

No. 665,551.

Patented Jan. 8. 1901.

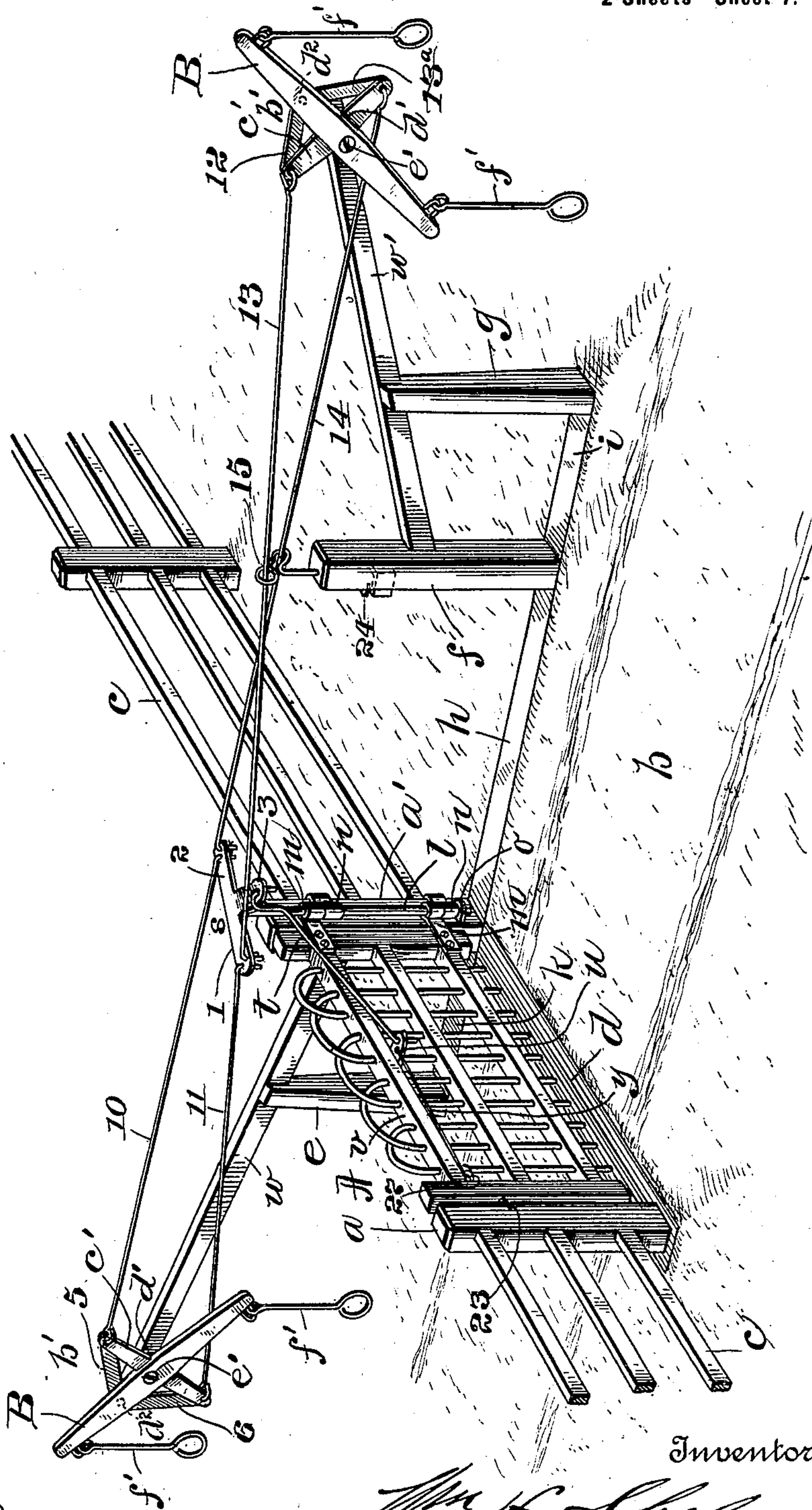
W. H. SHELEY.
SWINGING GATE.

