(No Model.) 2 Sheets—Sheet 1.

W. H. CLAY.

GATE.

No. 603,258. Patented May 3, 1898.

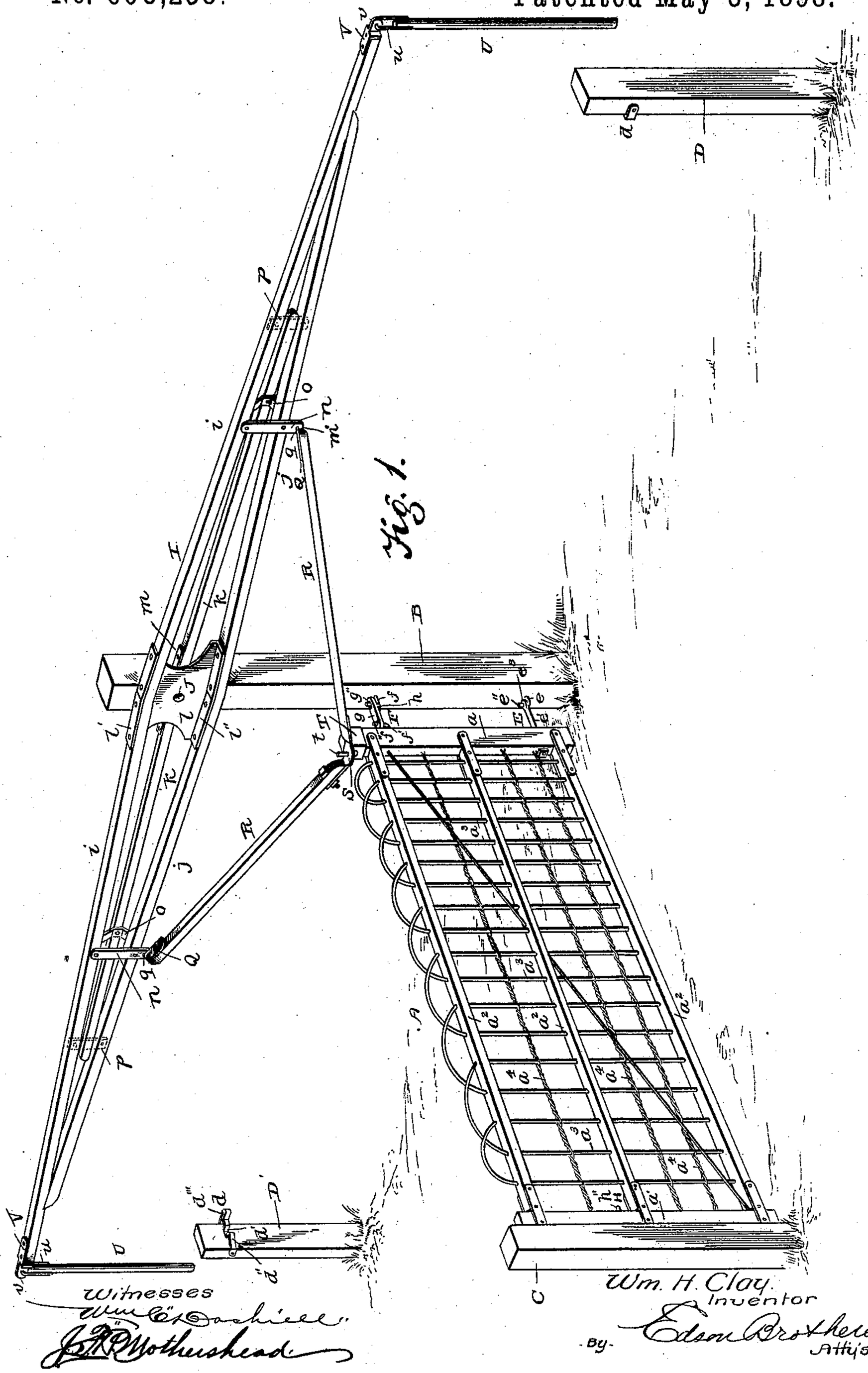

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