

682,075.

Patented Sept. 3, 1901.

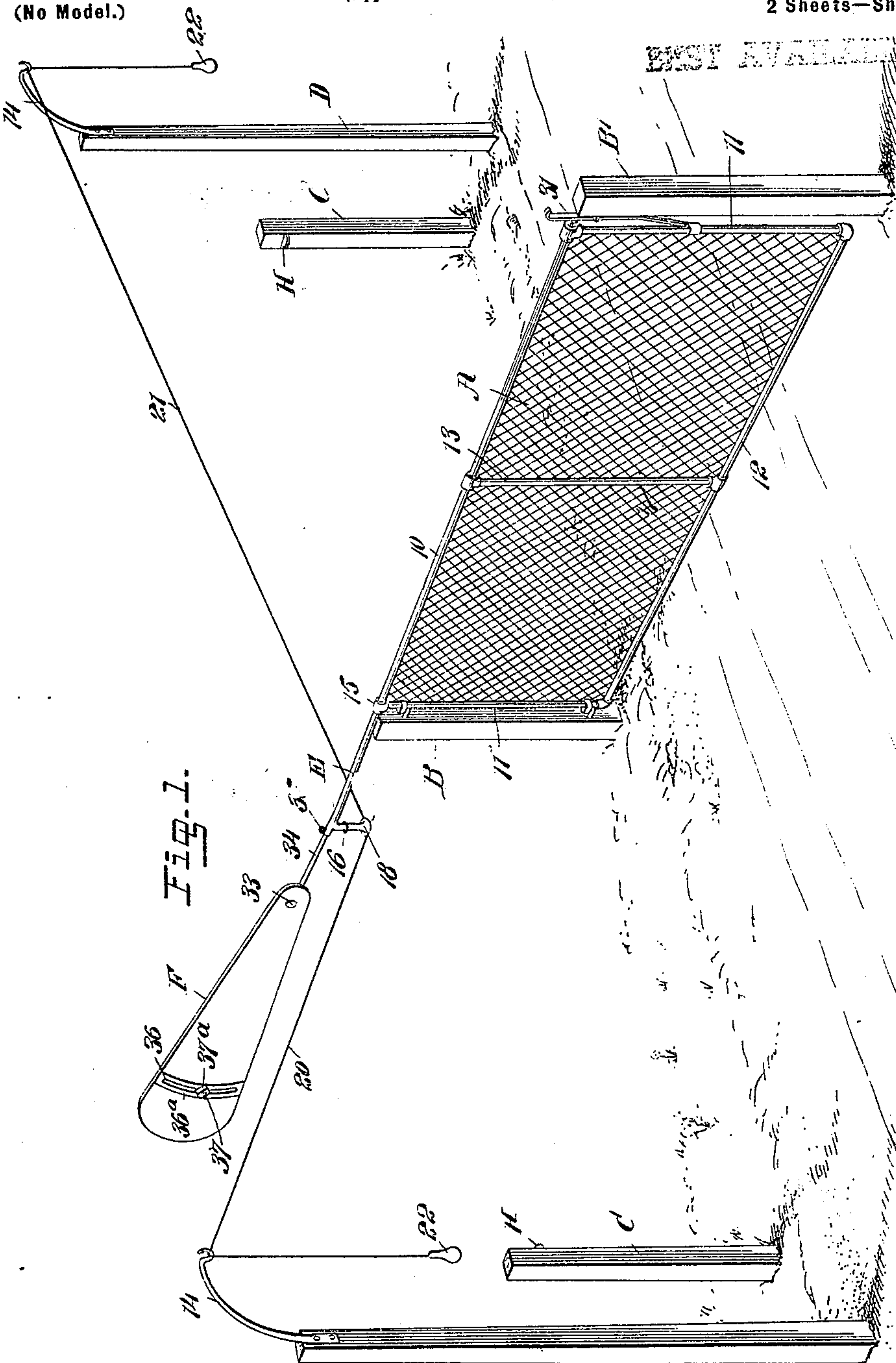
**H. H. HILLERSON.
GATE.**

(Application filed Mar. 15, 1901.)

2 Sheets—Sheet 1.

(No Model.)

