Aug. 16, 1927. 1,639,158

M. H. ALBERTS

TRAFFIC GATE

Original Filed Feb. 1, 1926 3 Sheets-Sheet 1

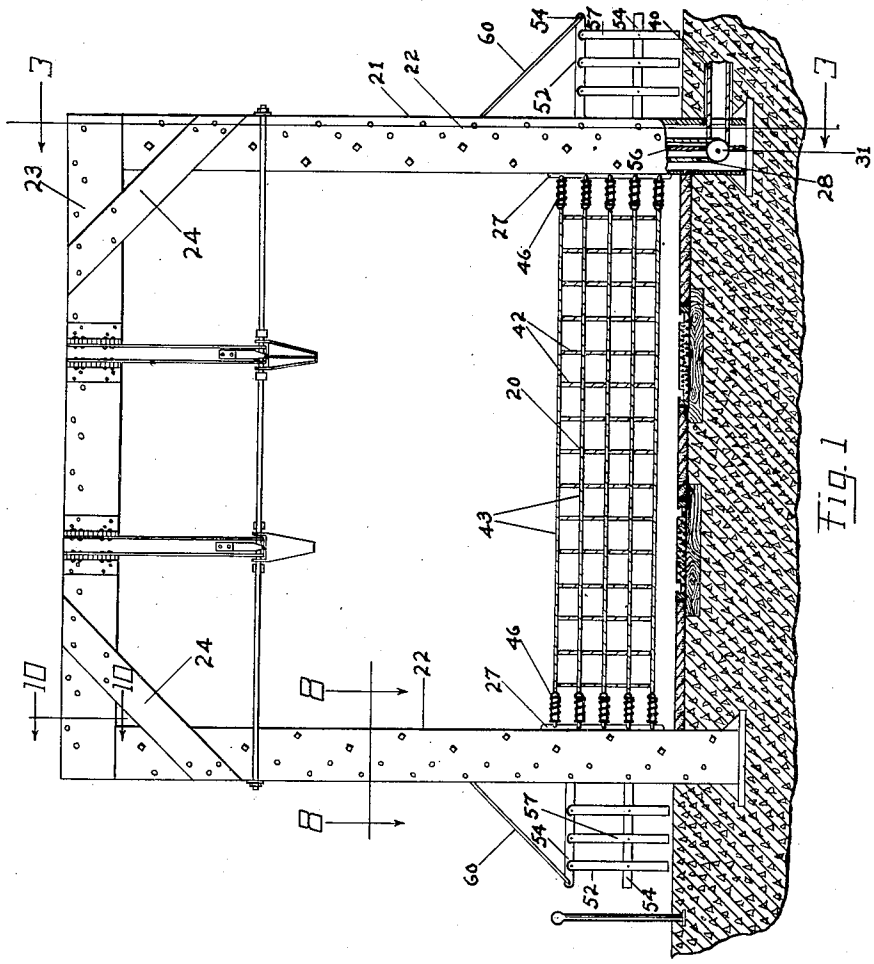


Fig. 1

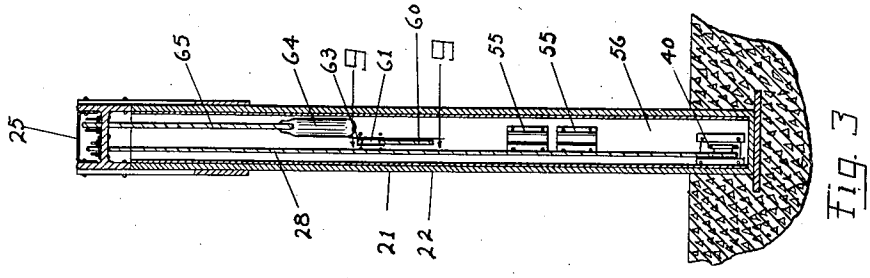


Fig. 3

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Original Filed Feb. 1, 1926 3 Sheets-Sheet 2

