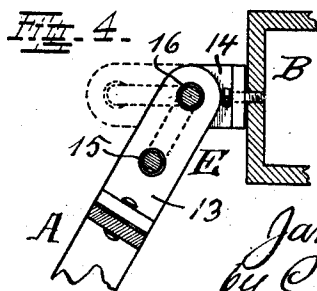
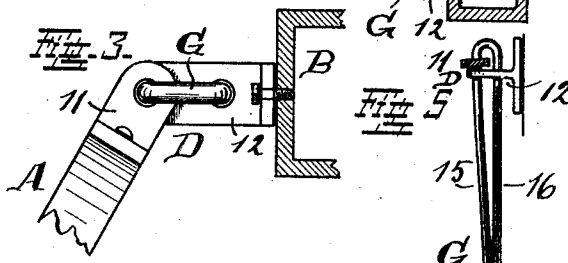
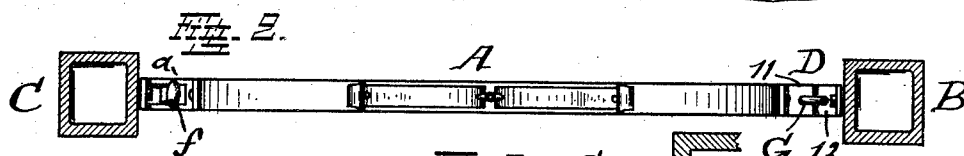
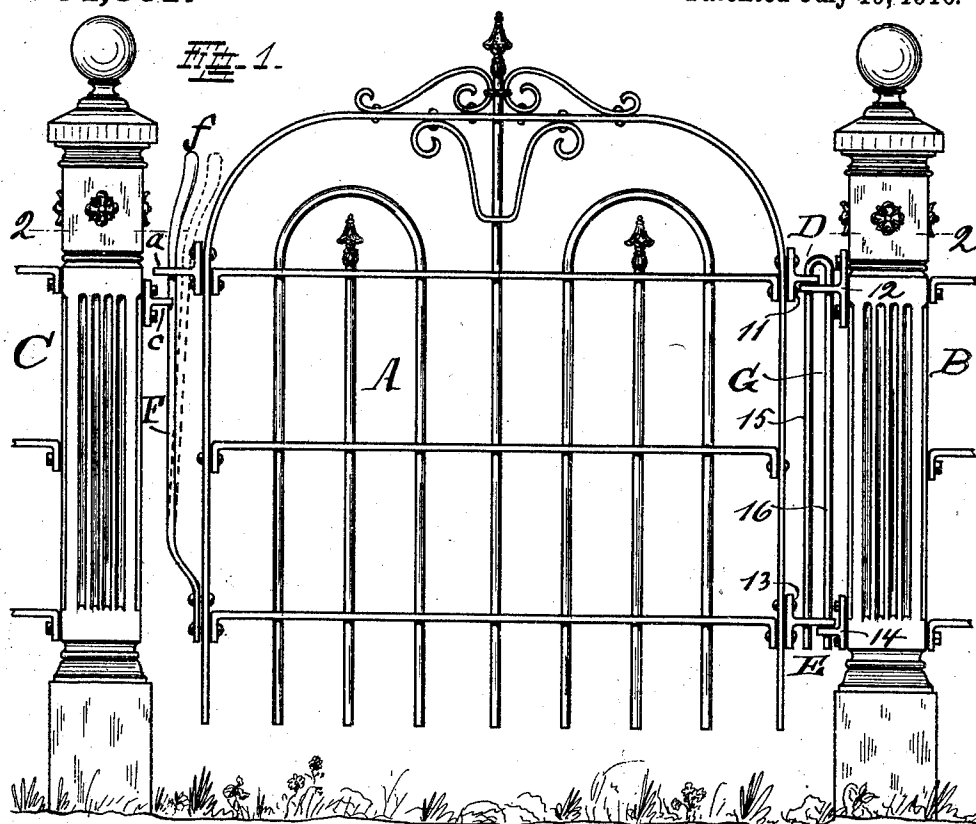


J. W. MARTIN.
SELF CLOSING GATE.
APPLICATION FILED MAR. 14, 1910.

964,801.

