

United States Patent

Glause et al.

[15] 3,706,164

[45] Dec. 19, 1972

[54] GATE LATCH ADAPTABLE FOR USE WITH MULTI-PANELS TYPE FARM GATES

[72] Inventors: **Loy E. Glause**, RFD No. 1, Palmer, Nebr. 68864; **Gene N. Glause**, RFD No. 1, Libory, Nebr. 68872

[22] Filed: **March 22, 1971**

[21] Appl. No.: **126,696**

[52] U.S. Cl.:.....**49/394, 292/175**

[51] Int. Cl.:.....**E05c 17/04**

[58] Field of Search:.....49/394, 381, 386, 279, 286; 292/175, 163, 164, 166

[56] References Cited

UNITED STATES PATENTS

2,587,167	2/1952	Kelley.....	49/394 X
1,846,842	2/1932	Butler.....	49/394 X
2,609,222	9/1952	Severson	292/175
527,693	10/1894	Hurst.....	49/394 X

1,519,908	12/1924	Etue	292/175 X
1,578,598	3/1926	Gidney	292/175
1,802,552	4/1931	Corcoran.....	292/175 UX
2,518,207	8/1950	Wagner.....	292/175
987,529	3/1911	Young.....	292/175

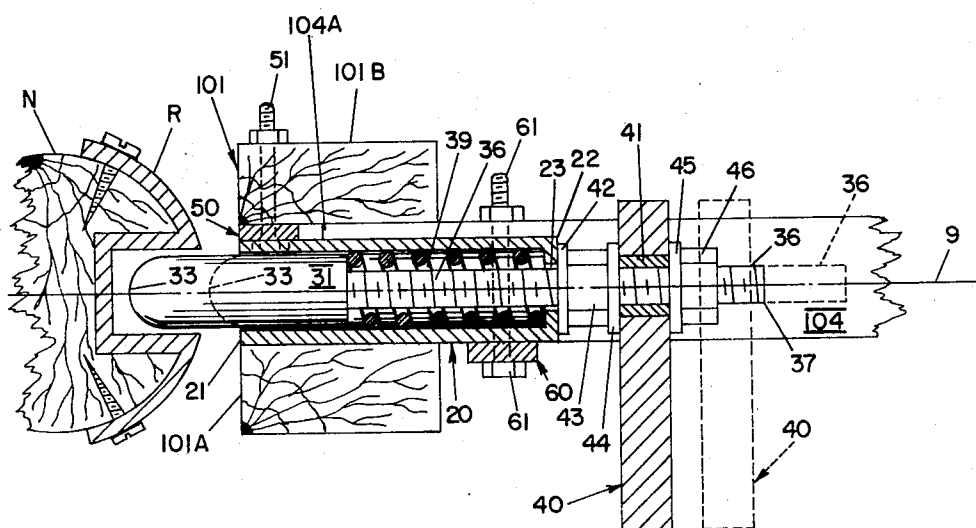
Primary Examiner—Dennis L. Taylor

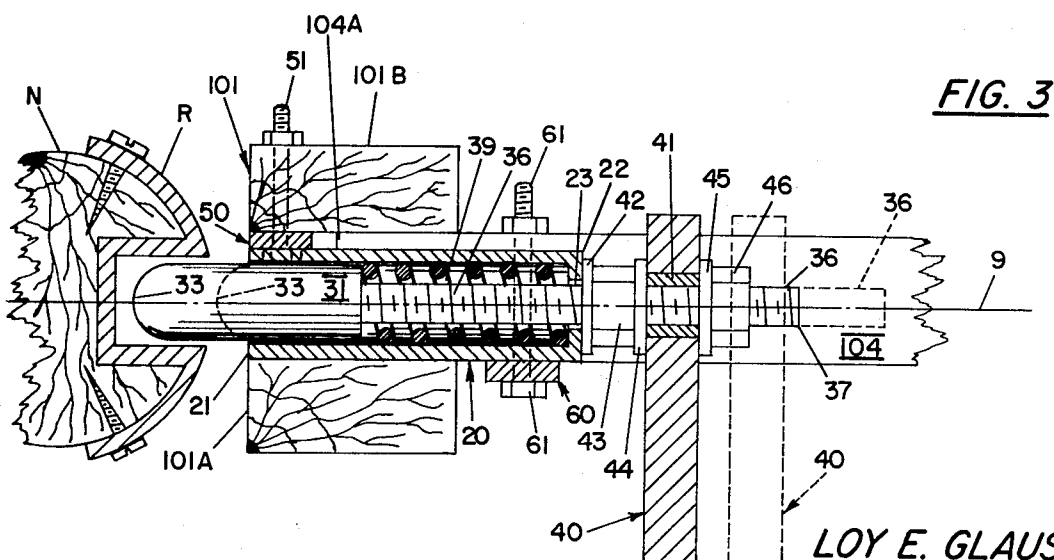
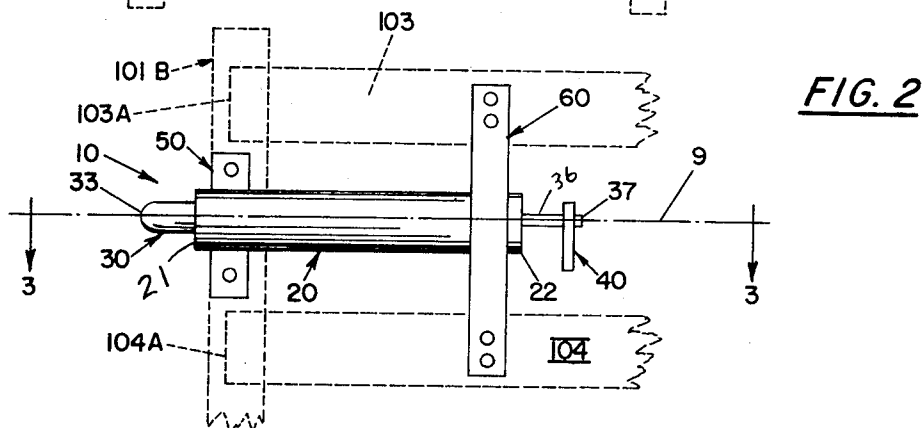
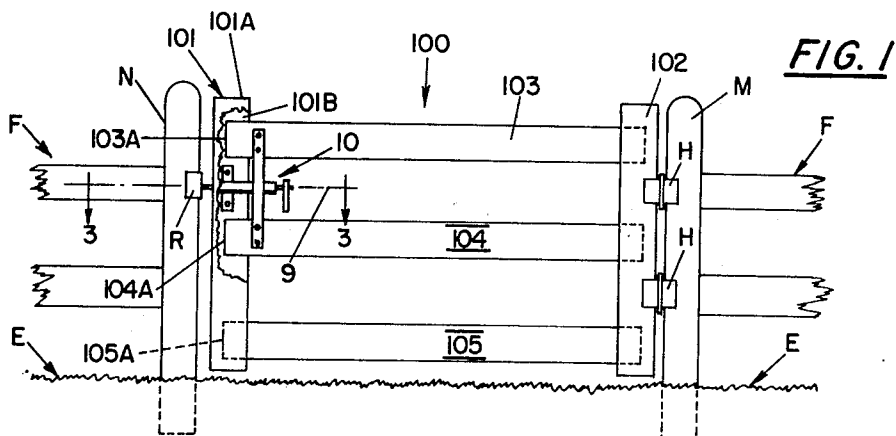
Attorney—George R. Nimmer

[57] ABSTRACT

There is provided an exceptionally reliable, versatile, and sturdy gate latch assembly having particular utility with multipanels type farm gates. The gate latch assembly generally comprises an elongate tubular housing horizontally positionable between forwardly disposed upright-panels of a farm gate, a linearly elongate manually rearwardly resiliently depressible spindle disposed within and extending forwardly of the tubular housing, and means (preferably in the form of at least one dual-lobed mounting-ear) for attaching the tubular housing to an upright closure such as a multipanels type farm gate.

3 Claims, 3 Drawing Figures





LOY E. GLAUSE &
GENE N. GLAUSE
INVENTORS

BY *George R. Hummer*
ATTORNEY

GATE LATCH ADAPTABLE FOR USE WITH MULTI-PANELS TYPE FARM GATES

The prior art teaches a variety of latch mechanisms and assemblies for removably securing movable closures, such as gates, doors, windows, etc., to a jamb or other external stationary framework for the movable closure. In the case of upright closures pivotably movably associated with the external framework, latch mechanisms have been placed at the closure upright free end, i.e., remote of the closure pivoted end, for removable engagement with the jamb or other external stationary framework. However, such latch means on the closure upright free end usually require extensive structural modification of the upright closure at the free end thereof in order to facilitate installation of the latch means. In the case of multi-panels type farm gate pivotal closures, it is exceedingly difficult to structurally modify the pivotably mounted farm gate for the purposes of installing latch means at the free end thereof, and accordingly, farmers have been forced to utilize very rudimentary and unreliable latch means for the prevalent multi-panels type farm gate.

