(No Model.)

2 Sheets—Sheet 1.

J. W. SMITH.

GATE.

No. 531,344. Patented Dec. 25, 1894.

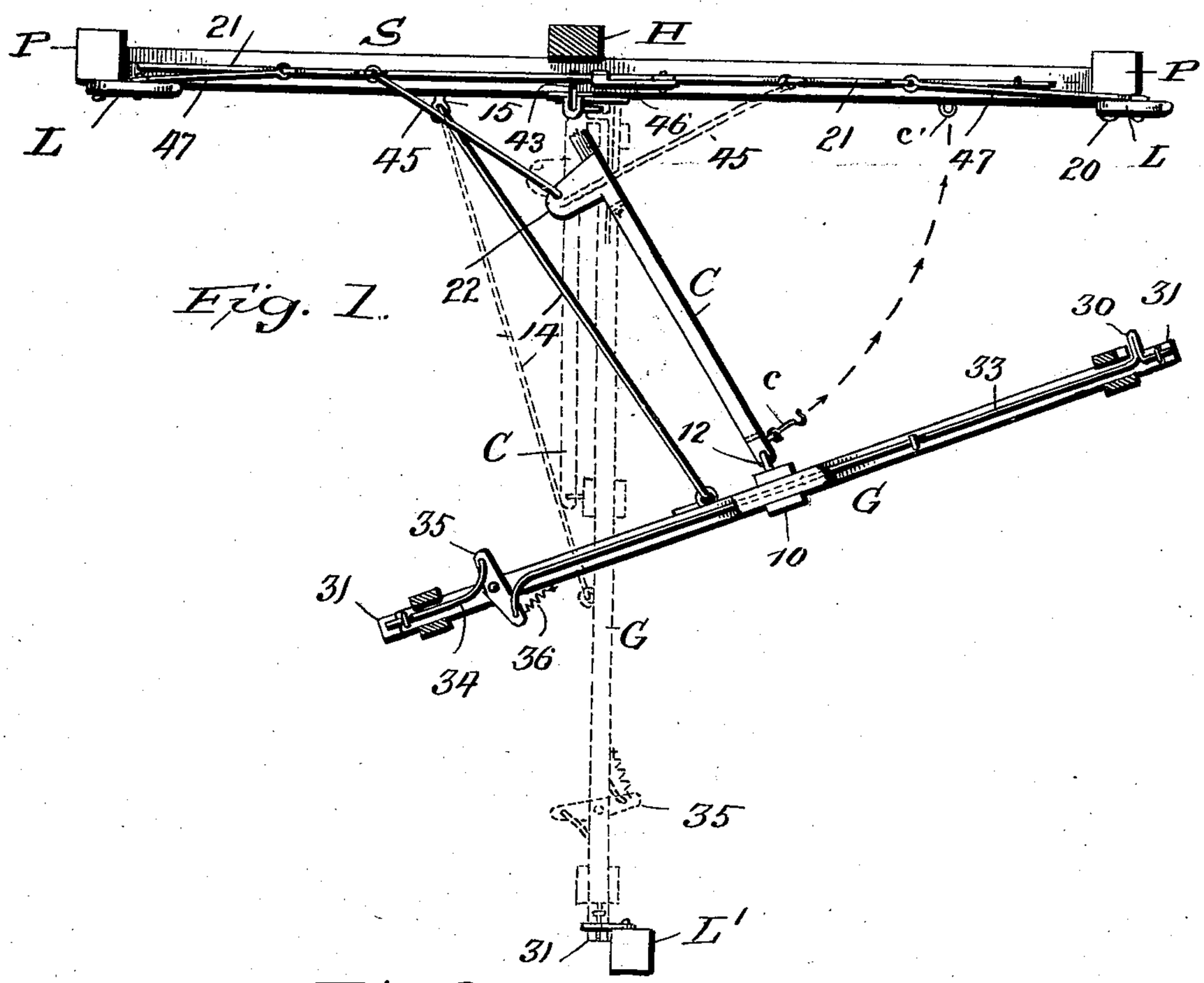
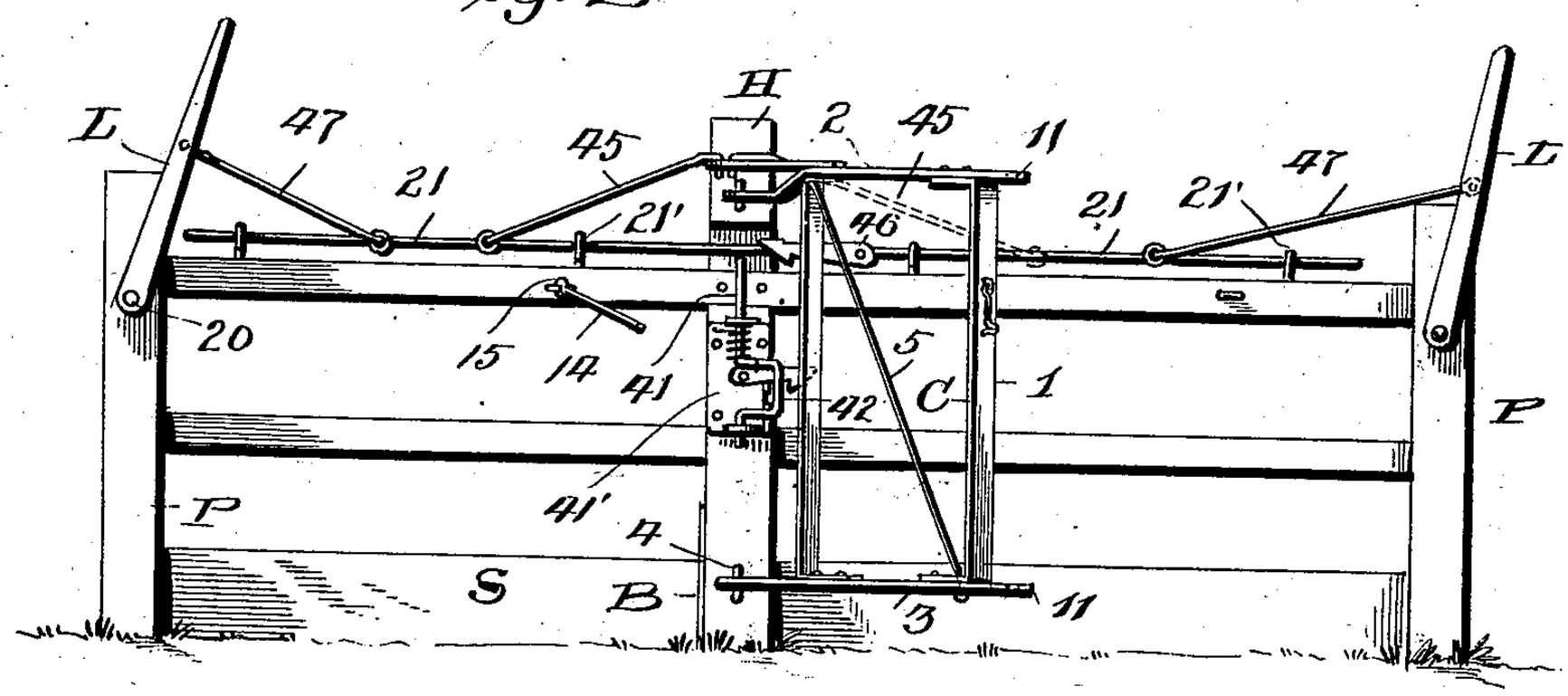


