April 28, 1931. E. A. GROSS 1,802,599

GATE

Filed June 3, 1929 3 Sheets-Sheet 1

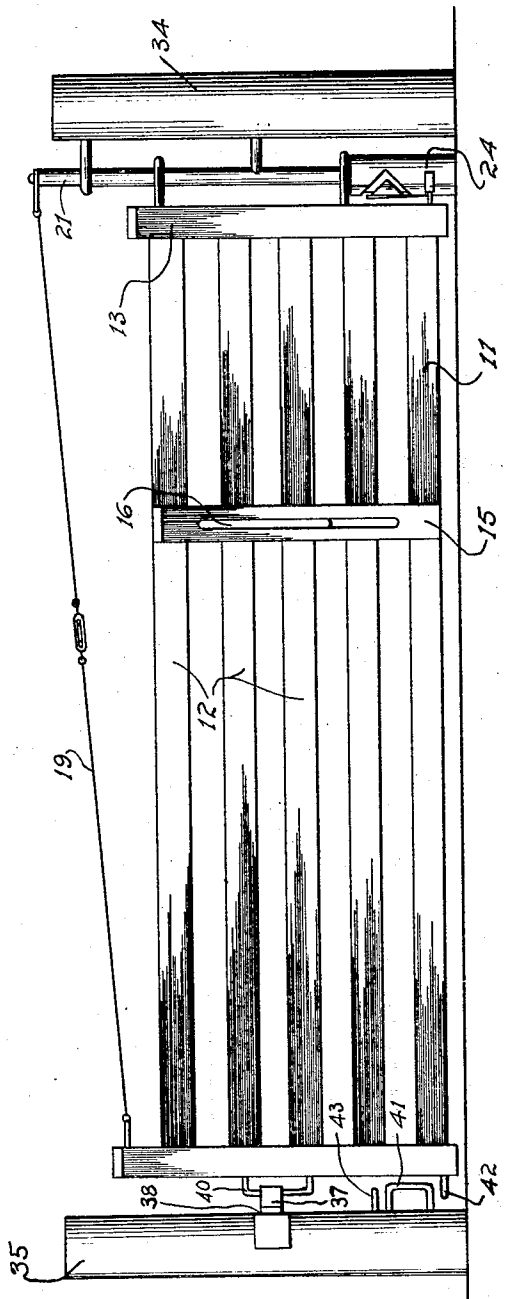


Fig. 1

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GATE

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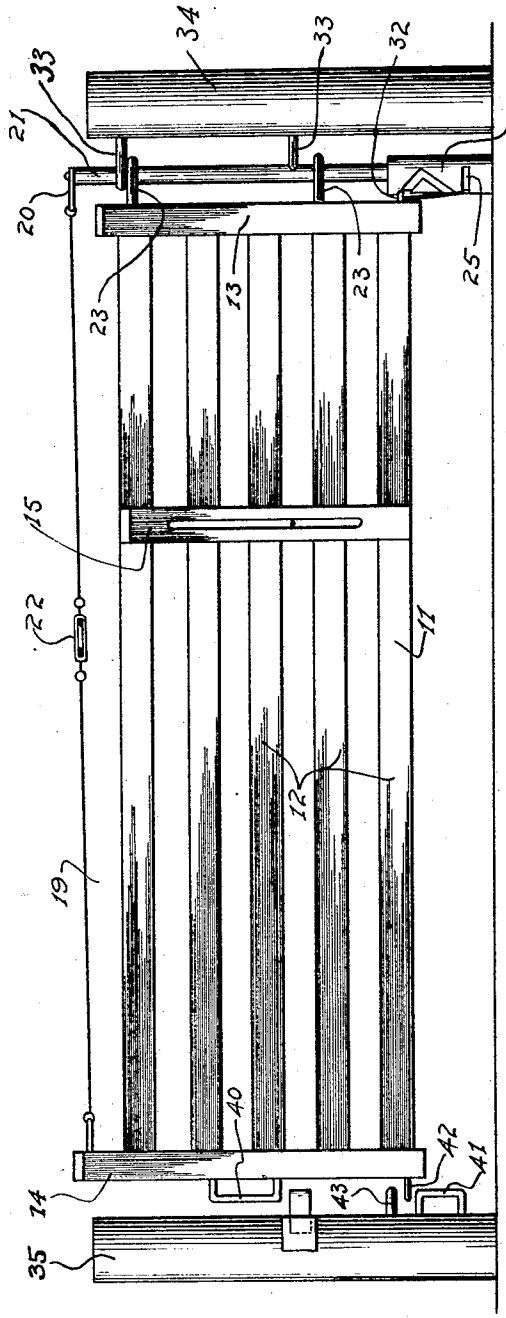