It is accordingly the general object of the present invention to provide an exceedingly reliable latch means which can be installed at the free end of an upright pivotal closure without the necessity for structurally modifying the pivotal closure.

It is an ancillary general object to provide an exceedingly reliable and stably positionable latch means for an upright pivotable closure of the prevalent multi-panels type farm gate, and which can be installed onto existing farm gates without the necessity for removing the gate from its pivotal connection nor for structurally modifying or altering the farm gate in any way.

It is another object to provide a gate latch for use in conjunction with livestock enclosures, which is amenable to easy and reliable manipulation by attending personnel from either side of the gate but not subject to manipulation by the confined livestock.

It is a further object to provide a gate latch of simple, reliable, and economical construction that is adaptable for various configurations of multi-panels type farm gates, and that is adjustable appropriate to the specific environmental gate situation encountered.

With the above and other objects and advantages in view, which will become more apparent as this description proceeds, the gate latch of the present invention comprises an elongate tubular housing horizontally positionable between forwardly disposed upright-panels of multi-panels type farm gates, a linearly elongate manually rearwardly resiliently depressible spindle disposed within and extending forwardly of the tubular housing whereby the spindle forward-extremity is adapted to removably engage a recessed portion of an external framework, and mounting-ear means attached to and extending uprightly from the tubular housing for attaching the gate latch to a pivotal upright closure such as multi-panels type farm gate.

In the drawing, wherein like characters refer to like parts in the several views, and in which:

FIG. 1 is a side elevational view of a typical multi-panels type farm gate, which provides an apt environment for the gate latch of the present invention.

FIG. 2 is a side elevational view of a representative embodiment of the gate latch of the present invention, within the FIG. 1 typical environment.

FIG. 3 is a sectional plan view of the FIG. 2 gate latch embodiment taken along lines 3—3 of FIGS. 1 and 2.

A typical multi-panels type farm gate environment 100 will first be described, reference being had primarily to FIG. 1, and secondarily to FIG. 2. Typical farm gate 100 extends uprightly vertically above the earth's surface E, the upright rear-end portion 102 of gate 100 being pivotably associated with the upright terminal post portion M of a wooden stationary fence F, as through conventional pivotal hinges H. The upright front-end portion 101 of farm gate 100 is provided by the vertically co-planar front-sides of a pair of substantially parallel upright-panels 101A and 101B; upright-panels 101A is partially broken away in FIG. 1 to indicate, along with FIG. 3, that upright-panels 101A and 101B are transversely spatially separated by some selected finite-transverse-distance. Farm gate 100 has at least two, and herein as three, vertically co-planar parallel horizontal-panels 103–105, attached to the respective upright-panels 101A and also to gate rear-end 102; each of said elongate horizontal-panels 103–105 has a uniform transverse thickness of said selected finite-transverse-distance. At least two of said horizontal-panels 103–105, and herein 103 and 104, are laterally vertically spatially separated by some selected finite-lateral-distance. Two or more of the horizontal-panels are each provided with a vertical-front-edge, e.g., 103A, 104A, all located between the upright-panels 101A and 101B and all being rearwardly offset of the co-planar frontal sides of upright-panels 101A and 101B. As will be pointed out later in greater detail, the gate latch 10 actuatably extends from the gate front-end portion 101 to the upright terminal post N of fence F, particularly to a conventional recess plate R embedded into post N.

The preferred gate latch embodiment 10 herein extends along a horizontal longitudinal central axis 9 and generally comprises: an elongate tubular housing 20 surrounding axis 9 and positionable between the upright-panels 101A–101B of farm gate 100, housing 20 having a forward-end 21 and an apertured rearward-end 22; an elongate spindle 30 reciprocatably positioned along longitudinal axis 9 within housing 20 and including a spindle forward-terminus 33; a spring means 39 for normally resiliently urging spindle 30 forwardly; a handle means 40 for manually imparting rearward longitudinal motion to spindle 30 along axis 9 and against the spring means; an upright forward-mounting-ear 50 attached to housing 20 and attachable to farm gate 100 between upright-panels 101A–101B; and an uprightly tall rearward-mounting-ear 60 attached to housing 20 and attachable to a pair of vertically separated horizontal-panels of farm gate 100.

Elongate tubular housing 20 is herein of circular cross-sectional shape, the housing outside diameter not exceeding the said finite-transverse-distance whereby housing 20 is positionable between farm gate upright-panels 101A–101B and between a pair of gate horizontal-panels, e.g., 103 and 104. The circular rearward-end wall 22 of housing 20 is provided with a circular aperture 23 concentrically surrounding axis 9. The circularly annular forward-end 21 of housing 20 extends forwardly of the several co-planar horizontal-panels 103–105 and might even extend slightly forwardly of the gate front-end extremity 101.