Fig. 1.

Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

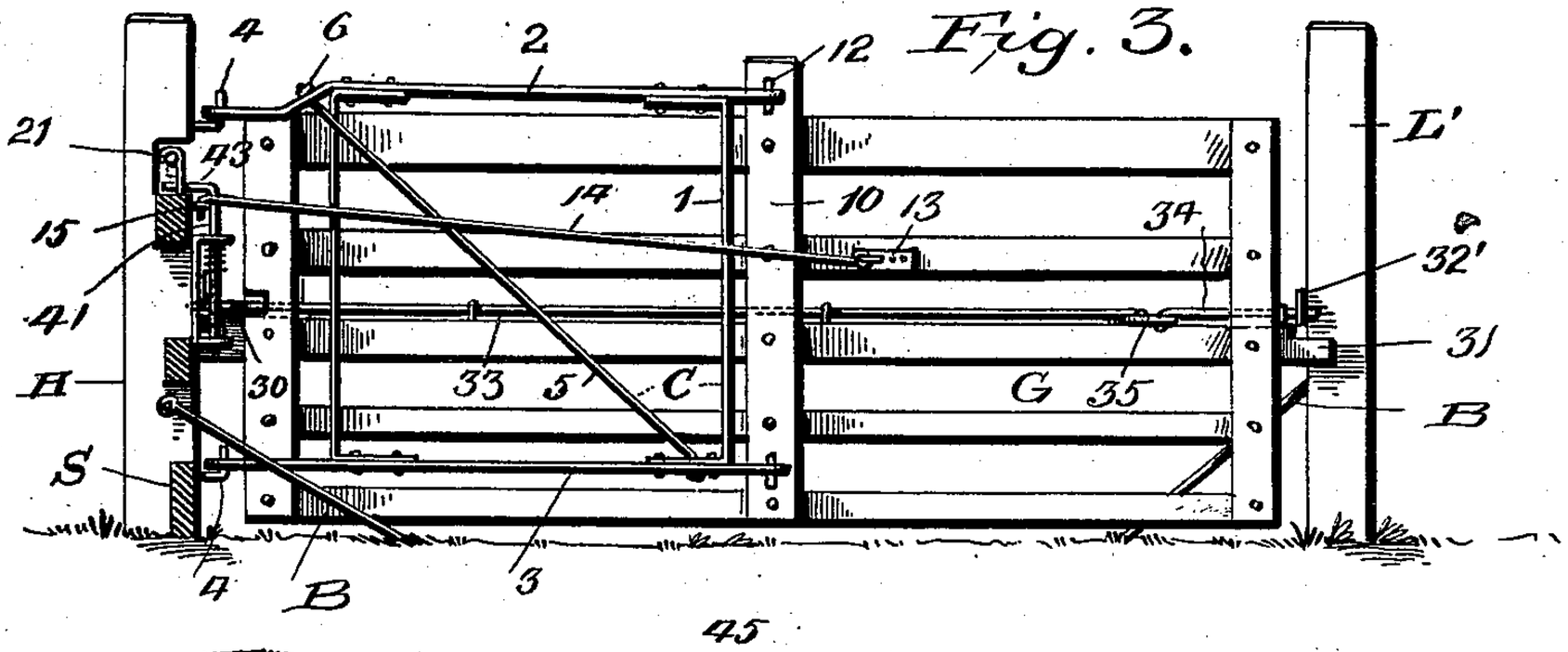


Fig. 4.