Fig. 2

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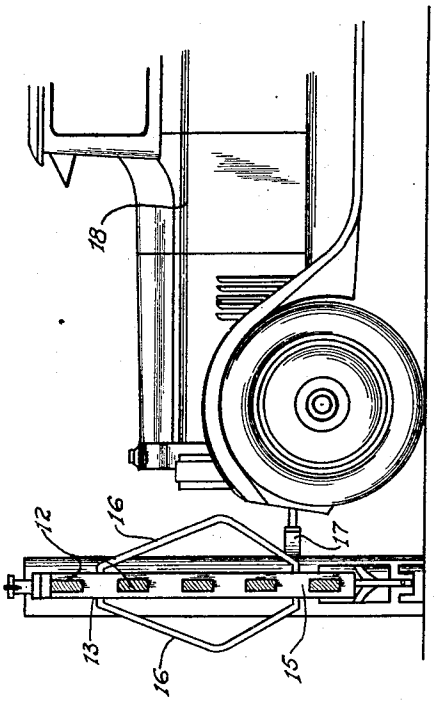


Fig. 3

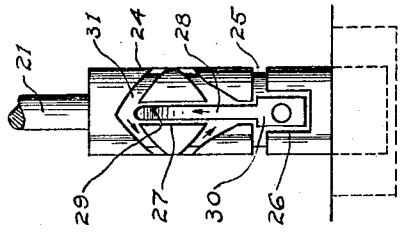


Fig. 4

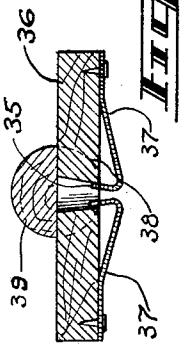


Fig. 5

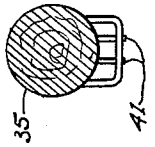


Fig. 6

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Patented Apr. 28, 1931 1,802,599

UNITED STATES PATENT OFFICE

ELMER AUGUSTUS GROSS, OF ERICKSON, BRITISH COLUMBIA, CANADA

GATE

Application filed June 3, 1929. Serial No. 368,142.

This present invention relates to new and useful improvements in a gate of the swinging type which is adapted to be automatically opened by an approaching vehicle and which will automatically close after passage of the vehicle through the gateway.

An object of the invention resides in the provision of a gate of the character stated which is of such construction and operation that in opening and swinging to one side the gate will first be raised between the gate posts and thus released from the gate latch, the gate gradually descending as it swings to its open position and returns therefrom to its closed position.

Another object of the invention resides in the provision of a gate of the character stated which operates on a guide post at one side of the gateway and is automatically locked in its lowermost closed position in such a manner as to require the raising of the gate before opening the same by an approaching vehicle, although the gate may be manually released and opened, without raising the gate if desired.

A further object of the invention resides in the provision of a gate of the character stated which is highly efficient in operation, is simple and inexpensive in construction and composed of the minimum number of parts.

To the accomplishment of these and related objects as will become apparent as the description proceeds, my invention resides in the construction, combination and arrangement of parts as shall be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claim hereunto appended.

The invention will be best understood and can be more clearly described when reference is had to the drawings forming a part of this disclosure, wherein like characters indicate like parts throughout the several views.