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No. 682,075.

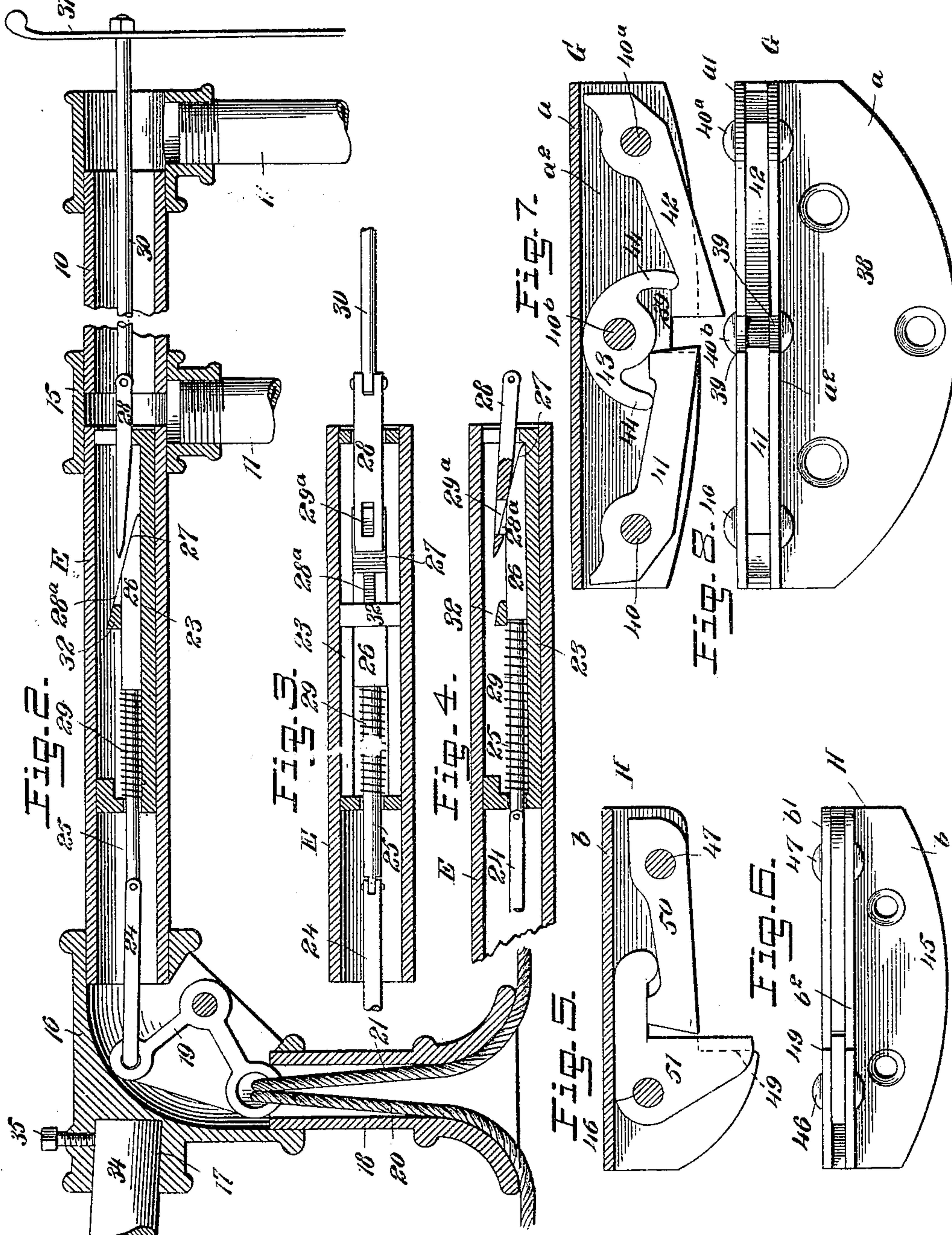
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UNITED STATES PATENT OFFICE.

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GATE.

SPECIFICATION forming part of Letters Patent No. 682,075, dated September 3, 1901.

Application filed March 15, 1901. Serial No. 51,301. (No model.)