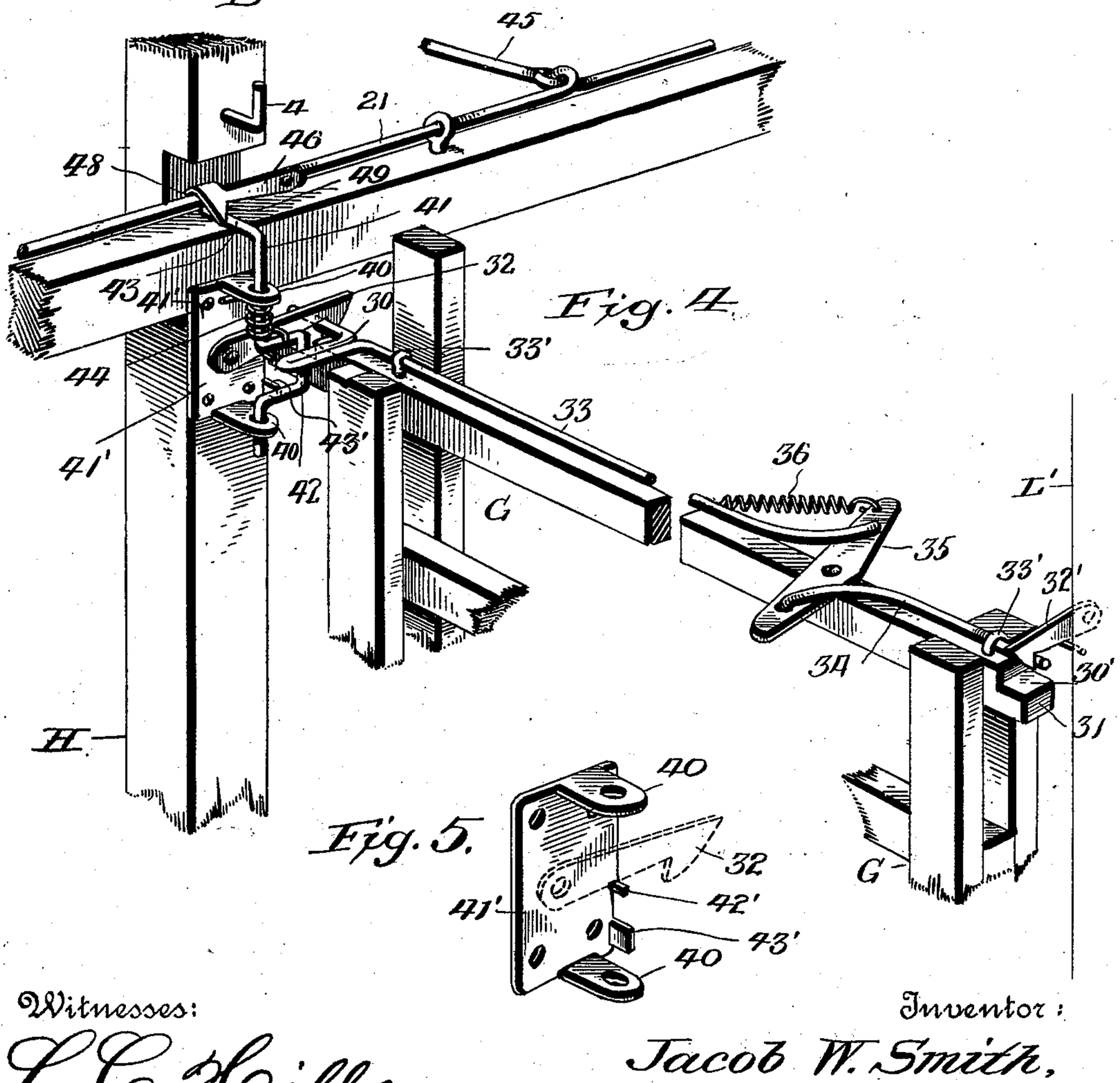
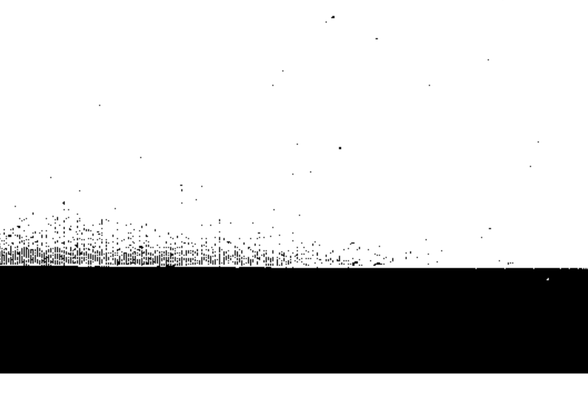


Fig. 5.



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UNITED STATES PATENT OFFICE.

JACOB W. SMITH, OF CHAMBERSBURG, OHIO.

GATE.

SPECIFICATION forming part of Letters Patent No. 531,344, dated December 25, 1894.

Application filed August 24, 1894. Serial No. 521,224. (No model.)

To all whom it may concern:

Be it known that I, JACOB W. SMITH, a citizen of the United States, and a resident of Chambersburg, Montgomery county, State of Ohio, have invented certain new and useful Improvements in Gates; and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with claims particularly specifying the novelty.

This invention relates to swinging gates, and the object of the same is to effect certain improvements in the mechanism for swinging them.

To this end the invention consists in the details of construction hereinafter more fully described and claimed, and as illustrated in the accompanying drawings, wherein—

Figure 1 is a plan view of this gate in the act of opening. Fig. 2 is an elevation of the side fencing with the crane swung nearly open and the gate proper removed. Fig. 3 is an elevation of the crane and gate, showing the latter as closed between the two posts. Fig. 4 is an enlarged perspective detail of the latch tripping devices. Fig. 5 is a detail of the catch-holding plate.

Referring to the said drawings, the letter S designates a side fencing having suitable posts P. H is the hinge post seated in the line of this fencing and held rigidly in upright position by proper braces B, and L′ is a latch post seated in the ground at the opposite side of the roadway from the hinge post H and also properly braced.

G is the gate proper pivotally mounted in a crane C hinged at one extremity to the center of the gate and at the other extremity to the hinge post, and L L are levers pivoted to the posts P and connected by suitable rods with the crane C so that by operating one of these levers from a wagon or from horseback the crane is caused to swing and carries the gate with it in a manner described below.

