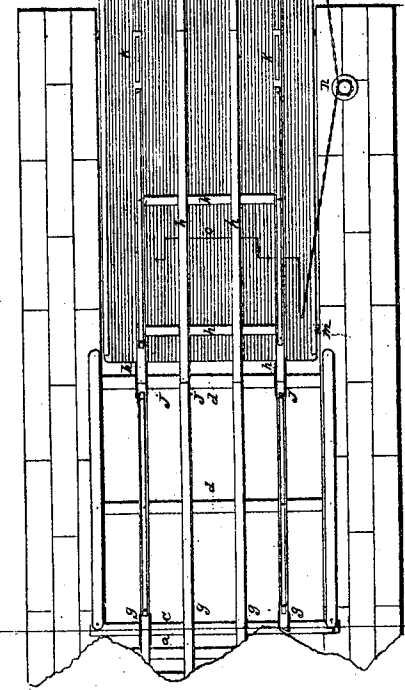
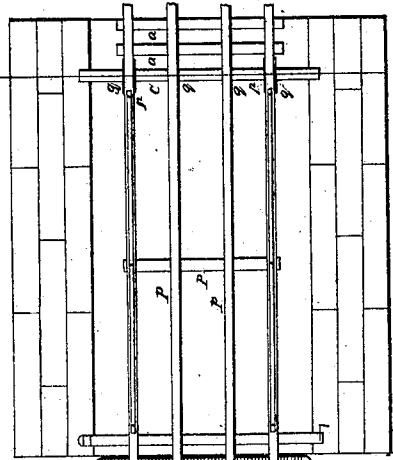
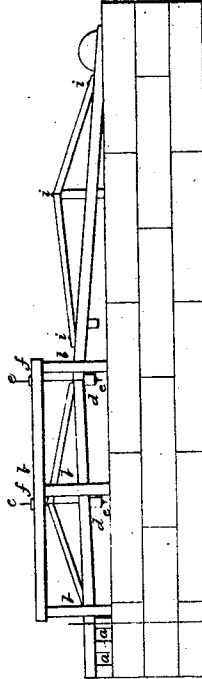
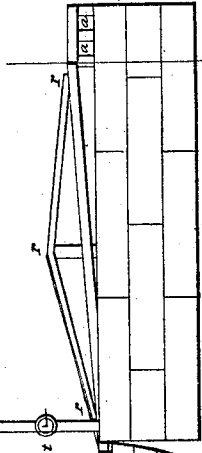
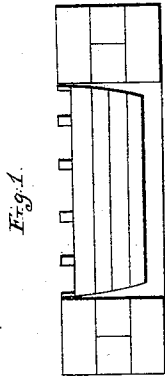
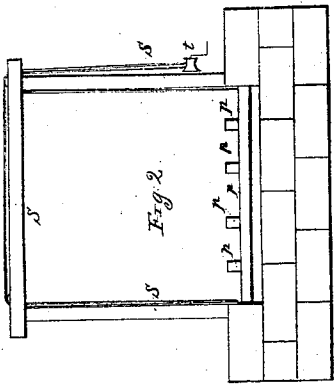


N. B. Proctor.
Draw Bridge.

Patented May 10, 1856.

No 14,928.



UNITED STATES PATENT OFFICE.

NAP. B. PROCTOR, OF BURLINGTON, VERMONT.

FLOATING DRAW-BRIDGE.

Specification of Letters Patent No. 14,928, dated May 20, 1856.

To all whom it may concern:

Be it known that I, NAPOLEON B. PROCTOR, of Burlington, in the county of Chittenden and State of Vermont, have invented a new and Improved Mode of Constructing Floating Draw-Bridges Across Navigable and other Streams or Waters; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in constructing a dock or wharf on each side of and partly within the stream or other water to be crossed by a floating bridge, leaving sufficient space open between such docks, or wharves, for the passage of vessels, within one of which docks or wharves a slip is constructed and a suitable boat placed therein, which boat can be worked forward speedily, by steam or other power, to the opposite dock or wharf, and thus form a connection therewith, and when thus connected the boat becomes a bridge; and when it is worked back into the slip, the space between the docks or wharves is left open and free for the passage of vessels. Said slip and boat are made about twice the length of the space left open for navigation so that only about half the length of the boat is worked out of the slip in making the connection, the other part of the boat remaining in the slip, and, by reason thereof the sides of the slip keep the boat in nearly a direct line so that wind, tide or current will not carry it off the line. The opposite dock or wharf may be constructed with a recess, in the end thereof fronting the water, for the reception of the end of the boat, or the end may be made straight, with timbers bolted thereon to serve as guides in conducting the end of the boat to its place, in making the connection.

To enable others skilled in the art to make use of my invention, I will proceed to describe its construction and operation when used as a railroad bridge.

I construct a dock or wharf upon each side of, or wholly or partly in a stream, bay or other water, necessary to be crossed with a railroad track, leaving between said docks or wharves an open space for the passage of vessels. In one of these docks or wharves I construct a slip, sufficiently large to receive a boat, of proper dimensions, in which slip I place such boat, (said slip and boat being

about twice the length of the open space between such dock or wharves,) and the boat is worked forward to and against the opposite dock or wharf, and thus makes a connected and continuous line, as shown in the accompanying drawings, numbered 3 and 4. Sections Nos. 1 and 3, in said drawings, Nos. 3 and 4, represent portions of the road bed and track. Timbers, marked *a*, in said drawings, are laid upon said road bed, and upon said timbers portions of the track is laid upon longitudinal timbers, resting thereon.