To all whom it may concern:

Be it known that I, HILL H. HILLERSON, a citizen of the United States, and a resident of Champaign county, Illinois, (post-office Elliott, in the county of Ford and State of Illinois,) have invented a new and Improved Gate, of which the following is a full, clear, and exact description.

My invention relates to an improvement in swing or hinged gates, and particularly to improved means for opening and closing the gate and latching and unlatching the gate when in its open or in its closed position.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improved gate and its connections. Fig. 2 is an enlarged vertical longitudinal section through the extension-arm of the gate and a sectional view of parts of the upper portion of the gate, showing in side elevation the mechanism employed for operating the gate-latch, the latch being shown in its closed position. Fig. 3 is a horizontal section through the extension-arm of the gate and a plan view of the mechanism for operating the gate-latch, the parts being in the position shown in Fig. 2. Fig. 4 is a longitudinal section through the extension-arm of the gate, showing the latch-operating mechanism in position for withdrawing the latch from engagement with its keeper. Fig. 5 is a horizontal longitudinal section through a keeper adapted for attachment to a side post. Fig. 6 is a front elevation of the keeper shown in Fig. 5. Fig. 7 is a horizontal longitudinal section through the keeper adapted for attachment to the jamb-post of the gate, and Fig. 8 is a front elevation of the keeper shown in Fig. 7.

A represents a gate which may be of any desired construction, but in the drawings the gate is shown as consisting of an upper tubular bar 10, tubular side bars 11, and a tubular lower bar 12, together with a tubular central brace-bar 13, and in the construction of the frame of the gate, as illustrated, gas-

pipe and suitable fittings may be employed. The gate A is hinged in any suitable or approved manner to a swing-post B and at its free end is adapted for engagement with a suitable keeper on a keeper or jamb-post B', as shown in Fig. 1. Auxiliary posts C are located at the front and the rear of the gate, usually in alinement with the swing-post B, and adjacent to these auxiliary posts C up-rights D are planted in the ground or are otherwise secured, and these up-rights D are higher than the auxiliary posts C. The up-rights D are provided at their upper ends with guide-hangers 14, adapted for a purpose to be hereinafter described.

It may here be stated that the auxiliary posts C are adapted to receive the gate when in an open position either at the right or the left and hold the gate in such position.

An extension-arm E is provided for the upper portion of the gate A. This extension-arm is carried over the top of the swing-post B beyond the said post a suitable distance, and is tubular, as shown in Fig. 2, and constitutes, practically, a portion of the upper section 10 of the gate-frame, and it is attached thereto by means of a suitable T-fitting 15 or a similar fitting, as shown in Fig. 2.

At the outer end of the tubular extension-arm E an elbow-fitting 16 is secured in any suitable or approved manner, and at the upper rear portion of this fitting 16 a socket 17 is provided. At the bottom portion of the elbow-fitting 16 a funnel-guide 18 is secured in any suitable or approved manner, the flaring portion of the funnel-guide being its lower portion, as is shown in Figs. 1 and 2. An elbow or bell-crank lever 19 is pivoted in the elbow-fitting 16, as is clearly shown in Fig. 2, and ropes 20 and 21 are connected with the lower member of this elbow-lever 19. These ropes extend down through the funnel-guide 18, which prevents them from being chafed and serves to guide them in action, and are carried from the said funnel-guide 18 in opposite directions over the hangers 14 on the up-rights D. At the outer or free end of each rope 20 and 21 a weight 22 is secured, which will be sufficient to automatically take up any slack that may occur in the said ropes 20 and 21 during the operation of the gate.

A shell 23 is located in the extension-arm

E, as shown in Fig. 2, and this shell is provided with an opening at each of its ends. A link 24 is attached to the upper member of the elbow-lever 19, and this link 24 extends into the tubular arm E and is pivotally connected with a stem 25, which passes through the opening in the outer end of the shell 23, and is connected to or made integral with an operating-head 26, located within the shell and adapted to slide on the bottom portion thereof. The upper surface 27 of the inner end of this operating-head 26 is beveled, and at the upper face of the said operating-head 26 a lug 28^a is transversely located, having its upper face beveled corresponding to the beveled surface 27 of the operating-head and constituting a continuation of the said beveled surface. A spring 29 is coiled around the stem 25 within the shell 23, and this spring has bearing against the outer end of the shell and outer end of the operating-head 26, so that when the head 26 is drawn rearward the spring 29 is placed under compression.

