(No Model.)

H. B. SEAMAN.

FLOAT BRIDGE OR PLATFORM.

No. 474,487. Patented May 10, 1892.

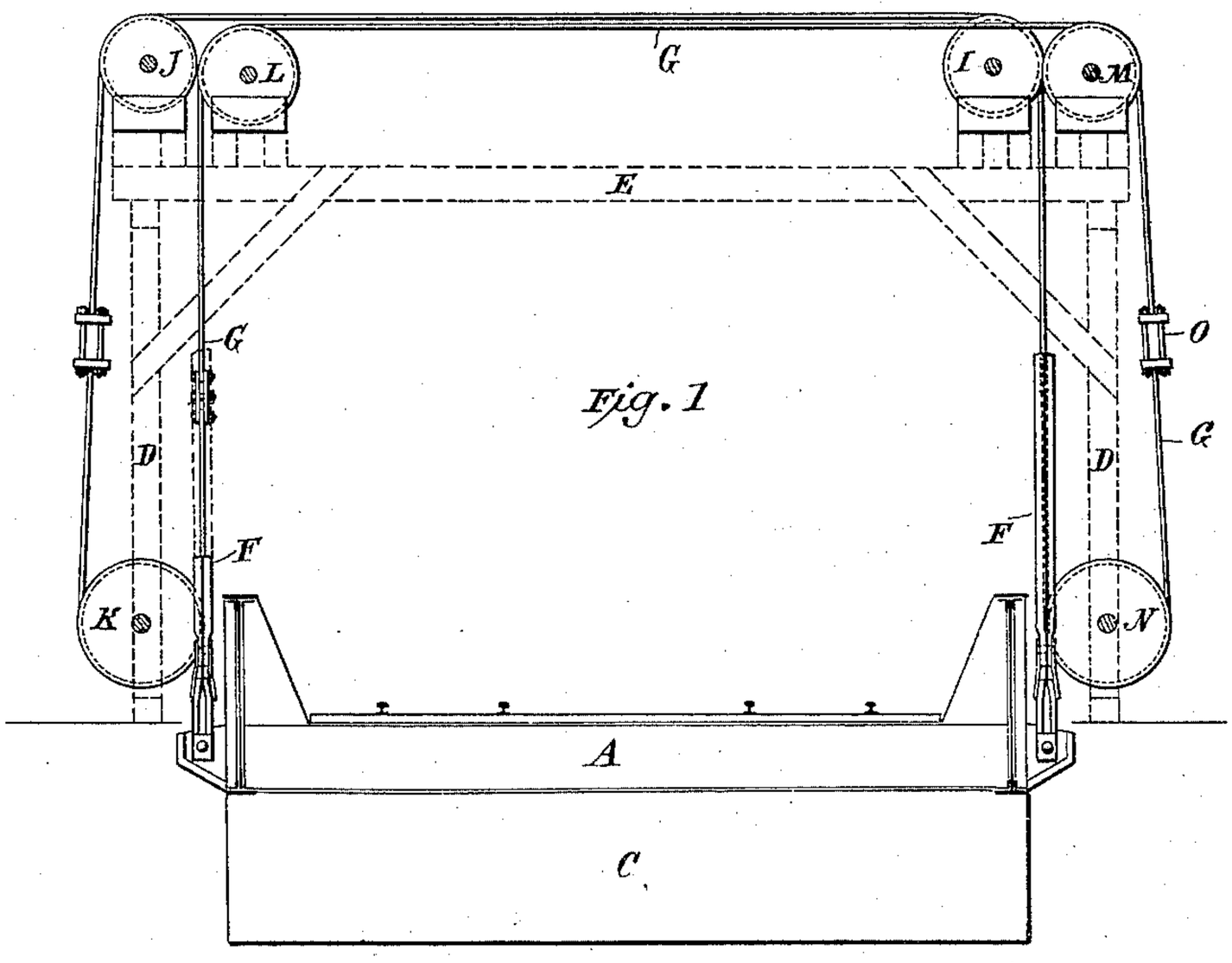


Fig. 1

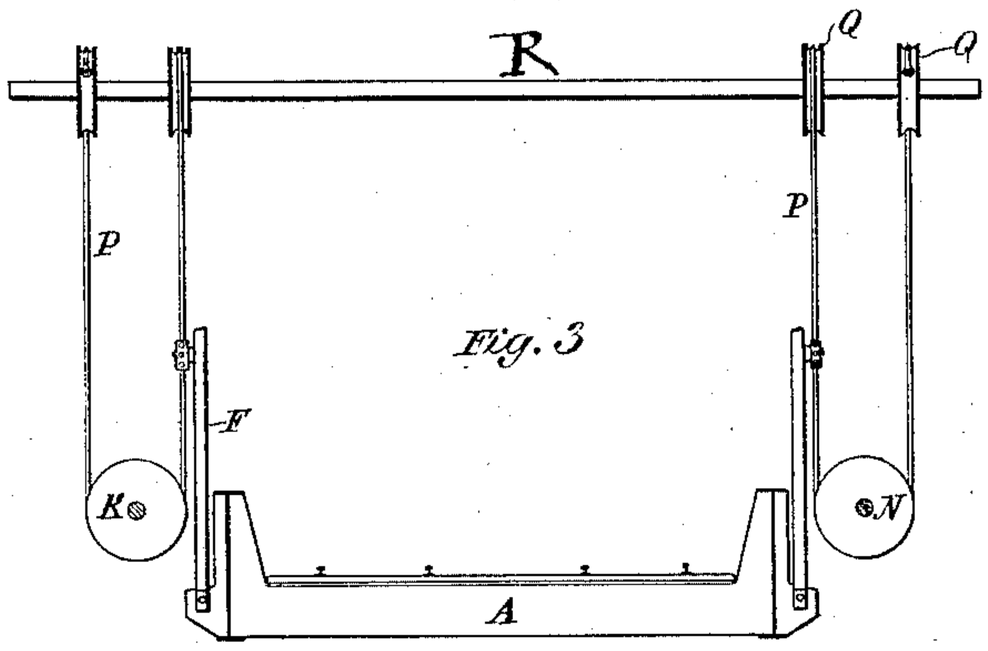


Fig. 3

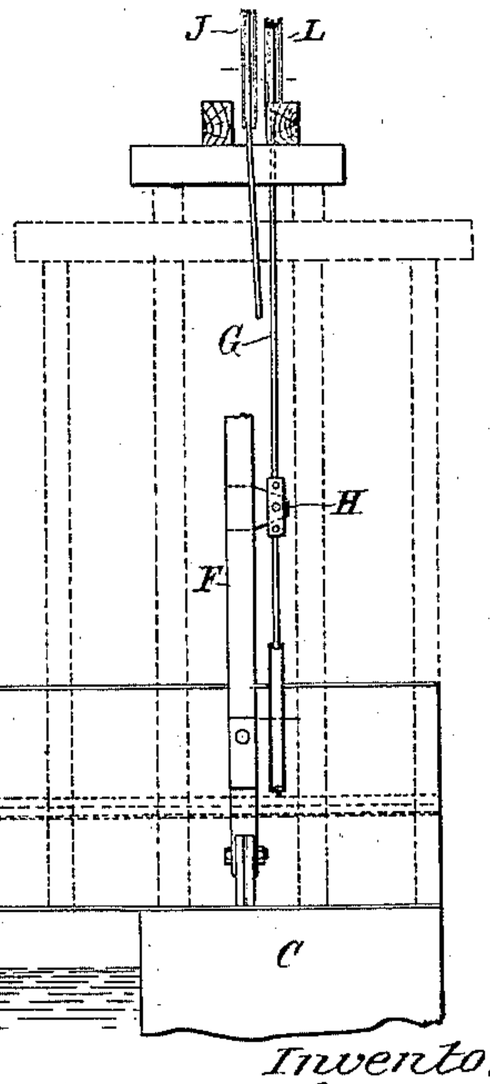
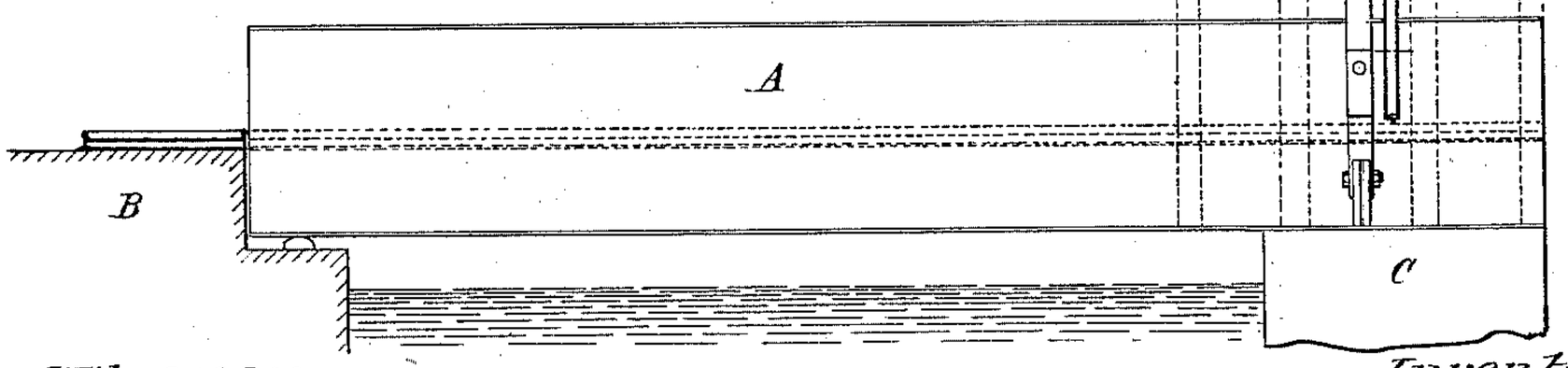


Fig. 2



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UNITED STATES PATENT OFFICE.

HENRY B. SEAMAN, OF NEW YORK, N. Y.

FLOAT BRIDGE OR PLATFORM.

SPECIFICATION forming part of Letters Patent No. 474,487, dated May 10, 1892.

Application filed June 29, 1891. Serial No. 397,926. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. SEAMAN, of the city, county, and State of New York, have invented a certain new and useful Improvement in Float Bridges or Platforms, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to float or ponton bridges or platforms or other like structures for transferring loads from boats or ships to land, and whether used as a single structure floating in the water at one end with the other end pivotally secured to land or as a vertically-moving float-platform connected to land by other and separate structures. In the use of such a bridge, especially when the same is of more than a single width—that is, a width greater than would suffice for one passage-way for passengers or teams, trucks, or railroad-cars—the use of one side of the bridge at one time or the disposition of the load mainly on one side causes it to become most depressed on that side, thus racking and twisting it and causing the ponton or float to leak and the whole structure to be rapidly worn out. This is more particularly true in the case of bridges used to transfer railroad-cars to or from ferry or other boats, as in such cases the bridges are often built to carry locomotives, and as there is usually a track upon each side of the bridge the great weight of the locomotives causes it to be very badly racked and strained.

It has been common to variously attach to the sides of the bridge chains running to the covering structure overhead or to compensating weights for the purpose of preventing the undue depression of the bridge on one side. All those means with which I am familiar but partially accomplish the desired result, which is that the sides of the bridge remain at uniform height, whatever be the load on the bridge or how it be disposed.

