R. H. HEARN.

GATE.

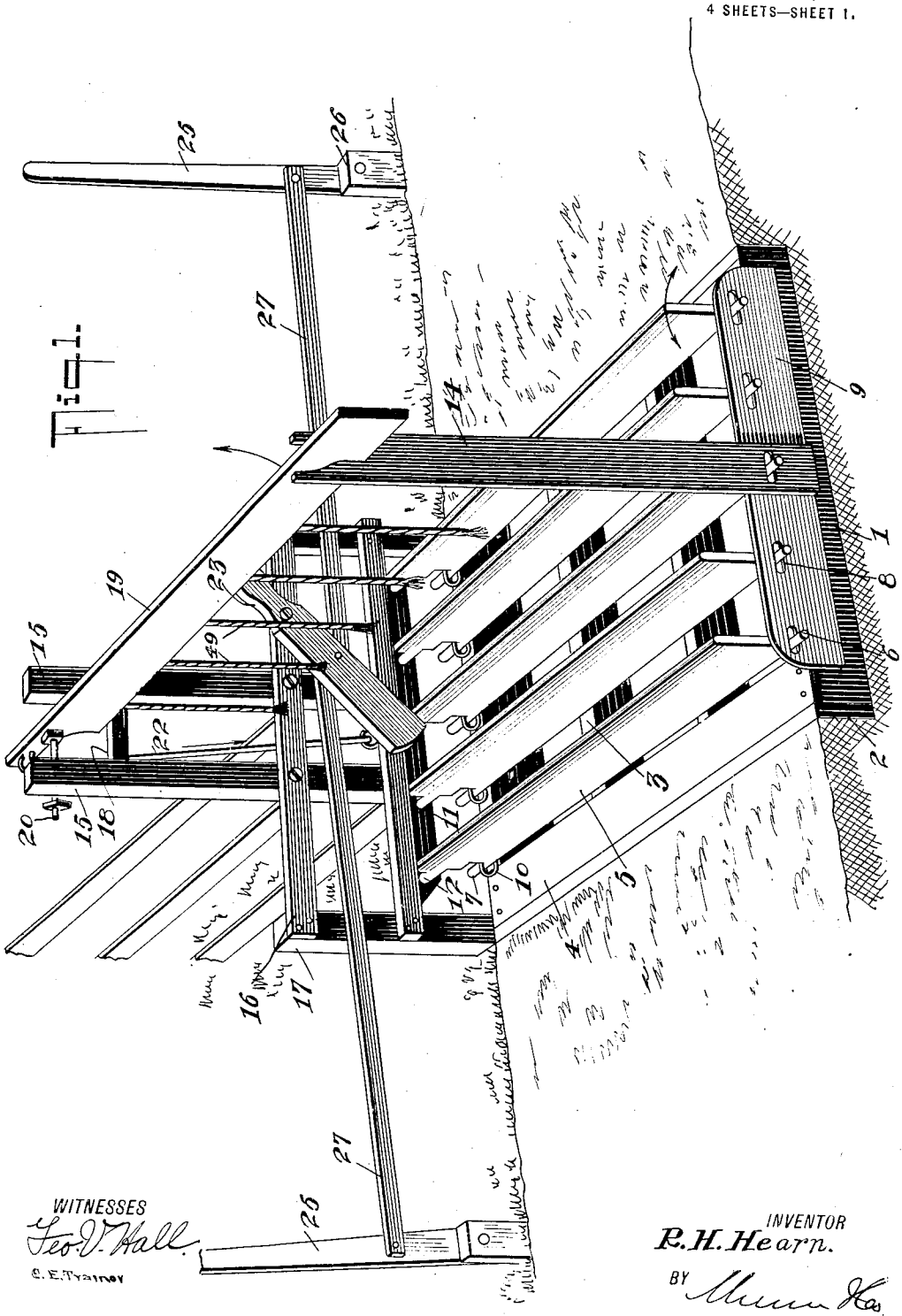
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1,370,689.

