May 19, 1925.

1,538,056

J. B. OLSON

GATE LATCH

Filed May 12, 1921

Fig. 1.

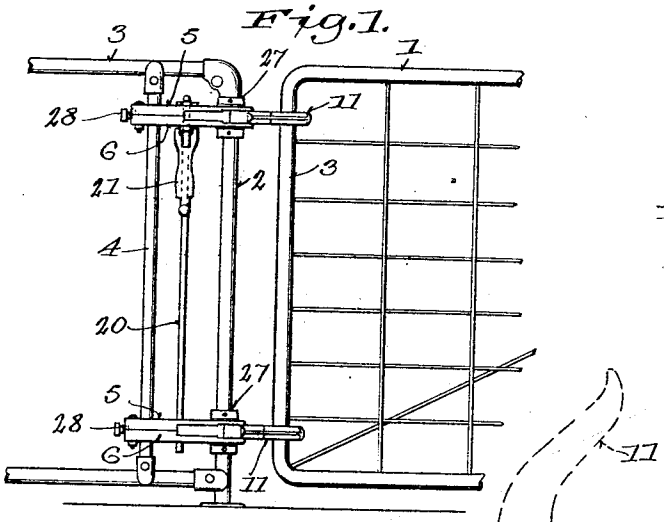


Fig. 5.

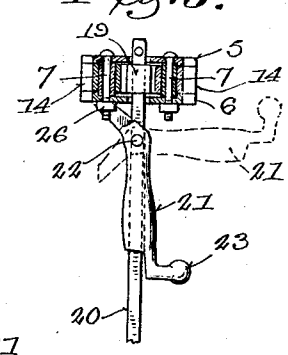


Fig. 2.

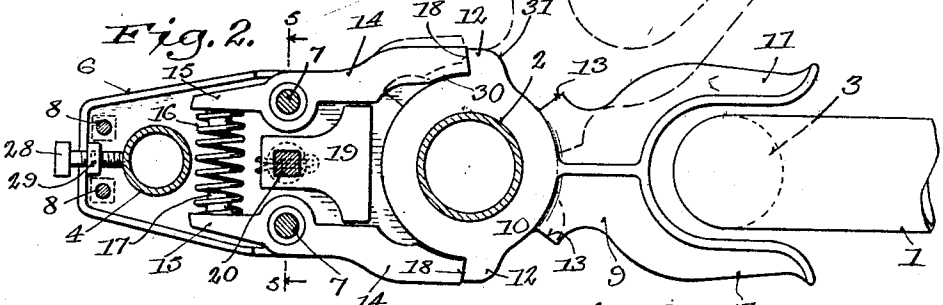


Fig. 3.

