

I. BARKER.

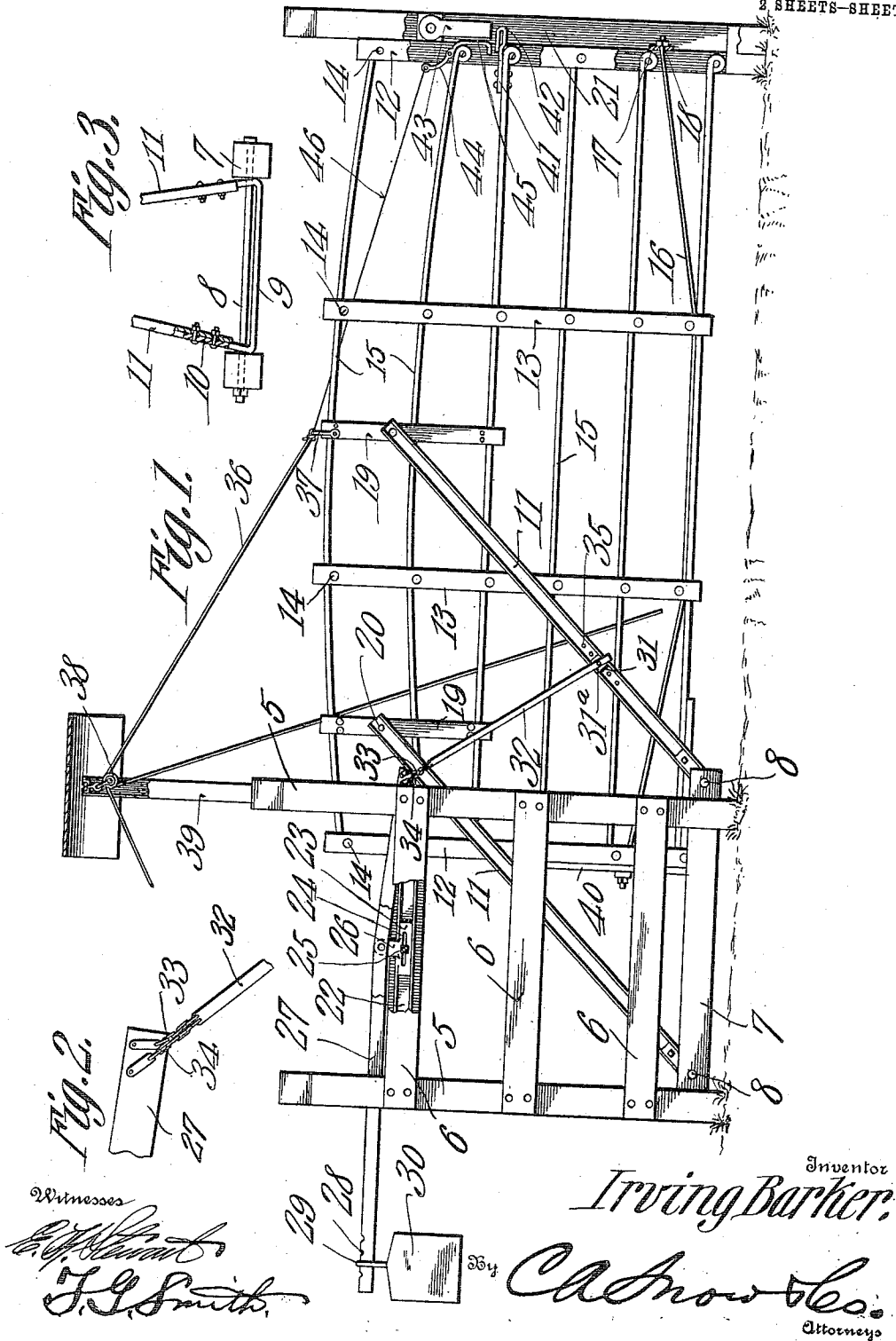
GATE.

APPLICATION FILED SEPT. 13, 1909.

979,410.

Patented Dec. 27, 1910.

2 SHEETS-SHEET 1.



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2 SHEETS—SHEET 2.

