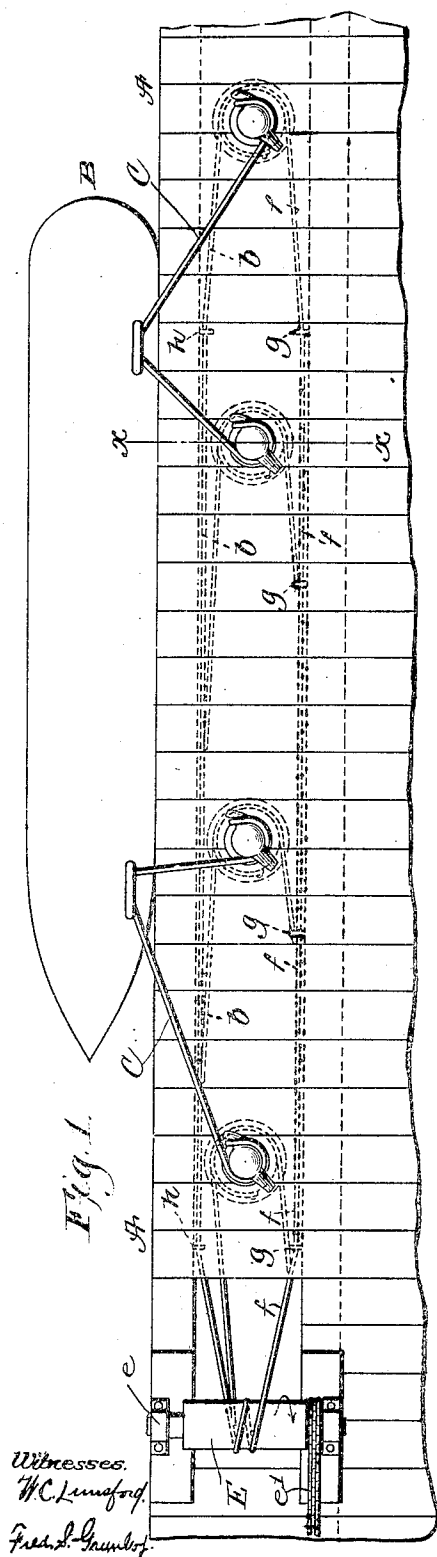


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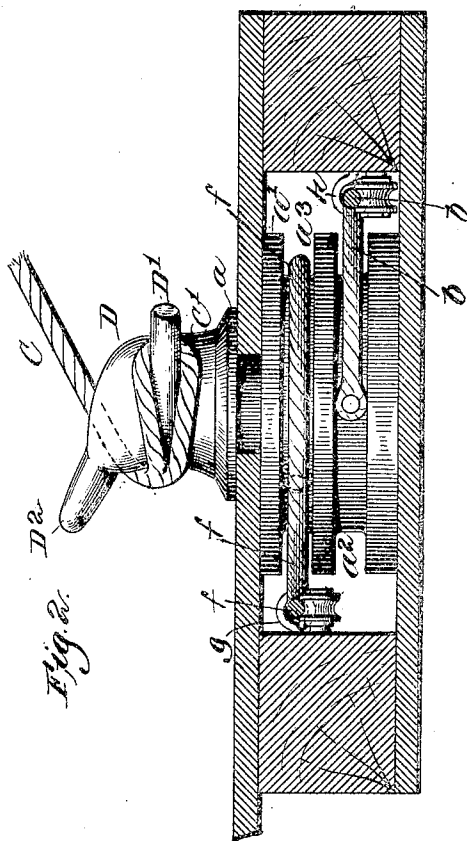
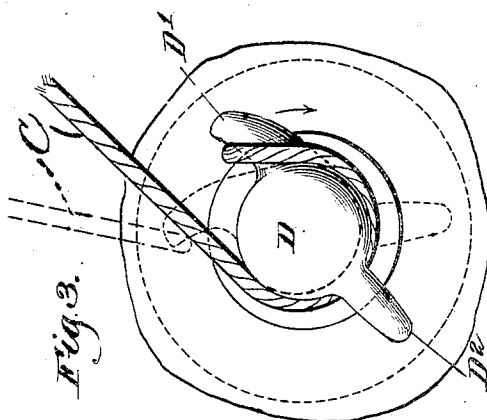
PATENTED JAN. 16, 1906.

W. D. DUNCAN.  
MOORING DEVICE.

APPLICATION FILED MAY 6, 1905.



Witnesses:  
W. C. Lundford,  
Fred. L. Gumbel.



Inventor:  
William D. Duncan,  
by Lewis E. Gregory, Atty.

# UNITED STATES PATENT OFFICE.

WILLIAM D. DUNCAN, OF BOSTON, MASSACHUSETTS.

## MOORING DEVICE.

No. 810,042.

Specification of Letters Patent.

Patented Jan. 16, 1906.

Application filed May 6, 1905. Serial No. 259,134.

*To all whom it may concern:*

Be it known that I, WILLIAM D. DUNCAN, a citizen of the United States, residing at Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Mooring Devices, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

It is a well-known fact that steamships and other vessels moored at a wharf or dock are frequently burned, owing to a conflagration of the wharf or dock or buildings thereon, because of the impossibility, owing to the intensity of the fire, of reaching the hawser and casting the same off the mooring device secured to the wharf or dock.