(Application filed Sept. 15, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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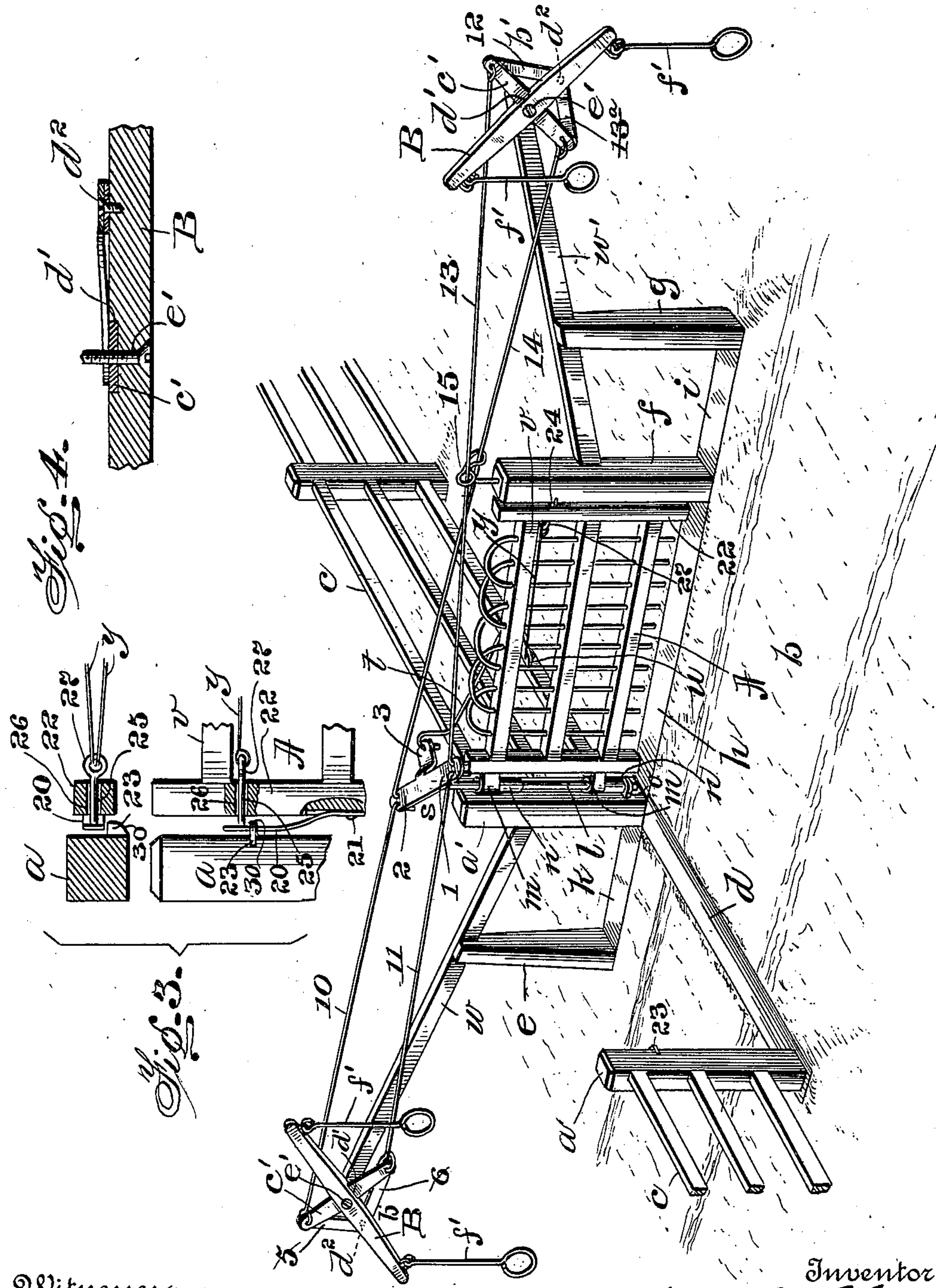
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UNITED STATES PATENT OFFICE.

WILLIAM H. SHELEY, OF SABINA, OHIO.

SWINGING GATE.

SPECIFICATION forming part of Letters Patent No. 665,551, dated January 8, 1901.

Application filed September 15, 1900. Serial No. 30,117. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. SHELEY, a citizen of the United States, residing at Sabina, in the county of Clinton and State of Ohio, have invented certain new and useful Improvements in Swinging 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.

This invention relates to swinging gates; and it consists, substantially, in such features of improvement as will hereinafter be more particularly described.

The principal object of the invention is to provide means for opening and closing the gate from either side, either while the operator is standing on the ground or when seated in a vehicle or upon a horse.

