(No Model.)

J. H. QUACKENBUSH.

GATE FOR PIVOT BRIDGES.

No. 359,742. Patented Mar. 22, 1887.

FIG. 1.

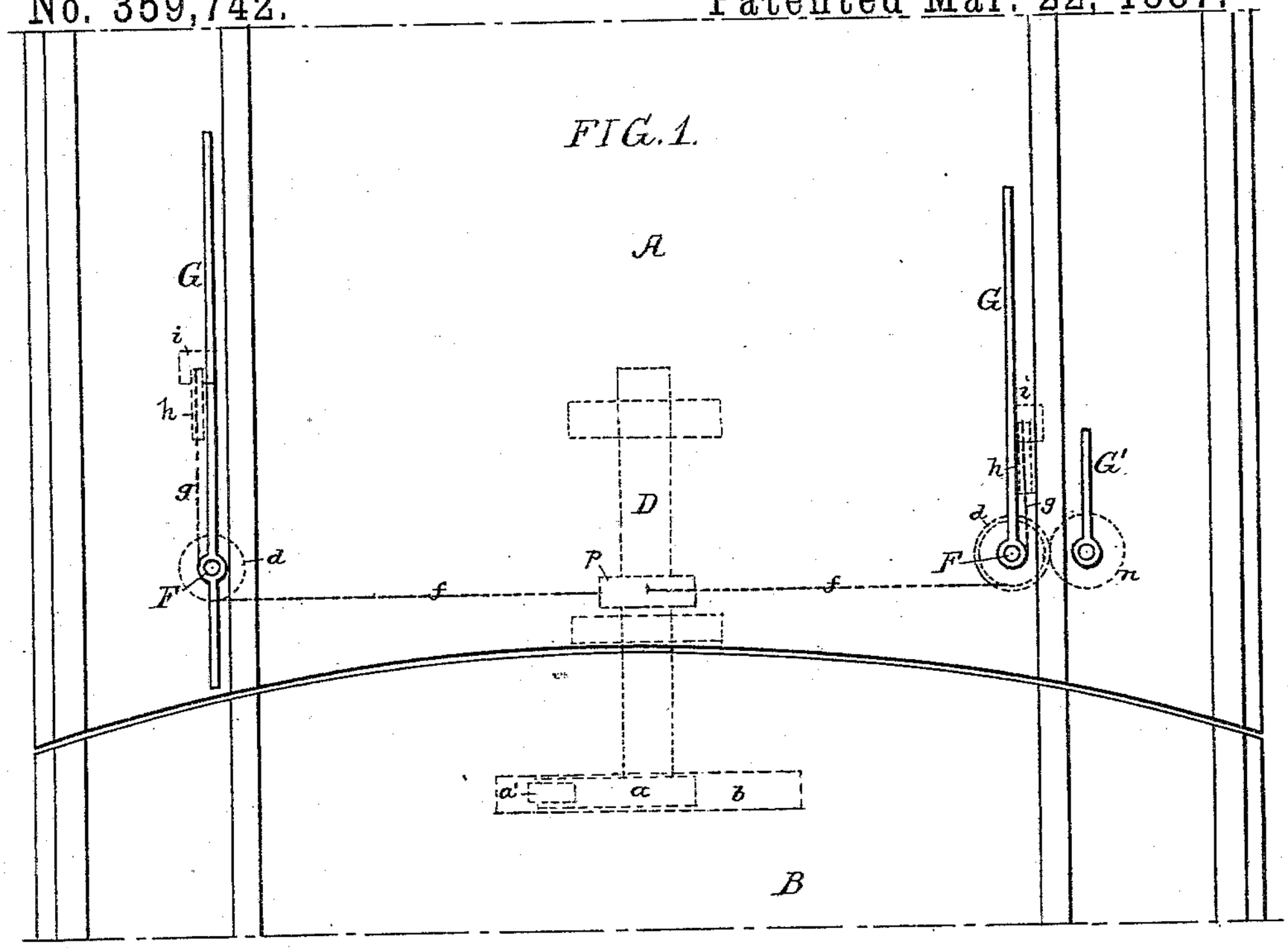
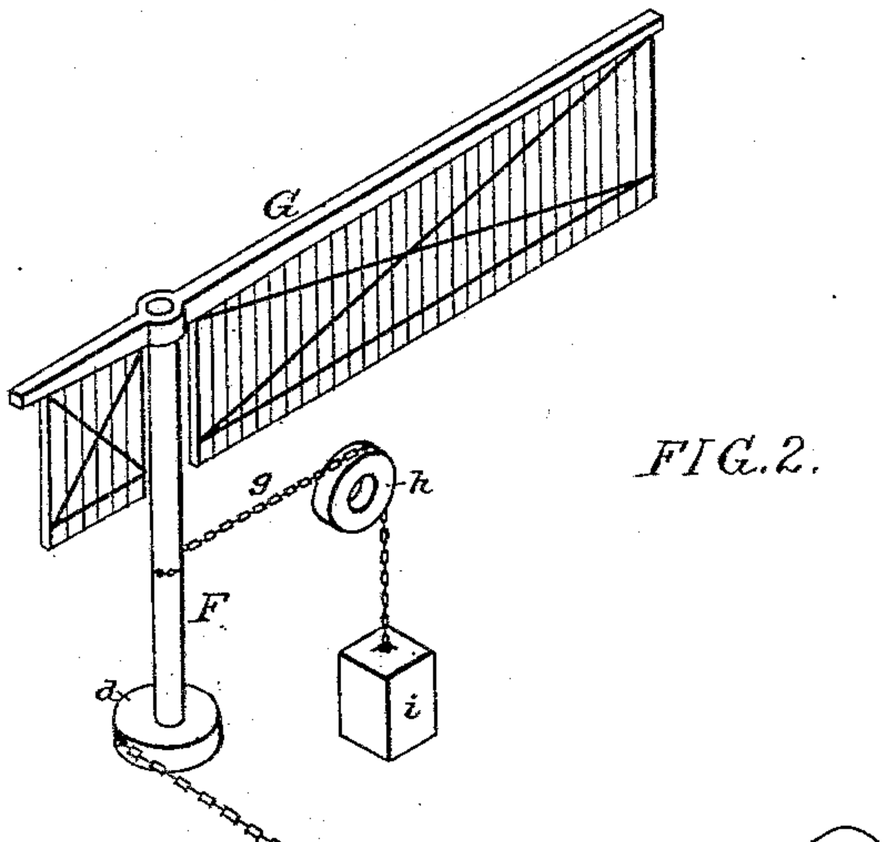
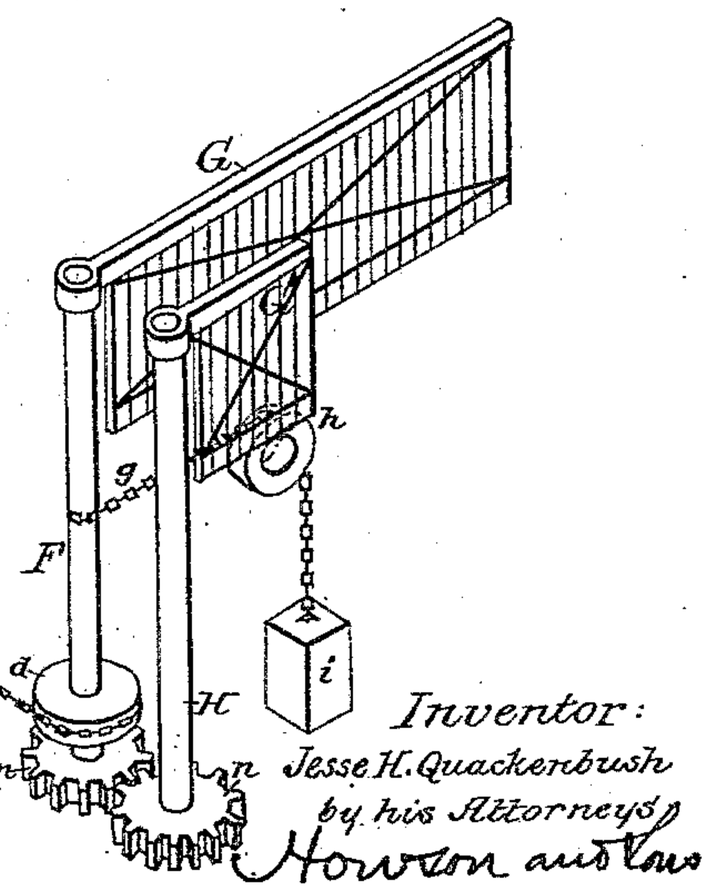


FIG. 2.