A receiving bar or member 28 is made to slide through the inner end of the shell 23, and this receiving bar or member 28 is provided with a tapering under face at its outer end and with a slot 29^a adjacent to its outer end, which slot 29^a under certain conditions is adapted to receive the lug or offset 28^a of the operating-head, so that when the bell-crank lever 19 is operated through the medium of either of the ropes 20 or 21 when the slot of the receiving bar or member has received the lug 28^a of the operating-head 26 the said head 26 when drawn rearward by the operation of the bell-crank lever will carry the receiving bar or member 28 with it. This receiving bar or member 28 is pivotally connected with a rod or wire 30, which rod or wire 30 extends longitudinally through the upper tubular bar or member 10 of the gate-frame and out through the said upper member 10 at the free end of the gate, at which point the rod or wire 30 is attached to a spring-latch 31, which is parallel with the free end 11 of the grate and extends above the top bar 10 of said gate, as shown in Figs. 1 and 2, the lower end of the spring 31 being connected in any suitable or approved manner with the end bar at the forward end of the gate, as is shown in Fig. 1. A cross-bar 32 is located in the shell 23, and the upper face of this cross-bar 32 is shown in Figs. 2 and 4 as beveled or inclined in direction of the receiving bar or member 28. Thus when the upper member of the bell-crank lever 19 is carried to the rear and the receiving member or bar 28 is in locking engagement with the operating-head 26 through the medium of the lug 28^a the gate-latch 31 will be carried toward the gate out of engagement with its keeper, thereby permitting the gate to be swung either to the right or to the left; but when the operating-head 26 has been carried so far rearward as to bring the lug 28^a in en-

gagement with the cross-bar 32 of the shell 23 the receiving bar or member 28 will ride up on the inclined face of the cross-bar 32, which will release it from engagement with the lug 28^a, whereupon the spring-latch 31 will automatically assume its normal position, enabling it to engage with a keeper on one of the auxiliary posts C, which keeper is to be hereinafter described.

It will be observed that the extension-arm E connected with the gate enables said gate to be swung much more readily than if the ropes 20 and 21 were attached to the gate at a point inside of its hinged connection with the hinge-post B and that this easy action of the gate is augmented by reason of the funnel-guide 18 being carried down to a point below the upper end of the swing-post.

In operation after the rope 20 or 21 is relieved from strain the spring 29 will carry the operating-head 26 inward, and its lug will again enter the slot 29^a in the receiving bar or member 28, uniting the operating-head and receiving bar or member and completing the connection between the bell-crank lever 19 and the gate-latch, so that when one of the ropes 20 and 21 is again operated the gate-latch will be disconnected from the keeper with which it may be in engagement. It will be observed that the gate-latch after being removed from its keeper by the controlling mechanism described is automatically restored to a position for engagement with a keeper while the gate is swinging from one post to the other.

A governor F is provided for the gate, as shown in Fig. 1. The governor is shown as of fan shape, its outer end being widest, although it may be otherwise formed, and the inner end of the governor is pivoted by a pin 33 to a rod 34, the inner end of which rod is made to enter the socket 17 in the elbow-fitting 16, as shown in Figs. 1 and 2, being held therein by a set-screw 35 or its equivalent. This rod 34 extends practically to the outer end of the governor F, and the governor, which may be transversely curved, is provided near its outer or wider end with a slot 36, usually reinforced by an added slotted plate 36^a, and a bolt 37 is secured to the outer end portion of the rod 34, which bolt is passed through the slot 36 and is provided with a suitable nut 37^a, so that the governor may be adjusted as occasion may demand. The governor balances the gate, so that it can be readily opened in a strong wind practically as easily as in a calm. The governor also balances part of the weight of the gate and reduces the pull on the upper hinge of said gate.

