

(No Model.)

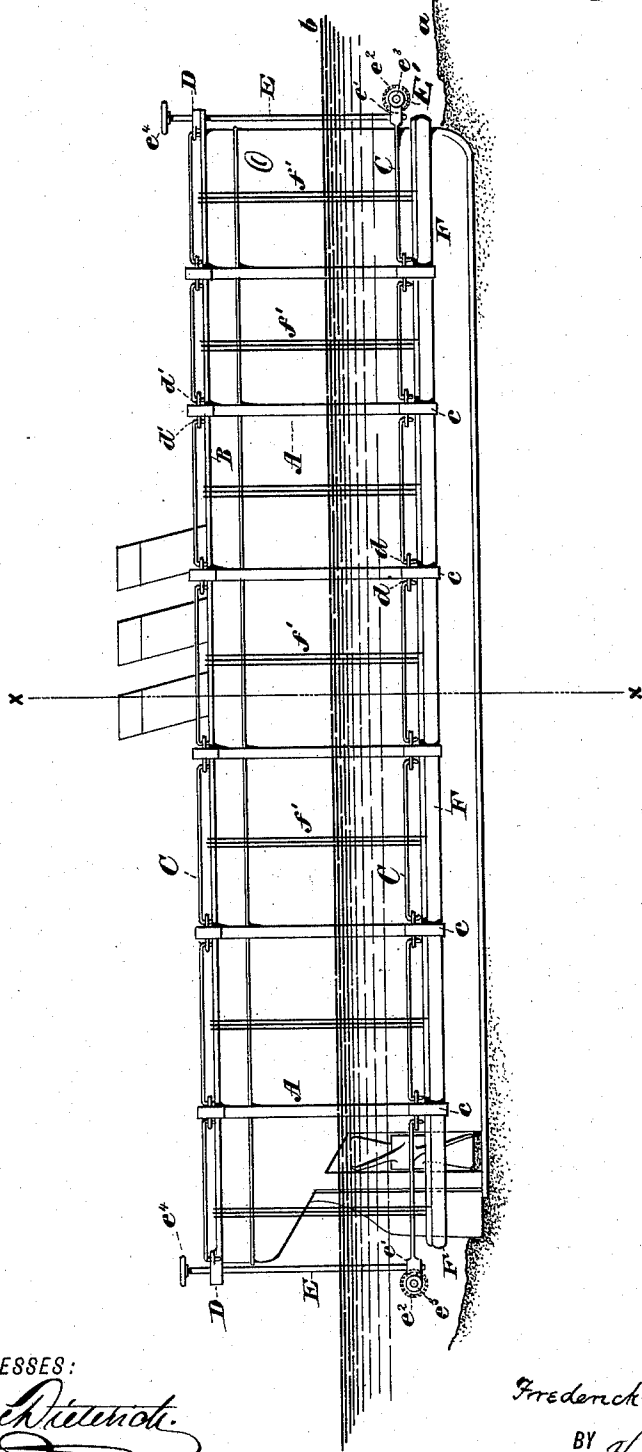
2 Sheets—Sheet 1.

F. GUTTENBERG.
APPARATUS FOR RAISING SUNKEN VESSELS.

No. 567,744.

Patented Sept. 15, 1896.

Fig. 1.



WITNESSES:
Gustav Kienrich.
John Kehlenbeck.

INVENTOR
Frederick Guttenberg
BY *N. Albertus Kesh*
ATTORNEY.

