Jan. 2, 1923.

1,440,420

J. M. STUCHLIK.
GATE LOCK.
FILED JAN 6, 1921.

2 SHEETS-SHEET 1

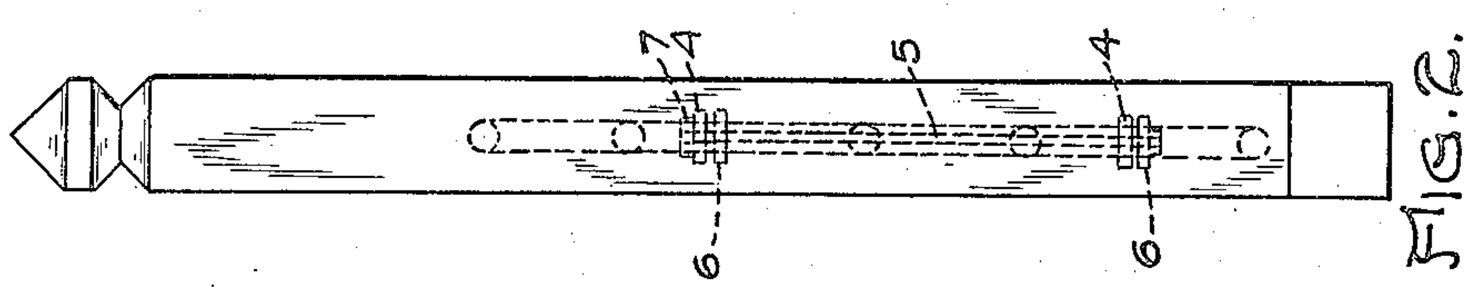

FIG. 2.