In Figs. 7 and 8 I have illustrated a double-acting keeper G, which is adapted for attachment to the jamb or keeper post B' and receives the gate-latch 31 when the gate is closed. This double-acting keeper consists of a body-plate 38, which comprises a vertical section α , which is adapted to be screwed or otherwise attached to the inner face of the jamb-

post B', an upper horizontal member a' , the outer edge of which is more or less convexed, and a lower horizontal member a^2 , corresponding in shape to the upper horizontal member a' . These two horizontal members a' and a^2 are connected by means of three bolts 40, 40^a, and 40^b, 40^b being the central bolt, and corresponding slots or recesses 39 are produced in the central portions of the outer faces of the said horizontal members a' and a^2 , as is best shown in Fig. 8. Opposing keeper-arms 41 and 42 are respectively pivoted to the bolts 40 and 40^a, as shown in Fig. 7, and the inner ends of these arms are very near or slightly extend over the side edges of the recesses 39 in the horizontal members a' and a^2 of the said body-plate 38, as shown also in Fig. 7. The inner longitudinal edges of the keeper-arms 41 and 42 are recessed, so as to form shoulders adjacent to their inner ends, which shoulders are adapted for engagement by horns 44, which form continuations of a segmental shifting plate 43, which is pivoted upon the central bolt 40^b of the keeper G, as is best shown in Fig. 7. When the gate is being closed, the gate-latch will engage with the outer longitudinal edge of one of the keeper-arms 41 and 42 and will force the said arm inward and cause the shifting plate 43 to rock in such manner as to carry the opposing keeper-arm outward. Therefore as soon as the latch enters the recesses 39 in the horizontal members of the keeper G the keeper-arm which is carried outward will serve to prevent the latch from leaving the recesses 39, which need not be very deep. It is evident that the keeper-arms will operate automatically in the manner described, no matter whether the gate be opened from the right or from the left.

In Figs. 5 and 6 I have illustrated keepers H, which are adapted for attachment to the sides of the auxiliary posts C, which face the gate. These keepers H are not double-acting, but are single-acting, and yet quickly retain the latch of the gate in locking position relative to the auxiliary post. Each keeper H consists of a body-plate 45, comprising a vertical member b , adapted for attachment to an auxiliary post, an upper horizontal member b' , and a lower parallel and corresponding member b^2 , the said members being connected by suitable bolts 46 and 47. A shoulder or offset 49 is produced upon each of the members b' and b^2 , as shown in Figs. 5 and 6. A keeper-arm 50 is pivoted upon the bolt 47, as shown in Fig. 5, and a shifting and retaining plate 51, of angular construction, is pivoted on the bolt 46, as is also shown in Fig. 5. The inner member of the shifting and retaining plate 51 is adapted at times for engagement with the inner longitudinal edge of the retaining-arm 50, while the other member of the said shifting and retaining plate 51 is adapted for engagement with the gate-latch. In operation when the gate is opened and the gate closely approaches an

auxiliary post C the gate-latch 31 will ride along the outer longitudinal edge of the retaining-arm 50 and will strike the outwardly-extending member of the shifting and retaining plate 51 and will carry the said outwardly-extending member in an outward direction, thus causing the inner member of the shifting and retaining plate to force the keeper-arm 50 outward, and the gate-latch will then be located between the inner end of the keeper-arm 50 and the outwardly-extending member of the shifting and retaining plate 51.

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

1. A swing-gate provided with an extension-arm at its hinged portion, which arm is carried over and beyond the hinge-post of the gate and has a downwardly-projecting tubular member having a flaring mouth, for the purpose specified.

2. A swing-gate, a tubular extension-arm carried rearward from the hinged end of the gate, a tubular projection carried downward from the outer or rear portion of the extension-arm, and operating-ropes leading out through the tubular projection in opposite directions for the purpose set forth.

3. A swing-gate, a tubular extension-arm carried rearward from the hinged end of the gate, said arm extending over and beyond the hinge-post for the gate, and having a downwardly-extending and flaring mouth, and a governor adjustably connected with the outer end of the extension-arm, for the purpose specified.

4. A swing-gate, a hinge-post therefor, a tubular extension from the hinged portion of the gate, which extension is carried from the upper portion of the gate-frame rearward over and beyond the hinge-post, a tubular projection extending downward from the extension-arm at the rear of the hinge-post, a governor adjustably carried by the rear end portion of the said extension-arm, operating-ropes leading out through the said projection in opposite directions, and guides for the said ropes, for the purpose set forth.