Patented July 19, 1910.



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SELF-CLOSING GATE.

964,801.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES W. MARTIN, a citizen of the United States, and residing at Covington, Kenton county, State of Kentucky, have invented certain new and useful Improvements in Self-Closing Gates; and I do declare the following to be a clear, full, and exact description thereof, attention being called to the accompanying drawing, with the reference characters marked thereon, which form also a part of this specification.

This invention relates to improvements in hingedly supported gates of the kind generally used to control passage through an entrance-opening provided in inclosures like fences for instance.

The leading feature of the invention consists of a certain construction whereby such a gate is given a normal tendency to return from an open position to a closed one and to remain in such closed position.

In the following specification and particularly pointed out in the claims at the end thereof, will be found a full description of my invention, together with its operation, parts and construction, which latter is also illustrated in the accompanying drawing, in which:—

Figure 1, shows a front-view of a gate provided with the features of my improvements. Fig. 2, is a horizontal section taken on line 2—2 of Fig. 1, as to the gate proper, the upper edge thereat being shown. Figs. 3 and 4, are enlarged top-views of the upper and lower hinges respectively, adjacent parts being shown in section. Fig. 5, shows the principal element involved in the particular construction whereby the self-locking quality is imparted.

A is the gate proper, its particular construction having no bearing on this invention. It is shown of the usual open wrought-iron-work construction. It is supported so as to swing between two posts B and C, being connected at one of its upright edges to one of them, B, by two hinges D and E. In its closed position it occupies the space between these posts, it being releasably held at its other upright edge to post C, by a spring-actuated locking-bar F which operates in conjunction with a notched keeper *c*. By preference this bar is carried on the gate while the keeper is con-

nected to post C. The upper part of the bar moves in a guide *a* whereby its position on the edge of the gate is sustained with reference to the keeper.

Each hinge consists of two complementary parts or hinge-lugs, 11 and 12 being those of the upper hinge D, the first connected to the gate and the other to post B. The lower hinge consists of the two lugs 13 and 14, the first likewise connected to the gate and the other to the post. The two complementary lugs of each hinge are held to each other by hinge-pins which constitute the pivots on which the gate swings. Tendency to assume and to maintain a normally closed position is imparted by an elastic-bar 15, one end of which is immovably held at one hinge while its other end is connected to the other hinge in a manner that opening movement of the gate carries this end with it and puts this bar in a condition of tension which is only relieved by the closing of the gate. See Figs. 3, 4 and 5. For such purpose one end of this bar, for instance the upper one, is secured to hinge-lug 12, which is held stationary by being connected to post B. Its other end is attached to lug 13 of the lower hinge which is connected to the gate and moves with it. Opening movement of the gate puts this bar in a strained position best shown in Fig. 5, which in its tendency for relief returns the open gate to a closed position, provided said gate is left to itself and not otherwise restrained. Sometimes this self-closing tendency of a gate is due to the effects of gravity, the gate being hung accordingly. For such purpose the two lugs of a hinge, instead of being of equal projecting lengths, are unequal, that is each hinge has a shorter and a longer lug, the longer lug of the lower hinge being on the gate. The effect is that the gate, as it swings open, rises at the same time at its free edge so that when released, it returns automatically to a closed position. This action is limited however by positions, that is to say it is effective for closing, only when the gate has not been swung to a position more than ninety degrees from its normal position. In such position it is liable to swing to either side, and beyond that position it will swing in a direction opposite to that which is desired. This objection is relieved in part where the spring-action

provided by my improved construction is also added to gates hung in the manner pointed out, so that such a gate, particularly when opened to the critical point, which is its highest position, will always return in the right direction, the resistance of the spring preventing it from swinging the wrong way.

