

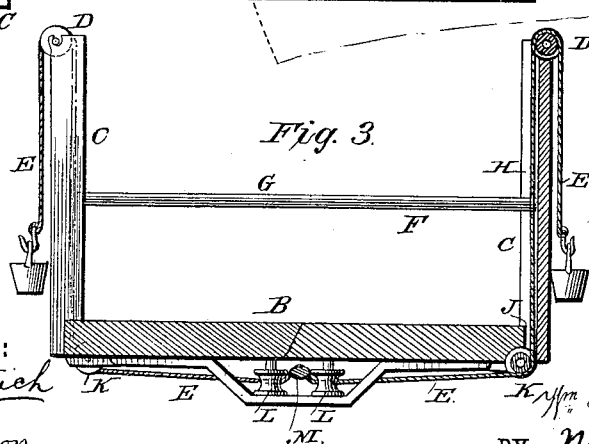
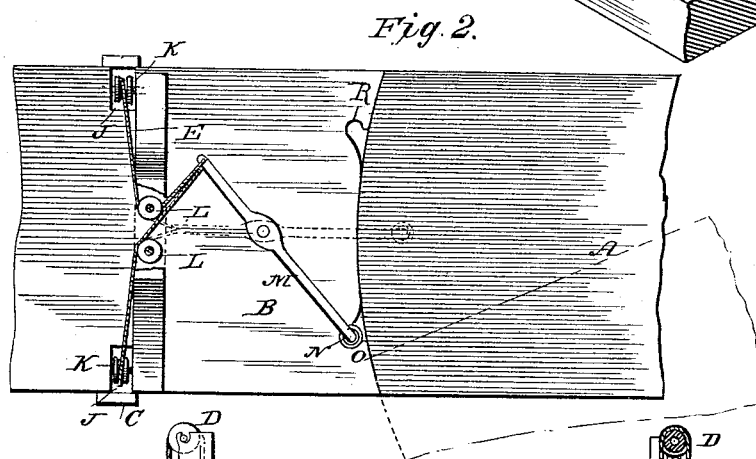
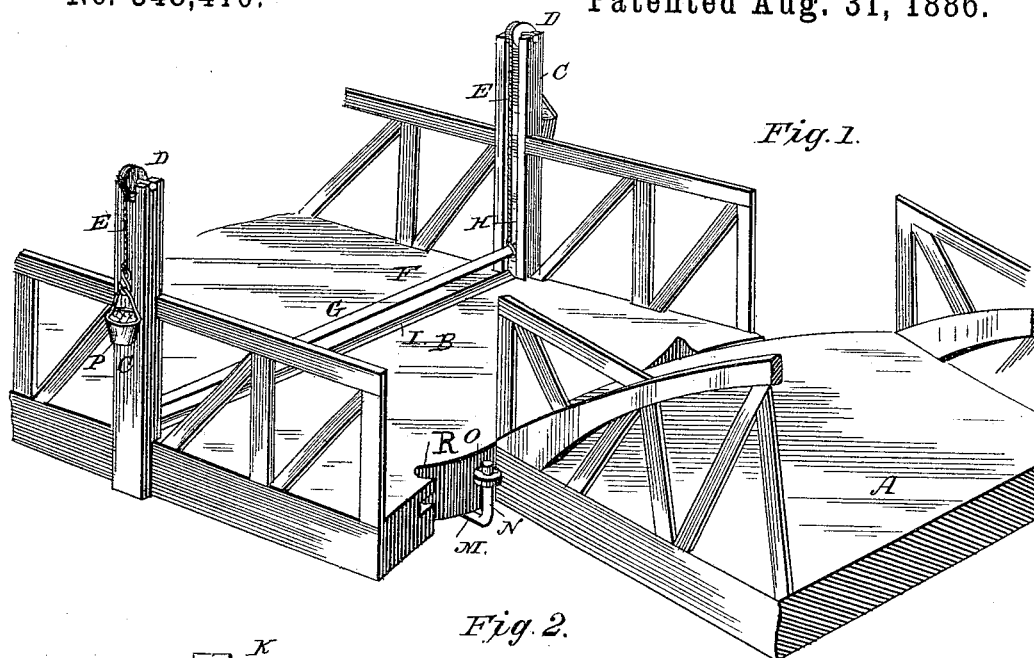
(No Model.)

W. C. NEWMAN.

BRIDGE GUARD.

No. 348,410.

Patented Aug. 31, 1886.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILLIAM C. NEWMAN, OF CHARLEVOIX, MICHIGAN.

## BRIDGE-GUARD.

SPECIFICATION forming part of Letters Patent No. 348,410, dated August 31, 1886.

Application filed April 23, 1886. Serial No. 199,963. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM C. NEWMAN, of Charlevoix, in the county of Charlevoix and State of Michigan, have invented certain new and useful Improvements in Bridge-Guards, of which the following is a full, clear, and exact description.

My invention consists in the improved construction and arrangements of parts of an automatic bridge-guard, which is adapted to be lowered by the bridge itself as the latter is closed, and which rises automatically into its operative position as the bridge is swung open for the passage of a vessel, all as will be hereinafter fully described; and pointed out in the claims.

Referring to the annexed drawings, Figure 1 is a perspective view showing the bridge partly open and the guard near its lowest position. Fig. 2 is a bottom plan, the bridge being shown closed. Fig. 3 is a vertical cross-section of the platform, the guard being shown raised.

The same letters of reference indicate corresponding parts in all the figures.

Referring to the several parts by letter, A represents a centrally-pivoted swinging bridge of ordinary construction, the ends of which are, as usual, slightly rounded; and B B indicate the frames or platforms which form the approaches to the bridge, the ends of said platforms adjacent to the water being slightly concaved, to adapt them to the curvature of the ends of the swinging bridge.

