J. W. KRAUS.

GATE.

APPLICATION FILED MAR. 16, 1911.

1,007,453.

Patented Oct. 31, 1911.

3 SHEETS—SHEET 1.

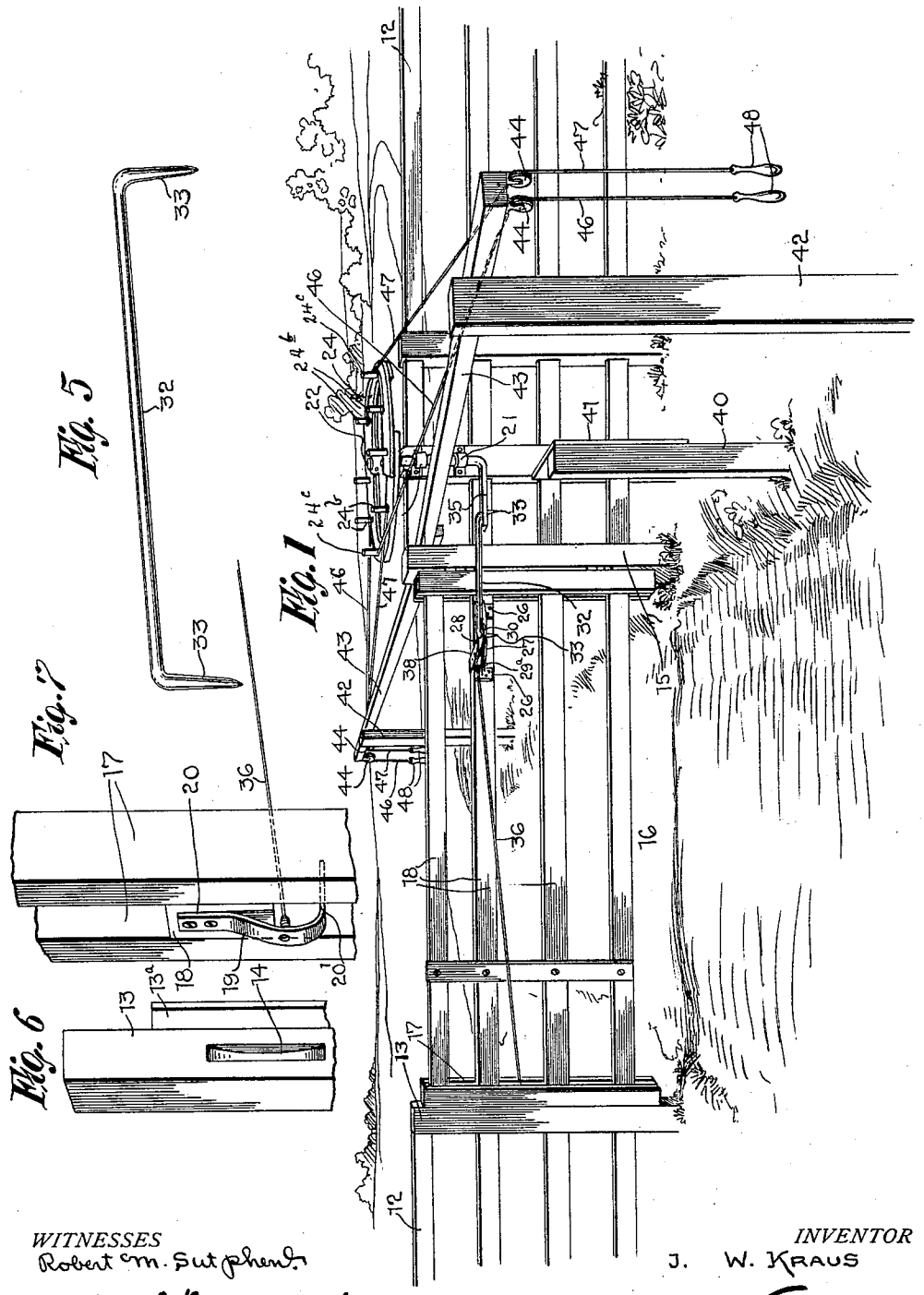

Fig. 1

Fig. 5

Fig. 7

Fig. 6

WITNESSES

Robert M. Sutphen.