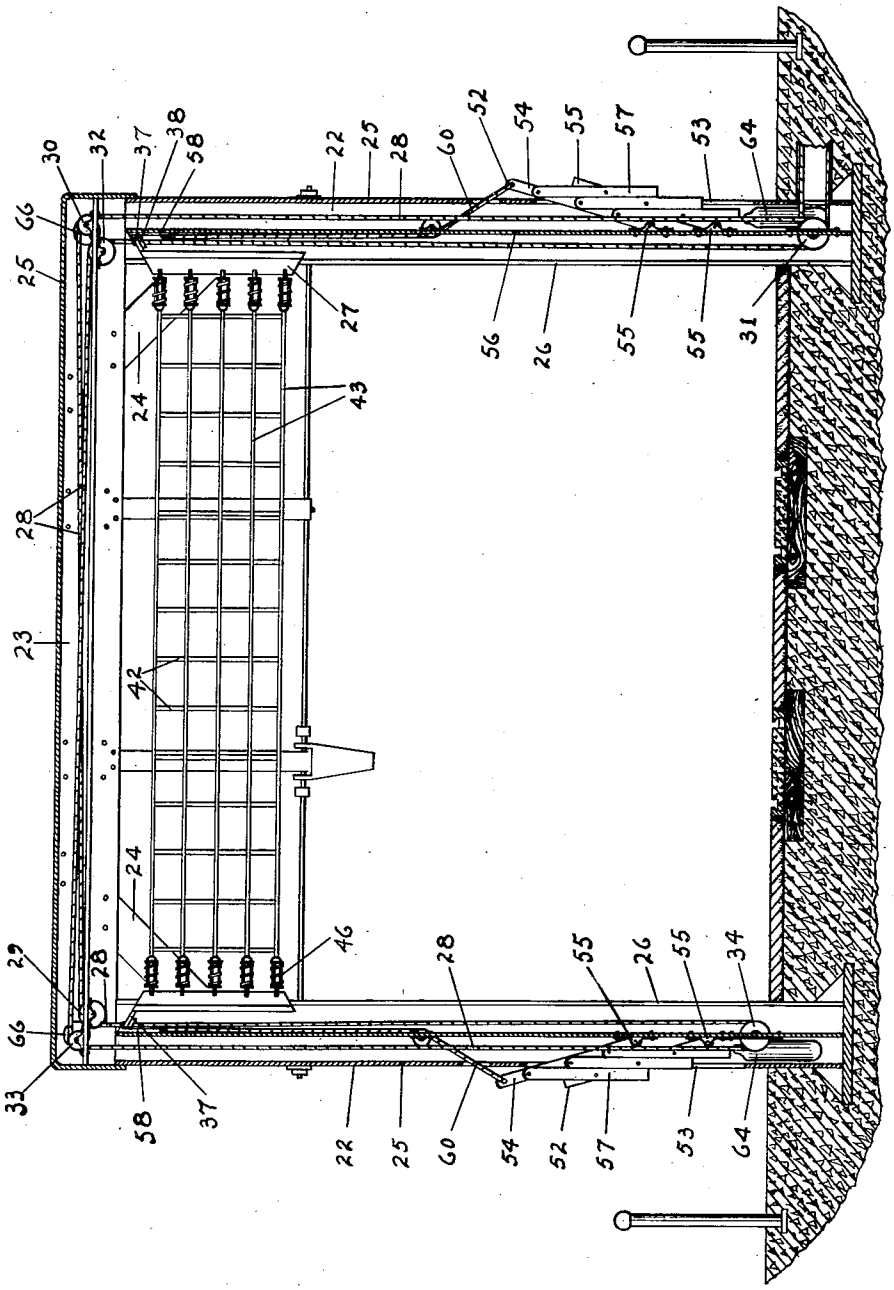


Fig. 2

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Original Filed Feb. 1, 1926 3 Sheets-Sheet 3