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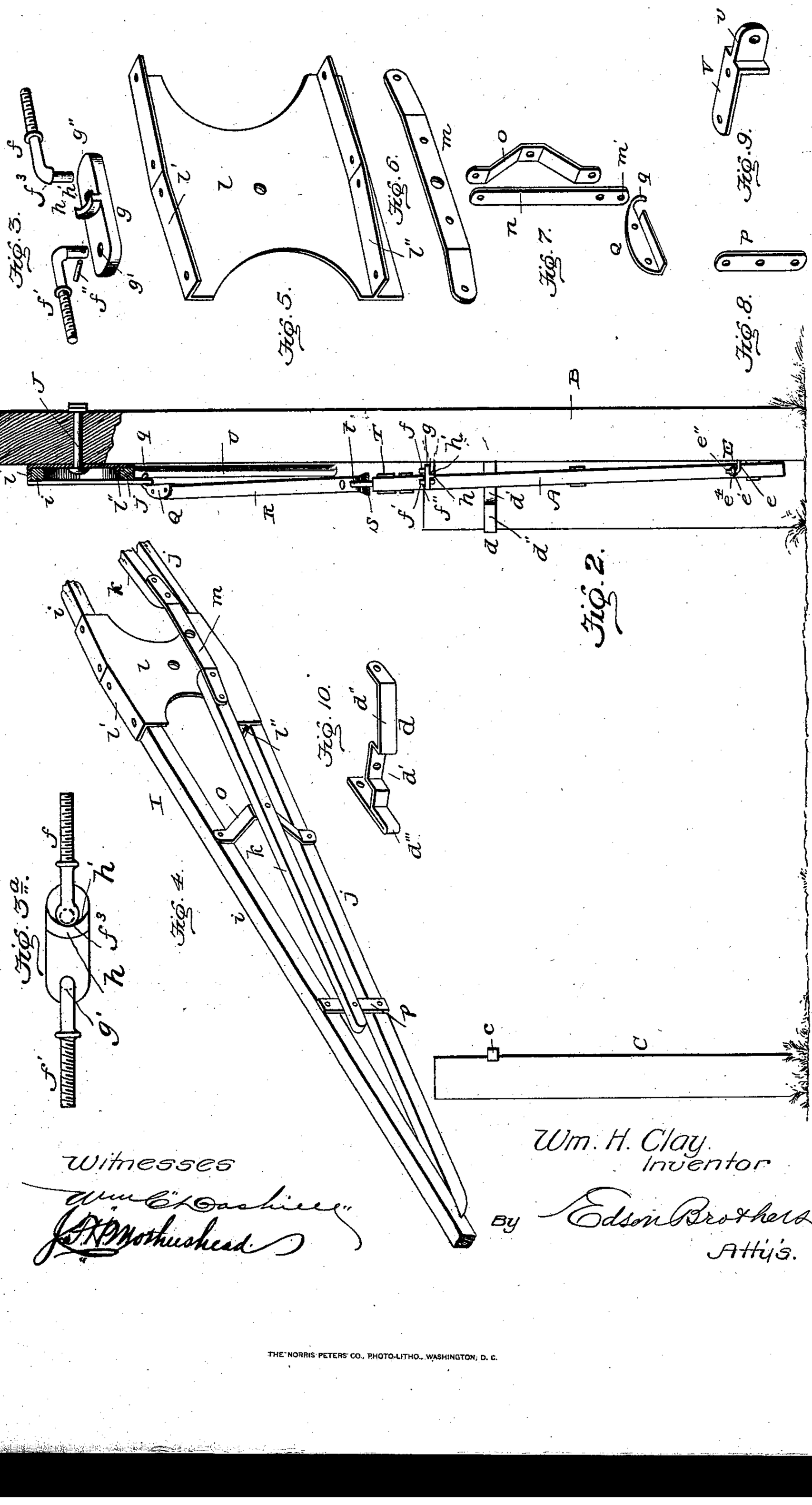

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UNITED STATES PATENT OFFICE.