Ross Woodward.

INVENTOR

J. W. KRAUS

By E. C. Crooman, Attorney.

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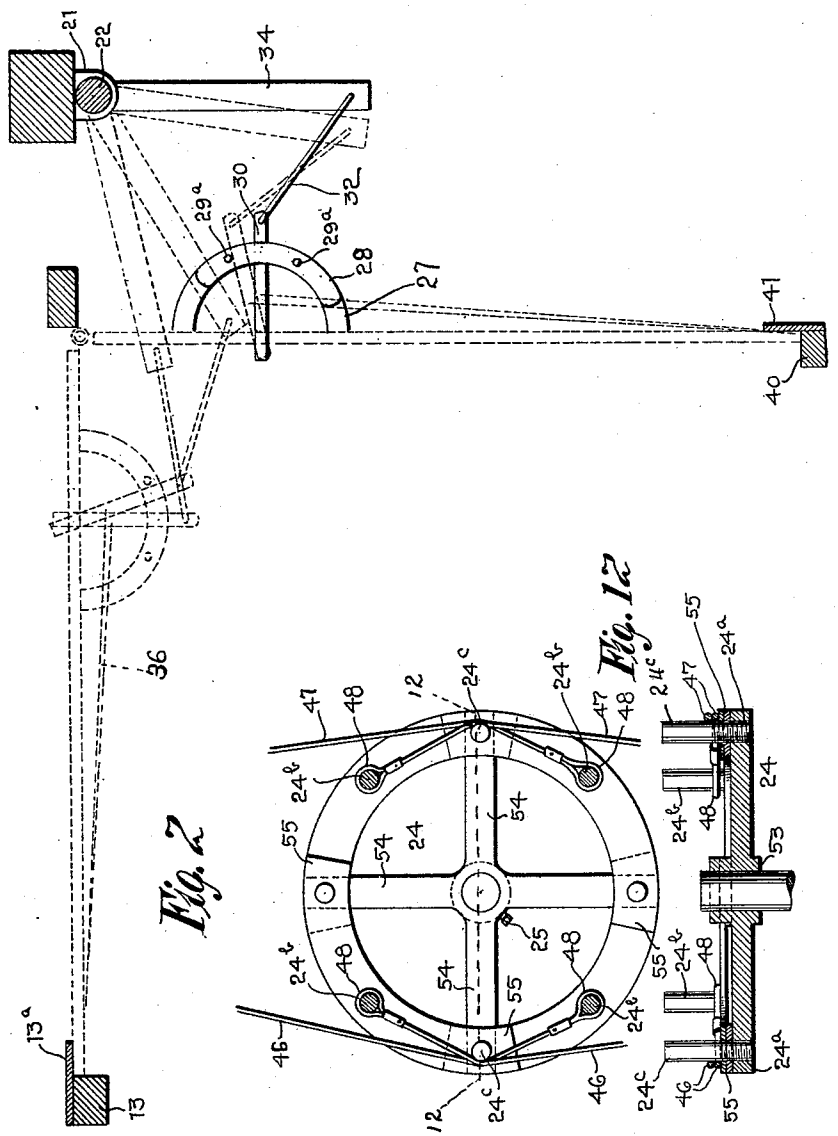

Fig. 11

Fig. 12

Fig. 2

WITNESSES

Robert M. Sutphen

H. Joseph Doyle

INVENTOR

J. W. KRAUS

By E. G. Siggers, *Attorney.*

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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3 SHEETS—SHEET 3.

