

A. E. LUZZI.
VESSEL RELEASER.

APPLICATION FILED APR. 20, 1912.

1,058,246.

Patented Apr. 8, 1913.

4 SHEETS—SHEET 1.

Fig. 1.

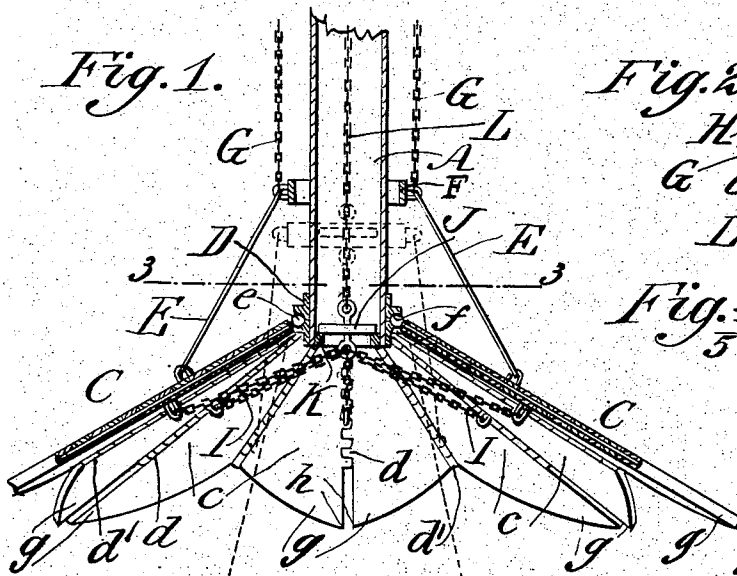


Fig. 2.

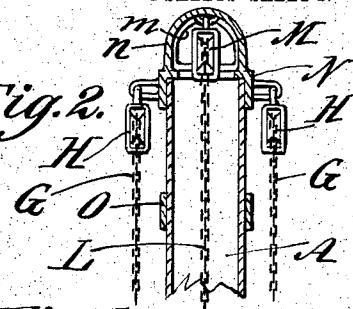


Fig. 4.

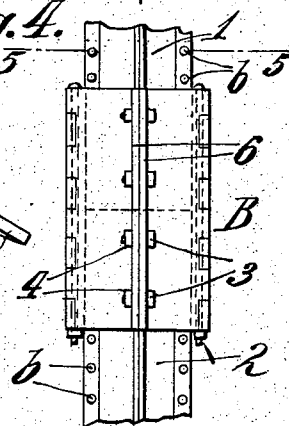


Fig. 3.

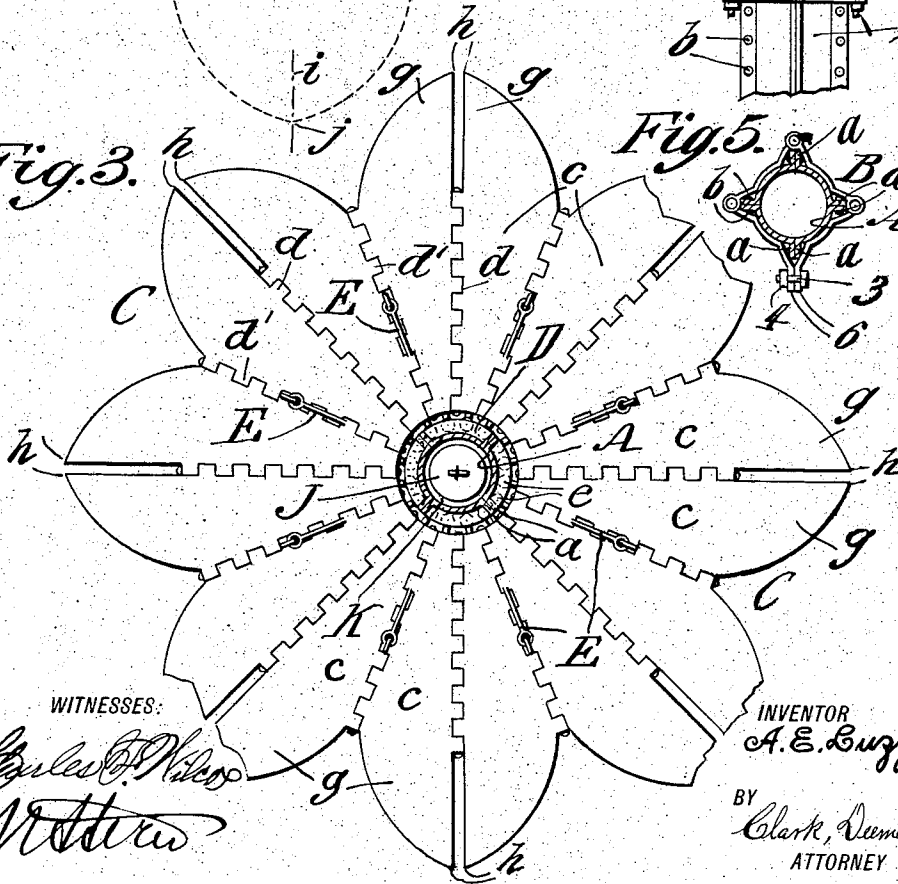
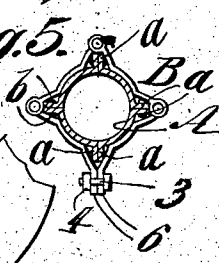


