Nov. 18, 1958 E. H. FLATHMAN 2,860,428

GATE

Filed Aug. 30, 1956 2 Sheets-Sheet 1

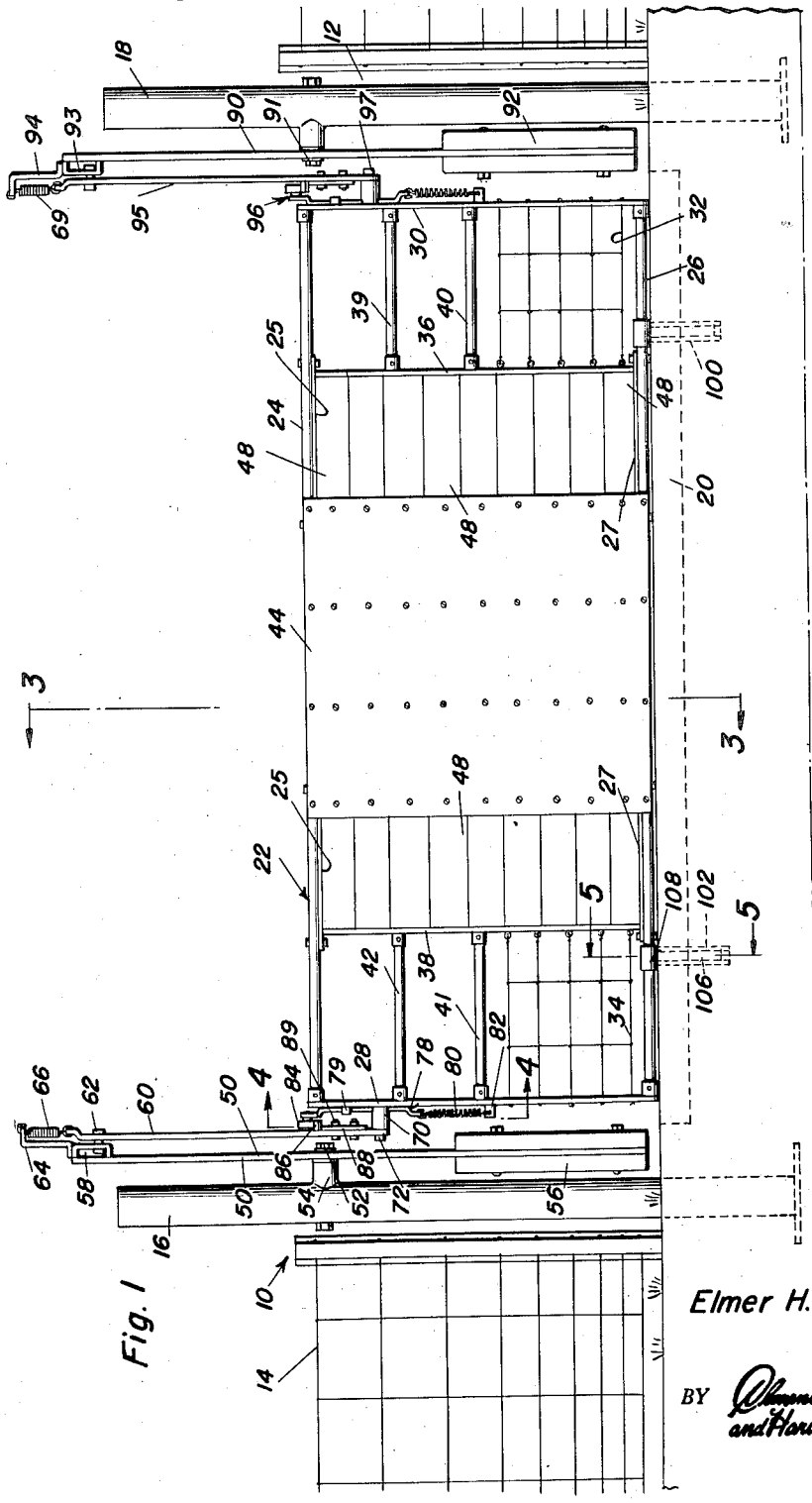


Fig. 1