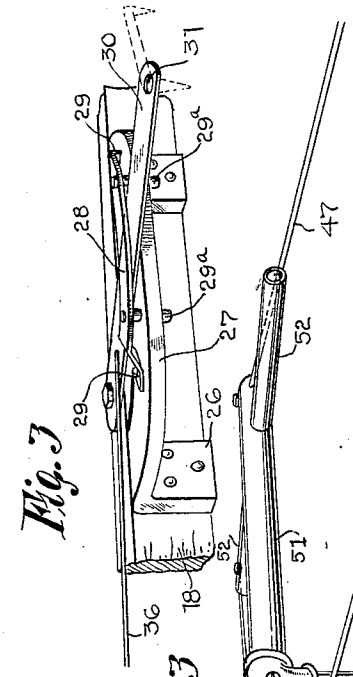


Fig. 3

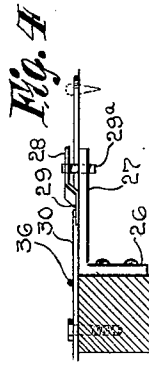


Fig. 4

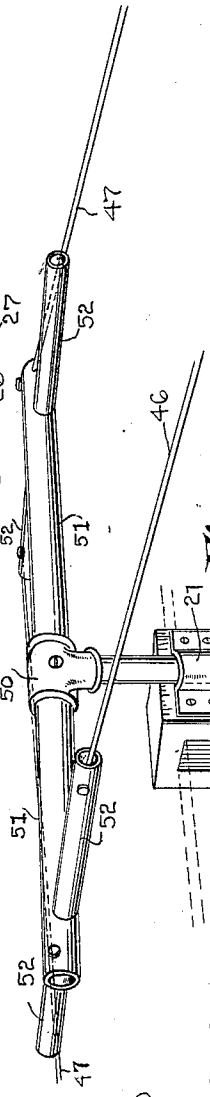


Fig. 13

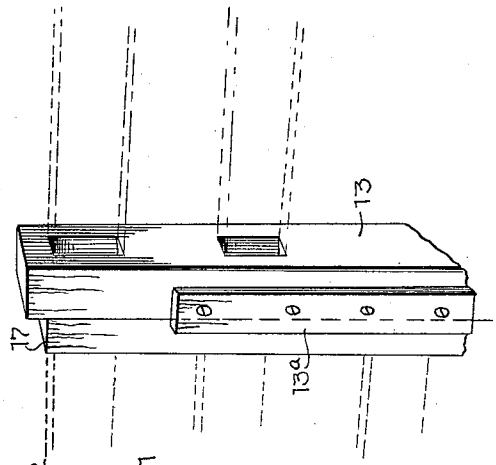
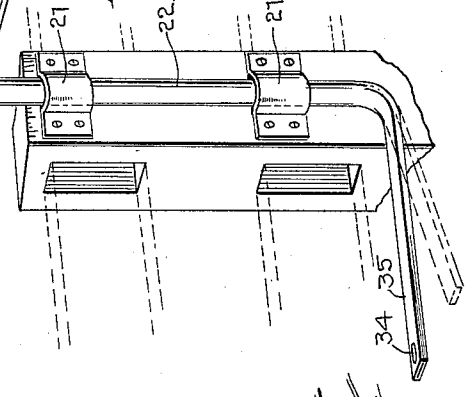


Fig. 8



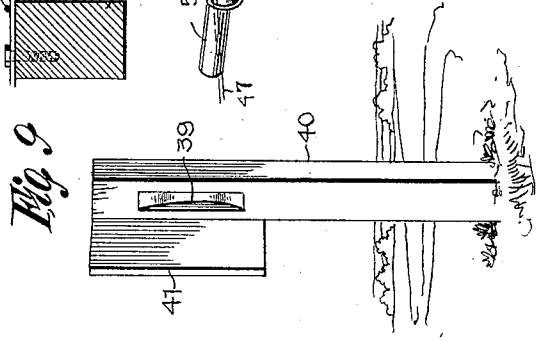


Fig. 9

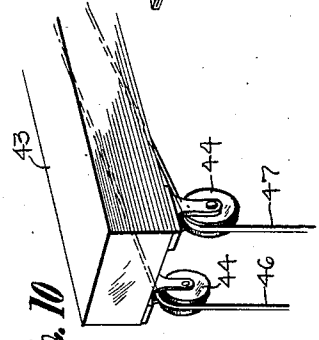


Fig. 10

Witnesses
Robert M. Sutphen.
Ross Woodward

Inventor
J. W. KRAUS
By E. C. Ivison
his Attorney.