Fig. 5.



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4 SHEETS—SHEET 2.

Fig. 6.

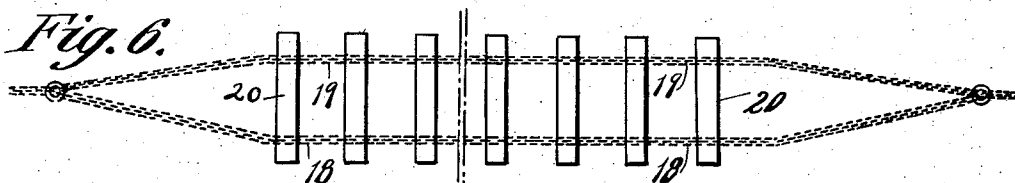


Fig. 8.

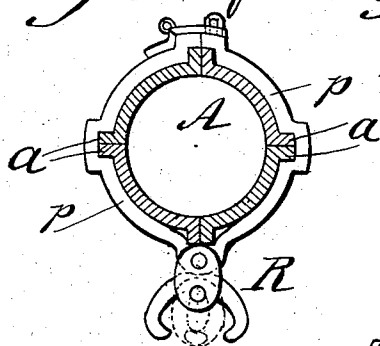


Fig. 7.

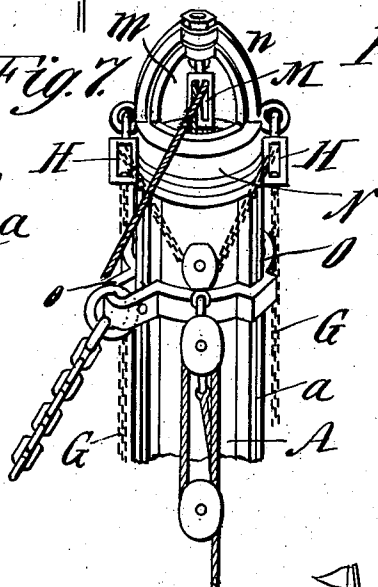


Fig. 9.