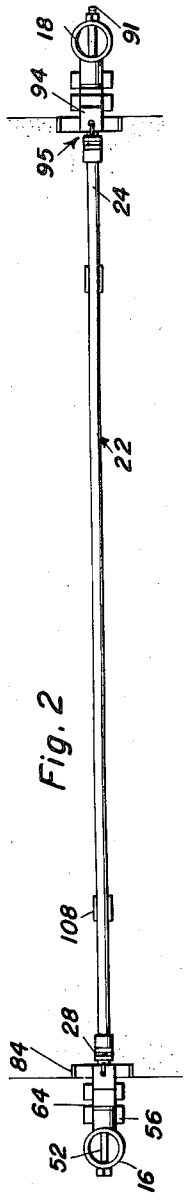


Fig. 2

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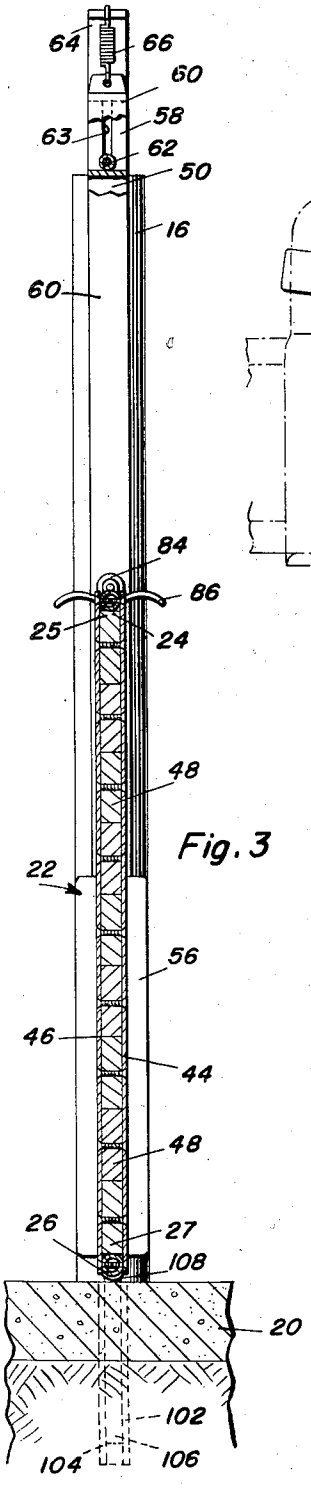


