No. 824,584. PATENTED JUNE 26, 1906.

J. W. REYNOLDS.

GATE.

APPLICATION FILED FEB. 28, 1906.

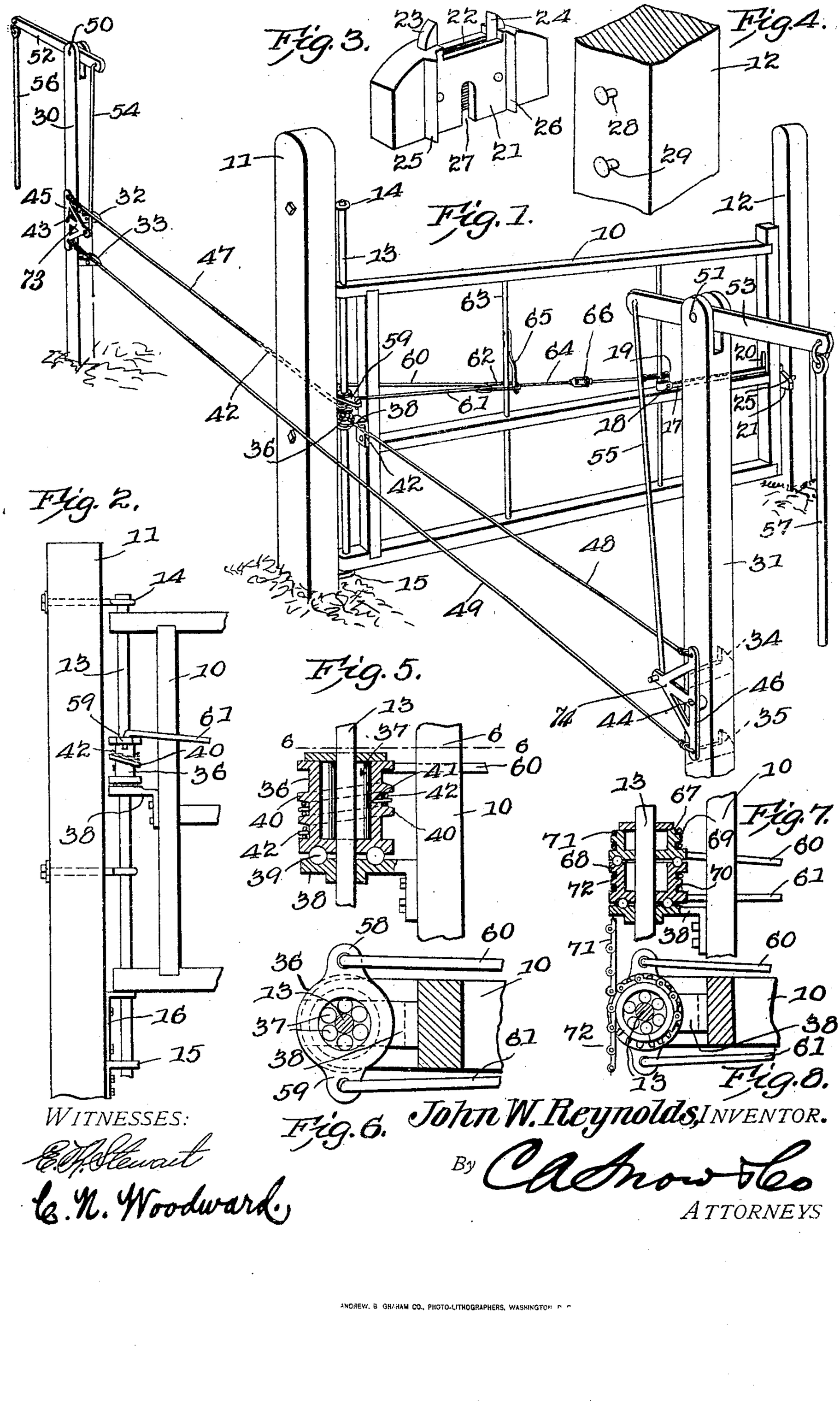

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

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GATE.

No. 824,584. Specification of Letters Patent. Patented June 26, 1906.

Application filed February 28, 1906. Serial No. 303,558.