In the drawings:—

Figure 1 is an elevation of the gate in its closed, lowermost position;

Figure 2 is a view similar to Figure 1, showing the gate raised, previous to the swinging of the gate to open position;

Figure 3 is a transverse vertical section through the gate, showing the manner of releasing and opening the same by the fender of an approaching motor vehicle;

Figure 4 is a detail elevation of the grooved supporting and guiding post for the gate;

Figure 5 is a transverse horizontal section through the post at the other side of the gateway and showing in section the spring latching mechanism carried by the post; and

Figure 6 is a transverse horizontal section through the lower portion of the post illustrated in Figure 5 and disclosing the guiding mechanism for the gate to prevent swinging of the same to either side between its lowermost and uppermost positions.

Referring more in detail to the drawings, it is to be noted that the gate 11 is of elongated form and constructed from spaced longitudinal strips 12 extending between the upstanding rear gate standard 13 and the upstanding forward gate standard 14. An intermediate reinforcing standard 15 is also included in the gate structure, a short distance from the upstanding rear gate standard 13 and a pair of reversely inclined upstanding gate raising members 16 are carried on the intermediate standard 15 with the bowed or elbow portions directed outwardly from the side of the gate so that the lower inclined portions of the members 16 may be engaged by the fender 17 of a motor vehicle 18 or the like approaching the gate from either side, to raise the gate while still in its closed position and then force the gate to swing open, away from the vehicle, so that the latter may pass through the gateway, after which the gate swings in the opposite direction and returns to its fully closed position in which it is automatically locked. On its opening swinging movement and its following swinging movement to closed position, the gate gradually descends until it is again in its lowermost position as it closes.

A flexible tension member 19 is connected by one end to the upper end of the forward gate standard 14 while its opposite end 20 is engaged on the upper end of the gate mount-

ing post 21. A tension regulating member 22, such as a turn-buckle is employed intermediate the ends of the tension member 19, whereby the latter may be adjusted to regulate the tension of the member 19 and thus assure efficient functioning of the latter in holding up the forward free end of the gate and counteracting the weight of the gate in its tendency to cause the free forward end of the gate to sag or drop down and drag.

A pair of eyes or rings 23 project from the rear end of the gate 11 and operate on the post 21, turning thereon and also sliding vertically of the post 21, during operation or opening and closing of the gate 11.

Proper adjustment of the tension members 19 also serves to take the strain off of the upper eye or ring 23, from the post 21. This is important, for if the post 21 is allowed to take the strain of the weight of the forward end of the gate, at the upper eye 23, it will bind and the gate will not raise or lower readily or when it is raised, it will not swing.

The lower or base portion 24 of the gate 21 is of increased diameter and a transverse guide slot 25 is provided in the lower portion thereof intersecting the short and wide vertical slot 26 which depends below the slot 25 and is located in the forward face of the post 21. Continuing upwardly from the center of the slot 26, after crossing the slot 25 is a narrow vertical slot 27 within which rests the narrow free upstanding portion 28 of the spring 29 having its free upper end bent out toward the opposed face of the rear gate post 13. The wide lower end of base 30 of the spring 29 is secured in the short wide vertical slot 26. A substantially diamond slot 31 is also provided in the forward face of the large portion 24 of the post 21 with the upper and lower points of the diamond slot 31 intersecting the vertical slot 27 at the upper extremity thereof and near the lower extremity of said slot 27. The guide pin 32 therefor rides upwardly over the spring 29, pressing inwardly the upper free end thereof until it passes over the same and reaches the upper point of the diamond shaped slot 31, from which point the pin 32 may move freely in either direction in the diamond shaped slot 31 to one of the side points thereof and then return to the slot 27 at the lower end thereof where it connects with the lower point of the diamond shaped slot 31. This complete operation of the guide pin 32 will be clearly understood as the operation of opening and closing the gate is more specifically set forth.

The post 21 may serve as one of the end gate posts or may be connected by connecting embracing members 33 to a more substantial end gate post 34 corresponding in character to the other end gate post 35 at the other side of the gateway and carrying the latching mechanism for the gate, as will be later more fully set forth.

