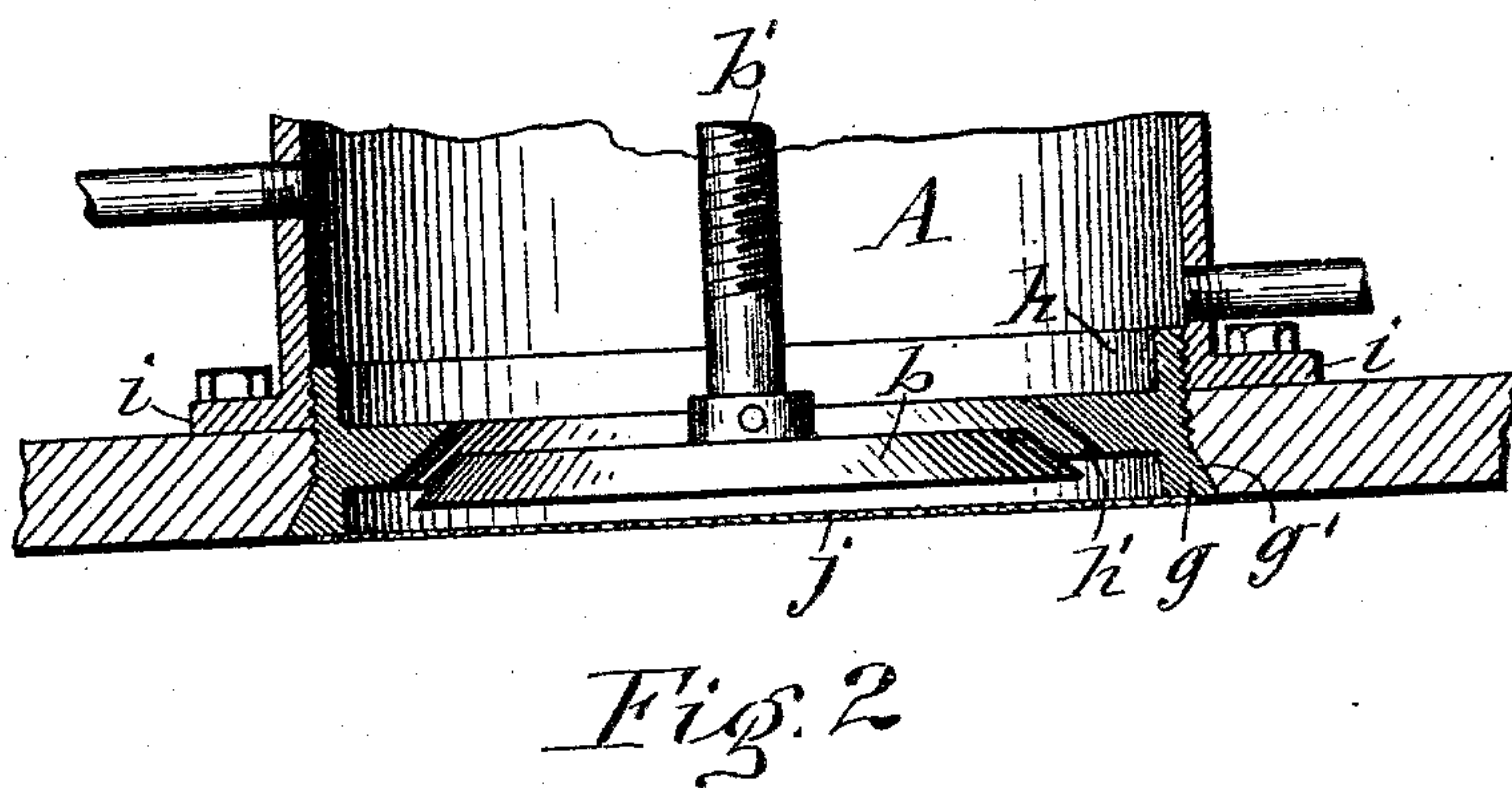
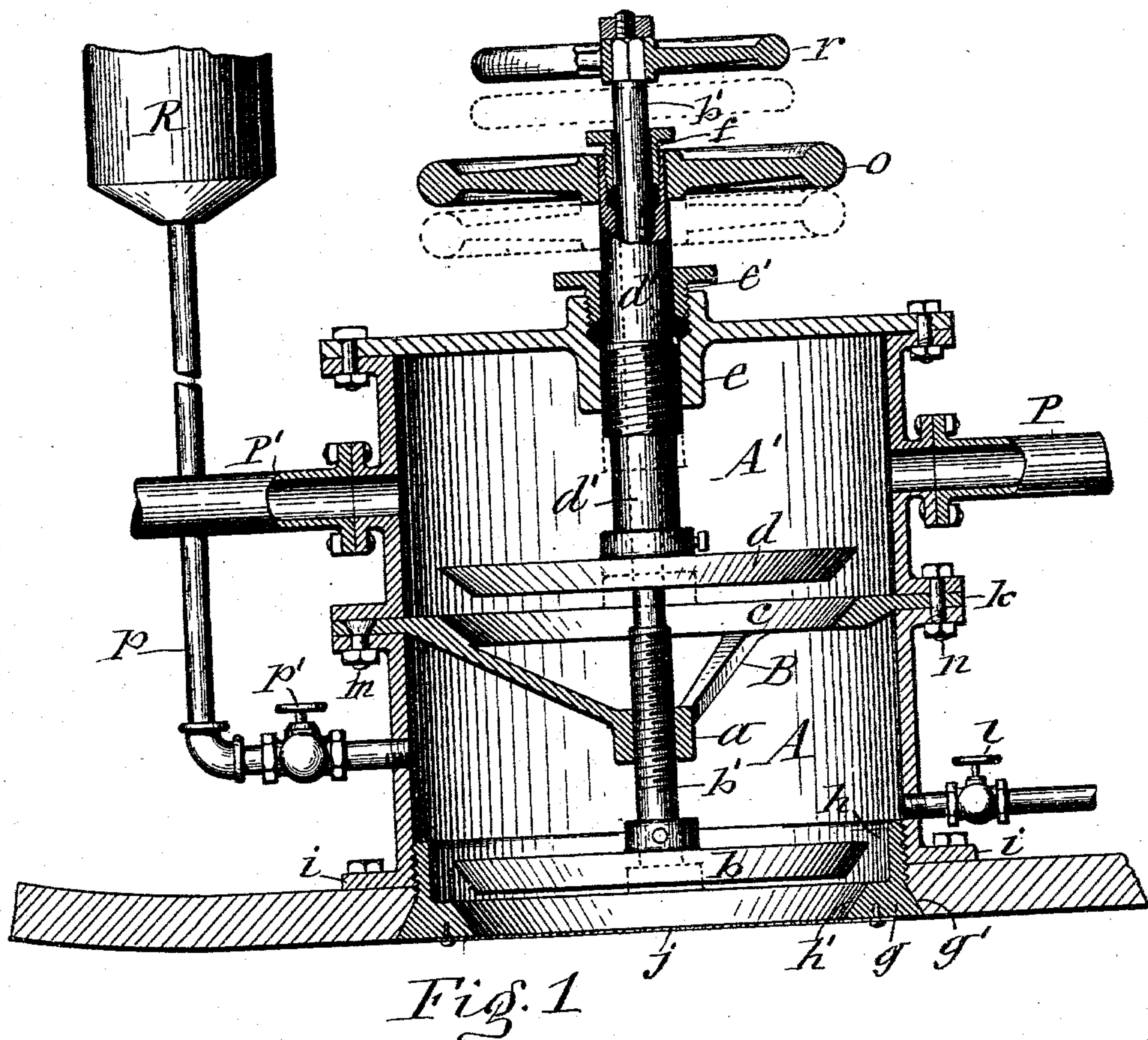