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4 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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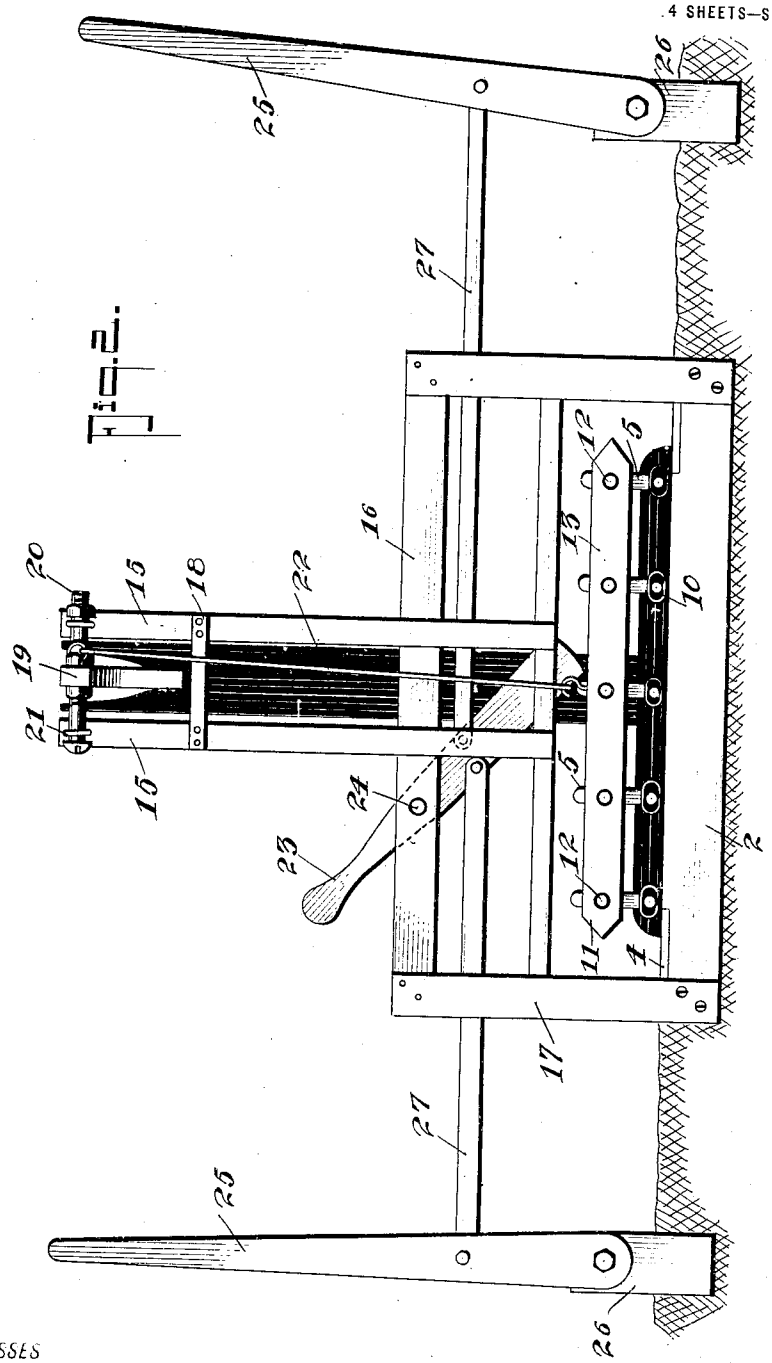
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4 SHEETS—SHEET 2.

Fig. 2.