Other objects of the invention are to simplify the construction and arrangement of parts and to render the gate and its operating devices comparatively cheap to manufacture and setup, all as will be more fully hereinafter described when taken in connection with the accompanying drawings, in which—

Figure 1 is a view of the swinging gate and its operating devices, the said view indicating the position of the several parts or devices when the gate is closed. Fig. 2 is a similar view representing the position of the several parts or devices when the gate is in its open position. Fig. 3 is a view in detail of the locking devices for the gate, and Fig. 4 is also a view in detail to indicate more clearly the construction of the operating-levers.

Preliminarily to a more detailed description it may be stated that the gate itself can be of any preferred construction or pattern, and the same may also be formed of metal or wood, accordingly as it is to be used at the entrance to a garden or farm. The gate is so mounted that when operated upon from either side the same is caused to swing to its open or closed position, according to the particular manipulation of the operating devices necessary to effect those positions. In connection with the gate and its operating devices I also employ suitable locking devices, so that the gate is locked automatically when carried to either position. The said locking devices

are also automatically released whenever the gate is operated to be carried or swung from one position to the other.

Reference being had to the drawings, *a a'* represent suitable posts situate upon opposite sides of a roadway *b* and included in the fencing *c*, inclosing or surrounding a farm, garden, or orchard. Said posts may be sunken directly in the ground or else mounted upon a suitable sill *d*, which is buried in the ground about flush with the surface thereof.

Arranged at right angles to the posts *a a'* are the posts *e, f*, and *g*, which are also preferably mounted upon a sill *h*, disposed at right angles to sill *d* and extending to opposite sides of the gateway constituted by the said posts *a a'*. In the present instance the longer part *i* of said sill *h* is supposed to be within the inclosure surrounded by the fence, the shorter part *k* thereof being without. The post *e* is preferably mounted at the end of said shorter part *k* of sill *h*, and the post *f* is mounted on said sill nearest to and a suitable distance from the end of the longer part *i* thereof. At the end of said longer part *i* is mounted the said post *g*.

Mounted at one end upon a vertical rotatable rod *l* is the swinging gate *A*, which, as already stated, may be of any suitable or preferred construction. The said gate is provided with suitable loop-hinges *m m*, which loosely embrace the rod *l*, and said hinges are supported at their lower edges upon the upper edges of stationary loops or straps *n n*, which are secured to the post *a'* of the gateway or entrance. The said vertical rod is loosely supported at its lower end in a bearing *o*, projecting from the side of post *a'*, and this rod also passes loosely through the said stationary loops or straps *n n*, so as to turn therein when properly actuated from the operating devices. The upper end of said vertical movable rod *l* extends a short distance above the upper end of post *a'*, and rigidly secured to the said upper end of the said rod is a T-plate or three-armed lever *s*, which serves to turn the rod in either direction through the medium of suitable connections hereinafter described. This T plate or lever has the advantage that it can be struck up from sheet metal or readily cast in a single piece at small cost. Moreover, the arms of said lever do not

require to be adjusted relatively to each other when placed upon the movable or rotatable rod, nor do they require to be separately fitted or fastened to said rod, either of which would
 5 be laborious and expensive as compared to the present construction and arrangement. The several arms of said three-armed lever *s* are indicated at 1, 2, and 3, respectively, the latter arm being bent or turned downward
 10 slightly, so as not to interfere with the proper working of the parts. Loosely fitting at one end in an opening or perforation in the end of said arm 3 of the said lever *s* is a swing-rod *t*, the other end of which similarly fits
 15 within an opening or perforation formed in a movable plate *u*, supported in the present instance on the under side of the top piece or strip *v* of the gate. Each end of the said swing-rod *t* is bent in the form of a crank, so
 20 as to enable the said arm to properly effect its intended function of swinging the gate to and fro whenever the three-armed lever *s* is operated from or by its connections.

Uniting the posts *a'* and *e* is an inclined
 25 brace *w*, which extends upwardly at its free or outer end for a suitable height and which also projects some distance beyond or in advance of said post *e*, as shown. Also uniting the posts *f* and *g* is a similar brace *w'*, inclined
 30 in an opposite direction and extending upwardly at its free or outer end to a substantially equal height with brace *w*. Said brace *w'* projects beyond the said post *g* for some distance, as shown. It should be remarked
 35 at this point that the distance between posts *a'* and *f* is the same as the distance between posts *a* and *a'*, for a purpose that will hereinafter be understood.