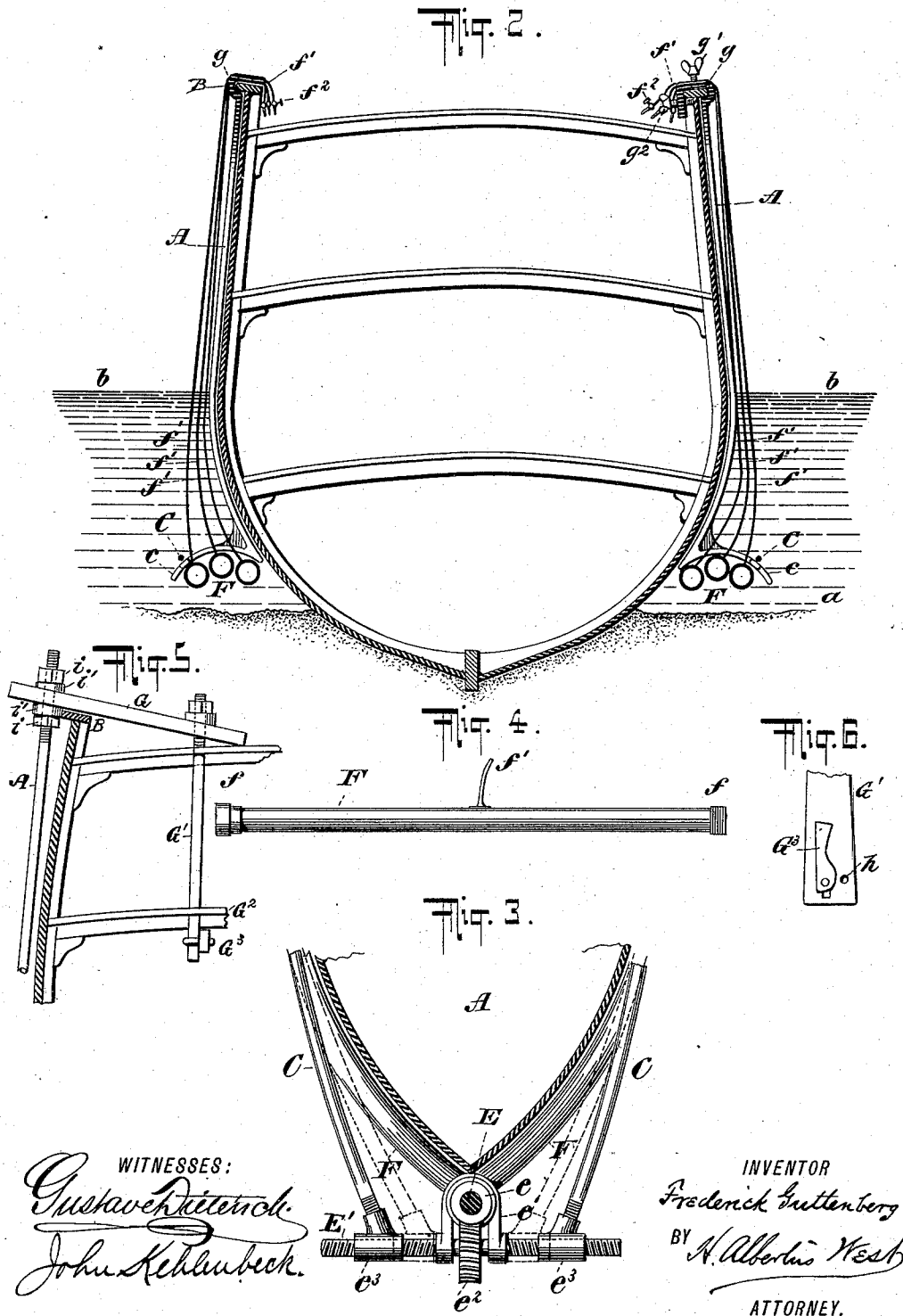
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UNITED STATES PATENT OFFICE.

FREDERICK GUTTENBERG, OF BROOKLYN, NEW YORK.

APPARATUS FOR RAISING SUNKEN VESSELS.

SPECIFICATION forming part of Letters Patent No. 567,744, dated September 15, 1896.

Application filed July 6, 1896. Serial No. 598,068. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK GUTTENBERG, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Apparatus for Raising Stranded Vessels, of which the following is a specification.

My invention relates to raising stranded vessels by means of apparatus which may be applied to the vessel from its deck.

In the accompanying drawings, to which reference is made, and which form a part of this specification, Figure 1 is a side elevation showing my new apparatus applied to the vessel, *a* representing the sand-line, and *b* the water-line on the hull of the vessel. Fig. 2 is a transverse sectional elevation taken on line *x x* of Fig. 1. Fig. 3 is an enlarged detailed plan view of the bow end of the vessel and apparatus. Fig. 4 is an enlarged detailed view of one of the sections of hose. Figs. 5 and 6 show modifications.