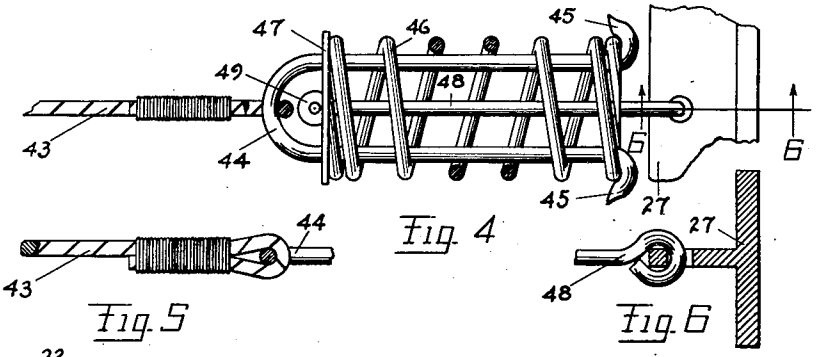


Fig. 4

Fig. 5

Fig. 6

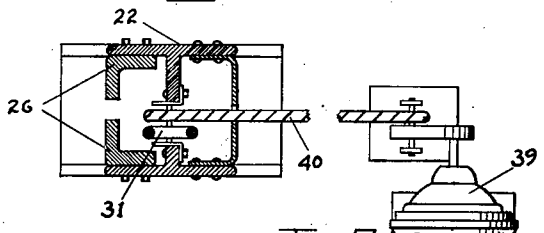


Fig. 7

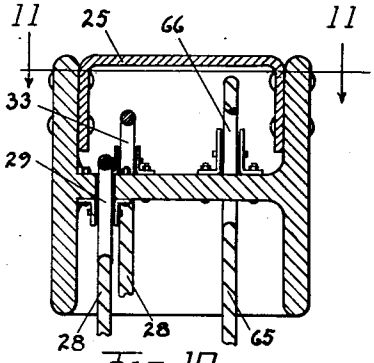


Fig. 10

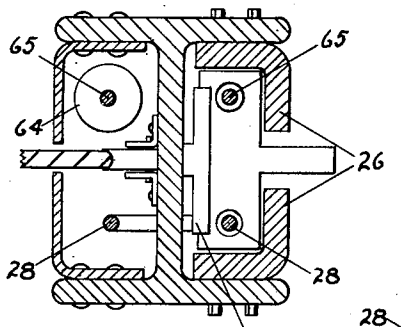
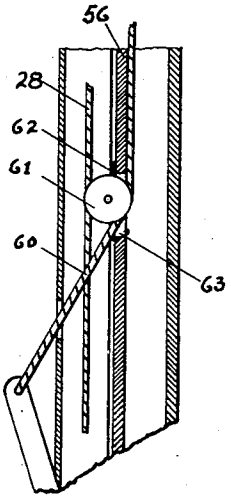


Fig. 8



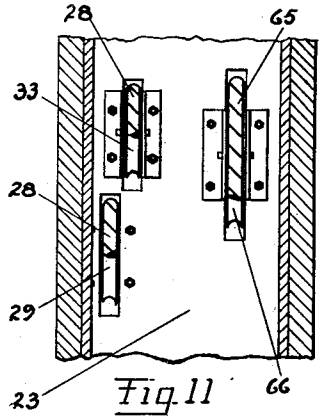


Fig. 11

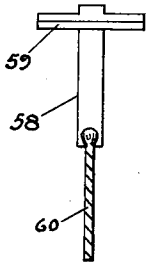


Fig. 12

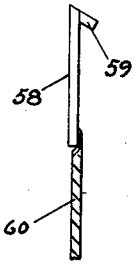


Fig. 13

Fig. 9

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Patented Aug. 16, 1927. 1,639,158

UNITED STATES PATENT OFFICE.

MELVIN HOWARD ALBERTS, OF CHICAGO, ILLINOIS.

TRAFFIC GATE.

Original application filed February 1, 1926, Serial No. 85,310. Divided and this application filed March 18, 1927. Serial No. 176,412.

This invention relates to traffic gates for closing traffic and foot passage ways in front of a bridge or railroad track or any area that is to be periodically closed against passage thereto or thereacross. This application constitutes a division of my copending application, Serial Number 85,310, filed February 1st, 1926.

Objects of this invention are to provide an efficient means for readily raising the movable traffic gate member for the main street traffic and opening side gates, if they are present, to open the passage ways for individuals that are on foot, such as side walks. Other objects and advantages will hereinafter appear.

The invention is shown by way of illustration in the accompanying drawings, in which:

Fig. 1 of the invention illustrates a side view of the traffic gate structure. Fig. 2 illustrates a vertical section of the structure shown in Fig. 1. Fig. 3 is a view of a section taken on the plane of the line 3—3 indicated in Fig. 1. Fig. 4 is an enlarged view showing a part of the gate. Fig. 5 illustrates a view of a cable forming a part of the gate. Fig. 6 is a view of a section taken on the plane of the line 6—6 indicated in Fig. 4. Fig. 7 is a view of a means for operating the traffic gate. Fig. 8 is a view of a section taken on the plane of the line 8—8 indicated in Fig. 1. Fig. 9 is a view of a section taken on the plane of the line 9—9 indicated in Fig. 3. Fig. 10 is a view of a section taken on the plane of the line 10—10 indicated in Fig. 1. Fig. 11 is a view of a section taken on the plane of the line 11—11 indicated in Fig. 10. Fig. 12 is a view of a hook member for raising a side gate. Fig. 13 is a side view of the member shown in Fig. 12.