Supported at the upper end of each of the
 40 braces *w* and *w'* is an operating-lever *B*, having a cross-arm or plate *c'*, which is mortised or seated in a groove *d'* in the inner surface of said lever *B*, about midway the ends thereof. (See Fig. 4.) Said operating-lever *B* is
 45 loosely mounted upon a pin or bolt *e'*, passing through an opening extending through the same and through the cross-arm *c'* thereof, said pin projecting from the side of said supporting brace. Connecting the ends of the
 50 cross-arm *c'* with the outer main arm of said lever *B* is an angular brace *b'*, which brace is secured at its angle *d'* to the said lever *B*. Each end of each of said operating-levers *B* is provided with a pull rod, cord, or chain *f'*,
 55 which extends down to within convenient reach of the operator while standing on the ground. A person can also operate the gate while seated in a vehicle or upon a horse by simply taking hold of the ends of the operat-
 60 ing-levers themselves and then pushing or pulling upon the same in the proper direction. This is all clearly obvious from the drawings and description.

Movably connecting the upper end of the
 65 cross-arm *c'*, which is outside the inclosure, (the one mounted on supporting-brace *w*,) with the arm 2 of the three-armed lever *s* is

a connecting-rod 10, the ends of the said rod being received in openings or perforations in the ends of the said arms of the said levers, 70 as shown. Similarly connecting the lower end of the said cross-arm *c'* with the end of arm 1 of lever *s* is a similar connecting-rod 11, which, as shown, must necessarily be inclined to rod 10 when the gate is closed, but 75 which inclination is simply due to the construction and arrangement shown and is not for any intentional purpose. Similarly connecting the upper end of the cross-arm *c'* within the inclosure (the one mounted on sup- 80 porting-brace *w'*) with the end of the arm 1 of the three-armed lever *s* is a similar but longer connecting-rod 13, while also connecting the lower end of the said cross-arm with the end of arm 2 of said lever *s* is another long 85 connecting-rod 14, the two said longer rods being oblique or inclined to each other, simply due to the arrangement of devices employed. The said connecting-rods 13 and 14 pass through guide-loops 15, fastened in the 90 top of post *f*, by which the said rods are prevented from spreading or springing too far apart.

The arm 3 of lever *s* is bent downwardly, as already stated, so as not to have the mov- 95 able connection between said arm 3 and swing-arm *t* strike the connecting-rod 14 when the gate is swung open, and in this way the gate is permitted to swing open to a position substantially or directly at right angles to the po- 100 sition it occupies when closed.

It is desirable that the gate be caught or locked when brought to its full open and closed positions, and for this purpose I employ a bent spring-latch 20, secured at its 105 lower end at 21 to the outer side of the end stile 22 of the gate, which latch engages with catches 23 and 24, arranged on the adjacent sides of posts *a* and *f*, respectively. The upper end of said spring-latch is provided with 110 a pin 25, working through an opening 26 in stile 22, and said pin is formed with an eye 27. Connecting said pin 25 with the ends of movable plate *u* are suitable cords, chains, wires, or rods *y* on either side of the gate, one 115 end of which is fastened to the eye 27 and the other end to an end of said plate. Now it is evident that whenever either one of the levers *B* is operated to open or close the gate the said gate when brought to the full posi- 120 tion is caught and locked, since the beveled edge 30 of the catches 23 and 24 serve to first force the latch 20 inwardly, after which the latter of its own resiliency again springs outwardly and is engaged by the catch. 125

It will be observed that in both positions of the gate the three-armed lever *s* bears an oblique or diagonal relation to the upper end of post *a'* and reversely so, accordingly as the gate be open or closed. By so disposing or 130 arranging said lever *s* a slight initial or independent movement is exerted upon the swing-rod *t* sufficient to release the latch 20 prior to the opening or closing of the gate by the

immediately succeeding swinging movement of said rod *t*, caused by continued force applied to the operating-levers. By operating either one of levers *B* to open the gate the said initial or independent movement of rod *t* takes place in the nature of a quick pull on the end of movable plate *u* to release the latch, and by operating either one of said levers *B* to close the gate said movement is in the nature of a quick push upon the said end of said plate *u* with the same result.