WILLIAM H. CLAY, OF ELIZABETH, KENTUCKY.

GATE.

SPECIFICATION forming part of Letters Patent No. 603,258, dated May 3, 1898.

Application filed June 17, 1895. Renewed October 28, 1897. Serial No. 656,706. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. CLAY, a citizen of the United States, residing at Elizabeth, in the county of Bourbon and State of Kentucky, 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 improvements in gates of that class known in the art as "hand-operated swinging gates," in which class of devices the gate is swung to its open or closed position by a person seated in a vehicle or riding on horseback, suitable pull-bars or handles being arranged on both sides of the gate for convenience of the rider to open the gate and to close the same after having passed through the gate-opening.

The invention is more particularly designed as an improvement on the gate shown in my prior patent, No. 426,243, dated April 22, 1890; and the object of the present improvements is to improve the means for swinging the gate, so as to make the gate open and close more easily and to latch itself with certainty when it arrives opposite to the latch-post or either of the road-posts.

My invention relates to the appliances for hanging the gate, which are so constructed and are so combined with the walking-beam that when the gate is to be opened or closed it will be tilted in a vertical direction to cause the latch to be released from the keeper on the latch or the road post, and when the gate is being turned or swung on its pivots the gate is kept off its center or so that the rear stile of the gate is slightly out of plumb, whereby the gate is caused to turn easily and to close and latch itself with certainty.

To enable others to understand my invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of my improved gate, showing the latter in its closed position. Fig. 2 is an elevation with the gate opened and showing the position of the rear stile of the gate with relation to the hinge-post. Fig. 3 is a detail perspective view of the link-piece and angular bolts forming the top hinge of the gate. Fig. 3^a is an enlarged inverted or bottom plan view of the link-piece and the bolts forming the upper hinge, the parts of which are shown detached by Fig. 3. Fig. 4 is a detail view of the walking-beam detached from the hinge-post. Figs. 5, 6, 7, 8, and 9 are detail views of parts of the walking-beam. Fig. 10 is a detail view of one of the keepers for use on the road-posts.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A designates the gate; B, the tall hinge-post. C is the latch-post, and D D′ are the road-posts. As is usual, the hinge and latch posts are set in line with each other and with a fence, while the road-posts D D′ are in line with each other and on opposite sides of the tall hinge-post B, at suitable distances from the latter, for the gate A to swing up to the road-posts, so that the latch on the gate will engage with the keepers on the road-posts.

The gate which I prefer to use consists of the hinge-stile a, the latch-stile a', three rails a^2, a series of vertical wires a^3, and the longitudinal wires a^4, which are twisted between the vertical wires and secured to the hinge and latch stiles a a', respectively, of the gate, all said parts being rigidly fastened together to produce a gate which is light, durable, and substantial in construction.

The gate is hung to the hinge-post A by two hinges, the bottom hinge being shown at E and the top hinge at F in Fig. 1 of the drawings.

The bottom hinge E consists of a short bolt e and a longer eyebolt e'. The short bolt e is fastened in the post A and is formed with an annular bend to provide the vertical trunnion e''. The long bolt e' of said hinge is straight, has an eye e^3 at one end, a shoulder e^4 to abut against the rear stile a of the gate, and a threaded end to receive a nut that bears against the front face of the rear gate-stile a. The parts e e' of the lower hinge are rigidly fastened to the hinge-post and rear gate-stile a, respectively, and the eye of the long bolt e' is fitted or slipped over the short trunnion of the short bolt e.