5. In gates, an extension-arm carried from the hinged end of the said gate, which extension-arm terminates at its outer end in an angular member having a chamber therein, a bell-crank lever fulcrumed within the said chamber, operating-ropes connected with the lower end of the said bell-crank lever, a spring-controlled operating-head having movement in the extension and connected with the upper end of the bell-crank lever, a spring-latch for the gate, a rod attached to the said spring-latch, terminating in a pivotally-connected receiving bar or member, means for locking the receiving bar or member to the operating-head, and means for automatically releasing the operating-head from the receiving bar or member, as described.

6. In the construction of gates, the combination, with a gate and a tubular extension

carried outward from the hinged portion of the gate, the said extension terminating in an angular member provided with a chamber, of a bell-crank lever pivoted within the said chamber, a spring-controlled operating-head mounted to slide in the said extension and having pivotal connection with one member of the said bell-crank lever, the said operating-head having its upper surface beveled at its inner end and provided with a lug upon its upper face correspondingly beveled, a spring-latch for the gate, a rod attached to the said spring-latch, and passed through the gate, a receiving bar or member pivoted to said rod, the receiving bar or member having an opening therein to receive the lug on the operating-head, and a fixed releasing device located within the tubular extension, having its upper surface inclined correspondingly to the upper face of the lug on the operating-head and the beveled face of the inner end of said operating-head, which releasing device is adapted to remove the operating-head from engagement with the receiving bar or member when the receiving bar or member has been carried a sufficient distance rearward.

7. In gates, the combination, with the frame of a gate, a tubular extension-arm carried from the hinged end of the gate, having a downwardly-extending chambered member at its rear end, a lever fulcrumed in said chamber, a funnel continuation of the said chamber, and operating-cords extending through the funnel extension, which cords are attached to the said lever, of a spring-latch for the gate, a rod connected with the said latch, an apertured receiving bar or member pivotally attached to the said rod, a spring-controlled operating-head connected with the said lever and having movement to and from the receiving bar or member, and normally in locking engagement therewith, and means, substantially as described, for disconnecting the receiving bar or member from the operating-head when the operating-head has been moved a certain distance to the rear, as set forth.

8. In gates, the combination, with the frame of the gate, a tubular extension-arm carried from the hinged end of the gate, having a downwardly-extending chambered member at its rear end, a lever fulcrumed in said chamber, a funnel continuation of the said chamber, and operating-cords extending through the funnel extension, which cords

are attached to the said lever, of a spring-latch for the gate, a rod connected with the said latch, an apertured receiving bar or member pivotally attached to the said rod, a spring-controlled operating-head connected with the said lever and having movement to and from the receiving bar or member, normally in locking engagement therewith, means, substantially as described, for disconnecting the receiving bar or member from the operating-head when the operating-head has been moved a certain distance to the rear, a governor connected with the rear portion of the extension-arm, and guide-supports for the said operating-cords, as and for the purpose set forth.

9. The combination with a gate having an extension-arm projecting beyond the hinge-post of the gate, and a spring-latch for the gate, of a sliding and spring-pressed member carried by the extension, a bar connected with the latch, the said bar and member being normally interlocked, means for disengaging the bar and sliding member, and means connected with the sliding member for operating it, as set forth.

10. The combination with a gate having an arm projecting beyond the hinge-post of the gate, and a spring-latch for the gate, of a sliding and spring-pressed head carried by the said arm, means connected with the sliding member for moving the arm against the action of its spring, a pivoted bar connected with the latch of the gate, the said bar and head being normally interlocked, and means for disengaging the bar from said head, as set forth.

11. The combination with a gate, having an arm projecting beyond the hinge-post of the gate, and a spring-latch for the gate, of a sliding and spring-pressed head carried by the said arm, and provided with a projection, means connected with the said head for compressing the spring thereof, a bar connected with the latch and provided with an opening for engaging the projection of the head, and means for disengaging the bar from the head, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HILL H. HILLERSON.

Witnesses:

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S. J. STUELAND.