To this end my improvement consists in equalizing connections extending from one side of the bridge over, under, or around the same to the other side, these connections being carried on supports independent of or outside the bridge, and being arranged in such relation to the bridge that as one side thereof is forced down under a load the motion of depression on one side is, through the said connections, transferred to the other side of the bridge and causes such other side to be equally moved in the same direction.

In the drawings, Figure 1 is an elevation view of the front or float end of the common form of railroad-ferry bridge. Fig. 2 is a side elevation of the same. Fig. 3 shows a view similar to Fig. 1 of a modification.

In the views, and particularly in Figs. 1 and 2, A is the bridge, resting on the land by any suitable pivotal connecting-support B. C is the float or ponton of the bridge, and D represents the vertical posts, and E the beams of the frame-work at the outer end of the bridge, to which are attached the mechanism for variously operating or controlling the rise or fall of this end of the bridge.

The bridge and float may be constructed in any of the well-known ways and for this particular service, and accordingly I do not here enter into the detail of such structures.

F F are two vertical uprights on each side of the bridge and rigidly attached thereto, the upper ends of which uprights are secured to the endless cable G by the brackets H. This cable extends from one of the brackets H up and around the guide wheel or drum I, then horizontally to and over the drum J, then down to and around the drum K on the opposite side of the bridge, then up to the other upright, to which it is also attached, to and over the drums L and M, and down and around the drum N and to the bracket H. This cable may be provided with turn-buckles O, adapted to regulate its tension; also, in lieu of a cable, a chain, rope, band, or other similar connections may be used.

From these views and the foregoing description it will now be plain that a load on either side of the bridge will, in causing that side to be depressed, also depress the other side equally, through the medium of the cable. As one side is depressed the cable attachment is pulled down and moves the cable a like distance throughout its whole extent, and hence the opposite side to the load partakes of a motion corresponding to that effected by the load. In effect, the load acts upon both sides of the bridge alike, and the ends of the bridge, connecting, respectively, with the land and

with the boat, are caused to maintain a horizontal position, and are prevented from getting out of registering position with the boat and land connections.

In Fig. 3 I show another arrangement of the equalizing connections adapted to accomplish the same effects as the endless cable G of Figs. 1 and 2. Here the sides of the bridge are attached to two short cables P P, the ends of each of which are oppositely attached to the faces of the drums Q Q of the shaft R, properly supported over the bridge. It will be seen that as one cable is pulled down the shaft is turned, and thereby operates the cable at its other end, so that the bridge at this end is depressed or raised in accordance with the motion given it on the opposite side, yet other forms of connections between the opposite ends of a bridge are possible; but those shown will serve to illustrate the principle of the invention.

Although I have shown the equalizing connections as located at one end of a bridge, one end of which rests on fixed supports, it is obvious that the same may be similarly applied to other forms of bridges or float-platforms and duplicated or used in sets or pairs, as the case may require—that is, the whole structure may be raised as a platform, instead of one end thereof, and other forms of well-known landing ways or bridges may be employed to connect with land.

I am aware that it has been proposed to arrange at the sides of a boat-elevating ponton independent and vertically-moving floats which are connected across the ponton by gearing operating to cause the floats and the ponton to preserve parallelism, and I do not claim such a structure.

What I claim as new is—

1. In combination, a vertically-movable float bridge or platform buoyantly suspended in water and flexibly attached to land, a fixed ground-supported standard located adjacent the float, and power-transmitting mechanism mounted on said standard and operatively connecting the opposite sides of said float, whereby moving one side of the float vertically operates said mechanism and causes the other side of the float to be correspondingly elevated.

2. In combination, a vertically-movable float bridge or platform buoyantly suspended in water and flexibly attached to land, a fixed ground-standard located adjacent the float, and an endless cable carried on pivotal bearings mounted on said support and being attached to the bridge at opposite sides thereof, whereby the vertical movement of one side of the bridge operates the cable to cause the other side to be similarly moved.

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