It has been customary in these gates which are hung so as to be rendered self-closing by the effects of gravity, to provide the two hinge-pins required, in one structure indicated at G, the same consisting substantially of a rod bent upon itself in a manner to form two parallel members each of which provides a hinge-pin, one for the upper and the other for the lower hinge. The space between these members equals the difference in position, horizontally considered, between the openings in the lugs of the hinges due to their inequality of length. Thus in a case where spring-action as contemplated by my invention is to be added to the action of gravity, the elastic rod 15 before described forms a part of the hinge-pin-structure G, it being substantially an extension of one of the two members thereof. Thus for instance in the case shown, the lower end of member 16 forms the hinge-pin for the lower hinge E. The upper end of member 15 forms the pin for the upper hinge. The effect of spring-action is added here by extending this member 15 downwardly and connecting it to the lower hinge-lug 13 on the gate so as to move with the same when the gate opens as shown in Figs. 4 and 5, the extended part constituting the spring required. Thus as will be seen, while the upper end of this member is immovably held in the stationary hinge-lug 12 of the upper hinge, the lower end is forced to move with the gate, causing thereby member G to assume the twisted, spring-restrained position shown in Fig. 5. The tendency of the twisted member to return to its normal condition promptly moves also the gate to a closed position and if the gate is hung to close by gravity, this action is assisted by the added spring-action.

Having described my invention, I claim as new:

1. In a self-closing gate, the combination of an upper and of a lower hinge whereby it is supported and each of which consists of two complementary lugs, of which one in each hinge is connected to the gate so as to move with it, while the other is connected in a stationary position, and a spring-rod extending between the hinges to each of which it is connected, the connection as to one hinge being to the stationary lug thereof and as to the other one to the lug carried on the gate.

2. In a self-closing gate, the combination

of an upper and of a lower hinge whereby it is supported and each of which consists of two complementary lugs of which one in each hinge is connected to the gate so as to move with it, while the other is connected in a stationary position and a hinge-pin for each hinge which connects their lugs in each case, the pin of one hinge being extended to the other hinge and connected to that lug thereof which moves with the gate, whereby this extended part is caused to assume the function of a spring which tends to maintain the gate in a normally closed position.

3. In a self-closing gate, the combination of an upper and of a lower hinge whereby it is supported and each of which consists of two complementary lugs of which one in each hinge is connected to the gate so as to move with it, while the other is connected in a stationary position and a hinge-pin-structure consisting of two parallel members connected to each other at one of their ends and extending between the two hinges for which they form the hinge-pins, the end of one member being connected so as to move with one of the lugs of the gate, whereby this member is caused to assume the function of a spring which, when the gate is opened, tends to return the same to a closed position.

4. In a self-closing gate, the combination of an upper and of a lower hinge whereby it is supported and each of which consists of two complementary lugs of which one in each hinge is connected to the gate so as to move with it, while the other is connected in a stationary position, one lug in each hinge being of larger projection than the other one, the lug of larger projection on the upper hinge being stationarily connected, while in the lower hinge it moves with the gate, and a hinge-pin-structure consisting of two parallel members connected to each other at their upper ends and extending between the two hinges, the lower part of one member forming the hinge-pin for the lower hinge, and the upper part of the other member forming the hinge-pin for the upper hinge so that, when said gate is opened, effect of gravitation is caused to become operative in a manner which tends to return the gate to its closed position, the lower part of the member which forms the pin for the upper hinge being also connected to the lower hinge and to the lug thereat which moves with the gate, whereby the effect of spring-action is added to the action of gravity.

5. In a self-closing gate, the combination of the gate, a post, an upper and a lower hinge whereby it is supported on the post and each of which consists of two complementary lugs, one in each case connected to the gate and the other to the post, and a

combined hinge-pin and closing spring-
structure which consists of two parallel
members connected at one of their ends, the
end of one member forming the hinge-pin
5 for one hinge and the end of the other mem-
ber forming the hinge-pin for the other
hinge, the other end of each member being
connected, one to each of the hinges, to the

lug on the post in one hinge and to the lug
on the gate in the other hinge.

In testimony whereof, I hereunto affix my
signature in the presence of two witnesses. 10

JAMES W. MARTIN.

Witnesses:

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T. LE BEAU.