A A represent a series of strong stanchions, adapted to be firmly secured at their upper ends to the gunnel *B* or other part of the vessel to be raised. These stanchions are of a length to reach below the water-line *b*, and they are each provided at the lower end with a breast or arm *c*, which reaches out from the hull of the vessel, as shown in Fig. 2. Each stanchion is also formed with a pair of links or eyes *d d* near its lower end or on the arm *c* and with a like pair of eyes *d' d'* near its upper end to receive the spanners or braces *C C*, which brace each stanchion to its neighbor on either side. At the bow and stern of the vessel is secured, respectively, a journal clamp or block *D*, in which is journaled the upper end of a shaft *E*. The lower end of this shaft is provided with a worm *e*, Fig. 3, which is held by a yoke *e'* to mesh with a worm-nut *e²*, secured to a horizontal shaft *E'*. The ends of this shaft *E'* are formed, respectively, with right and left hand screw-threads, which work in collars or sleeves *e³ e³*, secured to the front ends of the spanners or braces *C*, as shown clearly in Fig. 3. By this construction the turning of the shafts *E E*, may be done by the cranks or hand-wheels *e⁴* at the upper ends thereof, the shafts *E'*, acting on the principle of turnbuckles, operate to

draw the spanners or braces and the whole framework close to the hull of the vessel and to unite the framework on both sides of the vessel firmly together, and causing the lower ends of the stanchions to approach the hull.

F F represent sections of flexible water-tight and air-tight pipes or hose. Each section is closed air-tight at ends by caps *f f*, which also constitute union pieces or couplings for the same at each end to the other sections of hose to form a long line or length of hose to pass around the hull of the vessel. Each section *F* of hose is provided with a small rubber or other suitable tube *f'*, which is provided with a valve like the valves used in pneumatic tires or with a cock *f²*, which may be opened and closed from the deck, and said tubes are adapted also to be connected with an air-pump, by which the sections *F* of hose may be inflated after they are lowered in place beneath the arms or breasts *c* of the stanchions. The said arms or breasts *c* of the stanchions are by preference curved outward and downward, as shown clearly in Fig. 2, so that the pipes or hose may be lowered over them and so that when the hose is inflated they will retain the hose in place and transfer the buoyancy due to inflation to the hull and cause the same to be lifted sufficient to float free of the sand. As here shown, the upper end of each of the stanchions is formed with a U-shaped keeper *g*, which embraces the gunnel-rail, as shown clearly in Fig. 2, and said keeper is by preference provided with two screws *g' g²* to connect the stanchion with the vessel, but I do not desire to be understood as limiting myself to this means for fastening the stanchions, as various other fastening means may be employed within the scope of my invention, as, for example, the stanchions may be held each by a strong bar *G*, as shown in Fig. 5, secured to the upper deck on the floor and gunnel by a rod or bar *G'*, passed through the same and down through the deck, where it may be connected to a beam *G²* by a stud or arm *G³*. This stud or arm is by preference pivoted to the bar *G* in front of a stop or limit pin *h*, which serves to lock the said stud or arm in horizontal position beneath the beam *G²*, as shown in Fig. 5. The stanchion is made adjustable longitudinally in the bar *G* by means of nuts and

washers *i i'* above and below the beam. It will be understood that in lowering the sections of hose they will be coupled together on the deck as they are paid out, and by lowering the same in a non-inflated condition the hose will sink of its own weight and by the action of the waves will dispose itself next to and alongside of the hull beneath the arms *c*, and on being inflated the hose will be held submerged by the said arms, and no matter how many courses of hose may be required the same will be held in a cluster by said arms close to the hull of the vessel, so that an unlimited amount of hose may be used, according to the exigencies of the case.

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

1. As a means for lifting stranded vessels, a series of stanchions formed with arms at their lower ends and adapted to be secured to the vessel at their upper ends, in combination with sections of water and air tight hose adapted to be connected together end to end and passed in a continuous length several times around the hull of the vessel from stem to stern, each section being provided with a separate inflating-tube by which each of the connected sections may be inflated separately from the deck substantially as described.

2. The series of stanchions, each formed with an arm at its lower end and adapted to be secured to the vessel at its upper end and provided with suitable loops or eyes, in combination with bracing-spanners for connecting the stanchions together, substantially as described.

3. The series of stanchions formed with arms at their lower ends, and spanners for connecting said stanchions together along the sides of the vessel, in combination with the bow and stern spanners connected to a rod having right and left hand screws, and a worm-gear and a crank-shaft for operating said rod, substantially as and for the purposes set forth.

4. The combination with the bow-spanners, of a stay-block in which is journaled the upper end of a shaft *E*, a worm *e* secured on the lower of said shaft, a horizontal shaft provided with a worm wheel or nut *e'*, complementary to the worm *e*, and a yoke *e'* for holding the said shafts and for holding the said worm and worm wheel or nut in engagement with each other substantially as described.

FREDERICK GUTTENBERG.

Witnesses:

H. A. WEST,
MILTON M. GOLDSMITH.