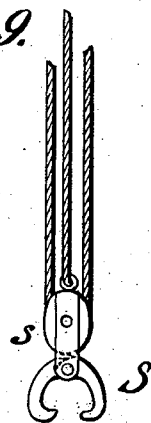
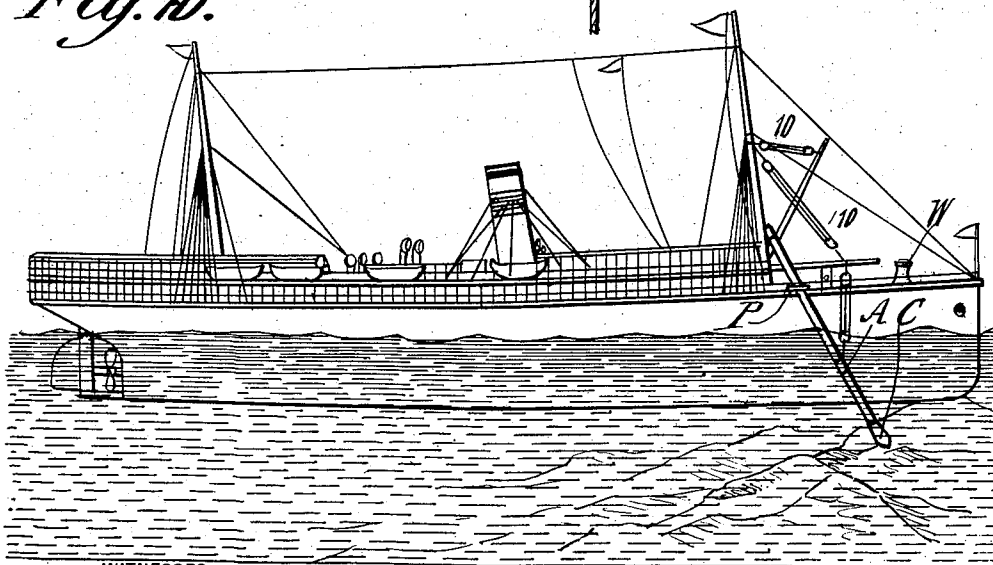


Fig. 10.



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4 SHEETS—SHEET 3.

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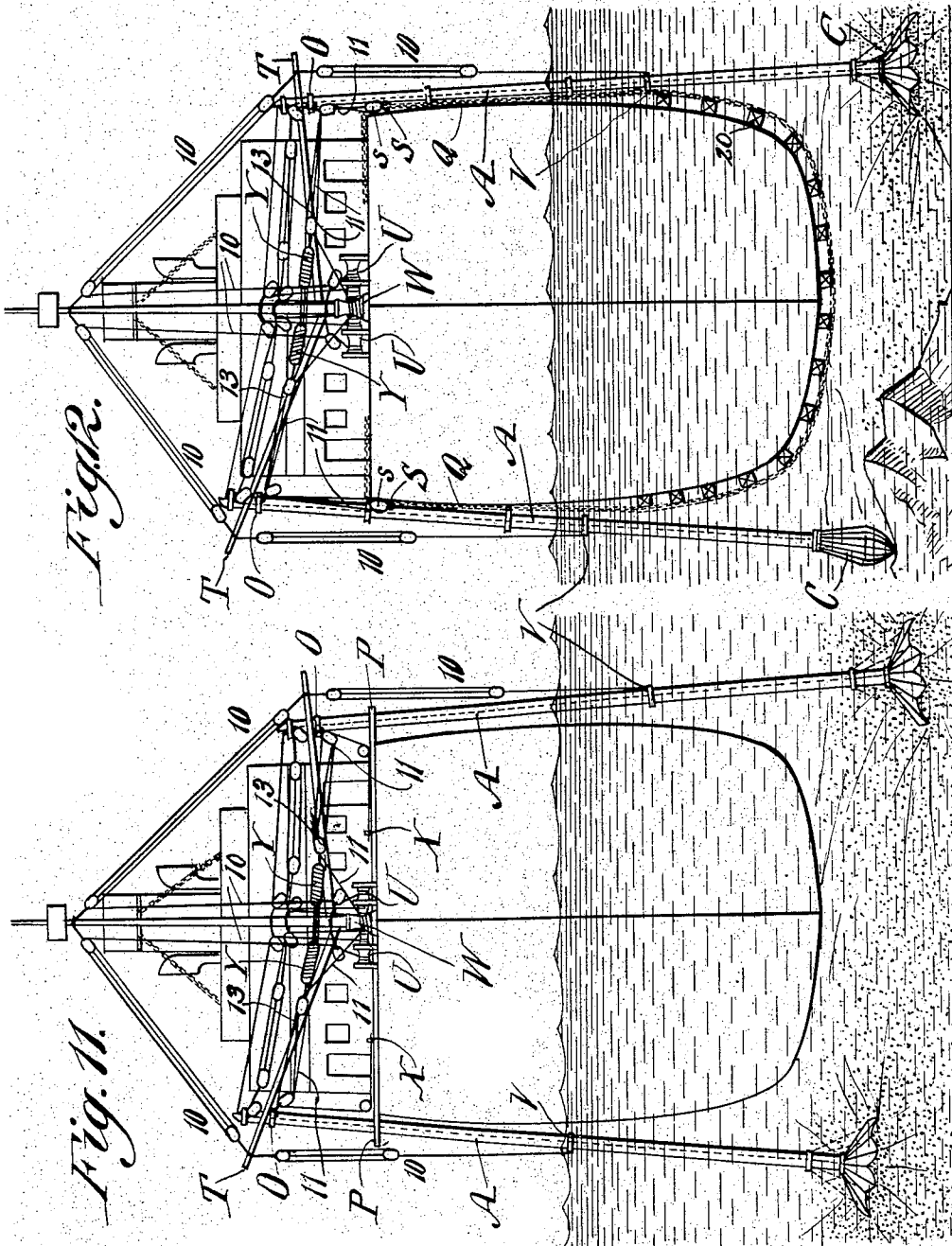