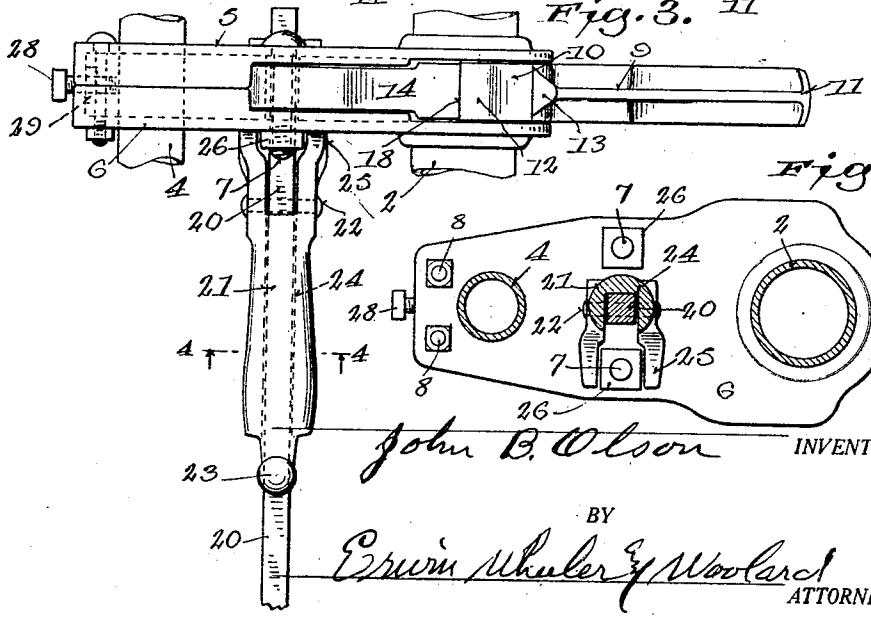


Fig. 4.

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UNITED STATES PATENT OFFICE.

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GATE LATCH.

Application filed May 12, 1921. Serial No. 468,918.

To all whom it may concern:

Be it known that I, JOHN B. OLSON, a citizen of the United States, residing at Fort Atkinson, county of Jefferson, and State of Wisconsin, have invented new and useful Improvements in Gate Latches, of which the following is a specification.

This invention relates to gate latches and is particularly directed to gate latches adapted for gates which may swing in either direction.

Objects of this invention are to provide a gate latch which is adapted to be moved by the swinging gate into locking position and thereafter to retain such gate in locked position; to provide a gate latch which may be swung in either direction and may allow, under certain conditions, the opening of the gate in either direction; which is provided with suitable means for preventing excessive movement of the latch under all conditions; and in which all of the parts are of substantial and rugged design.

Further objects are to provide a gate latch which may have a plurality of gate engaging members to lock the gate at a plurality of relatively spaced points; to provide manual releasing means which may simultaneously release all of such latches; and to provide manual releasing means which cannot be inadvertently released either by the operator or by cattle.

Further objects are to provide a gate latch in which the major portions of the mechanism are housed by portions of the gate latch itself, and to provide a gate latch having a minimum number of parts and of simple and durable construction.

An embodiment of the invention is shown in the accompanying drawings in which:—

Figure 1 is an elevation of the gate latch together with a fragment of a gate and fence showing the parts in gate-locking position.

Figure 2 is a plan view of one of the gate latches with the upper cover removed to more clearly show the interior construction, showing in full lines the gate engaging member in locking position and in dotted lines such member in releasing position.

Figure 3 is an elevation of the structure shown in Figure 2.

Figure 4 is a sectional view taken on the line 4—4 of Figure 3.

Figure 5 is a partial sectional view taken on line 5—5 of Figure 2.

Figure 1 shows a gate 1 which may be pivoted at one end (not shown) to the adjacent portion of the fence and arranged to swing about such pivotal point and to have its outer or swinging end pass closely adjacent to the gate post 2 of the corresponding section 3′ of the fence. Both the gate post 2 and the vertical member 3 at the free end of the gate may be made of tubular material and preferably the major portion of the fence 3′ may be formed of such tubular portions such, for example, as the gate post 2, the upper and lower stringers, and the intermediate bars 4. Gates of this type are usually designed to swing in either direction and the gate latch forming the subject of this invention, is designed to permit swinging in either direction, and to lock the gate in neutral or closed position.

The gate latch comprises upper and lower housing and bearing members 5 and 6 which are secured together by means of bolts 7, 7 and 8, 8. Between these members a gate engaging member 9 is pivotally mounted, such member 9 having a hub portion 10 positioned between the casings 5 and 6, and having an outwardly extending fork shaped member 11 between the arms of which the rod 3 of the gate is adapted to engage. The gate post 2 extends completely thru the housing members and forms a bearing or pintle for the gate engaging member 9. It is to be noted that a plurality of lugs 12, and a plurality of stops 13, are formed upon the hub portion 10 of the gate engaging member, whose purpose will later appear. A pair of pawls 14 are positioned between the casing or housing members and are pivotally held by means of the bolts 7, 7. These pawls have rearwardly extending arms 15, which are outwardly pressed by means of a spring 16, such spring being conveniently retained in position by lugs 17, formed integrally with the arms 15. The pawls 14 are provided at their free end with slightly inclined outer faces 18, adapted to simultaneously engage the corresponding faces of the lugs 12, to thereby lock the gate engaging member 9 in neutral or gate locking position. A member 19 is positioned within the housings 5 and 6, and between the pawls 14, and pivotally mounted upon a