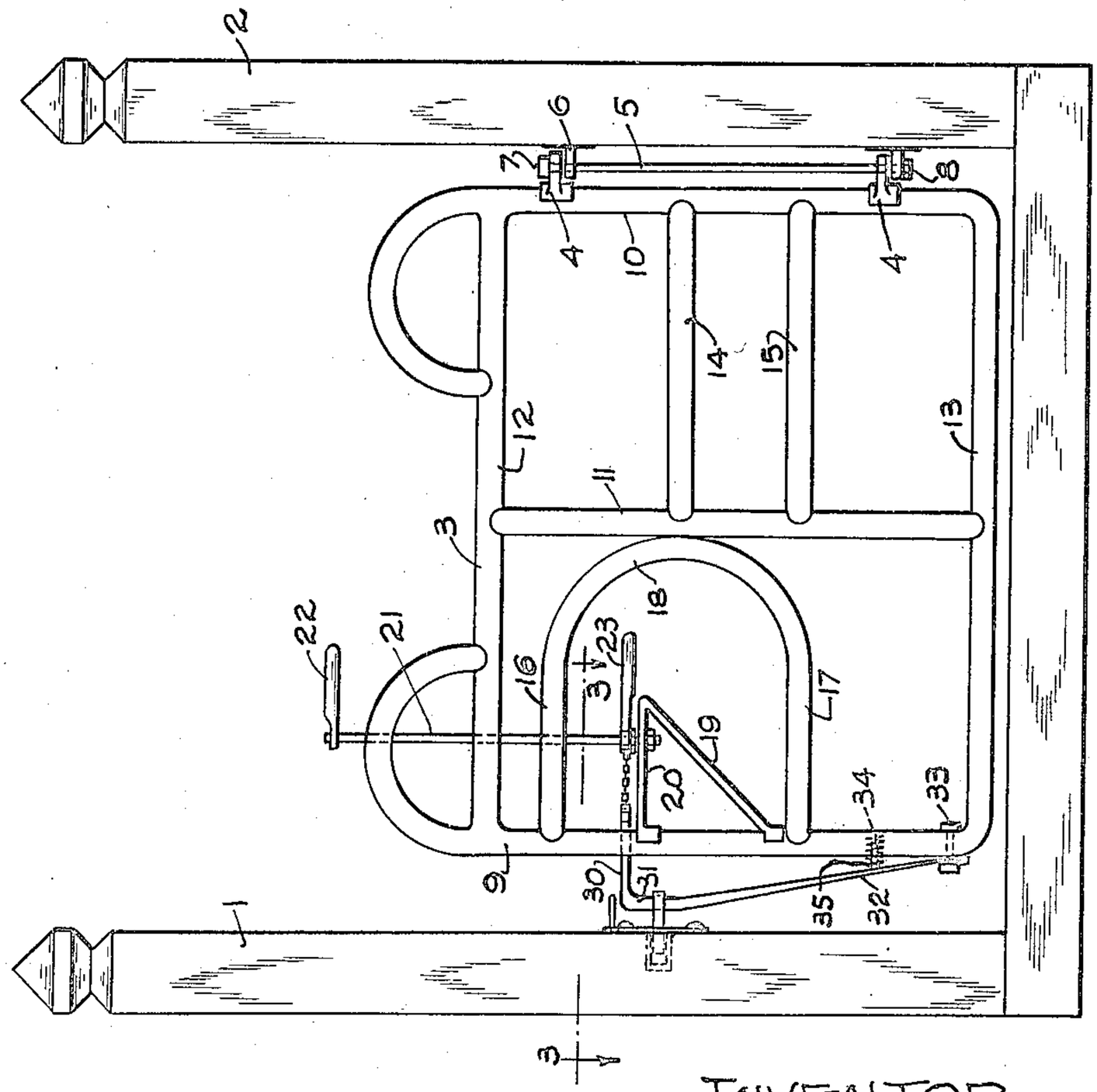

FIG. 1.

INVENTOR
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2 SHEETS-SHEET 2

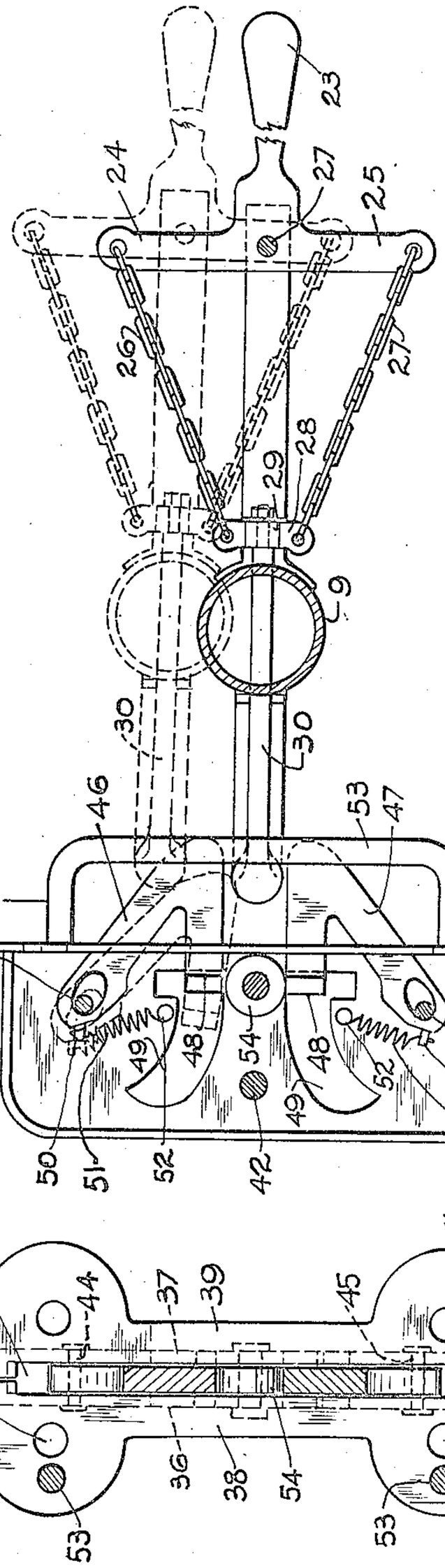

FIG. 3.

FIG. 4.

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Patented Jan. 2, 1923. 1,440,420

UNITED STATES PATENT OFFICE.

JOHN M. STUCHLIK, OF ROUNDUP, MONTANA, ASSIGNOR OF ONE-HALF TO UNITED STATES GATE LOCK AND TOOL COMPANY, OF MILWAUKEE, WISCONSIN.

GATE LOCK.

Application filed January 6, 1921. Serial No. 435,461.

To all whom it may concern:

Be it known that I, JOHN M. STUCHLIK, a citizen of the Republic of Czecho-Slovakia, residing at Roundup, in the county of Musselshell and State of Montana, have invented a new and useful Improvement in Gate Locks, of which the following is a specification.

The invention relates to gate latches, and its principal object consists in the provision of a latch of simple construction which will permit an automatic locking of the gate in closed position when the gate has been swung thereinto.

A further object aims at the provision of a pair of locking members permitting the automatic locking of the gate in closing position irrespective from which side the gate may be swung into closing position but preventing opening movement of the gate.

With these and other objects in view, which will appear as the description of the invention proceeds, the latter comprises the means set forth in the following specification, particularly pointed out in the claims forming a part thereof, and illustrated in the accompanying drawings, in which:

Figure 1 is an elevational view of a gate equipped with the invention;

Fig. 2 is a side view of the parts shown in Fig. 1;

Fig. 3 is a section on the line 3—3 of Fig. 1 and

Fig. 4 is a section on the line 4—4 of Fig. 3.