The specific construction of the various parts will now be set forth.

The crane C comprises an upright metal strap 1 across whose upper and lower ends are strap-irons 2 and 3 extending to hooks 4 seated in the face of the hinge post and forming hinges. At their outer ends these strap-irons pass beyond the upright strap or bar 1 and have eyes 11 as shown, the length of the crane being sufficient to cause these eyes to stand about midway between the posts H and L′.

5 is a tie rod extending obliquely from the lower strap 3 near the bar 1 to the upper strap 2 near its hinge 4, and here carrying a nut 6 which may be tightened from time to time to raise the bar 1 so that its lower end will not drag on the ground.

The gate proper, G, may be of any suitable construction having end panels and a central upright panel 10 provided in one face with downturned hooks 12 which engage the eyes at the outer ends of the strap irons 2 and 3 so that the entire gate is pivotally mounted at its center on the outer end of the crane. A little beyond the central panel 10 an eye 13 is secured to the gate, and this eye is connected by a strut rod 14 with an eye 15 carried by the side fencing at about the point shown. By this construction the hooks 12 can be lifted off the eyes 11 to unhinge the gate entirely from the crane C, or the eyes at the inner ends of the straps 2 and 3 can be lifted off the hooks 4 to unhinge the crane C. By this construction also, as the crane swings in the direction indicated in Fig. 1, the strut rod 14 causes the gate G to swing bodily around the hooks 12 from a position at right angles to and across the roadway to a position parallel with and along the side of the roadway, as will be clear.

The mechanism for swinging the crane consists of two levers L pivoted at 20 to the posts P and connected by links 47 with a rod 21 which slides longitudinally through eyes 21′ along the top of the side fencing. A link 45 is also connected with this rod at its outer end, while its inner end is pivotally connected with an arm 22 projecting laterally from the upper strap 2 of the crane as best seen in Fig. 1, so that when the crane is swung open this link will still have control of it. The link may be at either side of the hinge, as indicated in dotted lines in Figs. 1 and 2.

It will be obvious that the posts P are located so remote from the gateway that the levers L can be operated from a load or from horseback by a person approaching the gate and without the necessity of dismounting, and after passing through, the opposite lever

can be operated to again close the gate. A hook and eye *c c'* are provided for locking the crane to the side fencing so as to hold the gate permanently open when desired. The latch for this gate consists of two rods 33 34 extending along just above one bar of the gate as best seen in Fig. 4, with their outer ends guided in eyes 33' and their inner ends pivotally connected with a hand-lever 35; and the latter is normally moved by a spring 36 so as to project the extremities of the rods 33 34 over notches 30' formed in the projecting ends 31 of this bar of the gate, which ends strike the hinge post H and latch post L' when the gate is closed. These posts carry catches 32 32' for engaging the projecting ends of the rods, which latter form the latches.

Referring now to Fig. 5, 41' is a plate adapted to be secured by screws to the hinge post H and having ears 40 at its upper and lower ends as seen, and the catch 32 is pivoted to this plate and normally rests on a lug 42' as best seen in this view. Journaled in said ears is an upright rod 41 having a crank 42 in its body and an elbow 43 at its upper end, and a spring 44 is coiled on this rod in such manner as to throw the crank 42 normally against a lip 43' as best seen in Fig. 4. The sliding rod 21 above mentioned carries a hook 46 having an overhanging lip 48 as seen in Fig. 4, and the face 49 of this hook stands in position to operate the elbow when the sliding rod 21 is moved in the proper direction. By this construction, when the gate is closed and latched and an operator approaches on horseback, he grasps one of the levers L and moves it to the right as seen in Fig. 2, thereby drawing the rod 21 to the right and causing the hook 46 to engage the elbow 43. The upright rod 41 is thereby turned in the ears 40 so that the crank 42 is moved away from the lip 43', and this crank engages a projection 30 on the rod 33 so that when the projection is pushed inward both the rods 33 and 34 are drawn in and their extremities are moved from under the catches 32 and 32'. A continued movement of the sliding rod 21 causes the link 45 to swing the crane as seen in Fig. 1, and meanwhile the strut 14 causes the gate to swing in the opposite direction as will be understood. Having passed through the gate, the operator in a wagon or on horseback moves the other lever L in the opposite direction, and this causes the parts to return to the position seen in dotted lines in Fig. 1; but as the gate was swung so that the projection 30 disengaged the crank 42, the spring 36 caused the rods 33 34 to move outwardly again; and hence when the gate is again closed the tips of these rods pass under and automatically engage the catches 32 32'—the return movement of the sliding rod 21 having meanwhile permitted the crank 42 to fall back against the lip 43'.