Fig. 3

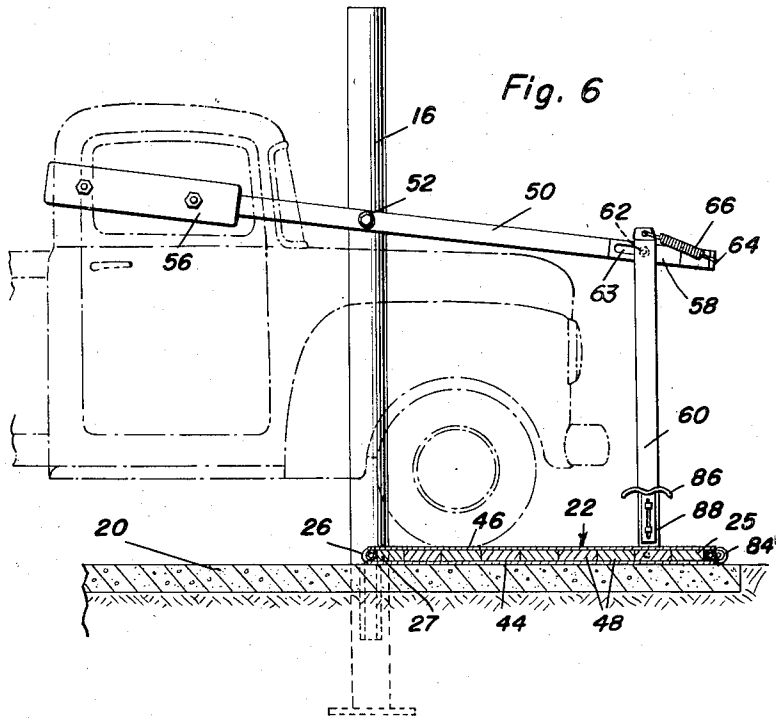


Fig. 6

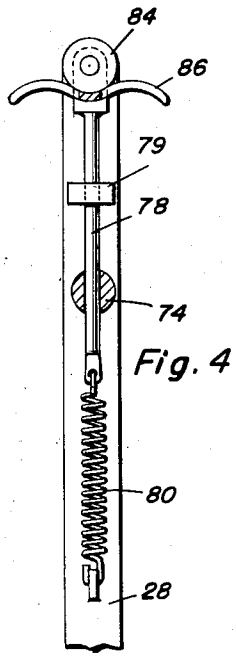


Fig. 4

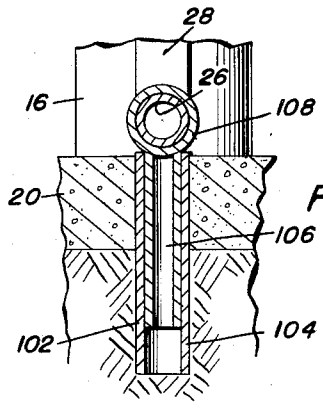


Fig. 5

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GATE

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Application August 30, 1956, Serial No. 607,100

4 Claims. (Cl. 39—5)

This invention relates to gate constructions and more particularly to a gate that is adapted to be opened by force applied thereon by an approaching motor vehicle, as a truck, tractor or other standard and commercially available type of motor vehicle.

An object of the present invention is to provide a structurally improved gate which is very easily operative, the gate including a closure that is adapted to be swung about a generally horizontal pivot along the lower edge of the closure when a motor vehicle contacts the closure and applies a force thereon, as by the front bumper of the vehicle, the motor vehicle continuing to ride over the closure as it is swung to an approximately horizontal position and the closure automatically returning to the upright and closed position after the motor vehicle is free from the gate.

A further object of the present invention is to provide a gate that has a closure capable of being operated by the force applied by means of a motor vehicle, the closure also being capable of a manual operation by release of pins, the manual operation being such as to swing the closure about a hinge axis which is approximately perpendicular to the previously mentioned horizontal hinge axis along the lower edge of the gate closure.

A further object of the invention is to provide a gate construction which operates smoothly, safely and positively, the gate functioning in such manner that the operator of the motor vehicle intending to go through the passage controlled by the gate need not stop his motor vehicle and need only continue in its course at a moderate speed, the motor vehicle depressing the gate and passing over it.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is an elevational view of a gate constructed in accordance with the invention;

Figure 2 is a top view of the structure in Figure 1;

Figure 3 is an enlarged sectional view taken on the line 3—3 of Figure 4;

Figure 4 is an enlarged sectional view taken on the line 4—4 of Figure 1;

Figure 5 is a sectional view of one of the ground spindles and taken on the line 5—5 of Figure 1; and

Figure 6 is a sectional view of the structure in Figure 1, this view showing the gate in the down or open position and being operative by a motor vehicle.

In the accompanying drawings there is a gate **10** constructed in accordance with the invention. This gate is arranged to control the passage **12** in fence **14**. The construction includes a pair of spaced posts **16** and **18**, respectively, which are anchored in the ground on opposite sides of driveway **20** which may be made of concrete, asphalt, or merely compacted soil depending on the desires of the owner of the gate construction.