At a suitable distance from the inner ends of the platforms B are secured to each side thereof the vertical posts C, having journaled in their upper ends the grooved rollers D D, over which the chains E pass. To the middle portions of these chains are secured the guards F, which consist of from one to three (or more may be employed, if desired) rods or rails, G, which extend across the entire width of the approach B and slide with their ends in vertical guide-grooves H, formed in the inner sides of the vertical posts, the said rods when drawn down out of the way, as hereinafter described, fitting into deep narrow transverse grooves or recesses I, formed across the upper surface of the platform B. The lower portions of the two chains E, to which the guards are attached, pass down through apertures J in

the platform and around grooved rollers K, journaled in the lower side of the platform, and then pass between and around two grooved rollers, L, journaled on the lower side of the platform directly beneath the guard F, as fully shown in the plan view, Figs. 2 and 3 of the drawings, the lower ends of the two chains after passing between and partially around these grooved rollers being secured to the inner end of a centrally-pivoted lever, M, the outer end of which is formed with an upwardly-projecting arm, N, on which is mounted a "traveler" or anti-friction roller, O.

To the upper outer ends of the chains E, which pass over the rollers in the upper ends of the posts C and hang down the outer sides of the said posts, are attached the weights, consisting of an iron bucket, P, capable of holding sufficient weights to overbalance the weight of the guard, no matter what number of metal rods may be employed in the same.

The operation of my automatic guard is as follows: When the bridge is swung open, the weights P will draw up or elevate the guards F, thereby closing the approach to the bridge automatically, and as the guards rise they draw upon the lower portions of the chains E, thereby swinging the centrally-pivoted levers M into a position at right angles to the guards, the said levers being arranged on the under side of the platform, and the raising of the guards swinging their outer ends, formed with the upwardly-projecting arm, out beyond the end of the approach, as shown in dotted lines, Fig. 2 of the drawings. As the draw-bridge is swung closed its ends, coming in contact with the anti-friction rollers on the upwardly-projecting arms of the centrally-pivoted levers, will force the said arms to one side and into the vertical recesses R in the ends of the platforms, into which they fit, so as to prevent obstructing the closing of the bridge. (See Fig. 2.) This movement of the levers will draw forward the lower portions of the chains E, which are secured to the rear ends of the said levers, as described, thereby drawing down the guards F into the deep recesses I, in which they fit, leaving the approaches to the bridge clear, and the weights P will be, of course, raised as the guards are lowered, and as soon as the gate is again swung open will operate automatically, as described, to raise

the guards, and thus close the approaches to the bridge as long as the bridge remains open, while the bridge in closing will automatically lower the guards, as above described.

5 From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of my automatic bridge-guard will be readily understood.

It will be seen that the device is exceedingly  
10 simple in its construction, while at the same time it is very efficient in its operation. None of the mechanism is attached to the bridge, the guard and all of its operative mechanism being secured to the platforms which form the  
15 approaches to the bridge.

I do not claim, broadly, the combination, with a bridge-guard adapted to rise and fall, of a movable device connected therewith by  
20 cords or chains and arranged to project in front of the platform, so as to be acted on by the draw-bridge when swinging back into its normal position.

Bridge-guards adapted to rise and fall in grooved uprights have heretofore been connected by means of weighted cords or chains  
25 passing over pulleys, with movable devices projecting in the path of the draw-bridge, so as to be acted upon by the draw-bridge when opening or closing. A device consisting of a  
30 belt, to which the ends of the weighted cords are attached, the belt having an eye or ring projecting in the path of the draw-bridge and the draw-bridge having a hook to engage with the eye in the belt, has been employed for this  
35 purpose.

I am also aware that the ends of the cords or chains have been connected to opposite sides  
40 of a drum, the drum-shaft having a pinion gearing with a wheel, on the shaft of which a lever-arm provided with a friction-roller is placed, the lever-arm with its friction-roller being operated upon a beveled cleat attached to the under side of the draw-bridge. Such combinations of devices I do not therefore  
45 claim.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of the sliding guard having the weighted chains adapted to raise  
50 it automatically when the bridge is open, and the centrally-pivoted lever having its rear end connected by chains to the said guard, and having the upwardly-projecting arm at its  
55 forward end with which the end of the bridge comes in contact when the latter is swung closed.

2. The combination of the side posts having the rollers journaled in their upper ends, the guard resting when lowered in a transverse  
60 recess in the platform, the chains connected to the said guard and having the weights at their outer ends, the centrally-pivoted lever formed at its outer end with the upwardly-projecting  
65 arm, and the chains leading from the guard down through vertical apertures in the platform around the rollers journaled at the lower  
70 ends of the said apertures, and between and around the central rollers, and secured at their lower extremities to the inner end of the centrally-pivoted lever, substantially as described.

3. The combination, with the platform having the vertical grooves at its forward end, of the side posts having the grooved rollers journaled in their upper ends, and having the  
75 longitudinal guide-slots formed in their inner sides, the chains having their upper portions passing over the said rollers, having the weights at their upper free ends, and passing  
80 down through the vertical apertures in the platform around the grooved rollers journaled at the lower ends thereof, between and around the central grooved rollers, and secured at their lower extremities to the inner end of the  
85 centrally-pivoted lever, and the lever centrally pivoted beneath the platform and formed at its outer end with the upwardly-projecting arm provided with the anti-friction roller, all constructed and arranged to operate in the  
90 manner and for the purpose herein set forth.

WILLIAM C. NEWMAN.

Witnesses:

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W. P. BROWN.