P. T. PERKINS.
SEA COCK FOR VESSELS.

Patented Dec. 17, 1895.

No. 551,473.



WITNESSES:

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UNITED STATES PATENT OFFICE.

PARDON T. PERKINS, OF OSWEGO, NEW YORK, ASSIGNOR OF SEVENTEEN THIRTY-SECONDS TO THOMSON KINGSFORD, OF SAME PLACE.

SEA-COCK FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 551,473, dated December 17, 1895.

Application filed April 20, 1895. Serial No. 546,504. (No model.)

To all whom it may concern:

Be it known that I, PARDON T. PERKINS, of Oswego, in the county of Oswego, in the State of New York, have invented new and useful Improvements in Sea-Cocks for Vessels, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the devices which are employed in the interior of steamboats and other navigating vessels and are arranged below the water-line of the vessel and communicate with the water at the exterior of the vessel for the purpose of receiving water to be utilized in the vessel.

The invention consists in an improved construction and combination of the component parts of a sea-cock, which is doubly safe from being broken by the freezing of water within the said cock while the vessel is laid up during the winter season, and said cock has its component parts detachable, so as to afford ready access for repairing or renewing the same, all as hereinafter more fully described, and set forth in the claims.

In the annexed drawings, Figure 1 is a vertical transverse section of a sea-cock embodying my invention, and Fig. 2 is a sectional view of a modification of the primary valve of the well.

Similar letters of reference indicate corresponding parts.

