

M. VINCENT.
DRAW-BRIDGE.

No. 170,650.

Patented Nov. 30, 1875.

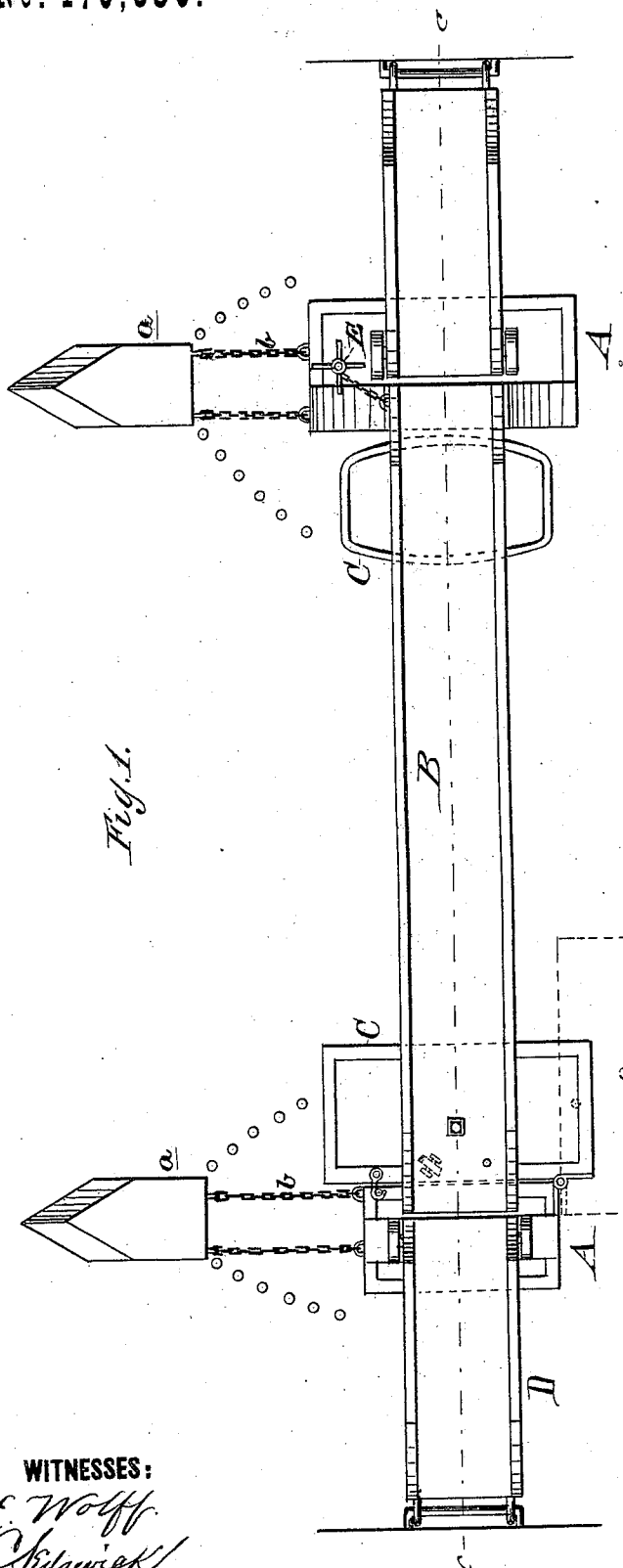


Fig. 1.