To all whom it may concern:

Be it known that I, JOHN WILLIAM REYNOLDS, a citizen of the United States, residing at Frankfort, in the county of Clinton and State of Indiana, have invented a new and useful Gate, of which the following is a specification.

This invention relates to gates of the class which may be operated from a distance by persons approaching from either direction without alighting from the vehicle or from horseback, and has for one of its objects to produce a simply-constructed device of this character whereby the gate may be opened and closed in either direction and from either side, as may be preferred.

With these and other objects in view, which will appear as the nature of the invention is better understood, the invention consists in certain novel features of construction, as hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of the embodiment of the invention capable of carrying the same into practical operation.

In the drawings, Figure 1 is a perspective view of the improved device in closed position. Fig. 2 is a side elevation of a portion of the hinge end of the structure, illustrating the arrangement when the gate is in elevated position. Fig. 3 is a perspective view, enlarged, of the adjustable "keeper" member of the latch-post. Fig. 4 is an enlarged perspective view of a portion of the latch-post. Fig. 5 is an enlarged sectional elevation of the chain-drum. Fig. 6 is a plan view of the same with the shaft and gate-frame in section on the line 6 6 of Fig. 5 and with the cover of the roller-bearing portion removed. Figs. 7 and 8 are views similar to Figs. 4 and 5, illustrating a modification in the construction of the chain-drums.

The gate portion of the device may be of any desired construction, and for the purpose of illustration it is shown in skeleton form at 10 and connected to a hinge-post 11 and a latch-post 12 of the usual construction.

The hinge end of the gate-frame is arranged to swing upon a rod or shaft 13, supported at the ends in brackets 14 15, extending from the post 11, the gate being adjustable vertically upon the rod, so that it may be elevated when required to swing over the snow or for other purposes.

When in its downward position, the lower member of the gate bears upon the lower bracket 15 of the rod 13 and when in its elevated position is supported by an extra bracket 16, attached to the post 11 for that purpose.

The latch member of the improved device consists of a bar 17, pivoted at 18 to the gate-frame, and with the inner end upturned at 19 and the outer end projecting through a vertical slot 20 in the outer member of the gate-frame for engagement with a keeper upon the latch-post 12.

The keeper is shown more clearly in Fig. 3 and consists of a casing 21, having a depression 22 in the upper face and with catches 23 24, yieldable inwardly when the latch-bar 17 engages them from either side and preventing the removal of the latch-bar unless it be elevated after it passes into the recess or depression.

The end portions of the casing 21 are inclined, and the protruding end of the latch-bar mounts one of these inclined portions and passes over the yielding catch and enters the depression as the gate swings into position from either side, as will be obvious. The casing 21 is provided with spaced ribs 25 26 to bear upon the opposite sides of the post 12 and with an open slot 27 in the rear side, as shown in Fig. 3, for engaging headed pins 28 or 29, extending from the post 12. When the gate is in its lower position, as shown in Fig. 1, the casing 21 will be engaged by its slot 27 with the lower pin 29, and when the gate is disposed in its upward position and bearing upon the extra bracket 16 the casing 21 will be engaged by its slot 27 with the upper pin 28.

Spaced from the hinge-post 11 are stop-posts 30 31, the post 30 having keepers 32 33 and the post 31 having keepers 34 35, the lower pair of keepers for receiving the latch-bar 17 when the gate is open in its lower position and the upper pair of keepers for receiving the latch-bar when the gate is in its upper position.

Mounted for rotation upon the rod or shaft 13 is a drum 36, having an internal roller-bearing 37 and supported upon a bracket 38, attached to the gate 10, the bracket having a ball-bearing 39. The drum 36 is provided with an external spiral rib 40, and attached to the drum at 41 is a chain 42, encircling the same in the space between the turns of its rib and extending in opposite directions. The drum 36 is provided with lateral arms 58 59, from which rods 60 61 extend upon each side of the adjacent member of the gate 10 and are connected at the other ends to a link 62, through which one of the vertical members 63 of the gate structure extends.