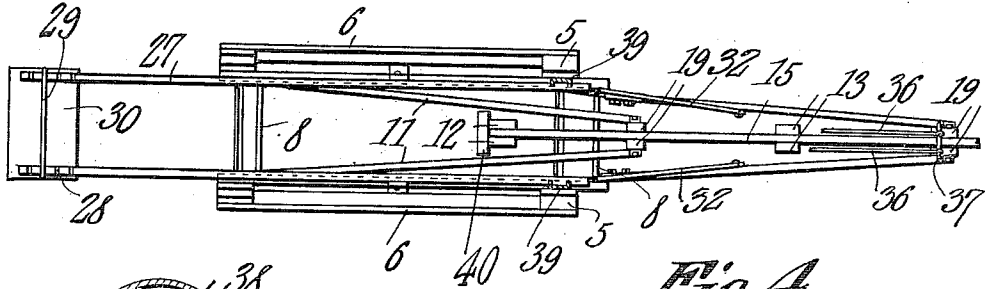


Fig. 4.

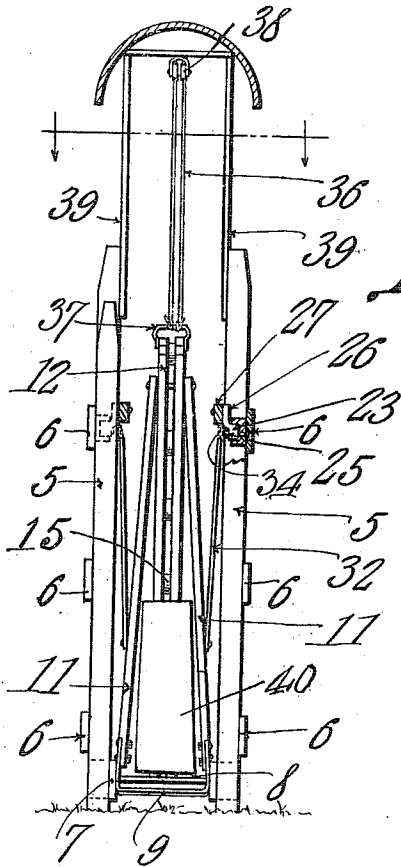


Fig. 5.

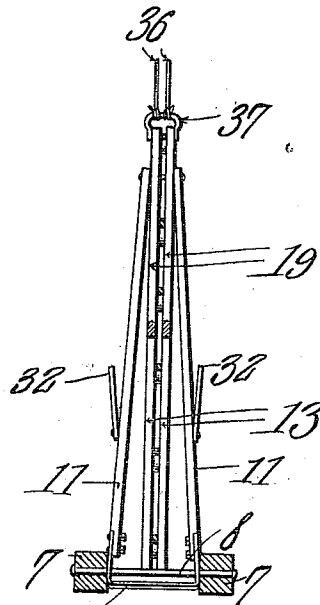


Fig. 6.

Witnesses

E. J. Blain
J. G. Smith

Inventor

Irving Barker

By

C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

IRVING BARKER, OF SPRINGFIELD, ILLINOIS.

GATE.

979,410.

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To all whom it may concern:

Be it known that I, IRVING BARKER, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented a new and useful Gate, of which the following is a specification.

It is the object of the present invention to provide an improved construction of gate and the invention is directed more particularly to that class of gates which include a supporting structure and a gate which is supported upon the structure to be moved upwardly from open to closed position and in which weighted levers are also provided for counter-balancing or nearly counter-balancing the gate and it is one aim of the invention to so mount these weighted levers that they may be readily adjusted to properly control the movement of the gate.

Another object of the invention is to provide, as a connection between the weighted levers above referred to, and the gate, means embodying two flexible connections one of which is taut when the gate is closed and slack when it is open and the other is in reverse condition at corresponding times, the provision of these flexible connections, permitting of adjustment of the weighted levers upon the supporting structure for the gate without interfering with the connection between the levers and the gate.

The connection above described between the weighted levers and the gate, owing to the provision of the two flexible elements, provides means automatically varying the leverage or effective lifting force of the weighted levers, as the gate moves from one position to another.

The invention further contemplates the provision of means for adjustably connecting the flexible connections above mentioned to the supporting means for the gate whereby the leverage may be varied when desired.

The invention still further contemplates the provision of a novel latch for the gate and means for releasing the same when the actuating ropes for lifting the gate are pulled.

With the above and other objects in view, the invention consists in the construction and arrangement of parts shown in the accompanying drawings, in which,

Figure 1 is a view in side elevation of a gate embodying the present invention, the same being shown in a closed position. Fig.