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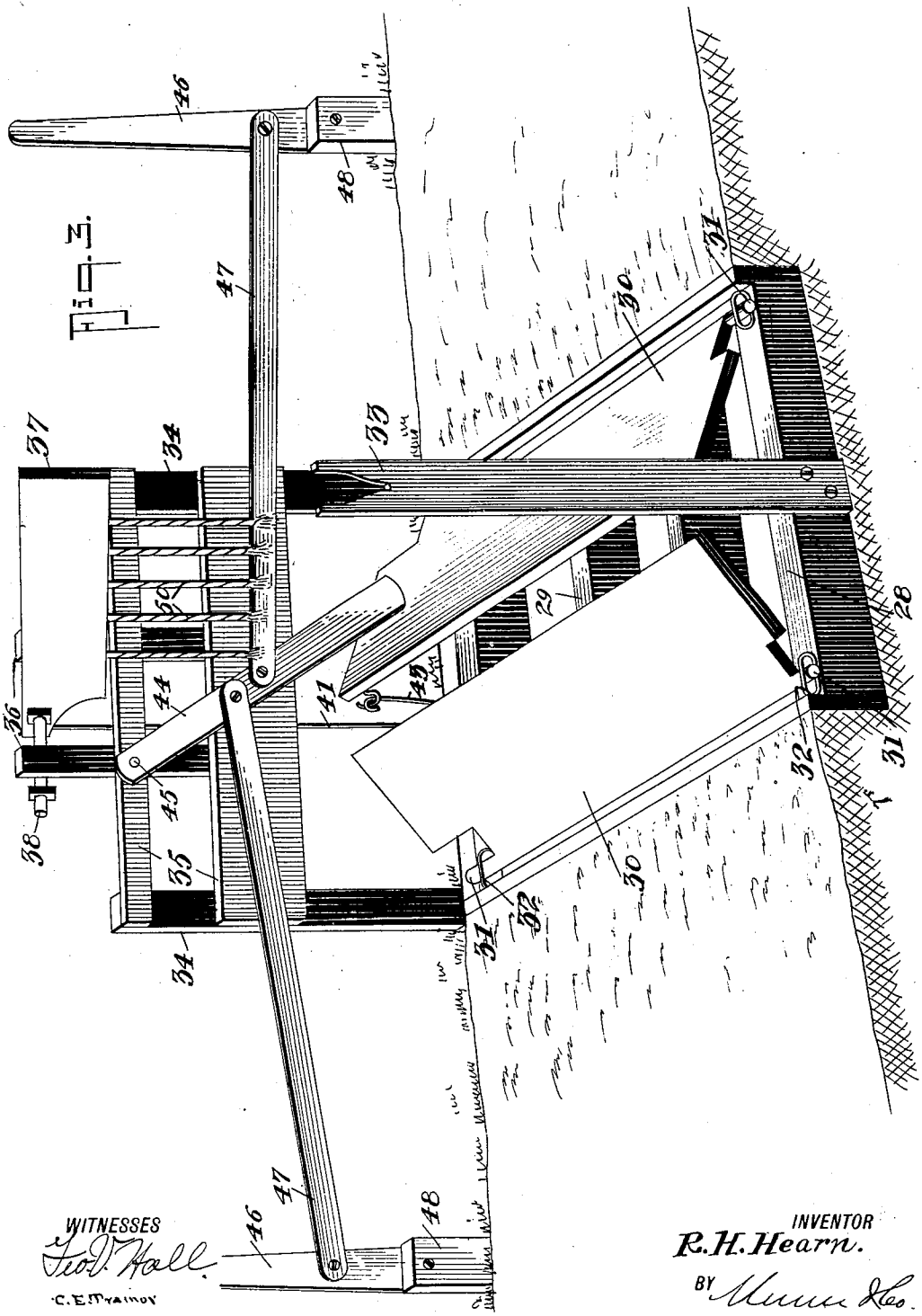
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