Referring to the several views of the drawings, 1, 2 indicate a pair of spaced posts or columns between which a gate, generally indicated by 3, is adapted to swing. The gate is equipped with a pair of spaced eyes 4 at the right end of the gate, as viewed in Fig. 1, arranged in vertical registry. A rod 5 passes through the eyes 4 and through eyes in brackets 6 registering with the apertures of the eyes 4 for the passage of the rod 5 and secured to the post 2. The rod 5 is provided at the top with a head 7 bearing against the upper eye 4, and the lower end of the rod has secured thereto a nut 8 whereby the gate 3 is pivotally secured to the post 2 and may be swung to permit passage between the posts 1 and 2 or prevent such passage when in closing position. The gate 3 comprises an open framework including upright members 9, 10, 11, which are interconnected by horizontal members 12 and 13. The upright members 10, 11 are further braced by horizontal ties 14 and 15 and the upright members 9, 11 are interconnected by ties 16, 17 which constitute extensions of a semi-circular member 18 integral therewith and secured to the upright 11. Intermediate the ties 16 and 17 an angular bracket 19 is secured to the upright 9, said angular bracket having a horizontal portion 20 on which is arranged an upright rod 21, which carries at its upper and lower extremity a lever 22 and 23, respectively.

The lever 23 is formed with laterally extending portions 24, 25 (Fig. 3) to which are anchored chains 26 and 27, secured at their outer ends to extensions 28 of a collar 29 secured to a horizontal rod 30 which slidingly extends through the upright gate member 9. The rod 30 is bent downwardly, as at 31, and terminates in a flat portion 32 which is secured to the lower extremity of the upright 9 by a bolt 33. The flattened rod portion 32 has adjacent its lower end a horizontal pin 34 surrounded by a coil spring 35 which is seated in a recess provided in the upright 9.

From the foregoing it follows that the spring 35 has a tendency of forcing the rod 30 in its outer position, but retraction of the rod 30 is possible upon rotation of the lever 22 or 23. The post 1 is equipped with the improved latch adapted to secure the rod 30 against movement when the gate occupies closing position. As indicated in Figs. 1, 3, and 4 the latch comprises a casing composed of two sections 36 and 37, which are arranged within a recess provided for this purpose in the post 1. The casing sections are provided at the outer ends with flanges 38 and 39, which are adapted to bear against the inner side of the post 1 and are equipped with apertures 40 and 41 whereby the flange plates may be secured by screws or the like to the post. The casing sections are held together by a bolt 42. The casing is formed with a longitudinal entrance slot 43 by providing cutout portions at the meting ends of the flange plates 38 and 39, and in this slot holding members presently to be described are arranged for

the purpose of coacting with the latch member 30 to arrest the same when the gate occupies a closing position.

The casing has vertical pins 44 and 45 constituting pivot pins for locking members 46 and 47 which are of angular construction projecting through the slot 43 and having the other leg of the angle re-entering the casing and terminating therein in a head portion 48. The bottom of the casing is formed with curved slots 49 the center of curvature coinciding with the axis of the pivot pins 44 and 45, respectively, so that the head portion 48 of the angle members 46 and 47 may be moved to the extent of the slot 49, the head portion 48 arresting said pivotal movement when engaging the inner outer end of the curved slot. The angular members 46 and 47 are formed with lugs 50 at the pivoted end, and the spring 51, secured to a casing pin 52, is secured to the lug 50 and thereby maintains the appertaining angular member in the outer operative position. The upper flange 38 is provided with a horizontal U-shaped member 53 which constitutes a guide for the latch rod 30. A roller 54 is interposed in the casing between the reentering portions of the angular members 46 and 47 and thereby insures practically frictionless movement of said members.