The upper hinge F consists of the short angular bolts f f' and the link-piece g, the lat-

ter fitted to the pintles on the angular bolts to operate in a peculiar way. The bolt f is fastened to the post A, and the other bolt, f', is fastened to the rear stile a of the gate, the pintle of the bolt f' having a transverse opening near its upper end to receive the pin or key f'', that serves to keep the link-piece g from slipping off the pintle of the bolt f'. The link-piece g is of cast metal, in a single piece, and at one end the link-piece has an eye g', while another opening g'' is provided near the other end of the link-piece. The link-piece g is further provided with a boss h, which is cast on the lower side of the link between the openings g g' therein, and this boss is curved or provided with a curved rear face to provide the concavity h', which is presented to the face f^3 of the hinge-bolt f. The curve of the face or concavity h' is eccentric to the vertical axis of the pintle on the hinge-bolt f, and the end face f^3 of the hinge-bolt itself is eccentric to the axis of the vertical pintle on the hinge-bolt, as shown by Fig. 3ª. The concaved boss h is adapted to ride or bear against the end face f^3 when the gate is swung either to the right or left of the latch-post. When the gate is swung out of line with the posts A C, the link g turns or swings with the gate, and it assumes a position at an angle to or a position oblique to the length of the fixed hinge-bolt f, and in this position of the gate and link-piece one or the other of the end portions of the boss or seat h rides against the end face f^3 of the hinge-bolt f, thus limiting the swing of said link. It will thus be seen that the eccentric boss on the link-piece serves to hold the gate when it is swinging to an open position or when it is fully open either to the right or left from being pulled or from falling back into a position where its rear stile is plumb or in a perpendicular position, whereby after the gate is tilted to clear its latch from the keeper on the post C the gate is held out of plumb and is caused to swing mainly by gravity toward the road-posts.

The link and bolts f f' allow the gate to have a limited tilting movement when the walking-beam is pulled in either direction, so that the latch H on the free end of the gate may be lifted out of engagement with the keeper on the latch-post or on either of the road-posts.

The link g and the hinge-bolt f' of the upper hinge are equal in length to the long straight bolt e' of the lower hinge, so that when the gate is closed against the latch-post it will hang in a level position.

The latch H is a spring-metal strip fastened at its upper end to the front stile a' and having an arm h'' at its lower end, which arm is fitted loosely in a slot or opening in the front gate-stile. The latch-post C has a double inclined keeper c, with a central recess to receive the spring-latch. The road-posts D D' are each equipped with a keeper d, which is wrought or otherwise produced from a single piece of metal, and each keeper d has a recess d', an inclined face d'', and an outwardly-extending stop or abutment d'''. The spring-latch H on the gate is adapted when the gate is swung open into line with the road-post to ride against the inclined face d'' of the keeper d and to spring into the recess d' of said keeper to hold the gate in its opened position, and the abutment d''' of said keeper d is arranged in the path of the front stile of the gate, whereby the gate-stile is adapted to strike against the abutment d''' when the gate is swung open to limit the opening movement of the gate and to prevent it from being blown in high winds beyond the road-post.