In the form of structure containing my invention and which is shown in the drawings, a movable gate member 20 is supported and guided in a frame 21 that may be formed of suitable rolled iron of desired shapes. In the particular structure the main supporting parts are formed of H-iron and consist of the uprights 22 and the top cross member 23 that are suitably riveted and secured together and are braced by means of the bars 24. The interior of the H-bars 22 and 23 are closed by suitable sheet metal U-shaped parts 25 and the L-bars 26. The L-bars 26 are so positioned that their inner edges are located in spaced relation so as to form a slot for guiding the movable gate member 20.

The movable gate 20 is provided with a pair of end members 27 that may be formed of T-bars and which are located within the uprights 22, the sides of the edge portions of the L-bars 26 constituting a guide for the gate 20, and over which the end members 27 slide as the gate is raised and lowered. The gate is raised by a set of parallel maintaining pulleys and lines, by which is meant to describe a mechanical elemental movement and structure whereby the gate will be maintained at all times parallel to the surface of the road or pavement across which the gate extends notwithstanding the position to which it may be raised by a force exerted on either end, or any part of the gate. Thus the gate is connected at one of its ends to the line 28 that passes over the pulleys 29, 30, 31, and is connected to the gate at its other end The line extends from this point over the pulleys 32, 33 and 34 to the first end of the gate. The operation of the parallel maintaining means is such, for example, that if one end of the movable gate member is drawn downward the line 28 passes over the pulleys to the opposite side of the supporting structure and downward to the lower end of the supporting structure and up to the gate so that when that portion of the line is drawn over the pulleys the other end of the gate will also be drawn downward in the manner well known in the art. Of course, when one end of the gate is raised the reverse occurs to raise the other end of the gate. The end members 27 are bent inwardly with respect to the supporting structure so as to form an inwardly extending lug or flange 37 through which the cable 28 extends and a locking means 38 such as lumps of metal having low fusibility, that may be formed by casting them about the cable and beneath the lugs or flanges 37 whereby the gate will be supported on the cable 28 and raised and lowered with the movements of the cable while being guided within the structure 21.

In order to raise and lower the gate, any suitable means may be used. In Fig. 11 is shown a conventional arrangement whereby one of the pulleys, such as the pulley 31 may be rotated by the operation of the electric

motor 39 whose circuit may be closed and opened and made to drive the belt 40 that will cause the rotation of the pulley wheel 31 and consequently move the cable 28 to raise and lower the gate. If desired, suitable automatic means may be provided for opening the circuit of the motor when the gate has been moved to its extreme positions with reference to the supporting structure 21.

The traffic gate structure, which has been selected as an example, is particularly adapted to support resilient traffic gates, which will elastically receive the impact of any car that may be properly driven or controlled when approaching the gate and so as to strike the gate when it is in closed position. The end members 27 of the gate being moved relative to each other by the parallel maintaining lines and pulleys so as to maintain the said end members 27 always at the same height, may be connected by cables 43 that have a certain amount of elasticity and will prevent undue damage to a car that may collide with the gate. The cables 43 are preferably connected together by means of cross cables 42 so as to form a net work to prevent the spreading of the cables 43 and form a resilient gate structure for the protection of the cars, as well as a gate structure that is light in weight. In order to further increase the elasticity of the gate structure the cables 43 may be provided with springs so that when the cables are forced from the plane of the gate they will be returned when the pressure is removed. Furthermore the springs operate to keep the cables 43 taut and eliminates the sag which gives an unattractive appearance to the gate. The springs may be located at any point in the cables 43. In the form of construction shown the springs are located at the ends of the cables. Thus the cables are connected to the end parts 27 of the gates through the bent U-shaped bars 44, as best shown in the enlarged view illustrated in Fig. 4. The ends of each bar 44 are hooked outward as at 45, and a spring 46 is located intermediate the hook portions 45 and a washer or disc 47. A link 48 is secured to the end part 27 of the gate and is located within the U-member 44. It has a pin 49 that engages the washer or disc 47 to hold the washer or disc 47 in position notwithstanding the pressure that may be produced by the spring 46. When, therefore, the cables 43 are drawn the springs 46 are compressed and upon releasement of the cables 43 from their deflected position produced by the force they will be drawn back into the plane of the gate by the resiliency of the springs 46. The cables 43 may thus be maintained taut and the sagging elimirated.

