(No Model.)

W. F. STANLEY.

BUFFER FOR THE PREVENTION OF COLLISIONS ON LAND AND WATER.

No. 345,552. Patented July 13, 1886.

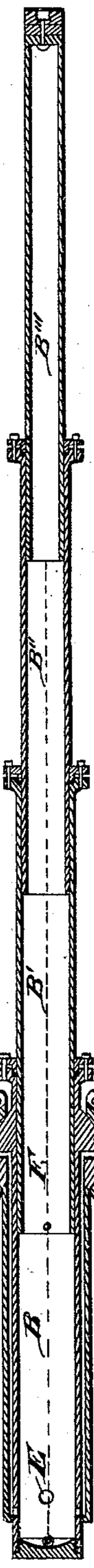

Fig. 1.

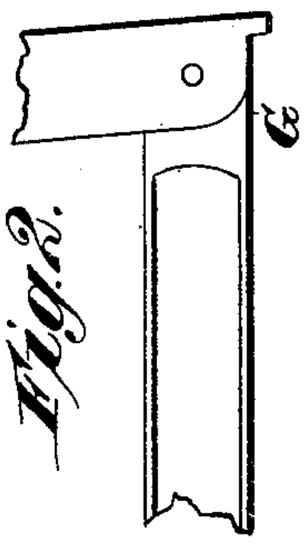

Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM FORD STANLEY, OF CUMBERLOW, SOUTH NORWOOD, COUNTY OF SURREY, ENGLAND.

BUFFER FOR THE PREVENTION OF COLLISIONS ON LAND AND WATER.

SPECIFICATION forming part of Letters Patent No. 345,552, dated July 13, 1886.

Application filed January 18, 1886. Serial No. 189,022. (No model.) Patented in England October 28, 1885, No. 12,953.

To all whom it may concern:

Be it known that I, WILLIAM FORD STANLEY, a subject of the Queen of Great Britain, residing at Cumberlow, South Norwood, in the county of Surrey, England, have invented certain Improvements in Buffers or Fenders for Vessels, (for which I have obtained a patent in Great Britain, No. 12,953, dated October 28, 1885,) of which the following is a specification.

My invention relates to a fender or collision-buffer for ships and other vessels; and it consists in the construction and combination of buffing devices, as hereinafter set forth.

In the annexed drawings, illustrating the invention, Figure 1 is a longitudinal section of my improved buffer extended from the fore part of a vessel. Fig. 2 is a detail view of a folding joint, which may be combined with the buffer.

A designates a universal joint, preferably located in the prow or fore part of a vessel.

B, B′, B″, and B‴ are metal cylinders, which constitute the collision-buffer, and are arranged to telescope, for the purpose of being extended to any required distance beyond the vessel, and to facilitate their retraction, and thus render the buffer more readily portable when not in use. These telescopic cylinders are connected with the universal joint A, as shown, so as to be capable of being turned in any direction from which danger of collision is likely to arise. The innermost cylinder, B, communicates by a pipe, C, with a pump by which water may be pumped into and out of the several cylinders to extend or retract them, as required. The cylinder B may also be connected with a steam-engine by means of a pipe, D, having means for cutting off the steam when there is an excess of pressure within the telescopic buffer.

In the rear end of the cylinder B is an escape-valve, E, opening at a predetermined pressure when the buffer comes in collision with an obstruction, the buffer being thus arranged to have a regulated degree of elastic resistance. If desired, this escape-valve may be arranged to serve as a whistle, to give warning in case of collision.

For the purpose of limiting the outward movement of the telescopic buffer-cylinders a chain, F, is arranged in connection therewith, as shown, and this chain may also be used in retracting the buffer when not required for use. If desired, two of the buffer-cylinders may be connected by a folding joint, G, so as to render the buffer partly telescopic and partly folding. The universal joint A may be located in any part of the buffer, or may be omitted; but it is preferably arranged in the prow of the vessel, as shown.

It is obvious that by simple mechanical connections (not shown) the telescopic buffer can be made to reverse or stop the engine in case of collision. The outer end of the buffer may carry a pad, H, of india-rubber or other elastic material.

What I claim as my invention is—

1. The combination, with a vessel, of a collision-buffer composed of telescopic cylinders, a pipe connecting said cylinders with a pump or engine, and a universal joint whereby the buffer can be turned in various directions and be actuated by hydraulic or steam pressure, substantially as described.

2. The combination, with a vessel, of a collision-buffer composed of telescopic cylinders located in and projecting from the bow, a folding joint located at or near the junction of two of said cylinders, a universal joint located in the bow of the vessel and connected with the telescopic cylinders, and a pipe connecting said cylinders with a pump or engine for actuating the buffer with hydraulic or steam pressure, substantially as described.

3. The combination, with a vessel, of a collision-buffer composed of telescopic cylinders, a universal joint located in the bow of the vessel and connected with said cylinders, means for projecting the telescopic cylinders, and a chain for limiting the extension of said cylinders, substantially as described.

In testimony whereof I have hereunto set my hand, this 18th day of December, 1885.

WILLIAM FORD STANLEY.

Witnesses:

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