The barrel or case of the cock I form of two separable end-sections A and A'. The lower section A is provided at its base with the outward circumferential flange *i* by which it is seated upon the skin of the vessel, to which it is firmly secured by bolts passing through said flange.

In the usual water-inlet opening in the hull is snugly fitted the ring *g*, which is formed with an outwardly-sloping exterior at its bottom portion, as shown at *g'*, which is tightly wedged into a correspondingly-beveled bottom portion of the opening in the hull. The upper part of this ring is of the form of a gland *h* which is screw-threaded externally and secured in a screw-threaded bottom portion in the interior of the case-section A, and by screwing said ring firmly into said section the aforesaid sloping bottom portion *g'* becomes

tightly wedged in the hull of the vessel. The opening in the ring is spanned by the usual strainer *j*, which is fastened to the under side of the ring. Immediately above this strainer is the valve-seat *h'* for the valve *b*, which I designate the primary valve in contradistinction to a secondary valve hereinafter described. To the lower section A, as near as possible to the base thereof, is attached the waste-cock *l*. To said section, at a suitable point between the aforesaid valves, is also connected a pipe *p*, which is provided with a stop-cock *p'* and is extended to a suitable reservoir *r* for oil or other incongealable fluid. Said reservoir is located at an ample elevation above the water-line of the ship or vessel to cause the gravity of the fluid contained in said reservoir and pipe to overcome the pressure of the water entrapped in the case when the valve *b* is closed, as hereinafter described.

B designates a spider or skeleton diaphragm which spans the top of the lower section A and is formed with a horizontal annular rim K, by which it rests upon the outwardly-flanged top of said section and is secured thereto by means of bolts *m*, the heads of which are countersunk in the rim K, so as to be flush therewith.

The center of the spider B is formed with a vertical screw-threaded eye *a*, in which works a screw-threaded portion of the stem *b'* of the primary valve *b*, said stem extending above the top of the upper section, as more fully described hereinafter.

Upon the rim K is seated the outwardly-flanged bottom of the upper section A', which is detachably secured to the lower section A by bolts *n* passing vertically through the flanges of the two sections and intervening spider-rim. This section has connected to it the service pipe or pipes P P', which in a steam-vessel are connected respectively to the force-pump and to the condenser or to the feed-water pipe of the boiler, according to the style of engine used in the vessel. The top of the spider B is formed with an annular valve-seat *c* which is concentric to the eye *a*, and over this seat is the valve *d*, which is fastened to the lower end of a tubular stem *d'*, extending through and working in a screw-threaded sleeve *e* formed on the center of the

top of the cap of the section A', which latter is also provided with a stuffing-box *e'* surrounding the valve-stem *d'* to render the case water-tight. The upper end of this valve-stem 5 is provided either with a hand-wheel *o* or a suitable crank or wrench for turning said stem, whereby the valve is moved to and from its seat *c*.

The stem *b'* of the lower or primary valve 10 *b* passes freely through the interior of the tubular stem *d'* and projects sufficiently above the upper end thereof to receive a hand-wheel *r* or a suitable crank by which to turn the stem *b'*, and thereby open or close the primary valve *b*. The hand-wheel or crank *r* is 15 made detachable from the stem *b'* to allow the tubular stem *d'* to be slipped longitudinally from the stem *b'*. This, together with the detachable connection of the upper section A' with the lower section A, is an important feature of my invention, in that it affords ready access for repairing or renewing the component parts of the apparatus.

The separation of the two case-sections A 25 A' is effected by disconnecting the pipes P P', removing the bolts *n* and the hand-wheel *r*. The section A' with the tubular stem *d'* can then be lifted to carry said stem off over the upper end of the stem *b'* of the primary valve 30 *b*, which latter has been previously screwed down to its closed position. The upper end of the tubular stem *d'* has connected to it a stuffing-box *f*, which surrounds the stem *b'*, to make a water-tight joint thereat when all parts are united and in operative position. 35

The operation of the described sea-cock is as follows: During the navigating season of the vessel the stop-cock *p'* of the oil-pipe *p* and the waste-cock *l* are closed, and the two valves *b* 40 *d* are opened to allow the water to enter into the case A A' through the bottom thereof, from whence it is conducted by the service-pipes *p p'* to the place where it is to be utilized. At the closing of navigation, when the vessel is 45 to be laid up, the lower or primary valve *b* is to be closed and the secondary valve *d* and waste-cock *l* are to be opened and the stuffing-box *f* is to be loosened to give air-vent to the interior of the case. This allows the water 50 to escape through the waste-cock. Then the secondary valve *d* and stop-cock *l* are closed while the primary valve *b* is also retained closed. Then the stop-cock *p'* is to be opened to allow the oil to enter the case and form an 55 incongealable seal over the primary valve *b*. In the latter process the air displaced by the oil is allowed to escape from the interior of the case through the loosened stuffing-box *f*.

