

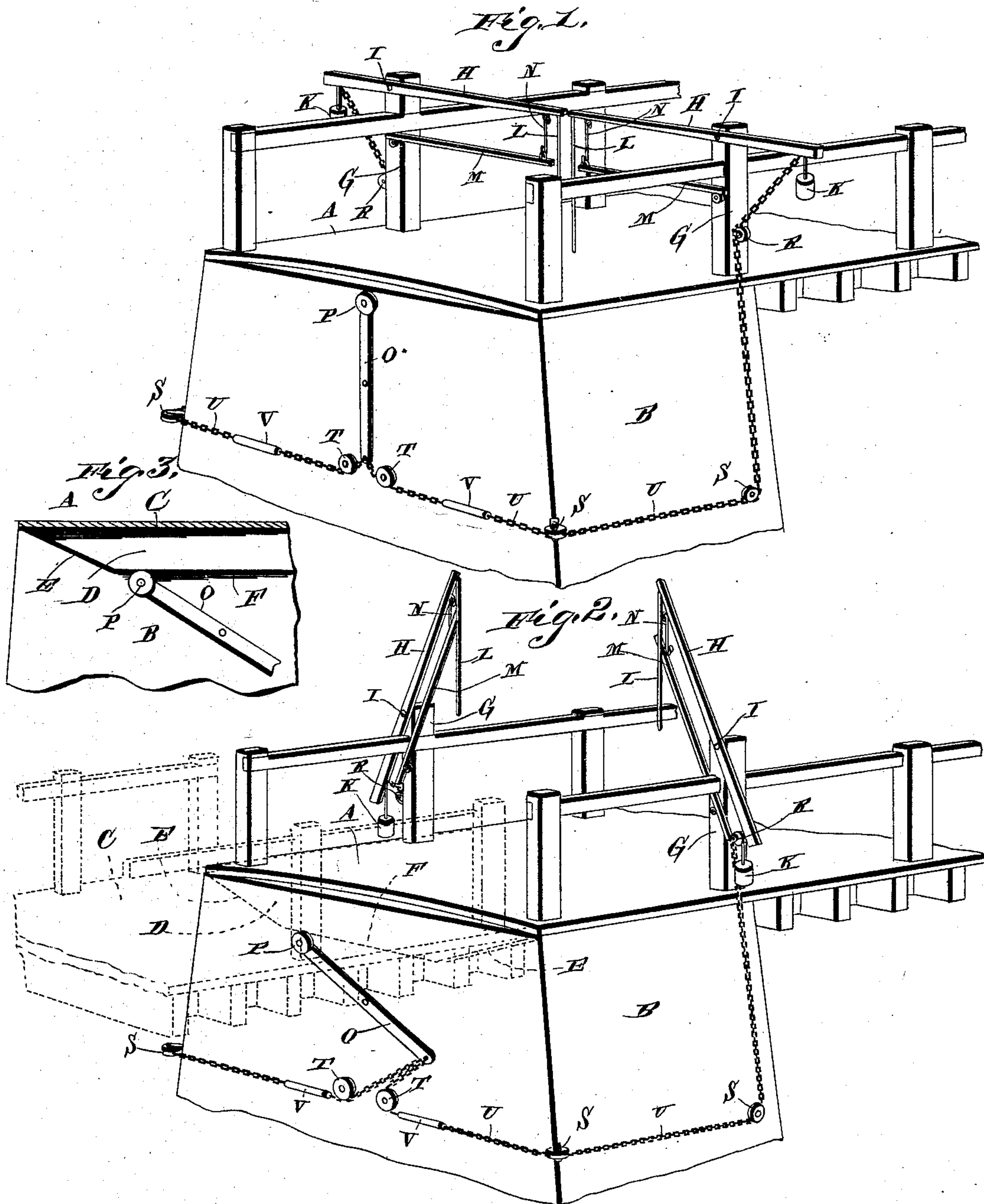
(No Model.)

W. C. NEWMAN.

BRIDGE GUARD.

No. 389,714.

Patented Sept. 18, 1888.



Witnesses

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UNITED STATES PATENT OFFICE.

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BRIDGE-GUARD.

SPECIFICATION forming part of Letters Patent No. 389,714, dated September 18, 1888.

Application filed January 17, 1888. Serial No. 260,982. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. NEWMAN, a citizen of the United States, residing at Charlevoix, in the county of Charlevoix and State of Michigan, have invented a new and useful Improvement in Bridge-Guards, of which the following is a specification.

My invention relates to an improvement in bridge-guards; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

My present invention is an improvement on the bridge-guard for which Letters Patent of the United States No. 348,410 were granted to me August 31, 1886, and No. 370,403, granted to me September 27, 1887.