The operation of the gate lock is thought to be easily understood. If the gate is swung toward the observer viewing Fig. 1 from an open to closing position, the gate and therewith the latch bar 30 will for an instant engage the rear side of the member 46 and in the continued motion will force the angular member 46 to occupy the position indicated in dotted lines in Fig. 3. Further swinging movement of the gate will cause a further shifting of the angular member into the casing until the latch rod 30 is permitted to pass the member 46 and reaches the position indicated in full lines in Fig. 3. Inasmuch as the angular member 47 has its head 48 in engagement with the outer end of the curved slot 49, the engagement of the rod 30 with the member 47 will not cause movement of the latter but further movement of the gate is arrested if, due to the sudden arrest of the gate the latter has a tendency to swing back into open position, it will meet with the re-entering portion of the angular member 46, which in the meantime, under the influence of the spring 51, has been forced outwardly into functional position. The engagement of the rod 30 with the member 46 will, however, cause the arrest of the gate because the head 48 of the member 46 will then be in engagement with the outer end of the slot 49 and consequently be unable to clear the rod 30. It is, therefore, evident that after the gate has been swung into closing position and the rod 30 has entered the interspace between the members 46 movement in either direction of the gate is impossible as it is then effectively locked between the angular members. In order to open the gate after it has been locked in closing position it is merely necessary to rotate either the lever 22 or 23 whereby the rod 30 is withdrawn from the space between the angular members 46 and 47 and upon release of the levers 22 or 23 the spring 35 will cause the rod 30 to occupy functional position.

The drawings disclose the preferred embodiment of the principle on which the invention is predicated but various changes and alterations may be made within the scope of the invention. It is, therefore, not my intention of confining myself to the details exactly as shown but to include all such changes, modifications, and deviations constituting departures within the purview of the invention as defined by the appended claims.

I claim:

1. In combination with a pair of spaced posts and a gate hingedly secured to one of said posts, a latch element secured to said gate, a casing secured to the other of said posts, a pair of slotted locking members pivotally and slidably secured to said casing and protruding therefrom, said members being arranged to permit movement of said latch therebetween but preventing opening movement of said element past said members.

2. In combination with a pair of spaced posts and a gate hingedly secured to one of said posts, a latch element secured to said gate, a casing secured to the other of said posts, a pair of spring-impelled locking members pivotally and slidably secured to said casing and protruding therefrom, said members being arranged to permit movement of said latch element therebetween but preventing opening movement of said element past said members.

3. In combination with a pair of spaced posts and a gate hingedly secured to one of said posts, a latch element secured to said gate a casing secured to the other of said posts, a pair of locking members pivotally and slidably secured in said casing and protruding therefrom, and means for limiting movement of said members, said members being arranged to permit movement of said latch element therebetween but preventing opening movement of said element past said members.

4. In combination with a pair of spaced posts and a gate hingedly secured to one of said posts, a latch element secured to said gate, a casing secured to the other of said posts, a pair of slotted locking members pivotally and slidably secured in said casing and projecting through a slot in the casing

into the path of said latch element, said members being arranged to permit movement of said latch element therebetween but preventing opening movement of said element past said members.

5. In combination with a pair of spaced posts and a gate hingedly secured to one of said posts, a latch element secured to said gate, a casing secured to the other of said posts, a pair of slotted locking members pivotally and slidably secured in said casing and projecting through a slot in said casing, means for maintaining said members normally in protruding position, said members being arranged to permit movement of said latch element therebetween but preventing opening movement of said element past said members.

6. In combination with a pair of spaced posts and a gate hingedly secured to one of said posts, a latch element secured to said gate, a casing secured to the other of said posts, a pair of slotted angular locking members pivotally and slidably secured in said casing and projecting through a slot in the casing into the path of said latch element, a head on said locking members guided in a slot in the casing to limit the movement of said locking members, resilient means for normally maintaining the locking members in ejected or protruding position, said locking members being arranged to permit movement of said latch element therebetween but preventing opening movement of said element past said members.

7. In combination with a pair of spaced posts and a gate hingedly secured to one of said posts, a latch element movably secured to said gate, a casing secured to the other of said posts, a pair of slotted angular locking members pivotally and slidably secured in said casing and projecting through a slot in the casing into the path of said latch element, a roller-journaled between and engaged by said latch members, a head on said locking members guided in a slot in the casing to limit the movement of said locking members, and resilient means for normally maintaining the locking members in ejected or protruding position, said locking members being arranged to permit movement of said latch element therebetween but preventing opening movement of said element past said members.

8. In combination with a pair of spaced posts and a gate hingedly secured to one of said posts, a latch element movably secured to said gate, means for moving said latch into inoperative position in engagement with the front edge of the gate, means for normally maintaining the latch element in functional position, a casing secured to the other of said posts, a pair of slotted angular locking members pivotally and slidably secured in said casing and projecting through a slot in the casing into the path of said latch element, a roller journaled between and engaged by said latch members, a head on said locking members guided in a slot in the casing to limit the movement of said locking members, and resilient means for normally maintaining the locking members in ejected or protruding position, said locking members being arranged to permit movement of said latch element therebetween but preventing opening movement of said element past said members.

In witness whereof, I have hereunto subscribed my name this 31st day of December 1920.

JOHN M. STUCHLIK.