From the foregoing it will be seen that a person approaching the gate from either side when the gate is closed has simply to pull down the elevated end of the particular operating-lever *B* at that side, whereupon the already-described operation of parts takes place and the gate is opened. After passing through the gateway a similar pull is exerted upon the elevated end of the operating-lever *B* on the opposite side, whereupon the gate is again closed, as will be clearly understood. It is clear also that the same effect will be produced by pushing upward the ends of said levers occupying the lowermost positions. Whenever the operating-lever *B* at one side of the gate is moved to either position, the lever on the opposite side is correspondingly moved, as is apparent.

It will be understood that instead of employing the spring-latch herein shown an ordinary drop-latch can be employed for automatically locking the gate in substantially the same manner and with equal effect, so far as the purposes of the present invention are concerned.

It will be seen that the gate and its operating devices are thoroughly effective in operation and that the parts are both light and strong and comparatively simple and inexpensive to manufacture.

I do not wish to be understood as limiting myself to the particular details of construction and arrangement shown and described, since various immaterial changes can be made therein and still be within the scope of the invention.

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

1. In a swinging gate, the combination with the gate, of a rotatable rod upon which the same is supported, a three-armed lever carried by said rod, and consisting of a substantially T-shaped plate, swing connections between one arm of said lever and the gate, operating-levers mounted on either side of the gate at a suitable height and distance therefrom, and connections between said operating-levers and the remaining arms of said three-armed lever, substantially as described.

2. In a swinging gate, the combination with the gate, of a rotatable rod upon which the same is supported, a three-armed lever carried by said rod, and consisting of a substantially T-shaped plate, swing connections between one arm of said lever and the gate, a

latch operated by said swing connections, operating-levers mounted on either side of the gate at a suitable height and distance therefrom, and connections between said operating-levers and the remaining arms of said three-armed lever, substantially as described.

3. In a swinging gate, the combination with the gate, of a rotatable rod upon which the same is supported, a three-armed lever carried by said rod, and consisting of a substantially T-shaped plate, a swing-rod movably connecting one arm of said lever with the side of the gate, pivotal operating-levers on opposite sides of the gate at a suitable height and distance therefrom, said levers each having a cross-arm and an angular brace connecting the ends of said arm with the lever, and movable connections between said operating-levers and the remaining arms of said three-armed lever, substantially as described.

4. In a swinging gate, the combination with the gate, of a vertical rotatable rod upon which the same is suspended, a gate-post supporting the rod, a horizontally-disposed three-armed lever rigid with the upper end of said rod and arranged diagonally with respect to the upper end of said post, said lever consisting of a substantially T-shaped plate, a movable plate on the gate, a swing-rod connecting the middle arm of said lever with said plate, a latch operated by said plate, and operating devices and connections for opening and closing the gate, substantially in the manner shown and described.

5. In a swinging gate, the combination with the gate, of a vertical rotatable rod upon which the gate is suspended, a gate-post supporting the rod, the three-armed lever rigid with said rod, and consisting of a substantially T-shaped plate, a movable plate on the gate, a swing-rod connecting one arm of said lever with said plate, a latch operated by said plate, said swing-rod having an initial independent longitudinal movement to operate said latch, catches for engaging the latch in the open and closed positions of the gate, operating-levers on either side of the gate and beyond the same, each having a cross-arm and connecting angular brace, and connections between said cross-arms and the remaining arms of said three-armed lever, substantially as described.

6. The combination with the gate, and its rotatable supporting-rod, of the three-armed lever on the upper end of said rod, and consisting of a substantially T-shaped plate, the middle arm thereof being bent downwardly, swing connections between said arm and the gate, the operating-levers, the cross-arms and angular braces joined therewith, and means on either side of the gate in movable connection both with said cross-arms and the other arms of the three-armed lever, substantially as described.

7. The combination with the gate, and its rotatable supporting-rod, of the three-armed lever and its connections with the gate, said

lever consisting of a substantially T-shaped plate, the inclined supports on either side of the gate, the operating-levers pivoted on said supports, the angular braces secured at their
5 angles to said operating-levers, the cross-arms connecting the ends of said braces and mortised in one side of the operating-levers, and operating connections between the ends of

said cross-arms and the three-armed lever, substantially as described. 10

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

WILLIAM H. SHELEY.

Witnesses:

T. E. MOON,
G. L. SHELEY.