Although I prefer to arrange the primary 60 valve *b* to open upward from its seat or inward relative to the case, so as to bring the bottom of said valve as close as possible to the strainer *j* and thereby reduce to a minimum the space for forming ice between said 65 parts, yet I do not wish to be limited to this specific arrangement, inasmuch as other more important features of my invention do not

depend on such an arrangement. A modification of the arrangement of said valve is shown in Fig. 2 of the drawings, in which the 70 valve opens downward.

What I claim as my invention is—

1. The within described safety-sea-cock for a vessel, said cock comprising a case provided with a water-inlet from the exterior of the 75 vessel and a service-pipe connected to the case above said inlet, two independently operating valves in the case between said inlet and service-pipe for controlling the flow of water, an inlet for incongealable sealing fluid 80 to the space between the valves, and a waste-cock communicating with said space as set forth.

2. A vessel's sea-cock, consisting of a case provided with a water-inlet from the exterior 85 of the vessel, and service-pipes connected to the case above said inlet, a primary-valve for opening and closing the inlet and opening inward therefrom, a secondary-valve operating independently of said primary-valve and in- 90 terposed between the same and service-pipes, an inlet for incongealable fluid to the space between the valves, a waste-cock tapping said space, and an air-vent in the top of the case as set forth. 95

3. A vessel's sea-cock, consisting of a case composed of detachable sections secured endwise one upon the other, a water-inlet in the lower section, a valve for opening and closing said inlet, a valve-seat at the junction of the 100 case-sections, a valve on said seat and adjustable to control the communication between the interiors of the two sections, a waste-cock and an inlet for incongealable fluid tapping the lower section, service-pipes connected to 105 the upper section and an air-vent in the top of the case as set forth.

4. A vessel's sea-cock consisting of a case provided with a water-inlet in its base, and with a screw-threaded sleeve in the center of 110 its top, a primary-valve for opening and closing said inlet, a spider disposed transversely in the case above said primary valve and provided with a screw-threaded eye axially in line with the center of said valve, the stem of 115 said valve extending through and screw-threaded to work in said eye, a secondary valve above the spider, a tubular-stem attached to said valve working in the screw-threaded sleeve on the top of the case and receiving through it the stem of the primary 120 valve, cranks or hand-wheels on the protruding upper ends of said valve-stems, a waste-cock and an oil supply-pipe connected to the case between the two valves, and a service- 125 pipe connected to the case above the secondary valve as set forth.

5. A vessel's sea-cock consisting of a case provided with the water-inlet at its base, a primary-valve opening and closing said inlet, 130 a secondary valve above the primary-valve and operating independently thereof, service-pipes connected to the case above the secondary-valve, a waste-cock tapping the case im-

mediately above the primary-valve, an oil-reservoir located on the vessel above the water-line thereof and an oil-pipe leading from the reservoir to the case between the two valves thereof and provided with a stop-cock as set forth and shown.

6. A vessel's sea-cock composed of a case formed of two end-sections—A—A'—detachably secured to each other, the spider—B—secured to the top of the lower section and provided with the screw-threaded eye—*a*—in its center and with the valve-seat—*c*—, the valve—*b*— in the lower end of the lower section, the valve-stem—*b'*— extending through the top of the case and working in the afore-said eye, the secondary valve—*d*— over the valve-seat—*c*— and provided with the tubular-stem—*d'*—, receiving through it the valve-stem—*b'*—, the screw-threaded sleeve—*e*— and stuffing-box—*e'*— on the cap of the upper section receiving through them a screw-threaded portion of the valve-stem—*d'*—, the stuffing-box—*f*— on the upper end of the tubular-stem receiving through it the stem—*b'*—, a crank or hand-wheel fastened to the

upper end of the tubular stem, a crank or hand-wheel on the upper end of the stem—*b'*— and detachable therefrom to allow the tubular stem to be slipped longitudinally from the stem—*b'*— simultaneously with the removal of the upper case-section from the lower section, an oil supply pipe connected to the case between the two valves, and a service-pipe attached to the upper section as set forth and shown.

7. A vessel's sea-cock having the base of its case screw-threaded internally, the ring—*g*— formed with the outwardly sloping bottom portion—*g'*—, upwardly extending screw-threaded gland—*h*— and inwardly sloping valve-seat—*h'*— in combination with the valve—*b*—, opening upward from said seat and means for raising and lowering said valve as set forth.

In testimony whereof I have hereunto signed my name this 11th day of April, 1895.

PARDON T. PERKINS. [L. S.]

Witnesses:

J. J. LAASS,

C. L. BENDIXON.