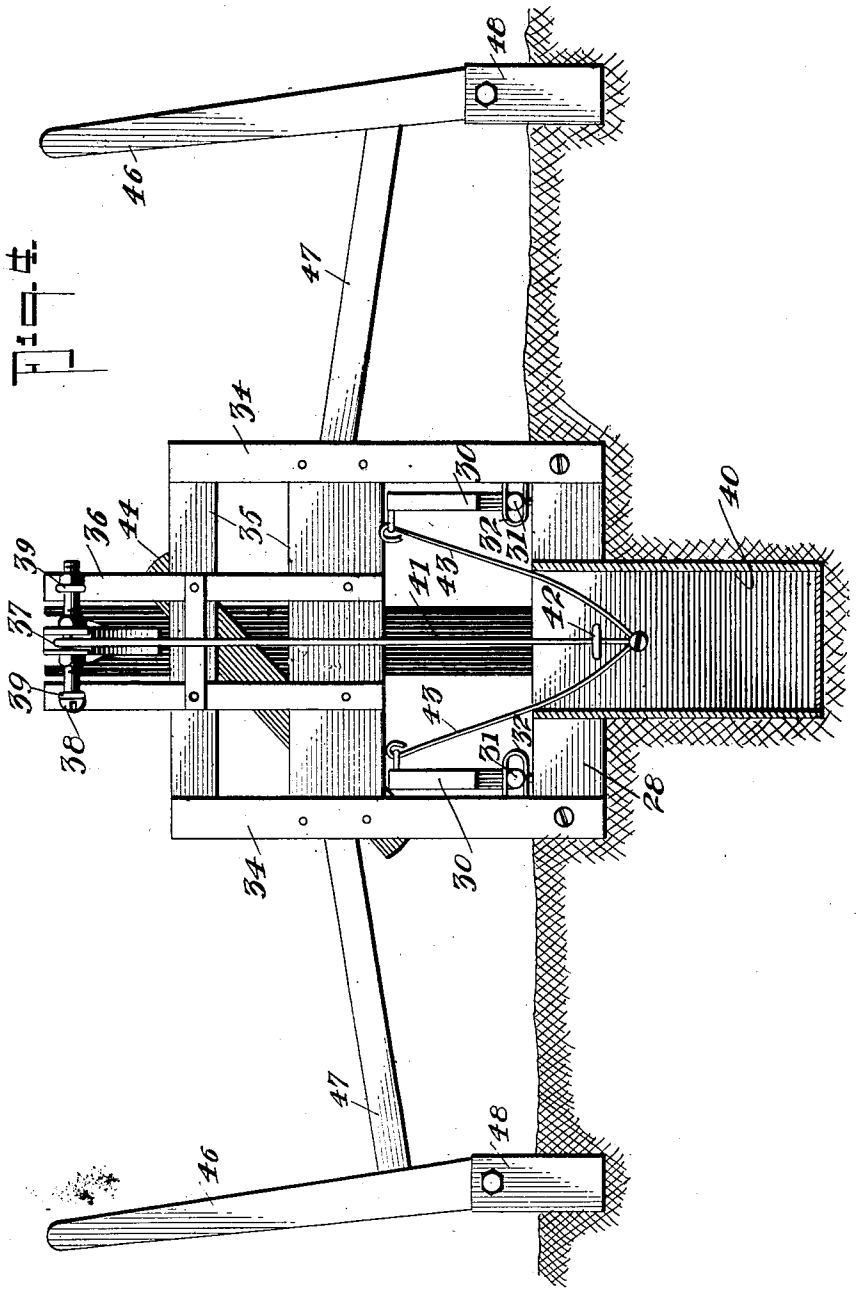


FIG. 4.

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UNITED STATES PATENT OFFICE.

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GATE.

1,370,689. Specification of Letters Patent. Patented Mar. 8, 1921.

Application filed February 18, 1920. Serial No. 359,609.

To all whom it may concern:

Be it known that I, ROBERT HATTON HEARN, a citizen of the United States, and a resident of Dyer, in the county of Gibson and State of Tennessee, have invented certain new and useful Improvements in Gates, of which the following is a specification.

My invention is an improvement in gates, and has for its object to provide a gate especially adapted for preventing the passage of stock when the gate is closed, and so arranged that it may be opened and closed from either side of the gate, the gate consisting of a series of plates so arranged that they may be swung into the same plane, or in parallelism with each other together with means for operating the same, the means for holding the plates in closed position being a counter-weighted bar forming a part of the gate.

In the drawings:

Figure 1 is a perspective view of the improved gate in closed position;

Fig. 2 is an end view, looking at the head of the gate;

Fig. 3 is a perspective view of a modified construction; and

Fig. 4 is a transverse vertical section.

In the embodiment of the invention shown in Figs. 1 and 2, the improved gate is arranged at a pit indicated at 1 and formed in the ground by digging or the like, the pit having a boxed-in curb wall indicated at 2 and sills 3 are provided extending transversely of the curb frame, in substantially parallelism with the end of the frame, and approach plates 4 are secured to the sills at the side members of the frame.

A series of plates 5 is provided, each plate having at each end a journal pin 6 and 7, respectively, and the journal pins 6 are journaled in slots 8 in a bearing plate 9 which is arranged at one side of the gate opening. The journal pins 7 are journaled in eyes 10 on the end member of the frame remote from the bearing plate 9.

Each plate has at the end adjacent to the eyes 10 an extension 11 provided with a journal pin 12, and these pins 12 are journaled in openings in a controlling plate 13, the said plate engaging the journal pins 12 of all of the plates 5.

A standard 14 is secured to that end of the frame adjacent to the bearing plate 9 and this standard is forked at its upper end, as shown. At the opposite end a pair of uprights 15 is arranged, the said uprights being secured to horizontal bars 16 supported by posts 17, and they are arranged on each side of a central plane through the gate. These uprights are connected by a cross bar 18 near their upper ends, and a counterweighted bar 19 is pivoted between the uprights above the cross bar. The bar is of such length that when it is in horizontal position the end thereof remote from the uprights 15 will rest in between the arms of the fork at the upper end of the standard 14.

The shaft 20 which is secured transversely of the bar near one end is held in bearing eyes 21 in the uprights 15, and a link 22 connects the center of the controlling bar 13 with the adjacent end of the counterweighted bar 19.

A lever 23 is pivoted at 24 to the uppermost bar 16, and the upper end of this lever is formed into a grip. The lower end of the bar is positioned to engage the central plate 5 of the series when the lever is swung in one direction to swing the said plate into horizontal position and to simultaneously swing all of the other plates since said plates are connected together. Other levers 25 are pivoted to base blocks 26 on opposite sides of the gate, and each of these levers 25 is connected by a link 27 with the lever 23 so that the lever 23 may be swung by the other lever 25.

