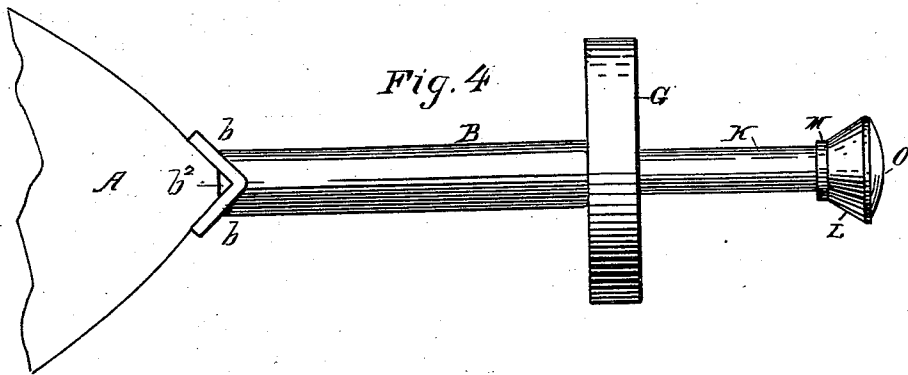
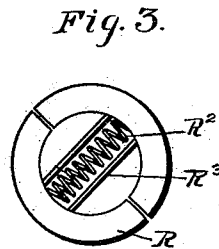
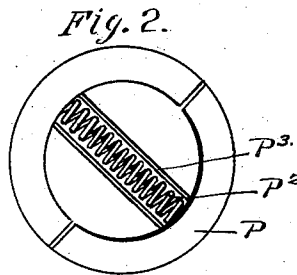
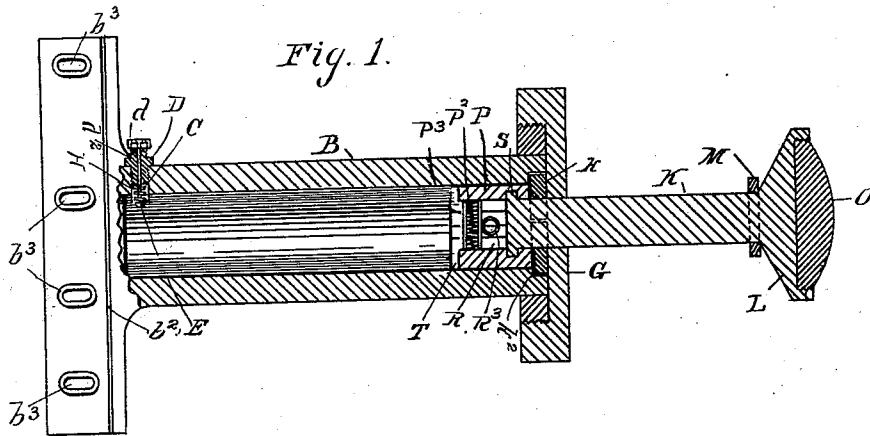


(No Model.)

J. CIOCKI.
BUFFER FOR VESSELS.

No. 558,482.

Patented Apr. 21, 1896.



WITNESSES:

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BUFFER FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 558,482, dated April 21, 1896.

Application filed January 9, 1896. Serial No. 574,854. (No model.)

To all whom it may concern:

Be it known that I, JOHAN CIOCKI, a citizen of the German Empire, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Buffers for Vessels, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to buffers for vessels; and the object thereof is to provide devices of this class which are adapted to be connected with or secured to the bow of a vessel and to serve as buffers to prevent the injury which would otherwise be occasioned to another vessel in case of a collision.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a central longitudinal section of my improved buffer. Figs. 2 and 3 are plan views of packing-rings which I employ in connection therewith, and Fig. 4 a plan view of my device attached to or connected with the bow of a vessel.

In the drawings forming part of this specification, A represents the bow of a vessel, and in practice I secure thereto a buffer, a part of which consists of a tube or cylinder B, which is closed at the inner end and provided with two plates *b*, which are arranged in the form of a triangle and are adapted to fit the bow of the vessel, as shown in Fig. 4, and said plates are provided with copper packing *b*² on the inner sides thereof, and formed in said plates are transverse slots or openings *b*³, through which bolts or screws are passed in securing the devices to the vessel, and these openings *b*³ are oblong in form, so as to provide for a slight movement thereof.

The tube or cylinder B is provided at the inner end thereof with an opening C, in which is placed a screw-threaded plug D, to the outer end of which is secured, in practice, a cap *d*, provided with a pin which passes therethrough and through a central bore *d*² in the plug D, and at the inner end of which is a button or valve E, and between said button or valve E and the end of the plug D is a spiral spring H.

Secured to the outer end of the tube or cylinder B is a cap G, which may be secured to said tube in any desired manner, and passing through said cap is a shaft K, and placed around said shaft directly inside of the cap G is a divided packing-ring *k*, which is composed of soft copper and which is adapted to rest in an annular groove *k*², formed in the outer end of the tube or cylinder B.

The outer end of the shaft K is provided with a head L, and mounted thereon, adjacent to said head, is a washer or bushing M, composed of soft copper, and the outer side of said head is provided with an annular chamber *m*, in which is placed a copper bushing or buffer-head O, which is also composed of soft copper, and which is designed to come in contact with the vessel struck if a collision should occur.