squared shaft 20, such shaft extending completely thru the casing or housing. An operating handle 21 is pivotally mounted at 22 on the squared shaft at a point immediately below the upper gate latch, such handle being adapted to be rocked outwardly into the dotted line position shown in Figure 5. The handle 21 may be provided with a knob 23 at its lower portion, which facilitates manipulating such handle and it is provided with a hollowed or channelled central cut-out portion 24 so that it may lie substantially axially of the square rod or shaft 20 when not in use. The handle 21 extends upwardly and outwardly beyond the pivotal point 22, and is provided with a pair of arms 25 adapted to engage upon opposite sides of the nut 26 of one of the bolts 7 when such handle is not being manipulated. By forming the handle portion proper of relatively large size in comparison to the lugs or arms 25, such handle will be caused by gravity to assume the position shown in Figure 5 and cause the arms 25 to engage the nut 26 and thereby lock the releasing means against accidental or inadvertent movement.

A convenient method of mounting the gate latch is to position two of such latches upon the gate post 2, and to secure the latches in position against vertical motion by means of collars 27 fastened upon the gate post 2, or by means of tubular spacing members (not shown) which may also serve, in an obvious manner, to position and space such gate latches. The rod 4 adjacent the gate post 2 may conveniently pass thru the rear portion of the casing or housing of each of the gate latches and will thereby prevent pivotal motion of such latches about the gate post 2. The gate latches may conveniently be secured to the rod 4 by means of set screws 28, such set screws passing thru notches formed in adjacent portions of the casing members 5 and 6 and thru nuts 29 positioned within such casing members.

The operation of the device is as follows:—

When it is desired to release the gate engaging members the handle 21 is raised into the dotted line position, Figure 5, and is moved in one or the other directions, depending upon which way it is desired to open the gate, thereby correspondingly rocking the square shaft 20, which shaft, as will be seen from Figure 1, passes thru both gate latches and forms one portion of the releasing means of each latch. This rotary motion of the shaft 20 causes the appropriate pawl 14 to be moved outwardly about its pivotal point and to disengage the corresponding lug 12, thereby permitting the gate engaging member to be rocked outwardly by the swinging of the gate, for example, into the dotted line position, shown in Figure 2, such pawl 14, engaging the corresponding stop 13 and thereby preventing excessive motion of the gate engaging member 9. It is to be noted that each pawl is provided along its inner side with a portion 30 which substantially fits the spaces between the corresponding lug 12 and stop 13, when the gate engaging member is in its outwardly swung position, thereby offering a slight retarding action against the closing movement of the gate engaging member 9. However such closing movement is allowed when the member 9 is moved by the returning gate, as the lugs 12 are provided with inclined outer faces 31, thereby causing the pawls to ride over such faces and to snap into locking position. It is to be noted that the spring 16 both actuates the pawls 14 and causes the rocking member 19 to move into neutral position. When in neutral position the arms 25 of the manual operable member will engage opposite sides of the nut 26 and lock such member against inadvertent or accidental motion.

It will thus be seen that a gate latch has been provided in which the major portion of the parts are completely housed by a portion of the device, in which relatively simple mechanism is employed, and in which provision against accidental manipulation of the releasing means is secured.

I claim:—

1. In a device of the character described, a gate latch comprising a supporting member, a pivotally mounted hub element having a gate engaging portion and provided with laterally projecting shoulders, a pair of dogs independently pivoted to said member and positioned for engagement with said shoulders, and a single spring acting upon both of said dogs and urging them toward said hub to positions for engagement with the shoulders to which they are respectively adjacent.