UNITED STATES PATENT OFFICE.

JACOB W. KRAUS, OF HAMPTON, VIRGINIA.

GATE.

1,007,453. Specification of Letters Patent. Patented Oct. 31, 1911.

Application filed March 16, 1911. Serial No. 614,805.

To all whom it may concern:

Be it known that I, JACOB W. KRAUS, a citizen of the United States of America, residing at Hampton, in the county of Elizabeth City and State of Virginia, have invented certain new and useful Improvements in Gates, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to gates, and has special reference to gates provided with mechanism by means of which a person approaching on horse back or in a vehicle may open the gate without dismounting or alighting, and may close the gate after passing through the gateway without dismounting or alighting.

The invention has for its object to provide an improved operating mechanism having a gate of this kind by means of which the gate can be unlocked at a distance from and opened by the same operation by a person approaching on horse back or in a vehicle without dismounting or alighting.

Preferred and practical embodiments of the invention are shown in the accompanying drawings, wherein:—

Figure 1 is a perspective view of the improved gate and the operating mechanism therefor. Fig. 2 is a top plan view of the operating wheels and cables of said mechanism. Fig. 3 is a detail perspective view of the mechanism carried by the gate. Fig. 4 is a view in side elevation thereof. Fig. 5 is a detail view of the link that connects the operating shaft to the gate mechanism. Figs. 6 and 7 are detail views of the latching posts of the fence and the gate respectively. Fig. 8 is a similar view of the latching post of the fence, showing an abutment, or stop, carried thereby. Fig. 9 is a similar view of a post for holding the gate when opened. Fig. 10 is another similar view showing the pulleys that carry the gate operating cables. Fig. 11 is a diagrammatic top plan view showing the gate closed, dotted lines being used to show the position of the gate when opened and closed. Fig. 12 is a vertical sectional view taken on the line 12—12, Fig. 2. Fig. 13 is a detail perspective view showing a modified form of the shaft-operating means.

The improved gate is shown in connection with a fence 12, having the latching post 13, the front vertical face of which is provided with a recess 14 formed in said post as a latch keeper. Post 13 is provided with a flat abutment or stop 13^a for the gate. The fence is also provided with the hinge post 15 to which the rear end of the gate 16 is hinged.

The front end of the gate is shown as formed of two vertical bars 17 that are retained in spaced parallel relation by the forward ends of the horizontal bars 18, the forward end of one of said bars forming a support for the latch 19 that engages the keeper 14. Said latch 19 is preferably formed of flat, resilient material having its upper end portion 20 fastened to said bar. The latch 19 is bowed outwardly and its free portion projects below the bar 18 to which the latch is fastened and has its free end 20′ projected rearwardly between bars 17.

Adjacent the hinge post 15, one of the vertical posts of the fence is provided with strap bearings 21 which are arranged in spaced vertical alinement, and an operating shaft 22 is journaled in said bearings. The upper end of shaft 22 has the hub of a wheel 24 detachably fastened thereon by means of the set screw 25. Wheel 24 is provided with regularly spaced threaded transverse openings 24^a in which the upstanding lugs 24^b and intermediate guiding lugs 24^c are mounted.

