April 12, 1932. F. H. SHETLER 1,853,934

CROSSING GATE

Filed Nov. 28, 1930 3 Sheets-Sheet 1

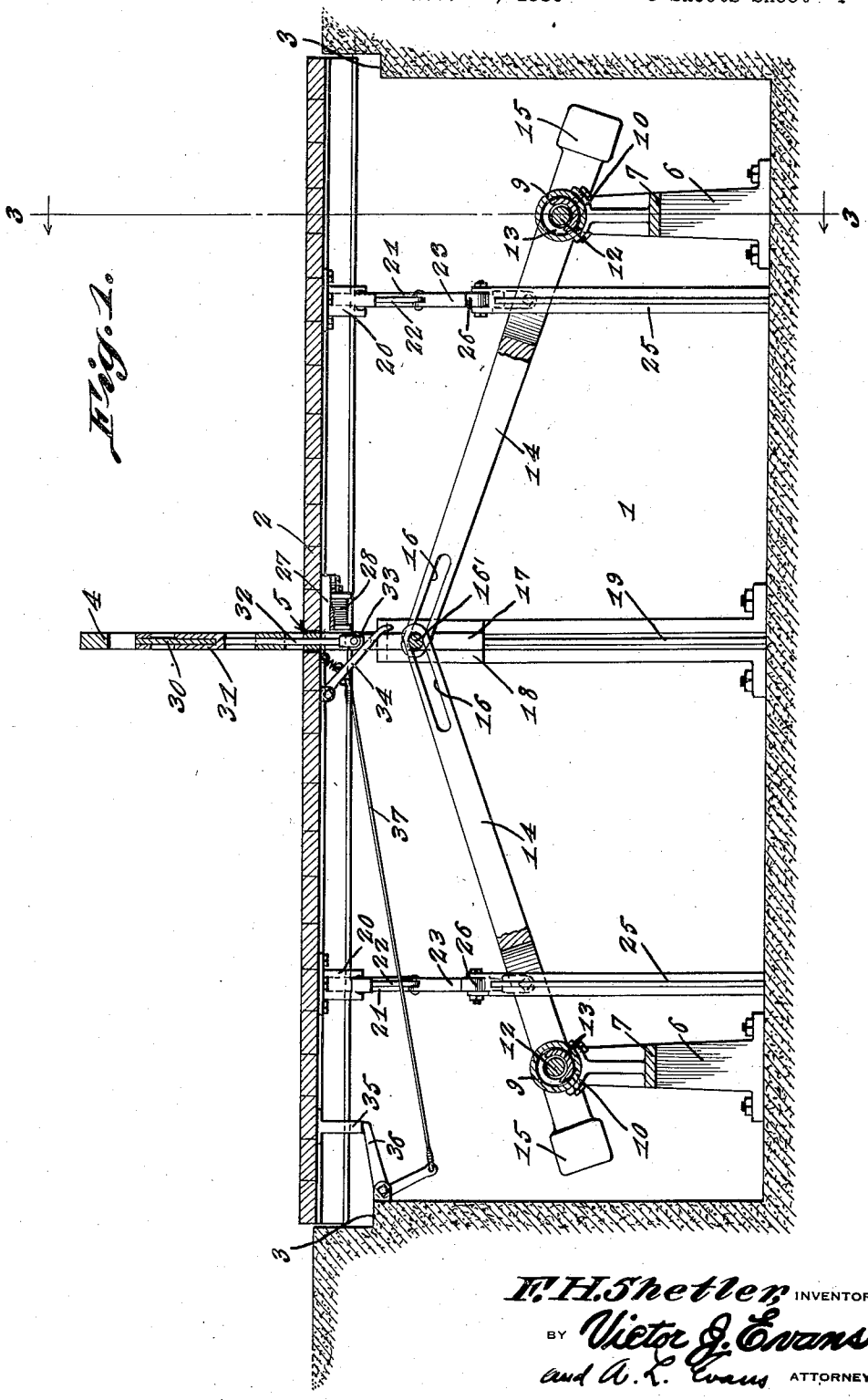

Fig. 1.

