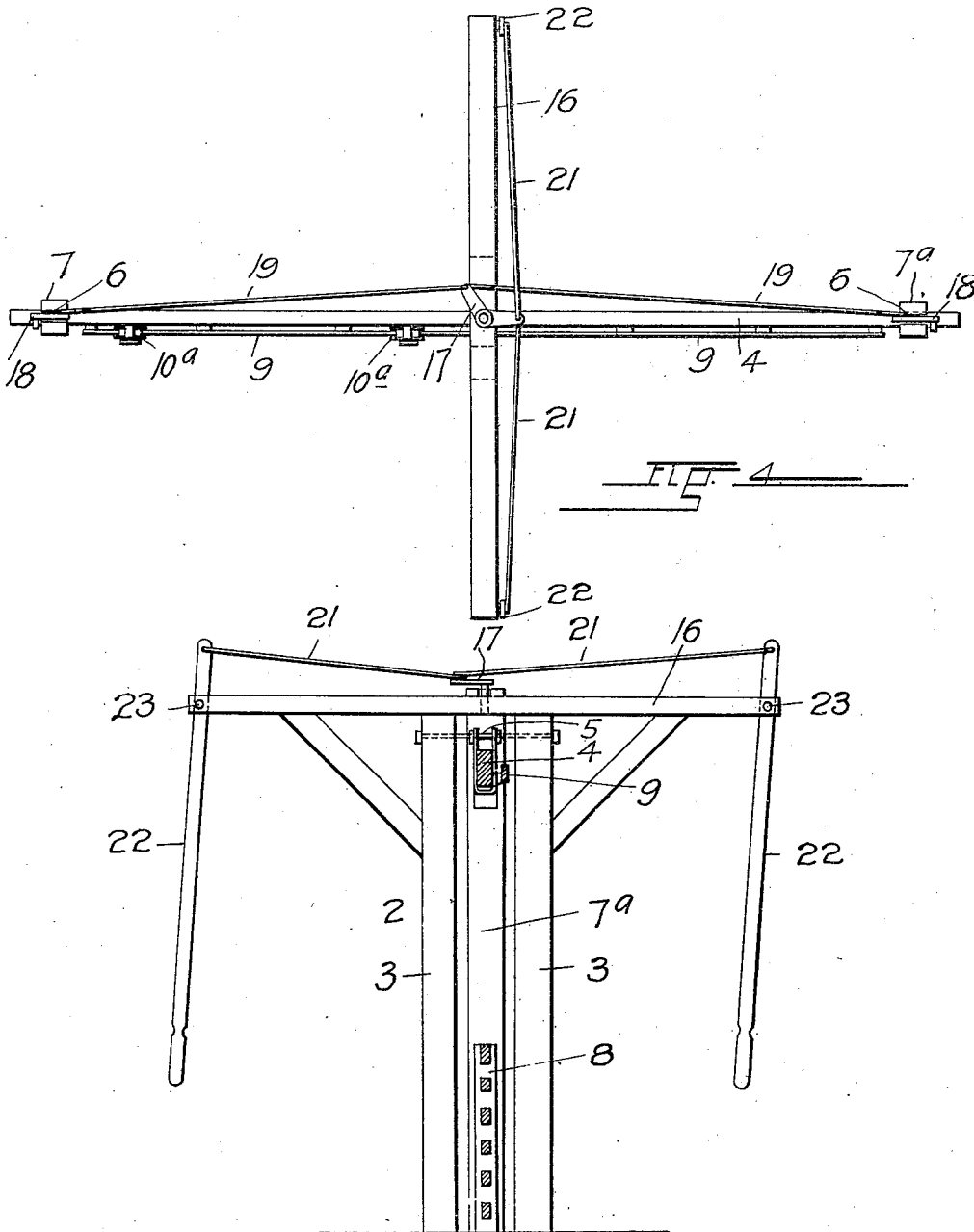
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UNITED STATES PATENT OFFICE.

HIRAM P. LATHAM, OF DENVER, COLORADO.

GATE AND DOOR.

935,374.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed February 23, 1909. Serial No. 479,384.

To all whom it may concern:

Be it known that I, HIRAM P. LATHAM, a citizen of the United States of America, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Gates and Doors, of which the following is a specification.

This invention relates to certain new and useful improvements in gates and doors and more especially in the class of barriers which are designed to open a passage-way by a rectilinear sliding movement in the same plane in which they extended while in the closing position.

The invention is particularly adapted for use on farm and field inclosures and to this end, includes means whereby the gate may be moved in either direction from distant points so that a rider or driver may open and close the same without dismounting.

The object of my invention resides in the provision of a gate capable of moving in either direction with little expenditure of energy on the part of the operator and which combines simplicity of construction with great practicability in use.

An embodiment of my invention is illustrated in the accompanying drawings, in the various views of which like parts are similarly designated and in which—

Figure 1, represents an elevation of my improved gate in operative position, Fig. 2, an end view thereof, Fig. 3, a section taken along the line 3—3— Fig. 1, Fig. 4, a plan view of the structure shown in Fig. 1, Fig. 5, an enlarged transverse section through the pivoted beam and rail included in the construction, Fig. 6, a similar view showing the method of applying the same below the gate or door and Fig. 7, a perspective view of the means whereby the gate is latched and unlatched.