Where it is desired to close the foot passage ways of traffic to prevent individuals walking across the area that it is desired to close off, side gates 52 are pivotally supported to the uprights 22. Preferably the sheet metal parts 25 are provided with slots 53 and the horizontal gate bars 54 extend through the slots 53 and are pivotally connected to the brackets 55 that are bolted to the webs 56 of the H-irons which form the uprights 22 of the supporting structure. The vertical gate bars 57 are pivotally connected to the horizontal bars 54 so that when the outer ends of the horizontal bars 54 are raised the gates will be folded together and large portions thereof moved within the slots 53 into the uprights 22 of the supporting structure to leave a substantially clear passage way for pedestrians.

The side gates 52 are preferably raised automatically when the main traffic gate 20 is raised. This may be accomplished by connecting the side gates 52 to part of the cable 28. In order that there may be proper coordination between the movements of the main traffic gate and the side gates, hook members are located in the uprights 22 and are movable along the webs 56 of the H-irons that form the main supporting part of the structure. The hook members 58 have engaging flanges 59 that extend across the major distance between the L-bars 26 that form the guides for the ends 27 of the gate 20 and so as to be caught by the lugs or flanges 37 that are formed by bending the upper end portions of the T-members that form the ends 27 of the gate and so that when the main traffic gate is raised the hook members 58 will be caught by the lugs or flanges 37 and raised by the upward movement of the gate. The hook members will thus be lowered when the main traffic gate is lowered. The side gates 52 are connected to the hook members 58 by means of the cables 60. The lower ends of the cables 60 are connected to the outer ends of the upper horizontal bars 54 of the side gates and so that when the main traffic gate is raised the side gate will be folded, largely within the vertical parts of the supporting structure 21. The cables 60 pass over pulleys 61 that are rotatably supported in brackets 62 that are bolted to the webs 56 of the uprights and are located in the slots 63 that are formed in the webs 56. The cables 60 pass from one side of the webs 56 around portions of the pulleys 61 and through the slots 63 to the other sides of the webs, in order to establish a connection between the main traffic gate that is located between the webs 56 of the uprights 22 and the side gates 52 which are located on the outside of the webs 56.

The cables 60 may be secured to the lower ends of the hooks 52 by any suitable means such as spot welding or brazing. Also the main traffic gate may be suitably counter-

balanced as by the weights 64 that are connected to cables 65 that pass over pulleys 66 and are connected at any desired points to the parts of the cables 28.

While I have shown my invention in more or less detail to comply with the requirements of the statute, it is to be understood that the above description is given by way of illustration and not of limitation, and numerous changes in details of construction and arrangement may be effected without departing from the spirit of the invention as defined in the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. In a traffic gate structure, a movable main gate member, a guide for guiding the vertical movements of the gate member, a set of parallel maintaining pulleys and lines connected to the ends of the movable gate member and supported on the guide, a side gate member having a part pivotally connected to the guide, a cable connected to the side gate member, a hook connected to the said cable and engaged by the movable gate member, and means for manipulating the pulleys and lines for raising and lowering the main gate member and the side gate.

2. In a traffic gate structure, a vertical slotted guide, a pair of end gate members movable in the guides, elastic members interconnecting the end gate members and forming a movable main traffic gate, parallel maintaining pulleys and lines connected to the end gate members and supported on the guide, a side gate having a part pivotally connected to the guide, a cable connected to the side gate member for raising the side gate, a hook connected to the said cable and located in the guide and engaged by one of the gate end members of the main traffic gate when the main traffic gate has been raised a predetermined distance and means for manipulating the pulleys and lines for raising and lowering the main traffic gate and the side gate.

In testimony whereof I have hereunto signed my name to this specification.

MELVIN HOWARD ALBERTS.