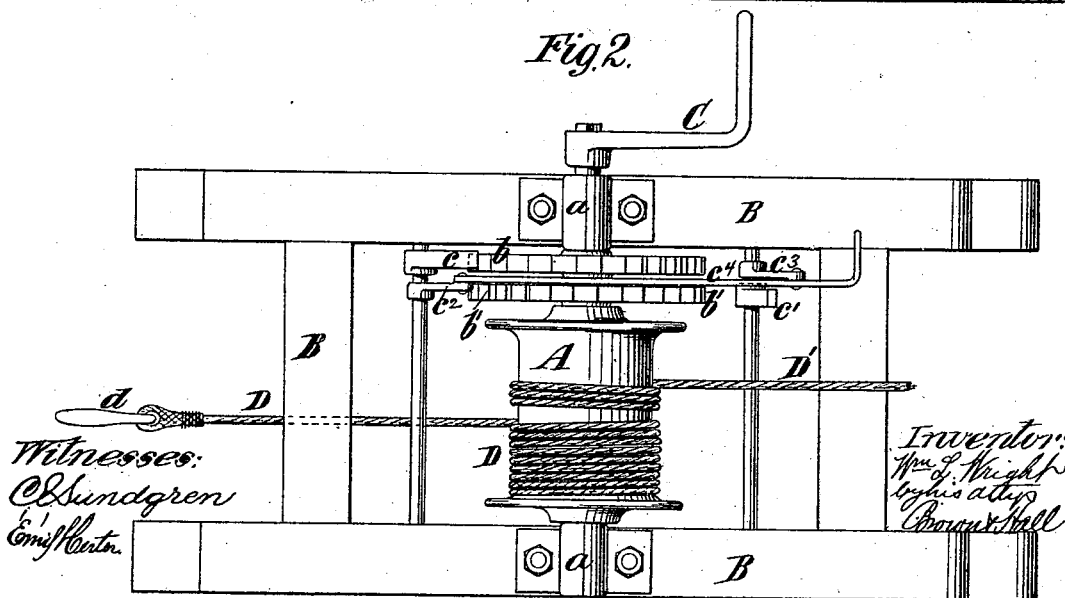
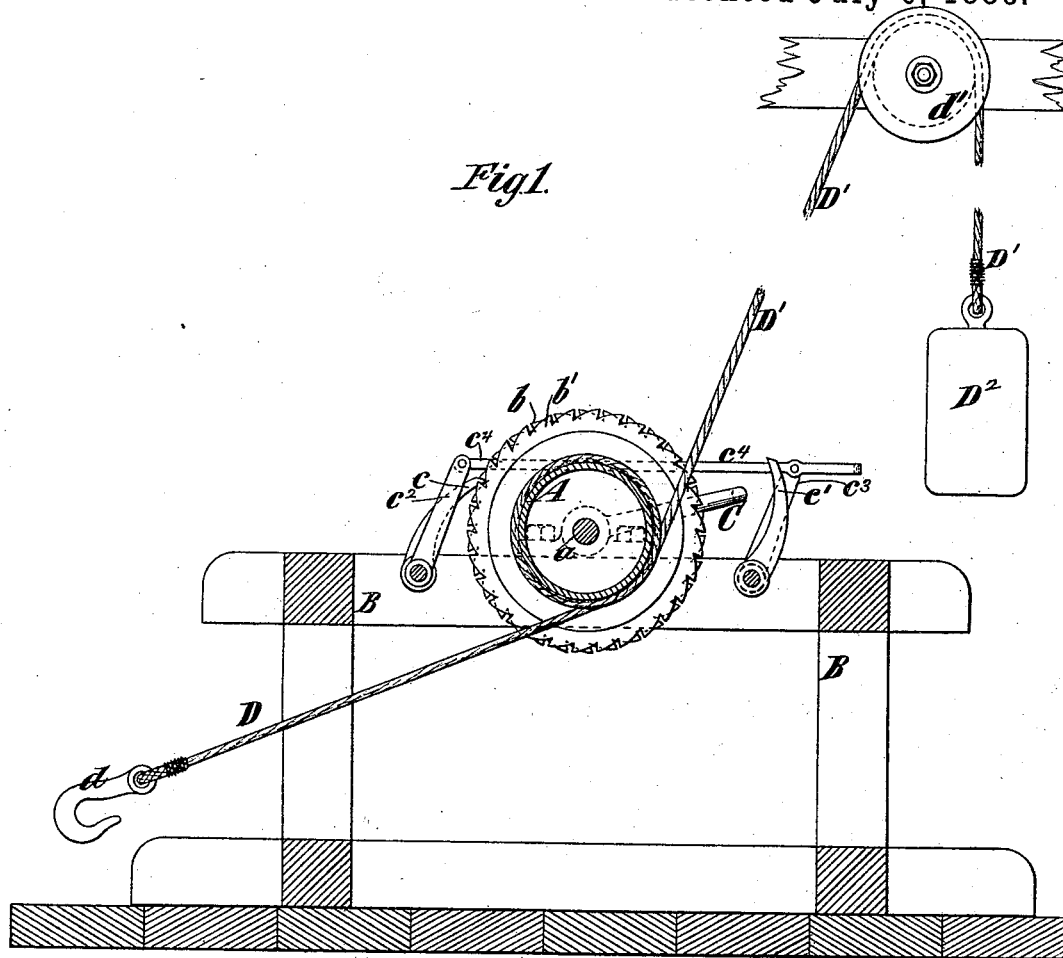


(No Model.)