F. H. Shetler, INVENTOR
BY Victor J. Evans
and A. L. Evans ATTORNEYS

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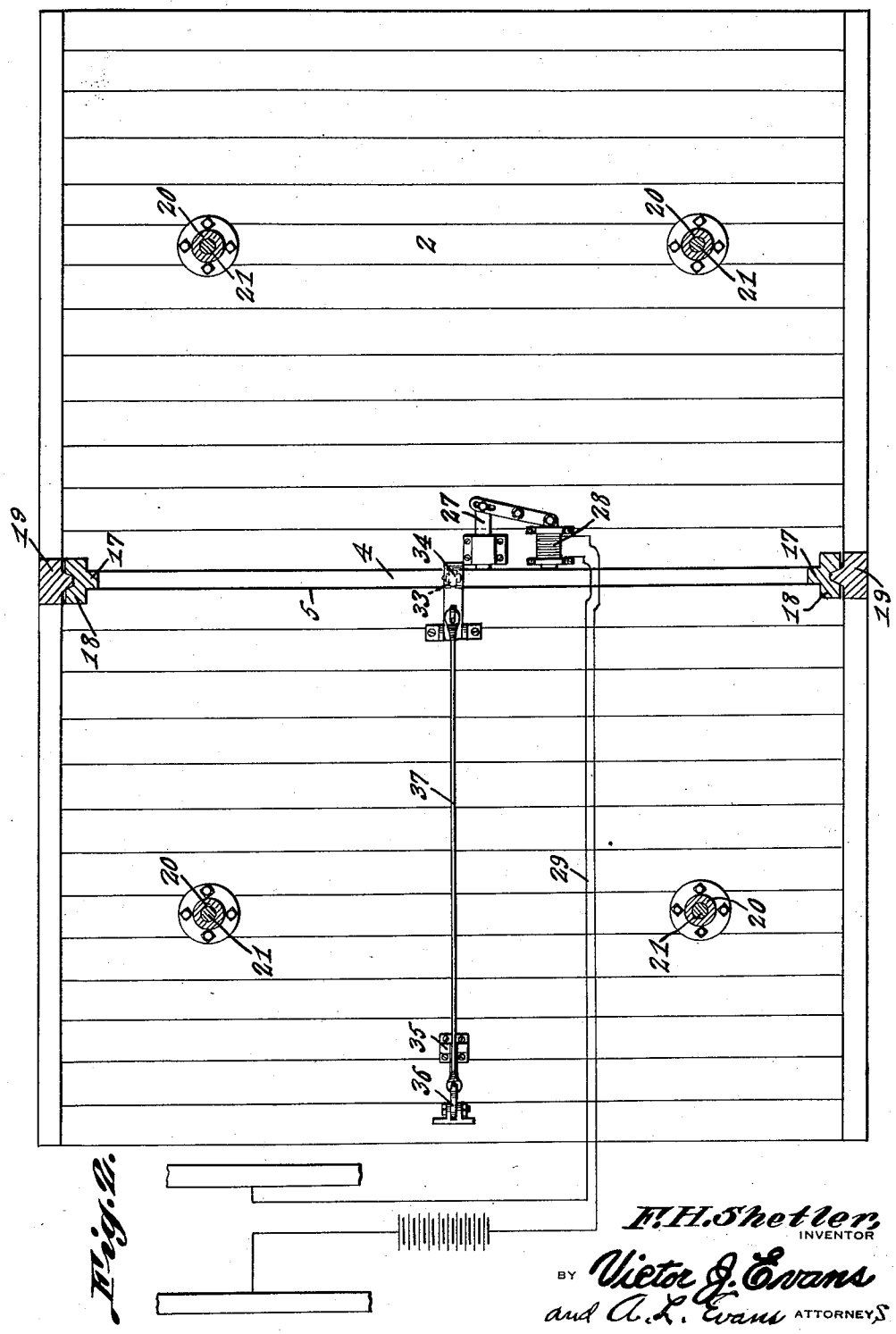

Fig. 2.

F. H. Shetler, INVENTOR

BY Victor J. Evans and A. L. Evans ATTORNEYS

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Fig. 4.

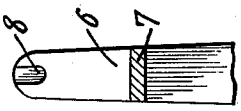


Fig. 5.