Referring to the drawings by numerical reference characters, let the numeral 2 indicate a stationary, upright support which, in the construction shown, consists of two posts 3 and 3 which are fixed firmly in an upright position, in spaced relation to each other. A beam 4 is fulcrumed between the posts, near their upper ends, by means of a pin or bolt 5 and its extreme portions project through slots 6 in uprights 7 and 7^a which are fixedly disposed equidistantly from the support 2, at opposite sides thereof. The uprights 7 and 7^a serve as abutments for a gate 8 which has

a rectilinear movement in between the posts 3 and the slots 6, guide the beam in its oscillatory movement about its fulcrum and furthermore determine the extent of the downward motion of its respective ends.

Fixedly secured upon the beam 4 in spaced relation to one of its sides, is a rail 9 the upper edge or tread of which forms an inverted arc whose central radius passes through the fulcrum of the beam. The gate 8 is suspended from the rail 9 by means of hangers 10, provided at their upper ends with anti-friction wheels 10^a which are supported upon the tread. The gate 8 is furthermore provided with a pivotally secured latch 12 which, normally, is seated in a catch 13 upon the upright 7 for the purpose of preventing accidental displacement of the gate and whose outer, upwardly curved extremity projects through a vertically slotted link 14 which is suspended from the foremost end of the beam 4 by means of a rod 15.

The beam 4, shown in Fig. 1 of the drawings, is normally inclined from the horizontal, downwardly toward the front end of the gate, (*i. e.*, the end foremost in relation to the direction of its travel while being closed), in which position the extreme point of the tread of the rail at its foremost end, is in horizontal alinement with or below the central point thereof and the gate 8 is, in consequence, held in the closing position in engagement with the adjacent upright 7, under the influence of its gravitative tendency and independent of the latch 12, which, it will be understood, serves merely to prevent its accidental displacement.

To open the door, the beam 4 is moved about its fulcrum so as to reverse the direction of its inclination, whereby the extreme point of the tread at the rearmost end of the rail, is brought below the central point thereof with the result that the gate impelled rearwardly by its gravity, moves along the oblique rail until arrested by engagement with the rearmost upright 7^a. To subsequently close the gate, the beam is again moved about its fulcrum in opposite direction until it has resumed its original position. Prior to the gate being opened, the upwardly moving end of the beam 4 will through instrumentality of the link 14, cause the latch 12 to be lifted from its seat and inasmuch as the said end is returned to its lowermost position before the gate has reached the end of its forward travel, the

link 14 will be in position to again receive the extremity of the latch when the gate engages the upright 7.

The operation of moving the beam about its fulcrum for the purpose of reversing the direction of inclination of the rail, may be accomplished by any suitable contrivance adapted to alternately depress the opposite ends of the beam, preference being given to the apparatus shown in the drawings whereby the gate may be moved from distant points at opposite sides thereof. The apparatus above referred to, includes a beam 16 which being fixedly supported upon the posts 3, extends horizontally at opposite sides thereof, transversely in relation to the direction of travel of the gate. A bell-crank lever 17 is mounted upon the beam 16, above the support 5; to move about a vertical axis, and one of the arms of this lever connects by means of rods 19, with arms of similar levers 18 which are mounted to move in vertical planes within slots cut in the uppermost portions of the two uprights 7, 7^a. The opposite arms of the levers 18 connect by means of links 20, with the respective extremities of the beam 4 and the opposite arm of the lever 17, is connected by means of rods 21, with the upper extremities of upright levers 22 which are fulcrumed at 23 upon the opposite ends of the transverse beam 16. By operating one or the other of these levers, the bell-crank 17, is moved about its fulcrum, which movement is, through instrumentality of the levers 18, the rods 19 and the links 20, transposed into a movement of the beam 4 about its pivotal axis, it being understood that the connections between the various rods and levers are sufficiently free to compensate for the movement of the levers in different planes. It will thus be observed that the gate 3 may be opened from either side by manipulation of one of the levers 22, to be subsequently closed by the use of the lever at the opposite side or, if so desired, by means of the same lever by which it was opened.

While I have shown my invention in the best and simplest form now known to me, I

wish it understood that changes in the form and arrangement of the various parts may be resorted to without departing from the spirit of the invention. For example, the rail may be disposed below instead of above the gate, as is indicated in Fig. 6, of the drawings, a form especially adapted for use on sliding doors in dwellings or other buildings, or two rails may be secured at opposite sides of the beam, in case the gate or door is unusually heavy.

What I claim and desire to secure by Letters Patent is:—

1. The combination with a stationary support, of uprights at opposite sides thereof, a normally inclined element centrally fulcrumed thereon and including an arcuate rail, a gate movably suspended from said rail, a bell-crank lever fulcrumed upon said support, levers fulcrumed upon said uprights and operatively connected with an arm of said bell-crank and manual operating devices operatively connected with the other arm of the bell-crank.

2. The combination with an upright support, of a normally inclined element fulcrumed thereon and including a rail, a gate movably suspended from said rail, a post arranged to engage the gate when the latter is in its normal position, a latch seat on said post, a latch pivoted on the gate and having a curved extremity whereby it is automatically raised into said seat by abutment therewith, means for reversing the direction of inclination of said element by moving it about its fulcrum, and a device suspended from an end of said element, loosely connected with said latch whereby the latter is disengaged from its seat when said end moves upwardly and disengaged from said device when the door moves away from said post.

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

HIRAM P. LATHAM.

Witnesses:

G. J. ROLLANDET.
M. L. GEARY.