Fig. 12.

Fig. 11.

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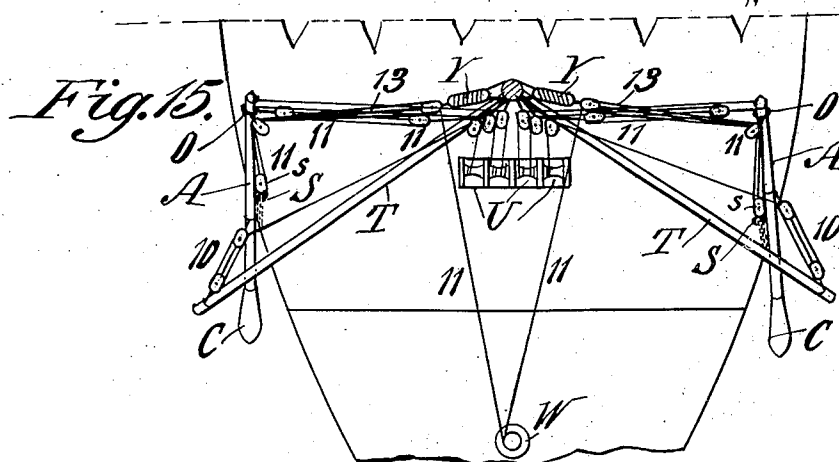
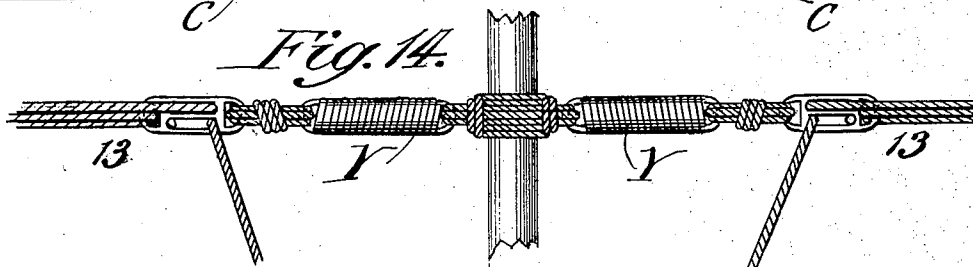
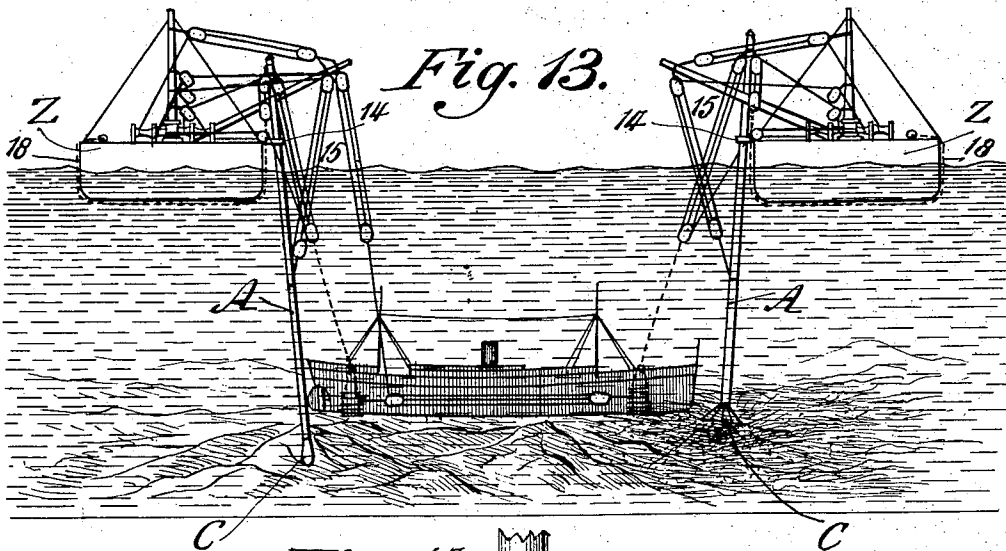
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4 SHEETS—SHEET 4.