Within the tube or cylinder B is mounted a packing-ring P, which is made of brass and which is composed of two similar parts, as shown in Fig. 2, and the separate sections thereof are connected by means of a spiral spring P², which is adapted to press the separate sections of said ring outwardly, and said spiral spring is inclosed in the tube P³, which is of substantially the same length as the smaller diameter of said ring, but which is not connected with either side thereof.

Mounted within the ring P is a supplemental packing-ring R, which is also composed of two equal parts, as shown in Fig. 3, and constructed of brass, and the separate sections thereof are united by a spiral spring R², which is inclosed by a tube R³, which is also not connected with either part of said ring.

On referring to Fig. 1 of the drawings it will be seen that the outer ring P is wider or deeper than the inner ring R, and that the end of the shaft K extends into the ring P and is connected therewith by projections or shoulders S, which are formed thereon and which are adapted to enter corresponding notches or recesses formed in the ring P, and the ring R is provided with corresponding shoulders or projections T, which are adapted to enter corresponding notches or recesses formed in the ring P, and by means of this construction when the shaft K is driven in-

ward the packing-rings P and R are also forced inward, and said packing-rings are expanded by means of the air within the tube or cylinder B, and in case of a collision the buffer-head O and the end of the shaft K will first receive the force of the blow, and the shaft K will be driven inward and the force of said blow will thus be broken and will be taken up by the air-cushion formed within the tube.

It will be apparent that any desired number of these buffers may be connected with the bow of a vessel, and the operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings. If a vessel provided with my improved buffer should come in collision with or strike another vessel, the force of the blow would be received by the buffer-head or bushing O at the end of the shaft K, and said shaft would be driven inward into the tube or cylinder B and would thus yield, so that the force of the blow would not be sufficient to create or produce any material injury to the vessel struck, and in this operation a slight amount of the air would be driven from the tube or cylinder B through the central bore in the plug D, and this tube may be kept full of air at all times or refilled with air under pressure by means of an air-pump, if the same should become necessary, or in any desired manner, and the plug D may be provided with an air-valve of any desired form or construction, and one which will operate to admit air under atmospheric pressure to the tube or cylinder B, but which will close, so as to prevent air from being forced from said tube, and thus a natural air-cushion would be provided within said tube at all times.

It is evident that changes in and modifications of this construction may be made without departing from the spirit of my invention or sacrificing its advantages, and I therefore reserve the right to make all such changes in and modifications of said construction as fairly come within the scope of the invention.

It will be observed that the divided packing-rings P and R are connected with the shaft K, so as to be forced inwardly thereby; but said rings are expanded by the air within the cylinder or tube B and thus caused to form a close fit and perfect packing, and the pressure of the inner ring upon the end of the shaft K will be such as to prevent any considerable amount of air from passing above said ring, and means may be provided for the escape of any air that should by any possibility pass through said rings and enter the outer part of the tube or cylinder B.

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

1. A vessel provided with a buffer connected with the bow thereof, and which is adapted to receive the force of a blow occasioned by a collision, said buffer being com-

posed of a tube which is connected with the bow of the vessel at one end, and which is closed by a cap at the other, through which passes a shaft the inner end of which is provided with two packing-rings, one of which is inclosed within the other, and each of which is composed of separate sections, said packing-rings being adapted to be forced inwardly by said shaft and to expand so as to closely pack the tube or cylinder in which they are located, substantially as shown and described.

2. A vessel provided with a buffer connected with the bow thereof, and which is adapted to receive the force of a blow occasioned by a collision, said buffer being composed of a tube which is connected with the bow of the vessel at one end, and which is closed by a cap at the other, through which passes a shaft, the inner end of which is provided with two packing-rings, one of which is inclosed within the other, and each of which is composed of separate sections, said packing-rings being adapted to be forced inwardly by said shaft and to expand so as to closely pack the tube or cylinder in which they are located, and said shaft being provided at its outer end with a head, and a buffer-head mounted thereon, which is composed of soft copper, and with a washer or bushing-ring which is mounted thereon, between said buffer-head and the head of the cylinder substantially as shown and described.

3. A vessel provided with a buffer connected with the bow thereof, and which is adapted to receive the force of a blow occasioned by a collision, said buffer being composed of a tube which is connected with the bow of the vessel at one end, and which is closed by a cap at the other, through which passes a shaft, the inner end of which is provided with two packing-rings, one of which is inclosed within the other, and each of which is composed of separate sections, said packing-rings being adapted to be forced inwardly by said shaft, and to expand so as to closely pack the tube or cylinder in which they are located, and said shaft being provided at its outer end with a head, and a buffer-head mounted thereon, which is composed of soft copper, and with a washer or bushing-ring which is mounted thereon, between said buffer-head and the head of the cylinder, and said shaft being also provided within the cylinder with a divided packing-ring which is also composed of soft copper and which is supported in an annular groove formed in the end of the tube or cylinder, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 6th day of January, 1895.

JOHAN CIOCKI.

Witnesses:

C. GERST,

A. C. VAN BLARCOM.