W. L. WRIGHT.  
WINDLASS FOR FERRY BRIDGES.

No. 345,268.

Patented July 6, 1886.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLIAM L. WRIGHT, OF JERSEY CITY, NEW JERSEY.

## WINDLASS FOR FERRY-BRIDGES.

SPECIFICATION forming part of Letters Patent No. 345,268, dated July 6, 1886.

Application filed February 24, 1886. Serial No. 192,985. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. WRIGHT, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Windlasses for Ferry-Bridges, of which the following is a specification.

In operating the windlass on ferry-bridges in the usual way a considerable length of cable or rope is drawn off from the windlass to provide for its ready attachment to an incoming boat, and after this cable or rope has been hooked or otherwise attached to the boat the windlass is turned by hand, in order to first draw in all the slack in the cable or rope and then hold the boat close to the bridge.

The object of my invention is to provide a simple means whereby the windlass will be automatically turned under control of the operator, in order to take up all the slack in the rope or cable, the operator then having only to turn the windlass very slightly in order to pull the rope or cable taut and hold the boat to the bridge.

In carrying out my invention I employ, in connection with the windlass, two ropes or cables which wind on the windlass in reverse directions, and one of which is weighted, while the other carries the hook or analogous holding device for engagement with the boat. I also provide the windlass with oppositely-arranged or reverse ratchet-wheels and pawls, one of which serves to hold the windlass after it has been turned forcibly to draw the ferry-boat to the bridge, and the other of which serves to hold the windlass against being turned by the constant force of the weight.

The invention will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional elevation of a windlass, with its supporting-frame and its appurtenances, embodying my invention, and Fig. 2 is a plan thereof.

Similar letters of reference designate corresponding parts in both figures.

A designates the windlass, which is journaled in suitable bearings, *a*, supported by substantial frame-work B, which is usually of timber. The windlass may be turned by a crank, C, or by a wheel similar to a steering-wheel, provided with radial handles and arranged on a journal of the windlass.

D D' designate two ropes or cables which wind in opposite directions around the windlass A, and also extend therefrom in opposite directions. The rope or cable D has at the end a hook, *d*, or other analogous holding device, for engaging with an eye or similar fixture on a ferry-boat, and the rope or cable D' passes over a sheave, *d'*, and has a weight, D<sup>2</sup>, suspended from it. Upon the shaft of the windlass are reversibly arranged ratchets or ratchet-wheels *b b'*, which operate in connection with pawls *c c'*. When the pawl *c* is in engagement with the wheel *b*, it resists and holds the windlass against turning by the action of the weight D<sup>2</sup>, and when the pawl *c'* is in gear with the wheel *b'* it prevents the windlass from being turned by a pull on the rope or cable D. As here represented, the shafts or pivots of the two pawls, *c c'*, are connected by arms *c<sup>2</sup> c<sup>2</sup>* and a rod *c<sup>4</sup>* which may be provided with a handle, and by means of these connections the two pawls may be operated simultaneously by the hand in reverse directions, one being removed from engagement with its wheel at the same time that the other is moved into engagement with its wheel. When the parts are at rest and before the boat enters the slip, they occupy the position shown in Fig. 1, the pawl *c* being in engagement with the wheel *b*, and during this time there should be a sufficient portion of rope or cable D free from the windlass to enable the hook *d* to be ready to attach to the boat when it enters the slip. As soon as the rope or cable D is attached to a boat the pawl *c* is thrown out of the wheel *b*, and the pull produced by the weight on the rope or cable D' will thereupon at once turn the windlass A to take up the slack in the rope or cable D. When the pawl *c* is thrown out of gear with its wheel, the pawl *c'* is brought in position for engagement with the wheel *b'*, and it only remains for the operator to slightly turn the windlass in order to put a tension on the rope or cable D to hold the boat firmly to the bridge, this tension being preserved by the pawl *c'* engaging with the wheel *b'*. When the boat is to be released, the pawls are again thrown into the position shown in Fig. 1, and the windlass is turned in a direction to draw upon the rope or cable D' and produce slackness in the rope or cable D sufficient to enable the hook *d* to be dis-

gaged from the boat, and the windlass will be held in such position by the pawl *c* until a boat again enters the slip.

From the above description it will be seen that by the simple mechanism described I turn the windlass automatically by the weight in order to take up the slack in the rope or cable, and that I also enable such automatic turning of the windlass to be perfectly controlled by the operator.

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

1. The combination of the ferry-bridge windlass and two ropes or cables winding in opposite directions on the windlass, one rope or cable being weighted, and the other being provided with a hook or analogous holding de-

vice, and ratchets and pawls, whereby the rotation of the windlass in one or other direction may be permitted at the will of the operator, substantially as herein described.

2. The combination of the windlass *A* and the ropes or cables *D D'*, one weighted at *D<sup>2</sup>*, and the other provided with a hook or analogous holding device, reversely-set ratchets and pawls *b b' c c'*, and a connection between the pawls for moving them simultaneously in reverse directions, substantially as herein described.

WILLIAM L. WRIGHT.

Witnesses:

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