All parts of this device are of the desired sizes, shapes, proportions, and materials, and considerable change in the specific details of construction may be made without departing from the principle of my invention.

What I claim as new is—

1. In a swinging gate, the combination with the gate proper supported by a suitable post, a lever pivoted to a remote post, rods and connections between the lever and gate for swinging the latter, a catch on the supporting post, and a latch on the gate for engaging the same; of an upright rod journaled in eyes in the supporting post and having a crank for disengaging said latch and catch when the rod is turned, a head at the upper end of this rod, and connections between said head and lever whereby the upright rod is oscillated by the movement of the lever, as and for the purpose set forth.

2. In a swinging gate, the combination with the gate proper having end and central upright panels, one gate bar being extended beyond said end panels and notched, and hinges for supporting the central panel; of rigid posts against which the extremities of said gate bar strike as the gate is closed, catches carried by these posts, latches carried by the gate and normally engaging said catches, and connections substantially as described between the latches for causing them to work in unison, as and for the purpose set forth.

3. In a swinging gate, the combination with the gate proper having end and central upright panels, one gate bar being extended beyond said end panels, and hinges for supporting the central panel; of rigid posts against which the extremities of said gate bar strike as the gate is closed, catches carried by these posts, rods extending the length of the gate and carrying latches normally engaging said catches, a hand-lever pivoted to said gate and also to these rods, and a spring normally moving the hand-lever in a direction to lock the latches and the catches, as and for the purpose set forth.

4. In a swinging gate, the combination with the gate proper having end and central upright panels, one gate bar being extended beyond said end panels, and hinges for supporting the central panel; of rigid posts against which the extremities of said gate bar strike as the gate is closed, catches carried by these posts, latches carried by the gate and normally engaging said catches, connections between said latches for causing them to move in unison, an upright rod journaled in eyes in one of said fixed posts and having a crank standing adjacent a projection on the nearest latch, and means for oscillating this rod to move the crank and disengage said latches from their catches, as and for the purpose set forth.

5. In a swinging gate, the combination with the gate proper supported by a suitable post, a lever pivoted to a remote post, rods and connections between the lever and gate for swinging the latter, a pivoted catch on the supporting post, and a sliding latch on the

gate for engaging the same; of an upright rod journaled in eyes in the supporting post and having a crank for moving said latch from under the catch when the rod is turned, a head at the upper end of this rod, and connections between said head and lever whereby the upright rod is oscillated by the movement of the lever, as and for the purpose set forth.

6. In a swinging gate, the combination with the gate proper having end and central upright panels, one gate bar being extended beyond said end panels and notched, and hinges for supporting the central post; of rigid posts against which the extremities of said gate bar strike as the gate is closed, pivoted catches carried by these posts and standing over the notches, sliding latches carried by the gate and normally engaging said catches, and connections substantially as described between the latches for causing them to work in unison, as and for the purpose set forth.

7. In a swinging gate, the combination with the gate proper having end and central upright panels, one gate bar being extended beyond said end panels, and hinges for supporting the central post; of rigid posts against which the extremities of said gate bar strike as the gate is closed, pivoted catches carried by these posts, latches consisting of sliding rods carried by the gate and having their ends normally engaging said catches, a hand-lever pivoted to said gate bar and also to these rods, and a spring normally moving the hand-lever in a direction to project the catches, as and for the purpose set forth.

8. In a swinging gate, the combination with the gate proper having end and central upright panels, one gate bar being extended beyond said end panels, and hinges for supporting the central panel; of rigid posts against which the extremities of said gate bar strike as the gate is closed, pivoted catches carried by these posts, sliding latches carried by the gate and normally engaging said catches, connections between said latches for causing them to move in unison, an upright rod journaled in eyes in one of said fixed posts and having a crank standing adjacent a projection on the nearest catch, and means for oscillating this rod to move the crank and disengage said latches from their catches, as and for the purpose set forth.

