J. Selser.

Draw Bridge.

No. 2,602. Patented Oct. 29, 1861.

33,606.

Fig. 1.

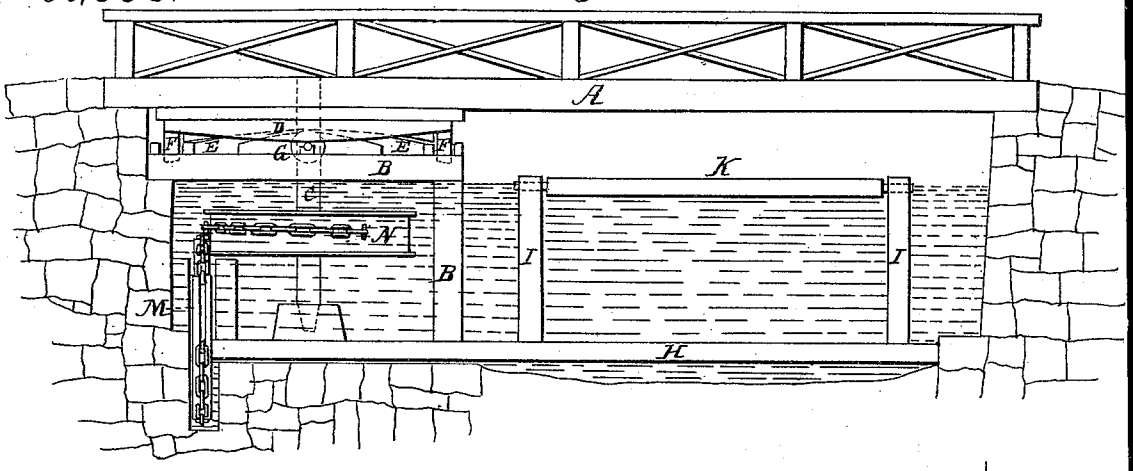
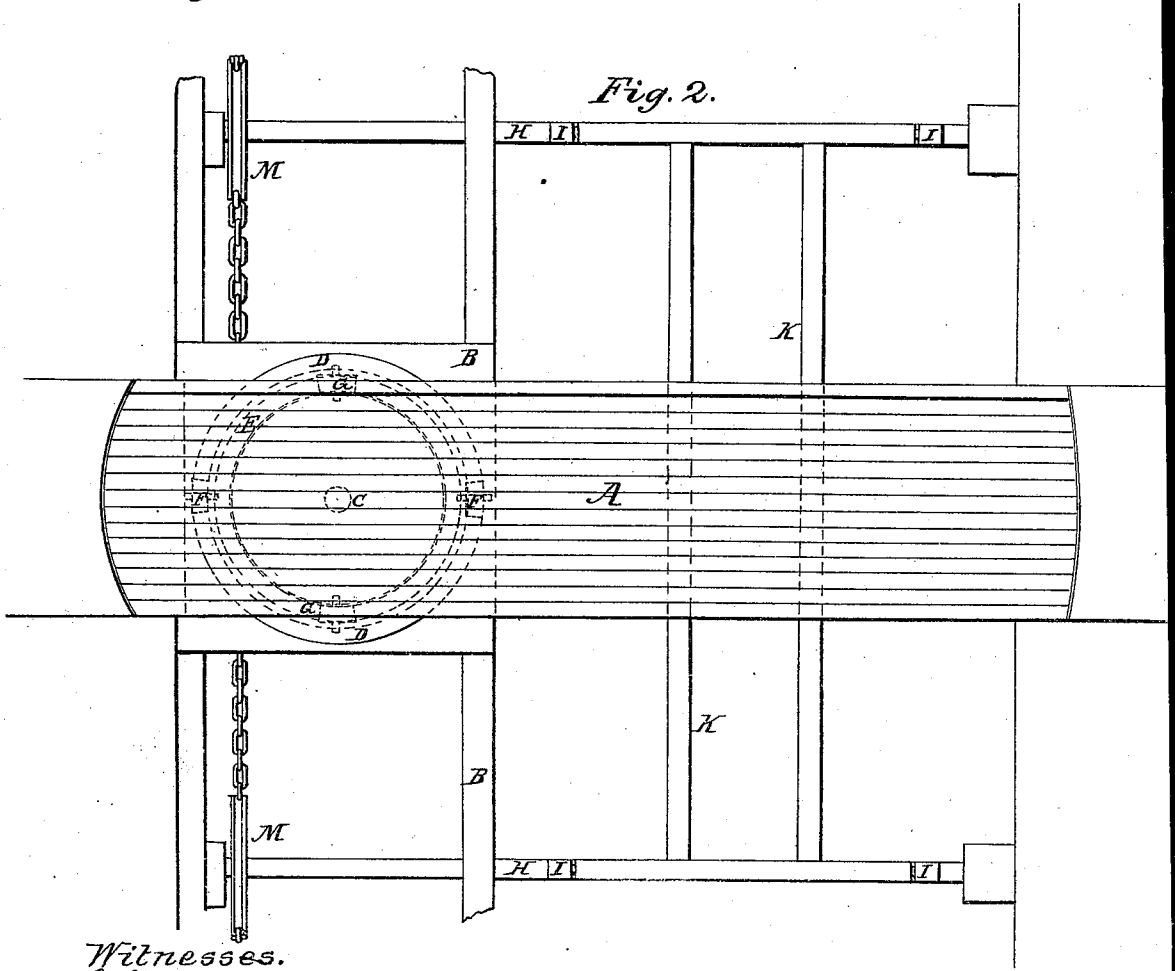


Fig. 2.