The elongate linear spindle 30 is reciprocatably positioned within tubular housing 20 along longitudinal axis 9. Spindle 30 has a forward portion 31 of circular cross-sectional shape and extending along axis 9. Moreover, spindle 30 also has a threaded rearward portion 36 of circular cross-sectional shape and extending along axis 9, threaded rearward portion 36 being integrally connected to forward portion 31 within housing 20 and extending rearwardly from forward portion 31 through the housing rearward-end 22. The larger diameter spindle forward portion 31 extends forwardly of the spindle rearward portion 36 along axis 9 beyond housing forward-end 21 whereby spindle 30 has a hemi-spherical forward-terminus 33 located forwardly of forward-end 21 and adapted to be retractably inserted into recess-plate R. As can best be seen in FIG. 3, the circularly tubular housing 20 concentrically surrounds both portions 31 and 36 of spindle 30, as well as helical spring 39.

There are means, preferably as spring means, for normally resiliently urging the elongate spindle 30 forwardly along axis 9 whereby the spindle forward-terminus 33 is normally positioned forwardly of housing forward-end 21 and forwardly of the gate front-end 101 and adapted to be retractably inserted within recess-plate R. The preferred spring means takes the form of a helical spring 39 positioned within housing 20 and surrounding spindle rearward portion 36, the rearward extremity of helical spring 39 bearing against housing rearward-end wall 22 while the helical spring forward extremity bears against the spindle diametrically larger forward portion 31 at the juncture of portions 31 and 36.

The gate latch also includes means, preferably as a handle means attached to spindle 30 rearwardly of housing rearward-end 22, to permit manually actuatable longitudinal movement of spindle 30 rearwardly along axis 9 and against the spring means whereby spindle forward-terminus 33 might be temporarily disengaged from recess-plate R. The preferred handle means takes the form of a bar 40 extending transversely from spindle rearward portion 36 for a distance exceeding the thickness of a gate horizontal-panel e.g., 103-105. Moreover, the transversely lengthy bar-like handle 40 is desirably revolvable about spindle rearward portion 36 and axis 9 whereby the radially extending handle is adapted to be utilized from either side of the multi-panels type farm gate. In this vein, an apertured portion of bar-like handle 40 surrounds a tubular bushing 41 which revolvably surrounds spindle rearward portion 36. When the revolvable bar-like handle 40 extends in a single radial direction from spindle 30, handle 40 can be selectively operable from either side of gate 100; moreover, such revolvable handle 40 can be rendered inaccessible to manipulation by livestock. The longitudinal position of bar-like handle 40 and bushing 41 along spindle threaded portion 36, as well as the forward extensibility of forward-terminus 33, is selectable through a pair of nuts 43 and 46 threadedly engaged with spindle portion 36 on opposite sides of members 40 and 41. Washers 44 and 45 surrounding spindle portion 36 between the respective nuts 43 and 46 and the radially aligned members 40 and 41. Yet another washer 42 surrounding spindle portion 36 might be interposed between nut 43 and housing apertured rearward-end wall 22.

There are mounting-ear means attached to the gate latch tubular housing and extending laterally uprightly therefrom whereby the gate latch (when positioned horizontally between the front-end upright-panels of the multi-panels farm gate) can be securely and reliably attached to the farm gate. Preferably, the mounting-ear means takes the form of a pair of perforate mounting-ears, each attached to the tubular housing and extending laterally uprightly in both vertical directions from the housing. One of said mounting-ears is attachable to one or both of the gate front-end upright-panels. For example, there is a metallic forward-mounting-ear 50 rigidly attached (as by welding) to the external side of metallic tubular housing 20 slightly rearwardly of housing forward-end 21 and forwardly remote of the rearward-end 22 thereof. Forward-mounting-ear 50 extends laterally upwardly equidistantly in both vertical directions from housing 20 as a pair of co-planar lobes, but the overall lateral vertical height of the dual-lobed forward-mounting-ear 50 is less than the finite-lateral-distance between consecutively adjacent horizontal-panels, e.g., 103 and 104, as indicated in FIG. 2. The combined transverse widths of housing 20 and the attached forward-mounting-ear 50 is less than, and is preferably substantially equal to, the finite-transverse-distance between the gate upright-panels 101A and 101B whereby gate latch 10 is snugly slidably stabilized between the gate upright-panels 101A and 101B, as indicated in FIG. 3. The transversely perforate upper and lower lobed portions of forward-mounting-ear 50, positioned between but not forwardly of upright-panels 101A and 101B, are each removably securely attached to said panels 101A and 101B as with transversely extending bolts 51.