In the accompanying drawings, Figure 1 is a perspective view of one of the approaches of a bridge embodying my improvement. Fig. 2 is a similar view of the same, the draw being indicated in dotted lines as closed. Fig. 3 is a detail view showing the cam.

A represents one of the approaches of a bridge, having an abutment, B, of masonry.

C represents the draw, which is centrally pivoted, and is adapted to be swung in position inline with the approaches, or to be turned to a position at right angles thereto, so as to open the space between the approaches or abutments for the passage of vessels. Under each end of the draw is arranged a depending cam, D, having its lower edges inclined upward in opposite directions at its ends, as at E, the central portion of the lower edge of the cam being horizontal, as at F.

G represents a pair of vertical standards, which are erected on opposite sides of each approach or abutment, and to the upper ends of the said standards are fulcrumed gate-bars H, the inner ends of which are adapted to almost touch each other when the said gate-bars are arranged in a horizontal position, as shown in Fig. 1. The outer ends of the said gate-bars are extended beyond the fulcrums I, and counter-weights K are attached thereto to balance the gate-bars and cause the same to be easily raised or lowered. Suitable stops, L, are pivotally connected to the inner ends of the gate-bars, and are adapted to at all times maintain a vertical position by their own gravity. When

the gate-bars are raised the said stops swing toward them, and when the gate bars are lowered the said stops rest upon the top or flooring of the approach, as shown in Fig. 1.

M represents guard-bars, which have their outer ends resting on friction-rollers pivoted to the standards G at a suitable distance below the gate-bars, and have their inner ends suspended from the inner ends of the gate-bars by means of links N. Any suitable number of these guard-bars may be employed; but, as here shown, I employ only one guard-bar for each gate-bar.

O represents an operating-lever, which is fulcrumed on the inner face or side of each approach or abutment, the said operating-levers being normally arranged in a vertical position, as shown in Fig. 1, and capable of being turned to an inclined position in either direction, as shown in Fig. 2. To the upper end of each operating-lever is fulcrumed an anti-friction roller, P, and the said rollers are arranged in the path of the cams under the ends of the draw, so that when the latter is closed its cams will engage the said rollers and incline the operating-levers, as shown in Fig. 2.

In each standard G is journaled a guide sheave or pulley, R, and similar guide sheaves or pulleys, S, are arranged on the sides and corner edges of the abutments, as shown. On the inner face of each abutment, at a suitable distance below the lever, is journaled a pair of sheaves or pulleys, T.

U represents chains, which are attached to the lower ends of the levers, pass under the pulleys T and S, and then upward over the pulleys R, and have their upper ends connected to the outer ends of the gate-bars. Each of the said chains is provided with a turn-buckle, V, by means of which compensation may be made for contraction and expansion of the chains under changes of temperature.

When the draw closes and its cams engage the upper ends of the levers and incline the latter, as before described, the lower ends of the said levers draw upon the chains U and cause the same to draw downward on the outer ends of the gate-bars and thereby raise the latter to open traffic across the bridge. When the draw swings open, the cams pass out of contact with the upper ends of the operating-

levers, and the gate-bars, by their own gravity, descend and close the approaches to the bridge, as shown in Fig. 1.

Having thus described my invention, I claim—

1. In a draw-bridge, the gates composed of the pivoted gate-bars H, the guard-bars M, hung or supported loosely from the gate-bars and parallel thereto and resting on friction-rollers at their free ends, as set forth.

2. In a draw-bridge, the combination of the gravity-gates, the levers pivoted at an intermediate point of their length in the ends of the abutments of the bridge, and the chains passing around the sides and ends of the abutments and having their opposite ends secured, respectively, to the lower ends of the levers and the outer ends of the gates, substantially as set forth.

3. In a draw-bridge, the combination of the standards, the gate-bars pivoted thereto, the levers pivoted on the ends of the abutments, the pulleys T on the end of the abutments and

the pulleys S on the sides and corners of the same, and the chains passing around said pulleys and having their opposite ends secured to the lower ends of the levers and the outer ends of the gates, substantially as set forth.

4. In a draw-bridge, the combination of the standards, the gate-bars pivoted thereto, the guard-bars having their inner ends secured to the inner ends of the gate-bars by links N and their outer ends resting on friction-rollers secured to the standards below the pivots of the gate-bars, the levers pivoted on the ends of the abutments, and connections between the levers and the gate-bars, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM C. NEWMAN.

Witnesses:

CORNELIUS BUDD,

FRED M. GREEN.