I designates the walking-beam, which is built up from the longitudinal bars i j k, the metallic front center piece l, the back center piece m, and the brace-plates n o p, all united securely together. The front center piece l is preferably cast in a single piece of metal, with the overhanging top flange l' and with the flange l'' a short distance from its lower edge. The longitudinal top bars i i are fitted against the center plate beneath the overhanging flange l', while the bottom bars j j are fitted against the lower part of the center plate, beneath the flange l'' thereof. These bars are firmly bolted to the center plate l, and they are protected from the weather by said plate and its flanges. These bars i i and j j extend a suitable distance from the center plate and beyond the road-posts D D', and the bars are inclined or converged toward each other, so that the bars j may be fastened to the bars i, as shown. The bars i i j j are braced by the middle bars k k; but these bars k k do not lie in the same vertical plane as the bars i i j j, except at the outer ends, where the bars k are fastened to the bars i j through the medium of the plates p p. The bars i j and center plate l are on the front side of the hinge-post; but the bars k k are inclined away from the bars i j, so as to lie on the opposite (or rear) side of the hinge-post A, and said laterally-inclined bars k are fastened to the ends of the back center plate m by bolts or equivalent fastenings. It will be noted that the plate l lies on one side of the hinge-post, while the plate m is fitted against the other side of the hinge-post, and these plates are connected to the post A by a headed through-bolt J, having a nut on its threaded end, said bolt serving as the fulcrum for the walking-beam I. The front bars i j are braced at points between the plates l p by the plates n n, and the bars k k are braced by the angular plates o o, the plates n o being bolted to the bars i j k, as shown. The plates n depend below the bars j j of the walking-beam and are provided with eyes n', into which eyes n' are fitted the hooks q on the plates Q, which are fastened to the bars or rods R. These bars or rods R R are inclined toward the rear stile a of the gate, and their lower ends are bolted to the inclined ends of a swivel-plate S. A pivot-strap T is fitted around the front

side of the rear or hinge stile *a* of the gate and is bolted thereto, and from this strap rises the pivot-stud *t*, which is fitted in an aperture in the swivel-plate S.

U are the pull-bars or handles, each of which is recessed to receive the ends of the straps *u*, said straps being loosely fitted in eyes *v*, formed on the cap-plates V, which are bolted to the ends of the walking-beam.

The operation of my gate may be described as follows: The gate hangs level when it is closed and latched against the post C. To open the gate, the operator pulls down one of the handles U, thus rocking the walking-beam I and pushing on one of the rods or bars R, which in turn presses the swivel-plate against the pivot *l* and tilts the gate sufficiently for the spring-latch thereof to clear the keeper *c* on the post C. A continued pull by the operator on the handle U causes the gate to swing away from the operator, and as the gate swings open the seat *h* on the link *g* rides against the hinge-bolt *f*, thus keeping the gate from falling back past the vertical center through the two hinges and causing the back gate-stile *a* to assume a position out of plumb when the gate is swung to its fully-opened position, as shown by Fig. 2. As the gate swings into line with the road-post D or D′ the latch H strikes the keeper and springs into the recess *d′* therein, and the front gate-stile *a′* strikes the abutment *d‴*, the gate being held in its opened position by the latch H. The operator can now pass through the gate, and to close it he pulls down on the other handle U, thereby tilting the gate to cause its latch to clear the keeper *d* on the road-post and to swing back into line with the latch-post C, with the keeper of which the spring-latch H is caused to engage.

I am aware that changes in the form and proportion of parts and in the details of construction of the devices herein shown and described can be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such modifications and alterations as fairly fall 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 combination with a hinge-post, a gate, and a lower hinge, of an upper hinge having two pintle-hooks, connected by a perforated link, which is provided with a boss or seat between its perforations, substantially as and for the purposes described.

2. The combination with a hinge-post, a gate, and a lower hinge, of the upper hinge consisting of a bolt attached to the gate, another bolt attached to the hinge-post and provided with an eccentric face and with a vertical pintle situated in a vertical plane to one side of the plane of the pintle of the lower hinge, and a link having an eccentric boss or seat arranged to ride against the eccentric face of the hinge-bolt, as and for the purposes described.

3. A walking-beam for gates comprising the socketed central plate, the converging bars *i j* attached at their inner ends to the central plate and fastened together at their outer ends, the brace-plates *n*, *o*, attached to said bars at points between their ends, the back plate *m* arranged opposite to the central plate, and the brace-bars *k* inclined laterally to the bars *i*, *j*, and fastened to the plate *m*, the brace-plates *n*, *o*, and to the bars *i*, *j* substantially as described.

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

WILLIAM H. CLAY.

Witnesses:
F. P. CLAY, Sr.,
F. P. CLAY, Jr.