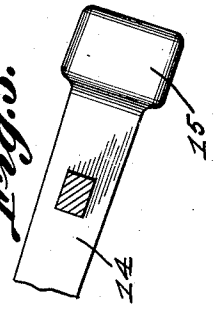
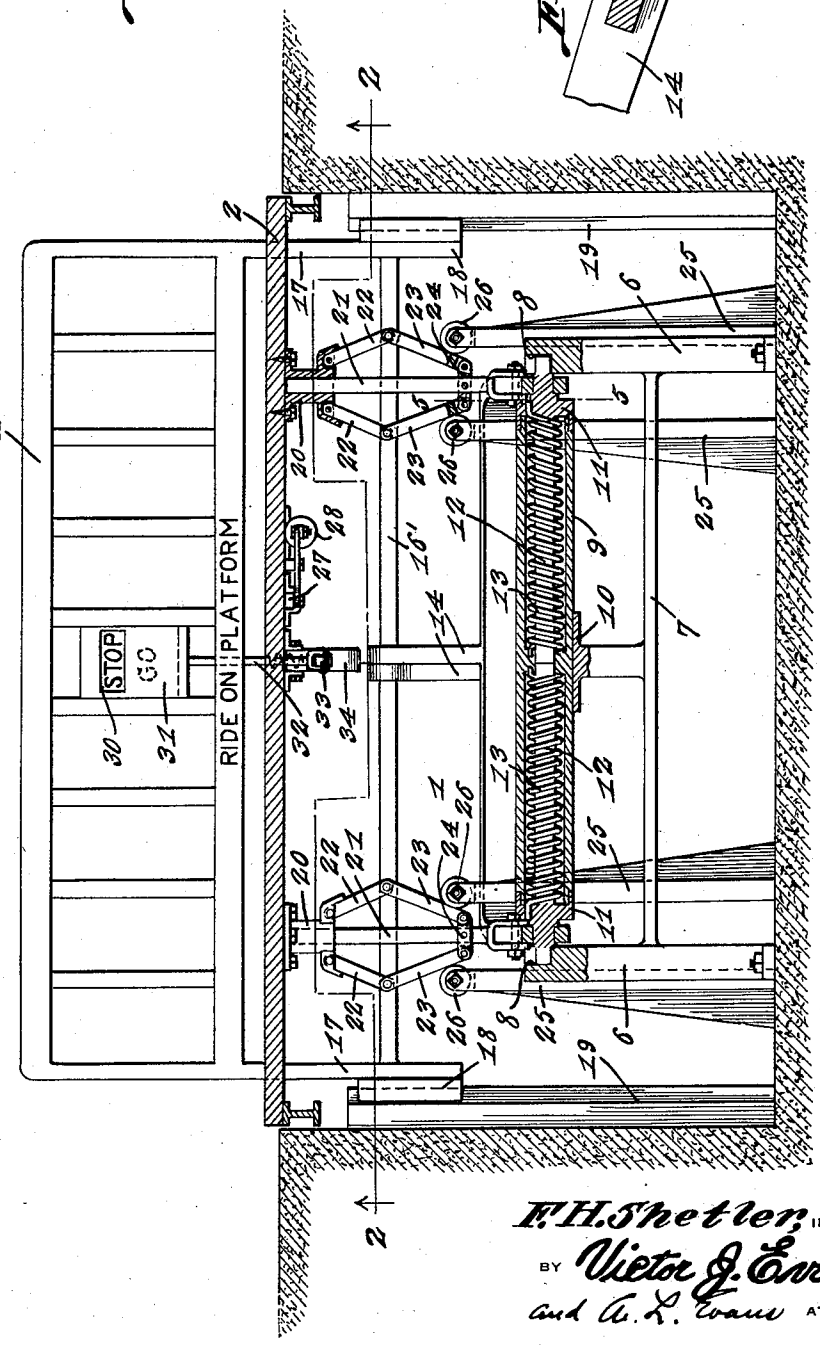


Fig. 3.



F. H. Shetler, INVENTOR

BY Victor J. Evans

and A. L. Evans ATTORNEYS

Patented Apr. 12, 1932 1,853,934

UNITED STATES PATENT OFFICE

FRED H. SHETLER, OF CANTON, OHIO

CROSSING GATE

Application filed November 28, 1930. Serial No. 498,798.

This invention relates to a railroad crossing gate, the general object of the invention being to provide a movable platform at each side of the track which is lowered by a weight of a vehicle passing thereon and having a barrier associated therewith, with means actuated by the lowering of the platform for lowering the barrier so a vehicle can pass over the same and means for locking the barrier in raised position by a train approaching the crossing, the locking means being released by the train after the same passes the crossing.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a sectional view through one of the platforms and showing the barrier in raised position.

Figure 2 is a section on line 2—2 of Figure 3.

Figure 3 is a section on the line 3—3 of Figure 1.

Figure 4 is a detailed sectional view of one of the roller supporting posts.

Figure 5 is a section on line 5—5 of Figure 3.