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JOHN SELSER, OF WILLIAMSPORT, PENNSYLVANIA.

IMPROVEMENT IN SELF-OPENING CANAL-BRIDGES.

Specification forming part of Letters Patent No. **33,606**, dated October 29, 1861.

To all whom it may concern:

Be it known that I, JOHN SELSER, of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Canal-Bridges, which are arranged to be opened by an approaching boat, whereby I secure an easier action of the boat upon the bridge than in those heretofore in use and avoid the sudden "buntings" or shocks and their consequent wear and damage to both boat and bridge, of which the following is a specification.

As "self-opening canal-bridges" as they are termed have heretofore been constructed the boat has been allowed to strike the bridge and push it out of the way, when a spring or weight returns it to its place. This impact between two heavy bodies, as a canal-boat and bridge, causes such a shock and jar as to seriously damage both structures after a time.

The nature of my invention consists in providing a lever or levers at or near the surface of the water and connected to the bridge by chains or other suitable means, so that the action of the boat striking upon or against this lever is transferred to the bridge, which is thereby opened for the passage of the boat. These levers being much lighter than the bridge itself, have much less inertia, and consequently occasion less jar by the impact, the spring of the parts causing the motion to be transferred to the bridge in a comparatively easy and gradual manner, and being placed at or near the surface of the water the action upon the boat is much less severe than at the elevated point at which the bridge is placed. These levers may be also placed in such a position relatively to the form of the boat or so formed themselves as to receive the impact in an oblique manner, and thus avoid the injurious effects of a direct blow.

The nature of my invention also consists in the arrangement of a device for shutting the bridge by its own weight after the passage of a boat in either direction, such device consisting of two concentric circular tracks, each composed of four inclines arranged alternately in opposite directions and the highest points of one track being placed opposite the lowest portions of the other. Four wheels or trucks are employed, two for each track, those of one track being arranged at right angles to those of the other, so that they all rest upon corresponding portions of the inclines as the tracks and wheels are turned relatively one to the other. By means of this device I am enabled to support my bridge firmly upon four trucks or wheels, and when turned in either direction any distance less than one-fourth of a revolution the structure will be raised slightly by means of the inclines and it will tend to return to its former position by the action of gravity.

The nature of my invention also consists in causing the action of the boat in opening the bridge to sink a buoyant mass, which by its buoyancy will tend to return the bridge to and hold it in its closed position.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation by the aid of the accompanying drawings, in which—

Figure 1 is a cross-section of a canal with my improved bridge applied thereto, and Fig. 2 is a plan of the same.

A is the bridge supported by suitable frame-work or abutment B and attached to a spindle C, on which it is free to turn. On the under side of the bridge and concentric with the spindle C, I place two circular tracks D E, one a little larger than the other. These tracks are made with four inclines placed alternately in opposite directions and with the highest points in D placed opposite the lowest points in E, as shown in Fig. 1. Four wheels or trucks are attached to the butment B, upon which the tracks D E rest, D resting upon the wheels F and E upon the wheels G, as shown by dotted lines in Fig. 2. These wheels and tracks are so arranged that when the wheels rest in that portion of the tracks nearest to the bridge A the latter is in its proper position across the canal, and when A is turned in either direction from that position the action of the inclined tracks raise it vertically a little distance, so that the action of gravity tends to return it to its former position.

Near the bottom of the canal, at a proper distance either side of the bridge A, I place a timber or shaft H, having projecting arms or levers I, which support a frame-work K,

near the surface of the water, in such a manner that when the said frame-work is forced longitudinally in either direction the shafts H turn equally and K is caused to sink parallel to the surface. Upon the other ends of the shafts H, I fix wheels M, from which chains extend to the drum N on the spindle C in such a manner that when the frame-work K is pressed in either direction the spindle C is turned, so as to cause the bridge A to be moved in the same direction. Now, on the approach of a boat in either direction, it first runs against and upon the frame-work K, causing it to move in the same direction and to sink, so that the boat may pass over it. In thus doing it turns the bridge, so as to open a passage. When the boat has passed through or beyond the bridge, so as to leave the frame-work K, the buoyancy of the latter tends to turn the bridge in the opposite direction and thus to close it, which action is assisted and facilitated by the action of the inclines D and E acting upon their respective wheels. The distance of the shafts H from the bridge A should be such that the bridge will be opened before the boat reaches it; but if the depth or weight of the boat is not sufficient to open the bridge to its full width it will strike obliquely against the bridge and push it one side; but such impact will be slight owing to the obliquity of the handle. The butment B may, when the canal is of sufficient width, be placed in the center of the bridge, and two frames K attached to the same shafts H, so as to operate in either direction on either side, if such an arrangement is desirable.

Having now fully described my invention, what I claim as new therein and desire to secure by Letters Patent, is—

1. The employment of a lever or levers at or near the surface of the water and connected with the bridge by means of chains or their equivalents, whereby the bridge may be opened or partially opened by the action of the boat thereon, substantially as described, and the concussion due to the boat striking against the bridge avoided, as herein set forth.

2. The arrangement of the double track, each composed of four inclines, as shown and described, for the purpose specified.

3. Causing the action of the boat to sink a buoyant mass, whereby the buoyancy of the said mass tends to close the bridge again after the passage of the boat in either direction, substantially as herein described.

In testimony whereof I have hereunto set my name.

JOHN SELSER.

Witnesses:
G. H. BABCOCK,
D. W. STETSON.