9. In a swinging gate, the combination with the gate proper hinged at its center and having one bar extended beyond its ends, posts against which the ends of the bar strike as the gate is closed, pivoted catches on these posts, and sliding latches carried by the gate and moving in unison, their extremities normally engaging the catches and one of them being provided with a projection; of an upright rod having a crank standing adjacent said projection and an elbow at its upper end, a sliding rod on the side fencing, a hook on this rod engaging the elbow so as to retract the latches when the rod is moved, and connections between the rod and gate for swinging the latter when unlatched, substantially as described.

10. In a gate, the combination with posts at the opposite sides of the roadway, a crane hinged to one post, a gate proper hinged to the outer end of the crane, a strut rod pivotally connecting the side fencing with the gate beyond its hinge, and latches and catches on the gate and posts adapted to engage automatically; of a rod sliding in eyes on the side fencing, levers pivoted to remote posts therein, links connecting the levers with said rod, another link connecting the rod with a lateral arm on the crane, and devices substantially as described operated by the initial movement of the sliding rod to disengage the latches and catches, as and for the purpose set forth.

11. In a gate, the combination with posts at the opposite sides of the roadway, a crane hinged to one post, a gate proper hinged to the outer end of the crane, a strut rod pivotally connecting the side fencing with the gate beyond its hinge, and latches and catches on the gate and post adapted to automatically engage; of a rod sliding in eyes on the side fencing, levers pivoted to remote posts therein, links connecting the levers with said rod, another link connecting the rod with a lateral arm on the crane, an upright rod journaled in ears on the hinge post and having a crank, a projection on one of the latches standing normally adjacent this crank, an elbow at the upper end of the rod, a spring turning the rod in one direction, and a hook on the sliding rod engaging said elbow and adapted to turn the upright rod in the opposite direction at the initial movement of the sliding rod, as and for the purpose set forth.

12. In a gate, the combination with the gate proper, a sliding latch thereon, a projection on said latch, a post, and a pivoted catch engaging the tip of the latch when the latter is projected; of a plate secured to the post and having aligned ears, the catch being pivoted to this plate, a lug on the plate upon which the catch rests, an upright rod journaled in the ears and having a crank between them, and means for turning this rod to throw the crank against said projection and retract the latch, as and for the purpose set forth.

13. In a gate, the combination with the gate proper, a sliding latch thereon, a projection on said latch, a post, and a pivoted catch engaging the tip of the latch when the latter is projected; of a plate secured to the post and having aligned ears, the catch being pivoted to this plate, a lug on the plate upon which the catch rests, an upright rod journaled in the ears and having a crank between them, a spring turning the crank in one direction, a lip on the plate limiting such turning of the crank, and means for turning the rod in the opposite direction to retract the latch, as and for the purpose set forth.

14. In a gate, the combination with the gate proper, a sliding latch thereon, a projection

on said latch, a post, and a pivoted catch engaging the tip of the latch when the latter is projected; of a plate secured to the post and having aligned ears, the catch being pivoted to this plate, a lug on the plate upon which the catch rests, an upright rod journaled in the ears and having a crank between them standing opposite said projection, a spring throwing the crank normally away from the projection, an elbow at the upper end of this rod, a sliding rod in the side fencing, and a hook pivoted to said sliding rod with an overhanging lip at its free end resting on the rod and its face standing adjacent the elbow, as and for the purpose set forth.

15. In a gate, the combination with the gate proper having a sliding latch, a catch on the post with which said latch engages, and an upright crank rod journaled in a support on the post and adapted when turned to retract the latch; of an elbow at the upper end of the rod, a horizontal rod guided in eyes in the side fencing, means for moving this rod, and a projection thereon engaging said elbow when the sliding rod is moved in one direction, as and for the purpose set forth.

16. In a gate of the character described, the combination with the hinge post carrying upwardly projecting hooks, and the gate proper having an upright central panel carrying downwardly projecting hooks; of a crane consisting of two upright straps, top and bottom horizontal straps extending beyond the upright straps and having eyes at both ends, those at one end engaging the hooks on the post and those at the other receiving the hooks on the gate, a tie rod leading from the outer corner of the crane through the upper strap near its inner end, a nut on the upper end of the rod for the purpose set forth, means substantially as described for swinging and latching the gate, and a hook and eye for connecting the crane with the side fencing when desired, as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my signature on this, the 22d day of August, A. D. 1894.

JACOB W. SMITH.

Witnesses:
JOHN R. TOMLINSON,
CHAS. W. BIESER.