In these drawings, the numeral 1 indicates a pit extending across the highway at each side of the track and the numeral 2 indicates a platform covering the pit and having vertical movement so that the platform will be lowered when a vehicle passes from the highway onto the same. The walls of the pit are formed with shoulders 3 to limit the downward movement of the platform. A barrier or gate 4 passes through a slot 5 extending transversely in the platform. A pair of posts 6 is located in the pit adjacent each side thereof, the posts of each pair being connected together by a cross piece 7. The upper ends of the posts are formed with the slots 8 for receiving the pintles of the spring rollers 9, it being understood that a roller is supported by each pair of posts. The housing of each roller is fastened in a bracket 10 carried by the cross piece 7 and the ends of the housing are closed by the rotary caps 11 which carry the pintles. A shaft 12 passes through the housing and is connected to the caps. The springs 13 are carried by the shaft, the outer ends of the springs being attached to the caps and their inner ends are fastened to a stationary part so that when the springs are wound they will act to turn the caps. A pair of weighted levers 14 is located in the pit and each lever is formed with a yoke shaped outer end, the limbs of which are connected to the caps by having square openings therein through which square parts of the pintles pass. Thus the levers are rocked by the spring rollers. The weights 15 are carried by the outer ends of the limbs of the levers. The inner ends of the levers are slotted, as at 16 to receive a bar 16′ which connects the legs 17 of the gate or barrier and these legs have guide ways 18 thereon for engaging the guides 19 located in the pit. Antifriction means may be provided in the guideways if desired.

A pair of tubular members 20 is attached to the bottom of the platform at each side of the barrier and a rod 21 has its upper end engaging each member, the lower end of the rod being forked and connected to a limb of a lever. A pair of links 22 is connected to each tubular member and each link has its upper end fitting in a recess in a flange formed on the lower end of the tubular member. These recesses are so formed that they limit the outward movement of the links but permit them to swing inwardly to a certain extent. A second pair of links 23 is pivoted to the lower ends of the first pair and the lower ends of the second links are pivoted to a cross piece 24 fastened to the lower part of each rod 21. Pairs of posts 25 are located in the pit, each pair being arranged adjacent each link assembly with the rollers 26 at the upper ends of the posts engaging the outer edges of the pair of lower links 23.

Thus it will be seen that the levers under

the action of the spring rollers will hold the platform and the gate in raised position, as shown in Figures 1 and 3, with the gate forming a barrier across the road. When a vehicle passes onto the platform the weight thereof will lower the platform and this lowering movement of the platform will cause the tubular members 20 to force the rods 21 and the links carried thereby downwardly to lower the levers and as the lower links 23 are pressed inwardly by the rollers 26, the link assemblies are lengthened and thus cause the rods 21 to move downwardly to a greater extent than the platform and at a greater speed so that the levers are lowered to a sufficient extent to move the gate downwardly so the vehicle can pass over it. When the vehicle passes off the platform the spring rollers raise the gate and platform to their normal positions.

A latch 27 is provided for locking the gate in raised position and this latch is operated by a train approaching the crossing through means of the magnet 28 the circuit 29 of which is closed by said train. After the train passes the crossing the circuit is broken and the latch returns to inoperative position. Thus the gate cannot be lowered by a vehicle running on the platform when a train is approaching the crossing.

The gate has on its front face the words "Ride on the platform" so as to inform drivers of vehicles that they must ride on the platform in order to lower the gate and I also provide "Stop" and "Go" signals to notify the drivers when to go ahead and when to stop. These words are carried by a stationary plate 30 attached to the gate and enclosed by a casing 31 having a window therein through which one set or the other of the signal words are visible. This casing is movably arranged on the gate and it is connected at its lower end to a rod 32 which has a roller 33 at its lower end which is engaged by a spring actuated pivoted member 34 at the lower face of the platform. This member normally holds the casing in a position with the "Stop" signals appearing through the window but when the platform is lowered a projection 35 thereon will engage a bell crank 36 pivoted to a wall of the pit and cause said bell crank to pull upon a cable 37 and thus move the member 34 out of engagement with the roller 33 so that the casing will drop and display the "Go" signals.

The device will act to cause drivers of vehicles to check their speed as they approach the crossing and then by riding on the platform the gate will be lowered if no train is coming so that the vehicle can proceed across the track. If a train is coming however, the gate will be locked in raised position and the vehicle cannot pass on the track until the train passes the crossing.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:—

A device of the class described, comprising a centrally slotted vertically movable platform, a vertically movable gate passing through the slot in the platform, weighted swinging levers located under the platform and having pin and slot connections with the gate, spring means coacting with the swinging connections of the levers for normally holding the latter in a position with the gate raised, toggles connecting the platform with the levers, means active on the toggles whereby the platform will be normally held in raised position, said levers acting to lower the gate when the platform is lowered by a vehicle riding upon the same, train operated means for locking the gate in raised position when a train approaches the platform, "Stop" and "Go" signals on the gate and operatively associated with the gate and platform, and means for exposing the "Stop" signal within the gate when the latter is raised and also the "Go" signal when the gate is being lowered.

In testimony whereof I affix my signature.

FRED H. SHETLER.