I construct a platform, in two parts, which is placed upon the dock or wharf containing the slip and over and above the slip and boat within it, one part of which platform is connected with the permanent railroad, and is constructed as follows: A permanent cross timber is placed under longitudinal timbers where the permanent road ends and the bridge commences, as shown at points marked *c*, in sections 1 and 3, of drawings Nos. 3 and 4. Permanent frames are also constructed upon each side of said dock or wharf, as shown by posts and beam, marked *b*, in said drawing No. 3. Timbers are laid across said dock or wharf as shown by timbers represented in said drawing Nos. 3 and 4, marked *d*, which are attached to said frames by having bolts pass through them, near each end of said timbers, and through the beam, which is part of said frame, as shown at points, marked *e*, in drawing No. 3, which bolts are held with screw nuts as shown at points marked *f*, in said drawing No. 3, by means of which screw nuts said timbers, which in part, support said platform, are raised, or lowered, as may be necessary to adapt the machine to high or low water. Upon these timbers, as shown in said drawing No. 4, marked *c*, *d*, *d*, four longitudinal timbers are laid which are connected with the permanent road, by hinges, at points marked *g*, in drawing No. 4. The other part of said platform is constructed of four longitudinal timbers, resting upon cross timbers, all marked *h*, in drawing No. 4, and bolted together and braced, as shown at points marked *i*, in drawing No. 3, which latter part of said platform is connected with the former, by hinges, at points marked *j*, in drawing No. 4, the other end of said platform resting upon the deck of said boat. In the outer longitudinal timbers of said platform, at

points marked *h*, in drawing No. 4, iron wheels are inserted, which run upon the deck of said boat, and when the boat is worked forward to the opposite dock, said wheels fall into sockets in the deck of said boat, and thereby drop that end of the platform which rests upon the boat, and connect the two longitudinal timbers of said platform with timbers marked *l*, in drawing No. 4, which are attached permanently to the deck of said boat, and upon which a section of railroad track is laid.

I attach a chain to the boat, upon its deck, near each end of the boat as shown at points marked *m*, in drawing No. 4, which runs around a capstan, placed upon the side of the dock or wharf in which the slip is constructed, as shown at point marked *n*, in drawing No. 4, and by working this capstan with steam, or other power, the boat is moved forward to form a connected line of road or back into the slip, leaving the draw open. Underneath the part of the platform which so rests in part upon the deck of said boat, I place a lever, attached to the deck, as shown at point marked *o*, in drawing No. 4, with which that part of said platform is raised, so that the timbers laid upon and attached to the deck of the boat (and upon which track is laid) pass under the platform as the boat is moved into the slip.

Upon the opposite dock or wharf I construct a platform substantially like that part of the platform last above described, viz, with four longitudinal timbers, as shown in said drawing No. 4, which timbers, as represented in said drawing, are severally marked *p*, with cross timbers underneath, also marked *p*, in said drawing, which longitudinal timbers are connected with the permanent railroad by hinges, as shown in said drawing No. 4, at points marked *q*. Said platform is held together by braces and bolts, as shown in drawing No. 3, at points marked *r*. The other end of said platform (next to the water or open space) is raised and lowered by chains attached thereto, which pass over pulleys in a frame above it, which frame I construct as follows: A post on each side

and near that end of said platform last described, is set and made permanent in said dock or wharf, with a cross beam on the top of said posts, as shown in drawing No. 2, marked *s*, which chains are attached to, and worked by a winch, on the side of one of the posts, as shown in drawings No. 2 and 3, at points marked *t*, (by means of which the said platform is raised and lowered,) and when the connection is formed by working the boat forward from the slip to the opposite dock or wharf, the end of said last mentioned platform (thus raised and lowered) rests upon said boat, forming a continuous line of road or track upon which locomotives and cars pass and repass over and upon said boat and platforms, and while the is passing the platforms sink with the boat, and they rise with it when the train passes off, keeping the connection unbroken, the platforms thus becoming self adjusting. The rail road track upon said platforms is made by laying the rails upon the two inner longitudinal timbers of said platforms.

What I claim as my invention and desire to secure by Letters Patent is—

The construction of a floating draw bridge, by erecting a wharf or dock on each side of, or partly or wholly within, rivers, or other waters, over or across which such bridge may be required, with a slip in one of said docks or wharves of a suitable size for the reception of a boat of proper dimensions, viz., nearly as wide as the slip and about twice the length of the open space between the docks or wharves (through which open space vessels may pass and repass) which boat, by steam, or other power, can be readily worked forward from the slip to the opposite dock or wharf and thus form a connection therewith, and back again into the slip, leaving the space, or channel open for the passage and re-passage of vessels, substantially in the manner and for the purposes above described.

NAPOLÉON B. PROCTOR.

Witnesses:

WM. WESTON,
WM. G. SHAW.