

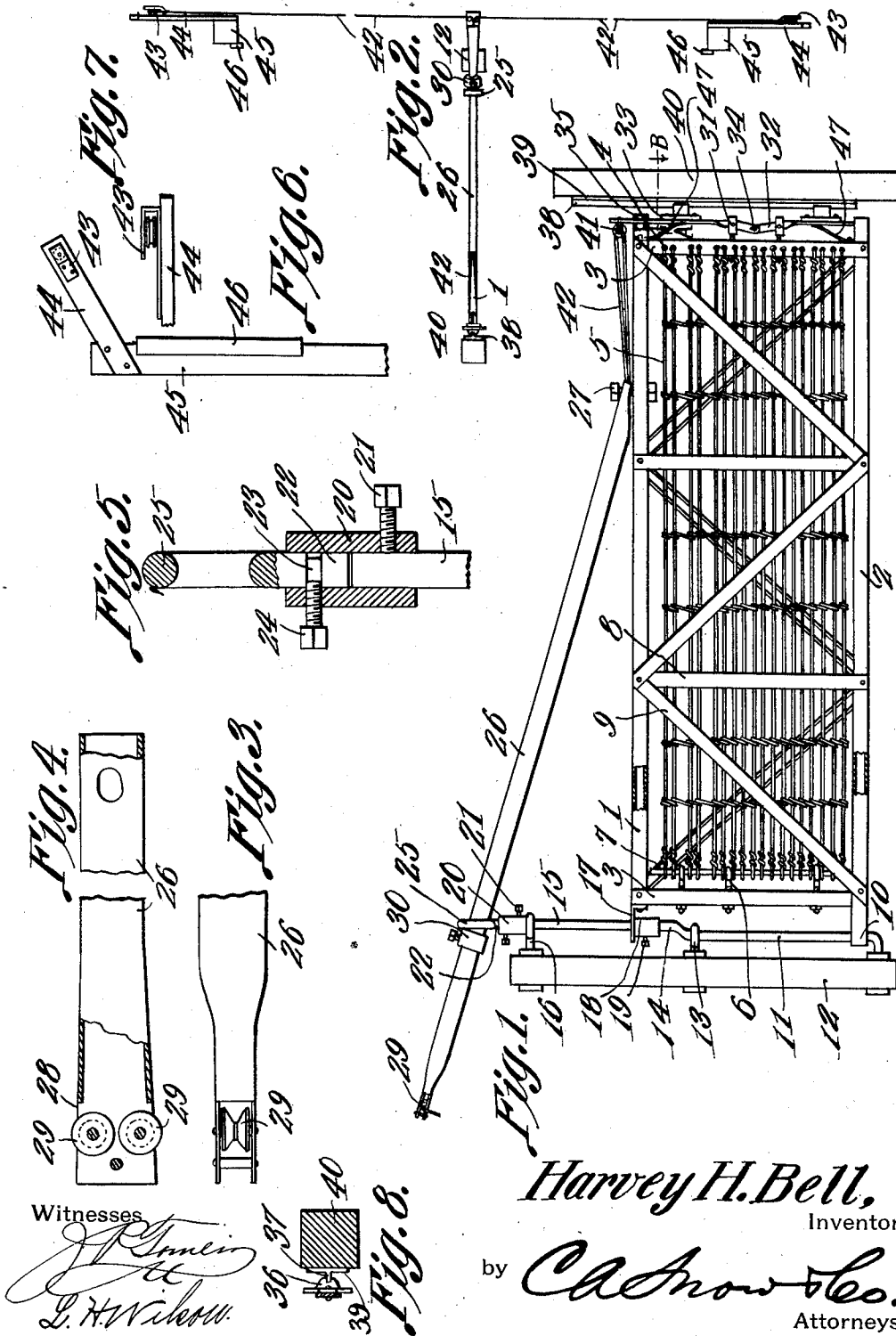
H. H. BELL.

GATE.

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UNITED STATES PATENT OFFICE.

HARVEY H. BELL, OF ROCHESTER, MINNESOTA.

GATE.

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Specification of Letters Patent.

Patented June 3, 1913.

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To all whom it may concern:

Be it known that I, HARVEY H. BELL, a citizen of the United States, residing at Rochester, in the county of Olmstead and State of Minnesota, have invented a new and useful Gate, of which the following is a specification.

This invention relates to swinging gates of that type adapted to be unlocked and opened at a distance from either side thereof, the device being, more particularly, an improvement upon the structure disclosed in Patent No. 998,739, issued to me on July 25, 1911.

One of the objects of the invention is to provide improved operating means including ropes or cables portions of which are housed and thus protected within a combined brace and sweep used for reinforcing and operating the gate.

A further object is to provide novel means for adjustably mounting the gate so as to hold it at any desired distance from the ground, said gate being adapted to automatically close when released.

A further object is to improve upon the construction of the gate and to provide novel means for locking the gate in closed or in open position.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts, and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a side elevation of the gate, parts being broken away. Fig. 2 is a plan view, on a reduced scale, of the gate and its operating means. Fig. 3 is an enlarged side elevation of one end portion of the sweep. Fig. 4 is a plan view of the sweep, parts being broken away. Fig. 5 is an enlarged section through the guide eye of the sweep and its coupling. Fig. 6 is an elevation of one of the posts of the operating mechanism. Fig. 7 is a plan view of a portion of the arm extending from said post. Fig. 8 is a section on line A—B Fig. 1.