2 is a detail view of one end of one of the weighted levers showing also the flexible connections heretofore mentioned, and Fig. 3 is an end view partly in section and partly in elevation of one of the pairs of supporting arms for the gate. Fig. 4 is a top plan view of the gate. Fig. 5 is an end view thereof. Fig. 6 is a vertical transverse sectional view.

In the drawings, the supporting structure for the gate is illustrated as comprised of spaced pairs of uprights, which are indicated by the numeral 5 and which are connected by bars 6. These uprights 5 are also connected by beams 7 in which adjacent the ends are fixed the ends of shafts 8. Mounted to rock upon each of the shafts 8 is a U-shaped bracket indicated by the numeral 9 and having its arms 10 projecting upwardly and seated in the channels of channel bar arms 11, the arms being in this manner supported upon the beams 7 for rocking movement. These arms 11 serve as the means for supporting the gate proper upon the supporting structure as will be presently described.

The gate proper includes, in its structure, end and intermediate stiles which are indicated respectively by the numerals 12 and 13 and all of the stiles are comprised of a pair of spaced bars secured together in spaced relation by means of bolts 14.

The gate also includes in its structure bars which are indicated by the numeral 15 and the intermediate ones of these bars are of right line extent and are substantially horizontal, or in other words at right angles to the stiles 12 and 13, whereas the upper ones of the bars 15 are bowed or arched upwardly as is clearly shown in Fig. 1 of the drawings, all of the bars except the lowermost one being passed above certain of the bolts 14 which connect the bars comprising the stiles of the gate. The said bars 15, as is also clearly shown in Fig. 1 of the drawings, are secured at their ends to the bolts connecting the bars comprising the end stiles 12.

In order to prevent sagging of the intermediate portion of the gate, a front rod 16 is passed beneath the lowermost ones of the bolts connecting the bars comprising the intermediate stiles 13 of the gate and at its ends this rod is engaged through plates 17 disposed against the bars comprising the end stiles of the gate and upon the said ends

of the rod are threaded nuts 18 which may be tightened to place the rod under tension.

Bars 19 are secured upon the upper ones of the bars 15 of the gate in pairs and the arms 11 for supporting the gate are pivoted at their upper ends as at 20 to these bars 19, it being understood that the gate may be swung from the position indicated in Fig. 1 of the drawings, upwardly and over to a corresponding position to the other side of the supporting structure upon which it is mounted so as to clear or open the passageway between the supporting structure and a latch post which will be presently specifically described.

As has heretofore been stated there is provided means for counter balancing or nearly counter-balancing the weight of the gate and such means will now be described. Upon the inner faces of each uppermost bar 6 of the supporting structure, there is secured a channel iron which is indicated by the numeral 22, and fitted in the channel in each iron is a block 23 which may be slid in the said channel, this block being formed with a slot 24 and having passed through its slot a bolt 25 which passes also through the web of the channel iron and serves to hold the block in adjustment in the channel. Each of the blocks 23 includes an upstanding portion 26 to which is pivoted a lever indicated by the numeral 27, and having portions extending to both sides of its pivot, the lever adjacent to one end being provided in its upper edge with a number of notches 28 for the engagement interchangeably of a bail 29 which supports a weight block 30.

It will be understood that there are two of the members 27 and that the blocks 30 are of sufficient weight to nearly counter-balance the weight of the gate.

Mounted for sliding adjustment in the channel of the channel bars of one pair 11, are blocks 31 to which are pivoted bars 32 which at their upper ends are connected to the lower ends of two lengths of chain which are indicated one by the numeral 33 and the other by the numeral 34. As illustrated each length of chain 33 is connected to the lever 27 practically at its extreme end opposite the end at which the weight block 30 is supported, whereas the other lengths of chain 34 are connected to their respective levers 27 rearwardly of this point.

It will be understood from the foregoing that the tendency of the weight blocks 30 is to swing down the ends of the levers from which they are supported and to swing the opposite ends of the levers upwardly thereby tending to swing the gate up from the position shown in Fig. 1 of the drawing, and, on the other hand when the gate is in open position, to swing it up in a reverse direction.