One of the horizontal bars of the gate has the flanged ends 26 of a bracket 27 fastened thereto, said bracket being preferably curved on an arc of a circle. The bracket 27 is preferably arranged adjacent the rear end of the gate, and a guide strip 28 is arranged in spaced relation above said bracket and has its flanged ends 29 suitably fastened to said bracket. Abutment pins or lugs 29^a connect the bracket and guide strip adjacent the ends of said strip. A lever 30 projects between the bracket 27 and guide strip 29 and has one end pivotally fastened to the gate bar that carries said bracket. Lever 30 is elongated and projects well beyond the bracket 27 and its outer end is provided with an opening 31 that is engaged by a hook at one end of a link 32. The link 32 is preferably a rod having its ends bent to provide the hooks 33, one of which engages opening 31, the other engaging an end opening 34 in a crank 35 that projects from the lower end of shaft 22. Lever 30 has a cable connection 36 with the free portion of latch

19. This manner of connecting lever 30 to the latch 19 provides means whereby the latch is retracted when the lever is swung in either direction so that when the gate is being opened, the latch is released from the keeper of the latching post of the fence, and when being closed is released from the keeper 39 of the post 40 arranged at one side of the road and with which the gate contacts when opened. Said post 40 is provided with a flat abutment or stop 41 for the gate.

As will be clear from the foregoing, the gate is swung on its hinge connection with the fence by rotating shaft 22, which, through its link connection 32 with lever 30, swings said lever. The initial swinging movement of the lever 30 obviously releases latch 19 from the keeper with which it is engaged, and when the said lever 30 contacts with either of the abutments 29^a, its movement is arrested and the pull of the end crank 35 of shaft 22 is exerted on the gate with the result that the gate is swung on its hinge connection with the gate post 15.

To permit the shaft 22 to be rotated from either approach to the gate, duplicate operating means are provided which include the roadside posts 42, which are connected to the hinge post 15 of the fence by the horizontal beams 43, the free ends of which each carry two pulleys 44. Cables 46—47 pass over pulleys 44 and have end loops 48 which engage the lugs 24^b of wheel *b*. The free ends of cables 46—47 are provided with handgrips 48. The cables 46 are used for swinging the gate to an open position and the cables 47 used for closing the gate. As is clearly shown in Fig. 2, the lugs 24^b are arranged in pairs, which are oppositely-disposed. The cables 46 engage one pair of the lugs and pass over the guide lug 24^c that is carried by wheel 24, and which is preferably similar to lugs 24^b. Cables 47 engage the other lugs 24^b and pass over the other guide lug 24^c.

In operation, a rider approaching the gate pulls the adjacent cable 46 which rotates shaft 22 which, as has been explained, first unlatches the gate and then swings the gate until it latches with post 40. After passing through, the rider pulls the cable 47, so that the gate is first unlatched from post 40 and then swung until it closes and latches with post 13.

In Fig. 13, a modified means for rotating the shaft 22 is shown wherein said shaft carries a coupling 50 from which the horizontal arms 51 project in opposite directions, each arm being provided with a pair of right angularly-projecting cranks 52. In this form of the invention a cable 46 is fastened to one end of a crank 52 on each side of the arms 51 and a cable 47 is fastened to an arm 52 on each side of the arm 51.

The wheel 24 is preferably formed of sections, the hub 53 and spokes 54 thereof being preferably integral and the rim formed of sections having overlapped ends 55 which are detachably connected by suitable fasteners. This construction permits the wheel to be compactly packed so that it will minimize storage and shipping space.

What I claim as my invention is:—

A gate opener comprising a gate, a latch at the forward end of the gate, a bracket at the rear end of the gate consisting of a pair of curved plates spaced apart from each other and connected together at their ends by pins serving as stops, a lever pivoted to the rear end of the gate and projecting between said curved plates and adapted to swing between the same and between said stops, a connection between said lever and the latch, a wheel mounted on the upper end of a vertical shaft rotatable on a post adjacent to the hinged end of the gate, said shaft having a crank arm on its lower end spaced from said wheel, a detachable link connecting said crank arm with the lever on the gate and consisting of a bar having depending ends engaging said lever and said arm, and manually operable cables extending from points opposite to each side of said gate and connected to said wheel.

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

JACOB W. KRAUS.

Witnesses:
IRVING L. MCCATHRAN,
L. N. GILLIS.