Referring to the figures by characters of

reference 1 and 2 designate the upper and lower tubular rails of the gate the same being connected adjacent their ends by strips 3 preferably flat and one of which has apertures 4 therein for the reception of the end portions of the wires 5 of the gate while the other strip 3 is adjustably engaged by eye bolts 6 or the like extending from a rod or pipe 7 to which the other ends of the wires 5 are secured. It will be apparent that by tightening the bolts 6 within the strip 3 all of the wires 5 can be drawn taut simultaneously. Additional connecting strips 8 are secured to the rails 1 and 2 between the ends thereof and diagonal braces 9 are secured to the rails 1 and 2, each brace being preferably formed of channel or angle iron. The lower rail 2 is extended, at one end, to form a hinge member 10 which is mounted on the lower portion of a pivot rod 11. The lower end of this rod is extended through the lower portion of the gate post 12 and said rod extends upwardly along the post through an eye bolt 13 secured to the post and is then offset, as at 14 and continues upwardly as at 15 through another eye bolt 16 attached to the post 12. Another hinge member 17 is secured to the end of the upper rail 1 and is somewhat shorter than the hinge member 10 and is adapted to engage that portion of the pivot rod above the offset 14. A supporting sleeve 18 is mounted on the upper portion 15 of the pivot rod and is held, adjustably, by a set screw 19 or the like. It will be apparent that by shifting the sleeve 18 along the upper portion 15 of the pivot rod 11 the gate can be held at any desired distance from the ground. Thus it can be adjusted to swing above the surface of snow or ice on the ground and can be raised so as to permit small live stock to pass thereunder while preventing the escape of larger animals.

By having the hinge member 17 shorter than the hinge member 10 and by offsetting the pivot rod 11 it will be seen that the gate will always gravitate to closed position.

A coupling sleeve 20 is secured to the upper end of the pivot rod 11 by means of a set screw 21 or the like and a stem 22 is swiveled in this sleeve, said stem being provided with an annular groove 23 into which a set screw 24 or the like projects. This construction is clearly shown in Fig. 5. An eye 25 is formed at the upper end of the stem 22 and constitutes a guide for the tubular sweep or brace 26. This sweep is

inclined, as shown in Fig. 1, and has both of its ends contracted, the lower end being attached to the top rail 1 of the gate by a bolt 27 or the like. Both ends of the sweep 5 are open and the upper end of said sweep has slots 28 in opposite sides thereof and guide sheaves 29 are journaled within the sweep and project into the slots. A collar 30 is adjustably mounted on the sweep 26 10 and is adapted to bear against the eye 25 so as to thus limit the longitudinal movement of the sweep within the eye and therefore support the gate at its latch end and prevent sagging.

Bolts 31 are adjustably connected to the latch end of the gate and have levers 32 and 33 pivotally connected to them and extending downwardly and upwardly respectively, the near ends of the levers being pivotally 20 connected, as shown at 34. The other ends of the levers are guided within the forked ends 35 of the rails 1 and 2 and mounted on the levers adjacent to said forked ends are heads 36 each of which has an upwardly 25 extending groove 37 in its active face. These grooves are adapted, when the gate is closed, to receive a flange 38 extending longitudinally along a plate 39 which is attached to the latch post 40. The flange 38 30 thus constitutes a keeper which, when engaged by the heads 36, prevents the gate from swinging open. An eye 41 is connected to the upper end of the upper lever 33 and operating ropes 42 are secured there- 35 to and extend into the lower end of the sweep 26 and thence along the inside of the sweep to the sheaves 29. The ropes engage these sheaves and extend in opposite directions therefrom and over guide sheaves 43 40 journaled in arms 44 which extend from the upper ends of posts 45. These posts are located at opposite sides of the gate and to one side of the road and each post carries an elongated strip 46 constituting a keeper 45 adapted to be engaged by the heads 36 when the gate is opened.

It will be understood that by providing elongated keepers such as indicated at 38 and 46 the heads 36 will always engage them 50 no matter to what extent the gate may be adjusted vertically.

The gate is of course normally shut inasmuch as it gravitates to this position. When it is desired to open the gate a person lo- 55 cated near one of the posts 45 remote from the gate pulls on the cord suspended from the sheave 43 carried by the post. This

cord or rope is thus shifted in the direction of its length and therefore pulls on the upper lever 33 so as to remove the upper 60 head 36 from engagement with keeper 38. At the same time lever 32 is shifted so as to disengage the lower head 36 from the keeper. As soon as the lever 33 has reached the limit of its movement further actuation 65 of the rope or cord 42 will result in the upper end of the sweep 26 being pulled toward the operator. The lower end will thus be swung away from the operator and the gate will move therewith, said gate, at the 70 same time, gradually inclining upwardly, by reason of the peculiar hinge connection hereinbefore described. When the gate reaches the limit of its swinging movement, the 75 heads 36 will engage the keeper 46 in the path thereof. The gate will thus be held open. After passing through the gate opening the operator can pull on the rope 42 located adjacent the other post 45 where- 80 upon the heads 36 will be disengaged from keeper 46 and the gate can then be caused to close either through the efforts of the operator or by gravity. When the gate is closed the sweep 26 will, obviously, support 85 the latch end thereof. During the tilting of the gate while opening, the sweep 26 will shift longitudinally within eye 25 and, as the gate returns to normal or closed position, the sweep will move longitudinally 90 back to its initial position so as to bring collar 30 into contact with the eye 25. Springs 47 are connected to levers 32 and 33 so as to hold heads 35 normally in position to engage the keepers.

What is claimed is:—

The combination with a post, of a pivot rod connected thereto and having an offset upper portion, a gate mounted to swing upon the rod and its offset portion, a combined brace and sweep connected to the gate, 100 a guide swiveled on the pivot rod and slidably engaged by the sweep, means adjustably mounted on the sweep and cooperating with the guide for limiting the longitudinal movement of the sweep in one direction, and 105 means for actuating the sweep to swing the gate.

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

HARVEY H. BELL.

Witnesses:

JAMES KELLY,
MINNIE McDERMOTT.