The gate comprises a closure **22** operable to open and close passage **12**. The closure is rectangular having upper and lower members **24** and **26** made of pipe, tubing or other structural framing members and reinforcing bars **25** and **27** are connected thereto. The closure also has sides **28** and **30** which are welded or otherwise fixed at their ends to the top and bottom members **24** and **26**. Wire cloth panels **32** and **34** are attached at the lower corners of the generally rectangular closure **22**, being secured to vertical supports **36** and **38** that are welded or otherwise rigidly secured to the upper and lower members **24** and **26**, and also to the sides **28** and **30**. Above the panels **32** and **34** there are horizontal bars **39**, **40**, **41** and **42**. Metal plates **44** and **46** are bolted or otherwise fastened to iron bars **48** which extend between and are secured to braces **36** and **38**. The sheet metal covering **44** and **48** is attached in place by countersunk screws or other non-protruding means inasmuch as the bumper of the motor vehicle or the equivalent part thereof is adapted to slide on either covering depending upon which way the gate is to be swung open, that is, forwardly or rearwardly in accordance with whether it is the desire of the motorist to enter or leave the area that is enclosed by the fence **14**. The bars **48** form the tread on which the tires of the motor vehicle are adapted to ride.

Identical means are provided on opposite sides of the gate in order to yieldingly oppose the movement of the gate from the up, passage closing position to the down, passage opening position. For one side of the closure there is a lever **50** pivoted between its ends on pivot pin **52**, the latter being secured to post **16**, as by spot welding or merely mounting in a sleeve **54**. One end of the lever has a counterweight **56**, spring or equivalent for the purpose of opposing pivotal movement of lever **50** in one direction and also for returning the lever to the rest position after it has been moved. The opposite end of lever **50** is fitted with a channel block **58** to which link **60** is slidably pivoted, as by pivot pin **62** in slot **63** of block **58**. Spring hanger **64** is bolted or otherwise fixed to the block **58**, spring **66** being supported by hanger **64** and by the extremity of link **60**. Spring **66** and its identical counterpart **69** function as shock absorbers and arresters when the closure is returned from the open position.

Side **28** of closure **22** has a sleeve **70** welded or otherwise fixed to it and the sleeve protrudes laterally therefrom. The purpose of the sleeve is to accommodate pin **72**, the latter constituting a part of the means for releasably connecting link **60** to the closure **22**. The sleeve **70** functions in addition, as a guide inasmuch as it has a passage **74** extending transversely therethrough, the passage constraining the motion of push rod **78**. The push rod passes through a guide **79** on side **28** to further aid in constraining the motion of the push rod **78**. Spring **80** is secured to one end of the push rod and to an ear **82** welded or otherwise attached to the side **28** of the closure **22**. The opposite extremity of the push rod supports a locking member, as roller **84** which coacts with the saddle **86** to form a latch for the gate closure. Saddle **86** is at the upper end of a mounting arm **88** formed with slots through which fastening bolts **89** pass in securing the saddle onto the link **60** in the proper, selected position along the length thereof. Accordingly, the latch to hold the gate in the upright position is carried by link **60** and side **28** of closure **22**.

On the opposite side of the gate closure **22** there is a lever **90** mounted for pivotal movement on pin **91**, the latter being secured to post **18**. Counterweight **92** is at one extremity of lever **90**, while the other end has a channel block **93** secured to it on which spring hanger **94** is secured. This spring hanger supports spring **69** for a reason described previously, the spring not only

being secured to the hanger but also to the link **95** which is identical in function and construction to link **60**.

Latch **96** is identically constructed to the latch on the opposite side of the closure **22**, and the link is connected to the side **30** of closure **22** by means of a pin **97** that is detachable.