Mounted on the forward end gate post 35 and extending transversely therethrough is the latch plate 36 of the gate latch mechanism and which has the spring latch members 37 secured on one face with their inturned opposed ends 38 working in the central slot 39 provided in the latch member 36 and which slot 39 increases in width toward its inner end. The main portions of the spring latch members 37 are normally spaced from the adjacent face of the latch member 36 and which latter projects for a short distance to either side of the gate end post 35. When the gate 11 is in its lowermost closed position, the latch member 40 projecting from the forward end of the gate 11 is engaged between the inturned working ends 38 of the spring latch members 37, thus latching the gate in closed position. By pressing inwardly toward the latch member 36, one of the spring latch members 37, however, the gate will be released so that it may be opened in that direction, the guide pin 32 of the gate 11 riding in the transverse lower slot 25 of the post 21. The forward end gate post 35 also has on its lower portion a pair of parallel spaced upstanding guide members 41 for the pin 42 projecting from the lower forward corner of the gate 11. A transverse member 43 is also extended from the post 35, a short distance above the guide members 41. The pin 42 moves upwardly between the guide members 41 when the gate 11 is raised and the latch member 40 thus elevated above the spring latch members 37. The pin 42 may then pass from under the member 43 as the gate 11 swings open to one side. When the gate 11 returns to its closed position, the pin 42 finds its way to its normal position below the guide members 41 and the latch member 40 automatically clamps again between the working ends 38 of the spring latch members 37.

As the construction of the device has thus been described in detail, brief reference is now had to its use and modus operandi: The gate 11 is normally in its lowermost closed position and held against movement by the spring latch members 37 engaging the latch member 40. The gate may be opened from either side without lifting the same, by pressing inwardly one of the spring latch members 37 and then swing the gate 11 toward that side of the gateway. An approaching vehicle may open the gate automatically by pressing upon the lower portion of the reversely curved member 16 on the side of the gate approached by the vehicle. This will result in first raising or forcing upwardly the gate 11 until the guide pin 32 thereof is at the upper angle of the substantially diamond shaped slot 31 and the pin 42 is above the guide members 41 with the latch member 40

also above the spring latch member 37. Continued pressure against the member 16 will result in swinging the gate 11 to open position, ahead of the vehicle as the latter passes through the gateway. When the vehicle has passed the gate 11, the latter will automatically return to its closed position and the latch member 40 will again rest between the spring latch members 37. During this outward swinging movement of the gate 11 from its elevated closed position, the gate will constantly descend as the guide pin 32 moves downwardly in the diamond shaped slot 31 to the outer side point of the slot 31, at which time the gate 11 is in its full open position. The guide pin 32 will then move in the next section of the diamond shaped slot 31 until it reaches the lower corner thereof, thus causing the gate 11 to continue to move downwardly and at the same time return to its closed position, with the pin 42 below the guide members 41 and the latch member 40 clamped between the spring latch member 37 where the gate 11 will remain until again released or raised for opening. It is evident that the gate 11 may be opened in either direction and from either side thereof, the operative and co-operating parts acting in the same manner, regardless of the side from which the gate is opened or the direction in which the gate 11 is swung when being opened or closed.

From the foregoing description taken in connection with the accompanying drawings, it will be manifest that a gate is provided that will fulfill all the necessary requirements of such a device but as many changes could be made in the above description and many apparently widely different embodiments of my invention may be constructed within the scope of the appended claim without departing from the spirit or scope thereof, it is intended that all matters contained in the said accompanying specification and drawings, shall be interpreted as illustrative and not in a limited sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

A gate including a pair of gate posts; a gate member mounted on one of said gate posts; an auxiliary supporting and bracing post for the last mentioned gate post; said gate member being adapted to be raised vertically on the post supporting the same; the last mentioned post having an enlarged lower portion with a transverse lower slot; an upwardly directed slot extending from the first mentioned slot and a substantially diamond shaped slot intersecting the upper and lower ends of the upwardly extended slot; a spring member carried in the upwardly directed slot; a guide pin carried by said gate member and adapted to ride in the slots of said last mentioned post and to rest upon said spring member when at the upper end of the upwardly directed slot and the upper point of said diamond shaped slot; co-operating means carried by said gate member and the remaining gate post for normally retaining said gate in its lowermost closed position; and means carried by said gate member and the last mentioned gate post for guiding said gate member in its raising movement.

In testimony whereof I hereunto affix my signature.

ELMER AUGUSTUS GROSS. [L. S.]