2. A gate latch including a latch supporting member adapted to be secured to a gate post, a gate engaging fork pivotally movable with reference to said supporting member and adapted in an intermediate position to engage and secure a gate, levers pivoted to said supporting member symmetrically upon opposite sides of said fork and adapted independently for interaction therewith to secure said fork against pivotal movement, the extremities of said levers being normally urged into operative relation to said fork, an oscillatory member alternatively engageable with said levers and adapted to press either of said levers from said fork, whereby said fork may be released, a rod rotatable upon its axis for the oscillation of said oscillatory member, a handle pivotally connected to said rod and mounted for automatic actuation normally

into conformity therewith, and an extremity upon said handle adapted when said handle conforms to said rod to interact with a portion of said supporting member, whereby said rod is locked against rotation.

3. A gate latch comprising a gate engaging member adapted to hold the gate when in neutral position; means for locking said gate engaging member when in neutral position; and means, adapted to be locked in inoperative position, for operating said first mentioned means to release said gate engaging member.

4. A gate latch comprising a housing; a hub pivotally mounted therein and having an integral, projecting, forked, gate engaging portion; a pawl mounted within said housing for locking said hub in neutral position with the forked portion engaging the gate; and means independently mounted within said housing for tripping said pawl.

5. A gate latch comprising a housing; a hub pivotally mounted therein and having an integral, projecting, forked, gate engaging portion; a pawl mounted within said housing for locking said hub in neutral position with the forked portion engaging the gate; and means independently mounted within said housing for tripping said pawl, said means comprising a rocker member and having an externally operable portion projecting outwardly from said housing.

6. A gate latch comprising a housing adapted to be attached to a gate post; a forked, gate engaging member pivotally mounted within said housing and projecting outwardly therefrom; a pair of pawls pivotally mounted within said housing for locking said forked member in gate retaining position; and a rocker member for selectively tripping said pawls to permit the gate to swing in either direction.

7. A gate latch comprising a two-part casing including upper and lower members provided with registering apertures whereby said members may be received upon and secured to a gate post, a forked member projecting from said casing and provided within said casing with an apertured portion pivotal upon said gate post, studs radially projecting from said forked member upon either side thereof, a pair of pawls symmetrically disposed within said casing and pivotally mounted for engagement and release of said studs, means for urging said pawls normally into stud engaging position, a rocking member disposed centrally between said pawls and movable upon its axis to force either of said pawls alternatively outwardly to release a stud, and manually operable means projecting from said casing and adapted to permit exteriorly thereof the control of said rocking member.

8. A gate latch comprising a two-part casing including upper and lower members provided with registering apertures whereby said members may be received upon and secured to a gate post, a forked member projecting from said casing and provided within said casing with an apertured portion pivotal upon said gate post, studs radially projecting from said forked member upon either side thereof, a pair of pawls symmetrically disposed within said casing and pivotally mounted for engagement and release of said studs, means for urging said pawls normally into stud engaging position, a rocking member disposed centrally between said pawls and movable upon its axis to force either of said pawls alternatively outwardly to release a stud, and manually operable means projecting from said casing and adapted to permit exteriorly thereof the control of said rocking member, said manually operable means being provided with a latch normally locking it against movement.

9. A gate latch comprising a plurality of gate locking devices, each of said devices comprising a housing adapted to be carried by a gate post, a forked member for engaging said gate pivotally mounted within and extending from said housing, means for locking said forked member against pivotal motion, and means for releasing said pawls to permit simultaneous pivotal motion of each forked member of each of said devices, said means comprising a pivotal member mounted in each of said devices, and a control shaft for causing pivotal motion of said rocking members when said shaft is partially rotated.

JOHN B. OLSON.