The described structure on opposite sides of the closure **22** will permit the closure to swing about a generally horizontal axis established by the lower member **26** of the closure. Ground boxes **100** and **102** are operatively connected with the closure **22**. Each box (Figure 5) has a sleeve **104** that is anchored in the ground and in which there is a spindle **106**. Bearing **108** is welded or otherwise fixed to the upper end of spindle **106** and has the lower gate member **26** mounted for oscillation therein. Accordingly, the closure **22** may rock forward or backward with the generally horizontal hinge axis being established by the lower member **26** of the closure **22**.

In operation, a motor vehicle approaches and contacts the closure **22** applying a horizontal force on it. This moves the closure to a down position against the yielding opposition of the counterweights **56** and **92** through the action of the links and levers. The latches at the sides of the gates are automatically released by the rollers thereof moving off their saddles against the yielding opposition of the springs operatively connected with the latches.

After the motor vehicle has passed over the closure **22**, it swings back to the erect, closed position by the pull of gravity acting on the counterweights **56** and **92**. This force is transmitted to a lifting movement of the closure through the levers and links with the shock being arrested by the pair of springs **66** and **69** as the closure automatically latches in place.

In order to open the gate manually it may be pushed by hand instead of by motor vehicle. When it is desired to open the gate or remove the gate for one reason or another, it is necessary only to remove the hinge pins **72** and **97** and lift one end of the gate from connection with its ground box. The spindle in the other ground box will act as a hinge pin so that the gate may be swung around the vertical axis. Alternatively, the closure may be separated from both of its ground boxes depending upon the desires of the owner.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be restorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A gate construction comprising a pair of spaced posts, a closure mounted between said posts, a pair of generally vertical spaced spindles between said posts, a bearing at the upper end of each spindle in which the lower part of said closure is pivotally mounted in order that the closure may be swung to the open and closed positions about a generally horizontal axis, a lever pivoted to each post, a link slidably and pivotally connected to each lever, means releasably connecting said links to the sides of said closure so that said closure may be swung about a generally vertical axis upon separation of one of said spindles, a pair of latches operatively connected to said links and the sides of said closure to hold said closure erect, and means connected to said levers for yieldingly retaining said levers in a position wherein said closure is erect.

2. A gate construction comprising a pair of posts that are spaced from each other, a closure having a lower member, means including bearings detachably supported at ground level for mounting said member for pivotal movement about a generally horizontal axis whereby the closure may be moved to an approximately horizontal down position when open, means to return the closure to the upright, closed position, said return means comprising for each side of said closure a lever pivoted to said posts, a link slidably and pivotally connected at the outer end of each lever, a counterweight at the opposite end of each lever, means pivotally connecting said links to the sides of said closure, latches operatively connected to said links and said closure to hold said closure releasably in the upright position.

3. A gate construction comprising a pair of posts that are spaced from each other, a closure having a lower member, means including bearings detachably supported at ground level for mounting said member for pivotal movement about a generally horizontal axis whereby the closure may be moved to an approximately horizontal down position when open, means to return the closure to the upright, closed position, said return means comprising for each side of said closure a lever pivoted to said posts, a link slidably and pivotally connected at the outer end of each lever, a counterweight at the opposite end of each lever, means pivotally connecting said links to the sides of said closure, latches operatively connected to said links and said closure to hold said closure releasably in the upright position, and shock arresters connected between said links and said levers.

4. A gate construction comprising a pair of posts that are spaced from each other, a closure having a lower member, means including bearings detachably supported at ground level for mounting said member for pivotal movement about a generally horizontal axis whereby the closure may be moved to an approximately horizontal down position when open, means to return the closure to the upright, closed position, said return means comprising for each side of said closure a lever pivoted to said posts, a link slidably and pivotally connected at the outer end of each lever, a counterweight at the opposite end of each lever, means pivotally connecting said links to the sides of said closure, latches operatively connected to said links and said closure to hold said closure releasably in the upright position, said means pivotally connecting said links to said closure including detachable pins, said means connecting said lower member for pivotal movement also being detachable.

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