WITNESSES.

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VESSEL-RELEASER.

1,058,246.

Specification of Letters Patent.

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Application filed April 20, 1912. Serial No. 692,078.

To all whom it may concern:

Be it known that I, ARTHUR E. LUZZI, a citizen of the United States, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Vessel-Releasees, of which the following is a specification, reference being had to the accompanying drawing, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to vessel releasers; the principal object thereof being to provide efficient and handy means for releasing either grounded or sunken heavy-tonnage vessels from a bed or bottom of any character, such as: rock, mud, coral, sand, etc.

Further objects are to provide a device which is adaptable for use in connection with the winches, windlasses, derrick booms, gearing and tackle commonly carried by all vessels of any considerable capacity or tonnage; which is durable and simple in construction; which is susceptible of being stored and carried within a limited space on the vessel's deck, and which can be rapidly placed in operative position when required for use, whereby the vessel may be quickly released.

The invention is operable by means of the motive power plant of the vessel, and comprises principally supporting columns of novel construction, hereinafter fully described and specifically set forth in the annexed claims.

In the accompanying drawings, forming part of this specification, Figure 1, is a vertical sectional view of the lower end part of a column, forming part of my invention; Fig. 2, a similar view of the upper end part of said column; Fig. 3, a sectional plan view taken on the line 3—3, of Fig. 1; Fig. 4, is a side elevation of part of a column comprising two sections coupled together; Fig. 5, is a cross sectional view taken on the line 5—5, of Fig. 4; Fig. 6, is a plan view of a chain and timber support for attachment around the hull of the vessel; Fig. 7, a perspective view of the upper end of the column, with operating gear attached; Fig. 8, a cross sectional view of the column having a hanger or guide attached thereto, for connection with the chain support; Fig. 9, a side view of a pulley block, for connection with a chain; Fig. 10, is a side view illustrating a grounded steam ship rigged with

my improved releasing means; Fig. 11, a front view of the steam ship, drawn on an enlarged scale, and Fig. 12, is a similar view illustrating a modification; Fig. 13, is a side view of a sunken vessel represented as being raised by the application of my invention; Fig. 14, is a detail view of part of the operating gear; Fig. 15, is a plan view of the bow of a vessel having my invention attached thereto.

Referring to the accompanying drawings, A, designates a tubular column, composed of metal, preferably steel, which is circular in cross section and comprises a plurality of segmental sections each having radially extended flanges *a*, said sections being connected to each other by means of rivets *b*, whereby a structure of great stability is provided. This column may be of any required length demanded by the draft of the vessel being operated upon. When very long columns are required, for the purpose of raising sunken vessels, as hereinafter described the column is made in sections, as 1, 2, Fig. 4, of the drawings; these are connected and held together by means of couplings B, which respectively comprise segmental sections, hinged at their points of intersection, whereby they are readily detachable from the column; and they are held in place around the column sections 1 and 2, by means of bolts and nuts 3 and 4, which lead through flanges 6, forming part of said coupling. Secured to the lower end of the column A, is a folding base C, which is conical in shape and is adapted to rest on a soft bottom, as sand or mud, when opened. This base comprises a plurality of segments *c*, which are hinged together at their points of intersection *d*, *d'*, and they are mounted on the column A, by means of spherical extensions *e*, formed on said segments, and sockets *f*, formed in the periphery of a collar D, which is secured to the lower end of the column A. When the device is used on a soft bottom the base C, is maintained open, as shown by Fig. 1, of the drawings, thus presenting a shallow cupped surface not liable to sink deeply into said bottom, and providing a base which is readily removable.