In operation, the weight of the bar 19 will normally hold the parts in the position of Figs. 1 and 2. When one approaches the gate from either direction and desires to open the same the lever 25 is grasped and swung in a direction to cause the lever 23 to move to an upright position. The lower end of the lever engaging the central plate 5 will swing all of the plates in a horizontal position, covering the pit so that safe passage is afforded across the same and at the same time the counterweighted bar is lifted and swung into a substantially vertical position so that it does not interfere with the passage through the gate. The lower end of the lever 23 will rest on the upper face of the central plate and will hold the plates down during the passage through the gate. When the user reaches the opposite side he will swing the lever 25 in the opposite di-

rection, lifting the lever 25 and the counterweighted bar will return the parts to normal closed position.

In Figs. 3 and 4, the pit which has a curbing 28 of substantially rectangular formation and cross sills 29 is closed by leaves or plates 30, two in number, each plate being hinged to the curbing frame, by means of journal pins 31 at the ends of the plate, which engage elongated eyes or loops 32 on the curbing frame. It will be noticed referring to Fig. 2 that the side walls of the curbing frame are of greater height than the end walls, the excess height being equal to the thickness of the plates or leaves 30, so that when the plates 30 are folded down in the same plane, their upper faces will be flush with the roadway or with the upper edges of the side members of the curbing frame.

A standard 33 is secured to one end of the curbing frame and a pair of uprights 34 is secured to the other end. These uprights are connected by cross members 35, and uprights 36 are secured to the cross members in spaced relation. A counterweighted bar 37 is pivoted between the uprights 36 at one end of the bar, and the other end of the said bar is adapted to engage between the arms of the fork at the upper end of the standard 33. This bar 37 which is similar to the bar 19 of Fig. 1 is mounted on a shaft 38, which is journaled in eyes 39 on the uprights.

An auxiliary pit curbing 40 is arranged at that end of the curbing 28 which is adjacent to the uprights 36, and a link 41 which is connected at its upper end to the counterweighted bar 37 slides at its lower end through an eye 42 on the auxiliary curbing wall. Links 43 connect the lower end of this link 41 with the free edges of the plates 30 at the adjacent end. The arrangement is such that when the plates or leaves 30 are swung downwardly into the same plane, the counterweighted bar will be lifted into approximately vertical position.

A lever 44 similar to the lever 23 is pivoted to the uppermost cross member 35, as indicated at 45, and the lower end of this lever is in position to engage one of the plates or leaves 30 when the lever is swung into approximately vertical position and to close said leaves. Levers 46 corresponding to the levers 25 of Fig. 1 are arranged at each side of the gate, the said levers being pivoted to posts 47, and each lever is connected by a link 48 with the lever 44. The arrangement is such that when either lever 46 is swung, the lever 44 will also swing to close the gate, or to permit it to be opened by the counterweight.

Preferably a series of ropes or cords indicated at 49 and 50 in Figs. 1 and 3, respectively is connected with the lower edge of the counterweighted bar, said cords depending below the bar.

The operation of the construction shown in Figs. 3 and 4 is precisely the same as that shown in Fig. 1. In practice, the upper edges of the plates 5 and 30 will be beveled or sharpened as will also be the upper edges of the sills.

When a vehicle approaches from either side, the wheels press or turn down the plates forming a smooth passage over which the car passes, and when the car is off, the gate automatically closes.

I claim:

1. In combination, an open frame adapted to be arranged at a gate-way and a series of plates hinged to the frame to swing into parallel planes substantially perpendicular to the plane of the frame or into the same plane to cover said frame, means for constraining these plates to swing in unison, a support at each end of the frame, a counterweight bar pivoted to one of the supports and normally extending longitudinally of the frame and resting at its free end on the other support, a connection between said bar and the plates for holding them in perpendicular position when the counterweighted bar is horizontal, and means for swinging said plates down upon the frame, and means for operating said means from each side of the gate.

2. A device of the character specified, a curbing frame adapted to be arranged within a gate-way to form a pit, leaves hinged to the frame to close the frame or to swing upwardly into substantially vertical position, means for constraining the plates to swing together, means for swinging said plates downwardly to close the frame and operable from a distance and counterweighted means for swinging said plates upward, said counterweighted means comprising a bar supported above the frame and longitudinally thereof and coöperating with the plates to close the gate-way when in normal position.

3. A device of the character specified, comprising leaves hinged to swing into vertical or substantially horizontal position, means for constraining the leaves to swing together, a counterweight bar extending longitudinally of the leaves above the same and connected therewith to swing said leaves upward when the counter-weight is swung downward into approximately horizontal position.

ROBERT HATTON HEARN.