There is a rigid metallic rearward-mounting-ear 60 attached (as by welding) to the metallic tubular housing slightly forwardly of housing rearward-end 22, and remote of and parallel to forward-mounting-ear 50. The respective parallel mounting-ears 50 and 60 are attached to opposite transverse sides of housing 20. Rearward-mounting-ear 60 extends laterally equidistantly uprightly in both vertical directions of housing 20, the overall lateral vertical height of rearward-mounting-ear 60 being greater than typically encountered finite-lateral-distances between consecutively adjacent horizontal-panels, e.g., 103 and 104, as indicated in FIG. 2. The transversely dual-perforate respective two lobes of rearward-mounting-ear 60, positioned wholly rearwardly of gate front-side upright-panels 101A and 101B, are each removably securely attached to a respective horizontal-panel 103 or 104, as with transversely extending bolts 61. Thus, it can be seen that by virtue of the respective mounting-ears 50 and 60 firmly attachable to the respective gate panels 103, 104, 101A, and 101B, and with housing 20 alongside of forward-mounting-ear 50 being snugly slidably disposable between upright-panels 101A and 101B, the novel gate latch 10 is stably and reliably maintained in operational relationship with a suitable external stationary catch means, e.g., R.

From the foregoing, the construction and operation of the gate latch will be readily understood and further explanation is believed to be unnecessary. However, 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 shown and

described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

We claim:

1. In combination with an upright multi-panels type farm gate, the upright front-end of said farm gate being provided by the vertically co-planar front-sides of a pair of substantially parallel upright-panels, said two upright panels being transversely spatially separated by a finite-transverse-distance, the said farm gate also including at least two vertically co-planar horizontal-panels attached to the respective gate upright-panels, two of said parallel horizontal-panels being laterally vertically spatially separated by a finite-lateral distance, two consecutive horizontal-panels being each provided with a vertical-front-edge that is located between the upright-panels and that is rearwardly offset from the co-planar front-sides of the gate two upright-panels, the improvement comprising a gate latch extending along a substantially horizontal longitudinal central axis and that is disposed between the spatially separated consecutive pair of horizontal-panels, said gate latch comprising:

- A. An elongate tubular housing extending along said horizontal longitudinal central axis, said tubular housing including a forward portion disposed between the gate upright-panels and having a transverse thickness less than said transverse-finite-distance, said tubular housing having a pair of terminal ends transversely intersecting said longitudinal axis and including a housing forward-end located forwardly of the horizontal panels front-edge and including a housing rearward-end located rearwardly of said upright-panels;
- B. An elongate spindle reciprocatably positioned along said longitudinal axis within the housing and having a rearward-terminus positioned rearwardly of the housing rearward-end;
- C. A handle attached to the spindle rearwardly of the housing rearward-end for imparting rearward motion to said spindle;
- D. Spring means for urging the elongate spindle for-

wardly whereby the spindle forward-terminus is normally resiliently urged forwardly of the gate upright front-end; and

E. a pair of mounting-ears positioned between the housing two ends and rigidly attached to said housing, said mounting ears being longitudinally separated and extending uprightly rigidly in both vertical directions of the tubular housing as a pair of co-planar lobes for each said mounting-ear, the overall vertical height of the forward-mounting ear being less than for said finite-lateral-distance, the combined transverse widths of the housing and the forward-mounting-ear being substantially equal to said finite-transverse-distance whereby the housing forward portion is snugly disposed between the farm gate upright-panels, and wherein the rearward-mounting-ear is located wholly rearwardly of the farm gate upright-panels and has an overall vertical height greater than said finite-lateral-distance whereby the respective lobes thereof are securely attached to consecutive horizontal-panels of said farm gate.

2. The gate latch of claim 1 wherein there is a bar-like handle revolvably attached to the spindle rearward portion rearwardly of the housing rearward-end to provide means for rearwardly moving said spindle against said resiliently compressible helical spring means.

3. The gate latch of claim 1 wherein there is a bar-like handle revolvably attached to and extending radially from the spindle threaded portion rearwardly of the housing rearward-end to provide means for manually rearwardly moving the lineal spindle along said longitudinal central axis; wherein there is resiliently compressible helical spring means within the housing and surrounding the spindle said threaded rearward portion; and wherein the entire rearward-mounting-ear comprises a uniplanar strip of rigid strap metal, a central portion of which is rigidly attached to the circularly tubular housing, each of the two rearward-mounting-ear lobes being transversely multi-perforate.

* * * * *

45

50

55

60

65