The segments of the base C, are respectively provided with integral wings *g*, of a shape substantially as shown in Figs. 1 and 3, of the drawings. These, when the base is folded, meet at their points *h*, at a common central point located on a vertical

line *i*, beneath the vertical center of the column A, thus presenting a common point of contact *j*, as shown by dotted lines, Fig. 1, of the drawings, which illustrate the folded shape of the base. In this folded shape the base is employed for contact with hard bottom, as rock. Alternate joints of the base C, (the outwardly folding hinged joints *d'*), are in outward connection with rods E. These engage a sliding sleeve F, which is operated by means of chains G, which pass over pulleys H, attached to the head of the column A, and lead to suitable operating tackle whereby the sleeve may be raised and lowered; when the sleeve is raised, as shown by full lines Fig. 1, of the drawings the base C, is maintained in open position. The hinged joints *d*, of the base C, which fold inwardly when the base is closed are each in connection with a chain I; these chains converge at a central point and connect with a depending eye formed on a plate J, which rests on an annular bushing K, secured within the lower end of the column A. Leading upwardly from and connected to the upper surface of the plate J, is a chain L, which passes over a pulley M, for engagement with suitable operating tackle. In operation, when it is desired to close the base, the chains G, are slackened and the chain L, is drawn upwardly until the base is closed into position shown by dotted lines Fig. 1, of the drawings. Upon the top of the column A, is a cap N, having a dome *n*, with an opening *m*, therethrough affording a passage way for the cables or chains of the operating tackle. The pulley M, is suspended within the said dome, and the pulleys H, are suspended from the outside of the cap N. Around the column A, near the top thereof is a fixed sleeve O, having a loop *o*, for connection with a chain or cable forming part of the operating tackle, hereinafter described.

The device when in use is run through guides extended from the sides of the vessel. These may be secured to the deck as shown at P, Figs. 10 and 11, of the drawings, or they may be connected to a chain Q, which is passed laterally around and under the hull of the vessel, and secured thereto. The latter named guides comprise two hinged sections *p*, Fig. 8, of the drawings, which are closed around the column and fastened together at *q*, said guide being provided at its hinged part with a clip R, for engaging the links of the chain Q. A similar clip S, Fig. 9, of the drawings, is connected to a pulley block *s*, forming a part of lifting tackle, said clip adapted for engagement with the chain Q.

In operation, when the vessel is grounded, head on, as shown by Fig. 10, of the drawings, columns A, are run through guides one each on the starboard and port sides of the

vessel, near the bow, and extended downwardly and forwardly at a desired angle, approximately as shown in Fig. 10, of the drawings, the bases of the columns being either open or closed, depending upon the nature of the bottom, which is ascertained by soundings. The columns are raised and lowered by means of suitable block and tackle gearing 10, connecting with the derrick booms T, and operated by the winches U. Suitable sleeves V, being fixed to the columns A, for engagement with the said tackle 10. Having placed the columns as described above, adaptable block and tackle 11, is interposed and connected between the windlass W, and the sleeves O, of the columns A, the terminals of said tackle fixed, as at X, whereby when the tackle is drawn and pulled taut by said windlass the columns are pressed downwardly and the bow of the vessel carried upwardly until it is released. To provide a cushion for the tackle and prevent breakage thereof by pounding of the vessel flexible connections, comprising helical springs Y, and auxiliary tackle 13, are interposed between the mast and the heads of the columns.

When the device is employed for raising sunken vessels, elongated columns are used. These engage guides 14, on barges Z, and the lifting tackle 15, is connected to a cradle placed beneath the hull of the sunken vessel. The cradles each comprising double chains 18, 19 and wooden cross beams 20, as shown by Fig. 6, of the drawings. The cradle may also be employed for releasing grounded vessels, as shown by Fig. 12, of the drawings.