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UNITED STATES PATENT OFFICE.

JESSE H. QUACKENBUSH, OF EAST SAGINAW, MICHIGAN.

GATE FOR PIVOT-BRIDGES.

SPECIFICATION forming part of Letters Patent No. 359,742, dated March 22, 1887.

Application filed December 7, 1885. Serial No. 184,973. (No model.)

To all whom it may concern:

Be it known that I, JESSE H. QUACKENBUSH, a citizen of the United States, residing in East Saginaw, Saginaw county, Michigan, have invented certain Improvements in Gates for Pivot-Bridges, of which the following is a specification.

The object of my invention is to provide simple mechanism for operating the gates of pivot-bridges, and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of sufficient of a pivot-bridge to illustrate my invention, and Fig. 2 is a perspective view showing the parts to which my invention particularly relates.

In Fig. 1, A represents part of the permanent structure of a bridge, and B part of the pivoted or swinging structure. To suitable bearings on the under side of the permanent structure A is adapted a rock-shaft, D, the front end of which projects beneath the pivoted structure of the bridge when the latter is closed or in line with the permanent structure, as shown in Fig. 1, this projecting portion of the shaft having an arm, *a*, which is under the influence of a cam, *b*, on the under side of the pivoted structure of the bridge, said cam acting on an anti-friction roller, *a'*, carried by the arm *a*.

To bearings in the permanent structure A are adapted vertical shafts F, which have at the upper ends obstructing-gates G, and to drums *d* on said shafts F are connected the ends of chains *f*, the opposite ends of which are connected to a drum, *p*, on the rock-shaft D. Other chains, *g*, are connected to the shafts F, these chains passing over pulleys *h*, and being provided with weights *i*.

One of the shafts F has, in the present instance, gates for closing both the main roadway and the foot-path of the bridge; but the other shaft has simply a gate for closing the main roadway, and this shaft has at the lower end a spur-wheel, *m*, which gears into a similar wheel, *n*, on a shaft, H, having at the upper end a gate, G', for closing the foot-path of the bridge.

The chains F are so connected to the drum *p* of the rock-shaft and to the drums *d*, and the weighted chains are so connected to the shafts F, that when the arm *a* of the rock-shaft D is depressed by the cam *b* of the swinging section B of the bridge the gates will be opened, as shown in Figs. 1 and 2; but as soon as the swinging section of the bridge has been moved, so as to release the arm *a* from the influence of the cam *b*, the shafts F and H will, under the influence of the weighted chains *g*, be moved so as to cause the gates to obstruct the roadway and foot-paths of the bridge, the obstruction continuing until the swinging section of the bridge has been again moved back into the position shown in Fig. 1 and the arm *a* again brought under the influence of the cam *b*.

Instead of using the rock-shaft with an arm, as described, I may use a pivoted lever acted on by a cam or projection on the swinging portion of the bridge, as set forth in my Letters Patent No. 321,249, June 30, 1885, the rock-shaft, however, being preferred.

I claim as my invention—

1. The combination of the swinging portion of the bridge having a cam or projection, vertical gate-shafts near each side of the fixed portion of the bridge-structure, a weighted cord or chain connected to each of said shafts and serving to open the gates, a central rock-shaft or equivalent device, as described, having an arm projecting into the path of the cam on the swinging portion of the bridge, and chains or ropes connected to said operating device and extending therefrom directly to drums on the vertical gate-shafts at the opposite sides of the bridge, all substantially as specified.

2. The combination of the swinging portion of the bridge having a cam or projection, a pair of vertical gate-shafts near each side of the fixed portion of the bridge-structure, gearing connecting each pair of shafts, a weighted cord or chain connected to one of the shafts of each pair, a central rock-shaft or equivalent device having an arm projecting into the path of the cam on the swinging portion of the bridge, and chains or ropes whereby said shaft is connected to one of the gate-shafts on each side of the bridge, all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JESSE H. QUACKENBUSH.

Witnesses:

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JOHN C. MATHEWS.