A rod 64 extends from the link 62 to the upturned end 19 of the latch-bar 17, while a spring 65 on the vertical gate member 63 operates to maintain the link 62 and rods 60, 61, and 64 yieldably in their outward position, and thus allow the free or operative end of the latch-bar to be retained normally in depressed position. The rod 64 is preferably provided with a turnbuckle 66 to enable the rods to be adjusted relative to the latch-bar.

Pivoted at 43 44 to the posts 30 31 are arms 45 46, having lateral extensions 73 74, the arms and their extensions forming double bell-cranks, as shown. The arms 45 46 are coupled to the chain 42 at one side of their pivots 43 44 by rods 47 48 and coupled together at the other sides of their pivots by a rod 49.

Pivoted at 50 51 to the posts 30 31 are levers 52 53, the lever 51 connected by a rod 54 to the arm extension 73 and the lever 53 connected by a rod 55 to the arm extension 74. The lever 52 is provided with a pull-rod 56, and the lever 53 is provided with a pull-rod 57. By this arrangement when a person approaches the gate a pull downward upon the nearest rod 56 or 57, as the case may be, will cause the bell-cranks, through the connecting-rod 47 or 48 and chain 42, to rotate the drum 36 and pull the rod 60 or 61 and elevate the free end of the latch-bar 17 and release the gate, which will then swing open away from the operator until the latch-bar engages one of the keepers on the stop-posts. If the operator desires to open the gate toward the direction from which he is approaching, he pushes upward upon the rod 56 or 57, which action causes the rod 49 to operate the bell-crank on the farther stop-post, and thence through the rod 47 or 48, as the case may be, acts upon the drum 36 from the side opposite from which the operator approaches. Thus the gate can be opened in either direction from either side or moved from its position in engagement with one of the stop-posts to engagement with other stop-post, if required.

In Figs. 7 and 8 a modified construction of the chain-drum is shown, consisting in forming the same in two parts 67 68, with chain sprockets or teeth 69 70, and mounting each portion to rotate independently upon a shaft or rod 13 and providing the parts, respectively, with roller-bearings and ball-bearings to minimize the friction. When the modified structure shown in Figs. 7 and 8 is employed, each drum-section will be provided with its own section of chain, as at 71 72, and operating in the same manner and producing the same results as the single chain 42 in the structures shown in Figs. 1, 2, and 5.

Having thus described the invention, what is claimed is—

1. The combination of a gate mounted to swing in both directions, posts spaced apart at opposite sides of the gate, arms pivoted to swing from said posts and provided with lateral extensions, connecting means between said arms at one side of their pivots, connecting means between said gate and said arms at the other side of their pivots, levers swinging upon said posts, and connecting means between said levers and the lateral projections of said arms.

2. In a gate, posts spaced apart at opposite sides of a gateway-opening, a shaft connected to one of said posts, a latch-keeper upon the other of said posts, a gate swinging upon said shaft, a latch element carried by said gate for detachable engagement with said keeper when the gate is closed, a drum rotatable on said shaft, rods connected between the opposite sides of said drum and said latch element, arms spaced apart and movably disposed at opposite sides of said gate, connecting means between said arms, and connecting means between said arms and said drum.

3. In a gate, posts spaced apart at opposite sides of a gateway-opening, a shaft connected to one of said posts, a latch-keeper upon the other of said posts adapted for vertical adjustment upon the same, a gate swinging upon said shaft and adjustable vertically thereon, a latch element carried by said gate for detachably engaging said keeper when the gate is closed, means for supporting said gate in its upper or lower position, arms spaced apart and movably disposed at opposite sides of the gate, connecting means between said arms, means for actuating said latch element, and connecting means between said lock-actuating means and said arms.

4. In a gate, posts spaced apart at opposite sides of a gateway-opening, a shaft connected to one of said posts, a latch-keeper upon the other of said posts, a gate swinging upon said shaft, a latch element carried by said gate for detachably engaging said keeper when the gate is closed, a drum rotatable on said shaft, a flexible element connected to said drum, rods connected between

the opposite sides of said drum and said latch element, arms spaced apart and movably disposed at opposite sides of said gate, connecting means between said arms, and connecting means between said arms and said flexible element.

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

JOHN WILLIAM REYNOLDS.

Witnesses:
JOHN H. YOUNG,
EDWARD C. BEAVER.