I do not confine myself to any specific arrangement of tackle, motive power nor lifting mechanism, as under the scope of my invention I am entitled to variations depending upon requirements of different cases. Neither do I confine myself to use of the columns in the specific positions as shown in the drawings, for they may be used in various places upon the vessel's hull. When the vessel is grounded stern first the releasing columns are placed aft instead of forward; and in case of a broadside grounding they are placed both fore and aft.

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

1. In a vessel releaser, the combination, with a tubular column having a folding base of conical contour, said base embodying a plurality of segments hinged together at their points of intersection, and means securing said base to said column; of means for folding said base comprising a plurality of chains engaging the inner parts of alternate joints of said base, and a main chain attached to their converging ends, whereby an upward pull on said chain folds the base,

and rods connected outwardly to the other joints of said base and to a sleeve on said column, and chains leading upwardly from said sleeve, whereby when said chains are
5 pulled upwardly the base is opened, substantially as shown and described.

2. A vessel raiser comprising a tubular column, a folding base attached thereto, said base embodying a conical cup comprising a
10 plurality of segmental plates hinged to each other at their points of intersection, a plurality of chains for closing said base, said chains attached, one each to the inner parts
15 of alternate joints of said base, and an operating chain attached to the converging ends of said chains and leading upwardly through said column, and a plurality of rods attached outwardly on each of the other
20 joints of said base, and a sleeve surrounding said column and connected to the upper end of said rods, and operating chains leading from said sleeve exteriorly of the column, and pulleys at the upper end of said
25 column for engaging the three said operating chains, said column having a fixed sleeve upon its upper end part for engaging an operating chain or cable, and a centrally located fixed sleeve also for engaging
30 an operating chain or cable, the device adapted for attachment to the hull of a vessel and to be operated by the motive power thereof, substantially as shown and described.

3. A vessel releaser comprising a tubular
35 column having a folding base of conical contour attached to its lower end, said base embodying a plurality of segmental plates, hinged at their points of intersection and adapted to be alternately folded inwardly
40 and outwardly, and means for folding and unfolding said base, substantially as shown and described.

4. A vessel releaser comprising a tubular column composed of metal and having a
45 folding base of conical contour attached to its lower end, and ball and socket joints connecting said base to said column, said base embodying a plurality of metal plates of segmental contour, hinged at their points
50 of intersection, and means connected alternately inwardly and outwardly to the joints of said base whereby it may be folded and

unfolded, substantially as shown and described.

5. The combination, of a vessel releaser 55 comprising a tubular column having a folding conical base embodying a plurality of segments hinged together, and a guide for said column, and means for folding and unfolding said base comprising chains; with a
60 vessel, means for securing said guide to said vessel, and block and tackle gearing and lifting mechanism connected with said columns, and lifting mechanism and block and tackle
65 gearing connected with said chains, whereby the base of the column may be folded and unfolded, and elastic gearing between said column and the mast of the vessel, said gearing comprising a spring and block and
70 tackle connections, and motive power for operating said mechanisms, substantially as shown and described.

6. The combination of a portable vessel releaser comprising a tubular column embodying a plurality of sections, detachable
75 couplings connecting said sections, and a folding base of conical contour, said base attached to the lower end of said column, and ball and socket connections between said column and said base, said base embodying
80 a plurality of segmental plates hinged to each other at their points of intersection, and a plurality of chains for closing said base, said chains attached, one each to the inner parts of alternate joints of said base, 85
and an operating chain attached to the converging ends of said chains and leading upwardly through said column, and a plurality of chains attached outwardly to the other joints of said base and leading up- 90
wardly and exteriorly of the column; with means for operating said column and chains comprising lifting mechanism, block and tackle gearing and motive power, and a vessel and means connecting said column there- 95
to, substantially as shown and described.

In testimony that, I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this sixteenth day of April, 1912.

ARTHUR E. LUZZI.

Witnesses:

CHARLES F. WILCOX,
N. STERN.