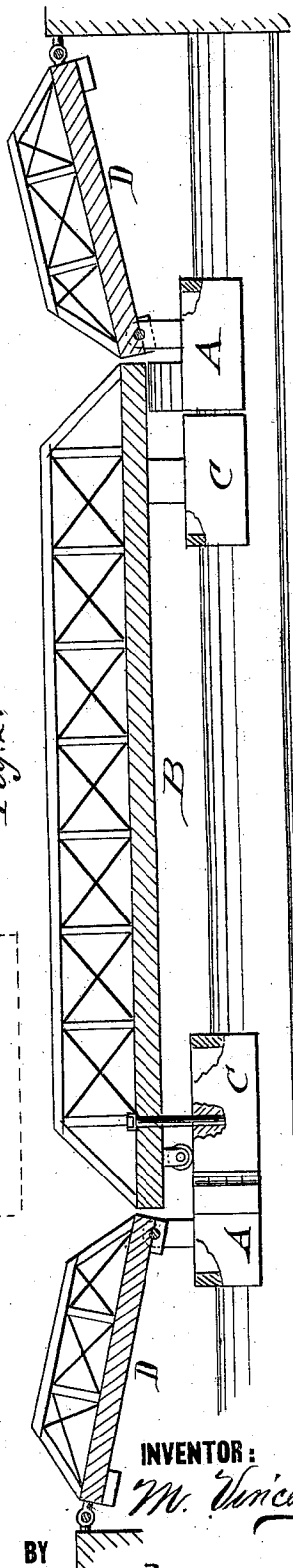


Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

MITCHELL VINCENT, OF ST. PAUL, MINNESOTA.

IMPROVEMENT IN DRAW-BRIDGES.

Specification forming part of Letters Patent No. 170,650, dated November 30, 1875; application filed March 13, 1875.

To all whom it may concern:

Be it known that I, MITCHELL VINCENT, of St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and Improved Ponton Draw-Bridge, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a plan view of my improved ponton draw-bridge, and Fig. 2 a vertical longitudinal section of the same on the line *c c*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to an improved ponton draw-bridge for railway and other traffic; and it consists of two stationary pontons supporting the approach-bridges and two ponton-piers, carrying the draw-bridge, and moving with the same, one being hinged to the stationary ponton to swing with the draw-bridge, or permanently applied to the same, in which case the draw-bridge is pivoted and supported on rollers thereon.

The draw-bridge is closed by a capstan and chain from the opposite stationary ponton, and opened from a pier above or below the bridge in case no current for opening in the draw-bridge is available.

In the drawing, A represents the stationary pontons, which are retained in position by chain-cables *b*, applied to ice-breakers *a*, or to piling driven in so as to ward off drift-wood or ice, or by means of wire cables from the shore, provided the pontons may readily rise and fall with the water of the river. The stationary pontons A serve to support the approach-bridges D, and to form the connection with the draw-bridge B, that is stretched across two movable pontons, C. One of the pontons C forms the pivot-pier, and is hinged to the stationary ponton A, making, when locked thereto, one pier therewith. This may, however, be modified by connecting the approach and pivot ponton in such a manner that one solid ponton is formed, the pivotal point of the bridge being then placed at either corner, or centrally to the same, the opposite

corners or sides being supported and carried on wheels.

When the current of the stream or navigable water is sufficient to open the draw, one capstan, E, and chain, at the approach-pier opposite the pivot-pier only, is required for the purpose of closing the draw.

An endless chain may be attached to the drum of the capstan and the end of the draw-bridge, passing through and obtaining direction from sheaves at suitable points, or in other approved manner.

The anchored pontons may be fastened, by horizontal capstans and chains, to the ice-breakers, in order to secure the movement of the combined bridge in a vertical plane as the water rises and falls, one end of the chain being fastened and wound upon the horizontal capstan, and passing freely over pulley-blocks of the ice-breakers.

In dead-water, a pile, pier, or any other fixed point, must be used, with an additional capstan and chain, to open the draw-bridge.

The connection of the roadway-floors between the approach and draw bridges will be effected by aprons, in the usual manner.

The shore end or pier end of the approach-bridges may be fixed or movable, as desired, the approach adjusting itself, by a slide or runway at either end, to the rise and fall of the water.

The system of ponton-piers may be extended to streams of any width, being obviously economical, especially when the foundations of stone or pneumatic piers are, by the nature of the bottom, expensive in their construction.

In streams requiring a number of spans, the pontons are held in place by cables and guys, or other suitable anchoring devices, by which the rigid position of the bridge is secured.

I am aware that the several parts composing my ponton-bridge are not new, *per se*, self-adjusting shore or approach sections and floating draw-sections having already been devised. Therefore, I confine myself to the

particular combination and arrangement of parts.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination, in a ponton draw-bridge, of the stationary pontoons A A, hinged self-adjusting approach-sections D, floating draw-section B, capstan and chain E, and support-

ing-pontoons C, the ponton at one end of the draw-section serving as a pivot-pier, and the opposite ponton being left free to float, so as to enable the draw to be opened and closed, in the manner herein described and set forth.

MITCHELL VINCENT.

Witnesses:

EDWD. SAWYER,
EDWARD BREWER.