As illustrated, the blocks 31 are mounted

in their respective channel arms by passing through each of these blocks a pivot bolt 31^a which serves to pivot the bars 32 thereto and passing these bolts also interchangeably through openings 35 in the webs of the arms.

It will now be understood from the foregoing description of the invention that as the gate is swung over from open to closed or from closed to open position, the lengths of chain 34 will gradually become slack and the lengths 33 become taut, or vice versa; that this slackening of one chain and tightening of the other will vary the effective lifting force exerted by the weighted levers owing to the fact that whereas the connection had by the chains 33 with the levers is near the ends of the levers, the connection had between the chains 34 and these levers is at a point inwardly of the first mentioned point of connection. In other words, when the chains 33 are taut, the lifting force of the weighted levers will be less effective than when the chains 34 are taut.

It will further be understood that by adjusting the blocks 23 in the channels of the channel iron 22, the leverage may be varied so that the gate may be made to close more or less quickly as may be desired. Also, the blocks 31 may be adjusted in their respective channel arms 11 to vary the point of connection of the bars 32 with the respective arms.

In order that the gate may be swung from open to closed or from closed to open position from a distance, cables which are indicated by the numeral 36, are connected to a clevis 37 upon the upper ends of one pair of the bars 19 (that pair located substantially midway between the ends of the gate) and these cables are trained over pulleys 38 which are mounted at the upper ends of uprights 39 which extend above and are supported by one pair of the uprights 5 of the supporting structure of the gate, and are led to any convenient point, one to one side of the gate and the other to the other side thereof so that the gate may be opened when approached from either direction.

In order to prevent animals passing between the gate and the uprights of the supporting structure therefor, a board or plate 40 is secured upon the inner end stile 12 of the gate, and substantially fills in the space between both sides of the supporting structure and in addition to this means there is also provided means for preventing the gate being lifted by an animal attempting to pass thereunder, and this means will now be described.

Secured upon one of the intermediate bars 15 of the gate at the outer end thereof, is a strip 41 which is bent back upon itself as at 42 to afford a reinforced portion which projects beyond the outer edges of the bars comprising the outermost one of the end stiles

12 of the gate, and pivoted between the two posts comprising the gate post 21, is a pendent gravity controlled latch or detent which is indicated by the numeral 43, the same being of such a weight as to normally hang with its lower end directly above and but very slightly spaced from the reinforced or overturned portion of the strip 41 whereby to prevent direct upward movement of the gate when in the position illustrated in Fig. 1 of the drawings, or in other words when in closed position. It is expedient, however, that some means be provided for swinging this gravity latch out of position for engagement by the strip 41, when it is desired to open the gate from a distance, and such means is embodied in a pivoted arm which is indicated by the numeral 44 and has a normally downwardly extending end portion 45, which, when the arm is rocked upon its pivot engages against and swings outwardly the gravity latch 43. To the upper end of this arm 44, above its pivot, is connected a cable 46 which at its other end is attached to the clevis 37. It will now be understood that the initial pull exerted upon either one of the cables 36 will result in the clevis 37 being rocked in the direction of pull and thereby exerting a pull upon the cable 46 serving to rock the arm 44 and swing the gravity latch in the manner stated, subsequent pull upon either of the cables 36 serving to lift and swing over the gate from closed to open position.

What I claim is:

1. In a structure of the class described, a supporting structure, a gate, arms mounted upon the structure and supporting the gate

for movement between its open and closed positions, a weighted lever mounted upon the supporting structure, a rod connected to one of the arms, and two flexible elements connecting the end of the rod and the said lever.

2. In a structure of the class described, a supporting structure, a gate, arms mounted upon the structure and supporting the gate for movement between its open and closed positions, a weighted lever mounted upon the supporting structure, a rod connected to one of the arms, and two flexible elements connecting the end of the rod and the said lever, the point of connection of one of the flexible elements with the lever being inwardly of the point of connection of the other flexible element therewith.

3. In a structure of the class described, a supporting structure, a gate, arms mounted upon the structure and supporting the gate for movement between its open and closed positions, a weighted lever adjustably mounted upon the supporting structure, a rod adjustably connected to one of the arms, and two flexible elements connecting the end of the rod and the said lever, the point of connection of one flexible element with the lever being located inwardly of the point of connection of the other flexible element therewith.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

IRVING BARKER.

Witnesses:

JOHN E. GEORGE,

ALBERT H. RANKIN.