I have aimed to provide a mooring device at a wharf or dock that may be actuated at a distance in order to cast off the hawser connected with the vessel and retaining the same at the side of the wharf or dock.

In the form in which I have illustrated my invention in the present application, showing one good form of my invention, I have made the mooring device revoluble and have looped or wound a part of the hawser about a horn or projection thereon; but this invention is not to be limited to the particular construction of mooring device and its actuating mechanism, as I believe that I am the first to devise any means whatever of automatically detaching the hawser from whatever device is sustained by the wharf or dock, and I desire to claim my invention broadly.

Figure 1 in plan view represents part of a wharf or dock with one form of my hawser-casting-off device shown thereon and a vessel held moored at the side of the wharf. Fig. 2 is an enlarged detail of one of the mooring devices; and Fig. 3 is a top or plan view of the same, the full and dotted lines showing its extreme positions.

Referring to the drawings, A represents part of a wharf or dock of any usual construction, the wharf being in many constructions composed of wood which is inflammable, and there are always buildings on the wharf or dock liable to be burned.

B represents a boat, steamship, or other vessel, and C the hawser connected therewith and engaging the mooring device mounted on the cap of the wharf or dock.

In accordance with my invention I mount on the cap of the wharf or dock a plurality of mooring devices at suitable distances apart

and to which may be secured the ends of the hawsers, whatever number are used, and the hawser on the boat may, if controlled by hand, be secured to the boat by slipping around any usual cleat, or, preferably, in larger vessels the hawser may be connected with a winch or capstan, not necessary to be herein shown, as my invention relates more particularly to confining and releasing the end of the hawser that is carried out of the boat and to be connected to the mooring device.

The mooring device as herein shown is represented as comprising a head D, provided with horns or projections D' D<sup>2</sup>. The horn D' receives about it a loop or bend C' at the end of the hawser, while the horn D<sup>2</sup> or a portion of the head is shaped to project and overlap a part of the hawser, so that the same cannot slip upwardly over the top of the head. These heads are journaled or mounted revolubly on the cap of the wharf or dock and have their shanks *a* provided with drums *a'*, herein represented as having each two annular grooves *a<sup>2</sup> a<sup>3</sup>*. In the bottom of the groove *a<sup>2</sup>* is connected one end of a cable *b*, preferably of wire, so that the same is rendered stronger and less liable to be destroyed, said cable being extended to a winch E, herein shown as a revolving shaft or drum mounted in journals having its bearings *e* erected at any suitable place at a safe distance from the point where the heads of the mooring devices are connected with the cap of the wharf. This winch may be in a building and may be turned when desired by a sprocket-chain *e'*, driven from any engine that may be capable of being started instantly whenever desired, said sprocket-chain engaging a sprocket-wheel on the shaft of the winch.

As shown in Fig. 1, there are a series of cables *b*, and they all lead from the same side of the mooring devices under the winch E, so that when one cable *b* is moved by the winch all the similar cables are moved in unison with it and each cable turns its own mooring device, the cables *b* serving to retain the mooring devices in the full-line position shown in the drawings, (their operative position,) and so long as the winch or whatever device is employed controls the cables *b* all the winches stand as represented by full lines and hold the hawsers so that the vessel is moored properly at the wharf or dock. Now in case of fire, where the conflagration is so fierce that it would be impossible to reach the hawsers to cast them off the mooring devices, I have pro-

vided the grooves  $a^3$  of each drum with a cable  $f$ , that is led to the winch and wound thereabout in an opposite direction, so that in case it is desired to automatically detach the hawsers it is only necessary to turn the winch in the direction of the arrow thereon, Fig. 1, and thereby rotate the mooring devices from the full-line position, Fig. 3, into the dotted-line position, Fig. 3, where it will be readily seen the bend or loop made in the end of the hawser immediately slips off the horn  $D'$ , freeing the vessel, so that it may be removed from the wharf in any suitable way to prevent its conflagration.

15 The cables  $b$  and  $f$  will be carried through suitable guides or eyes  $g$   $h$ .

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

20 1. A mooring device adapted to be sustained on a wharf or dock and having connected therewith one end of a hawser led out from a vessel, and flexible means for turning said mooring device to release the hawser therefrom.

25 2. A mooring device adapted to be mounted on a wharf or dock, and provided with a

horn or projection, combined with means for partially rotating said device.

3. A mooring device adapted to have connected therewith one end of hawser, and means to revolve said mooring device to discharge said hawser. 30

4. A mooring device provided with a drum and adapted to have one end of a hawser connected therewith, combined with a cable connected with said drum, and means to move said cable, said cable when moved causing the mooring device to disengage itself from the hawser. 35 40

5. A plurality of mooring devices, adapted to be mounted on a wharf or dock, and provided with a horn or projection, combined with flexible means leading to said mooring devices for revolving the same simultaneously to release a vessel. 45

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM D. DUNCAN.

Witnesses:

GEO. W. GREGORY,  
MARGARET A. DUNN.