

(No Model.)

F. M. BARBER.
METHOD OF FLOATING STRANDED VESSELS.

No. 435,788.

Patented Sept. 2, 1890.

FIG. I.

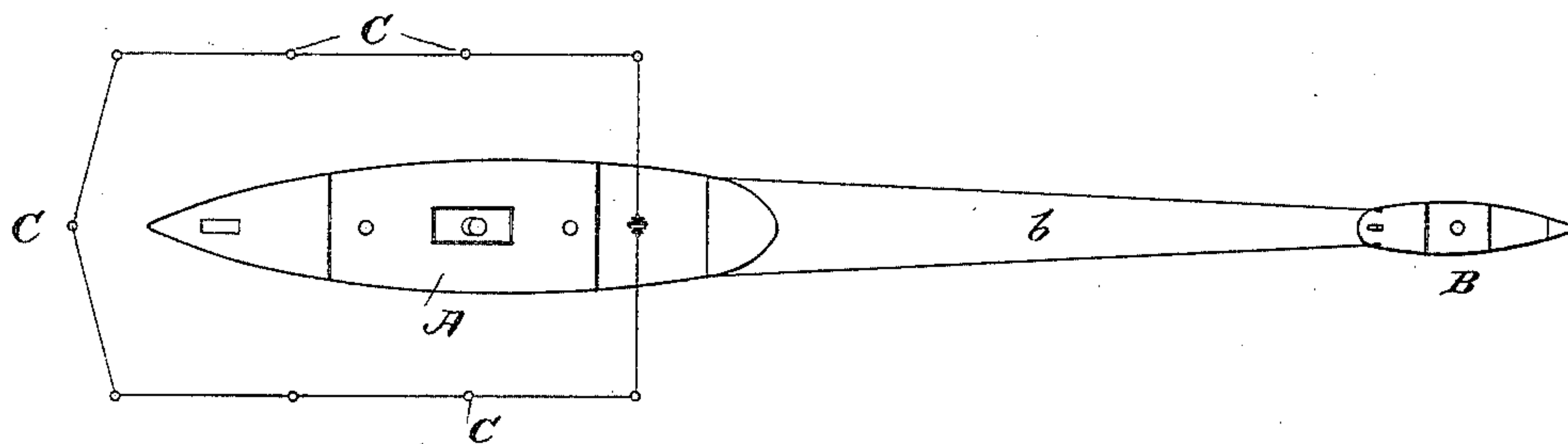


FIG. II.

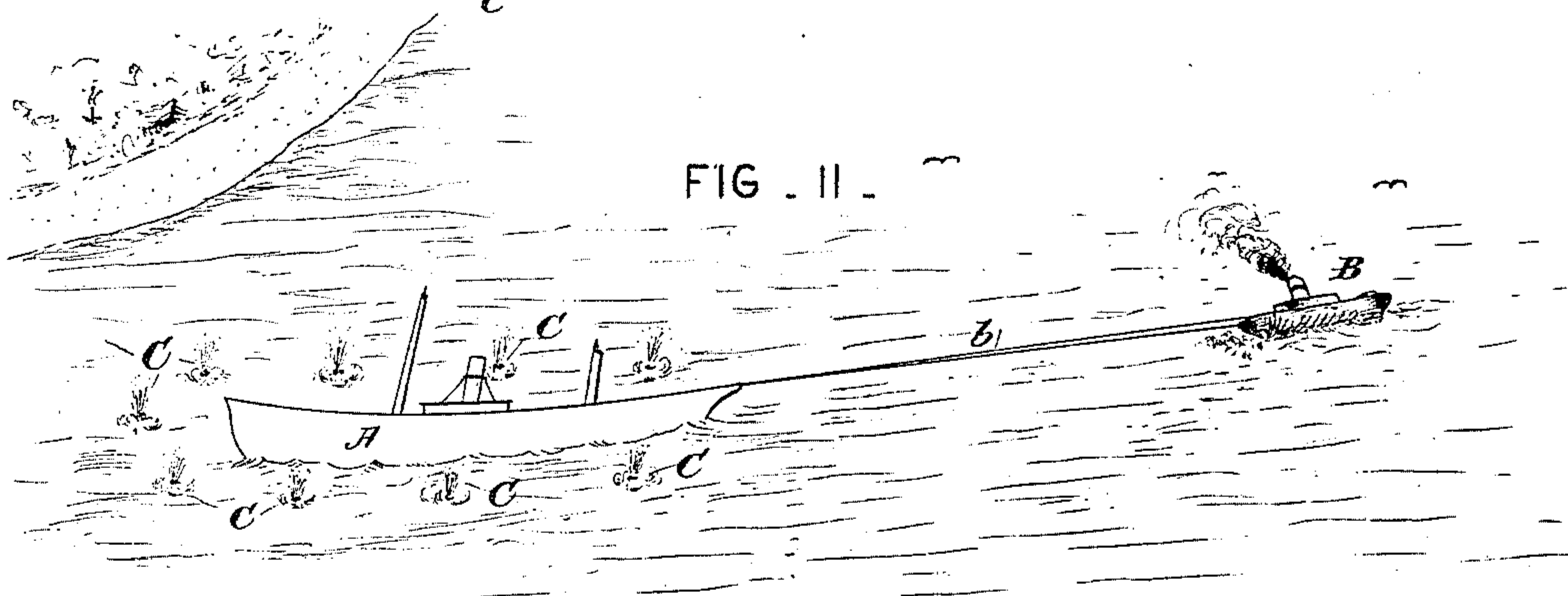
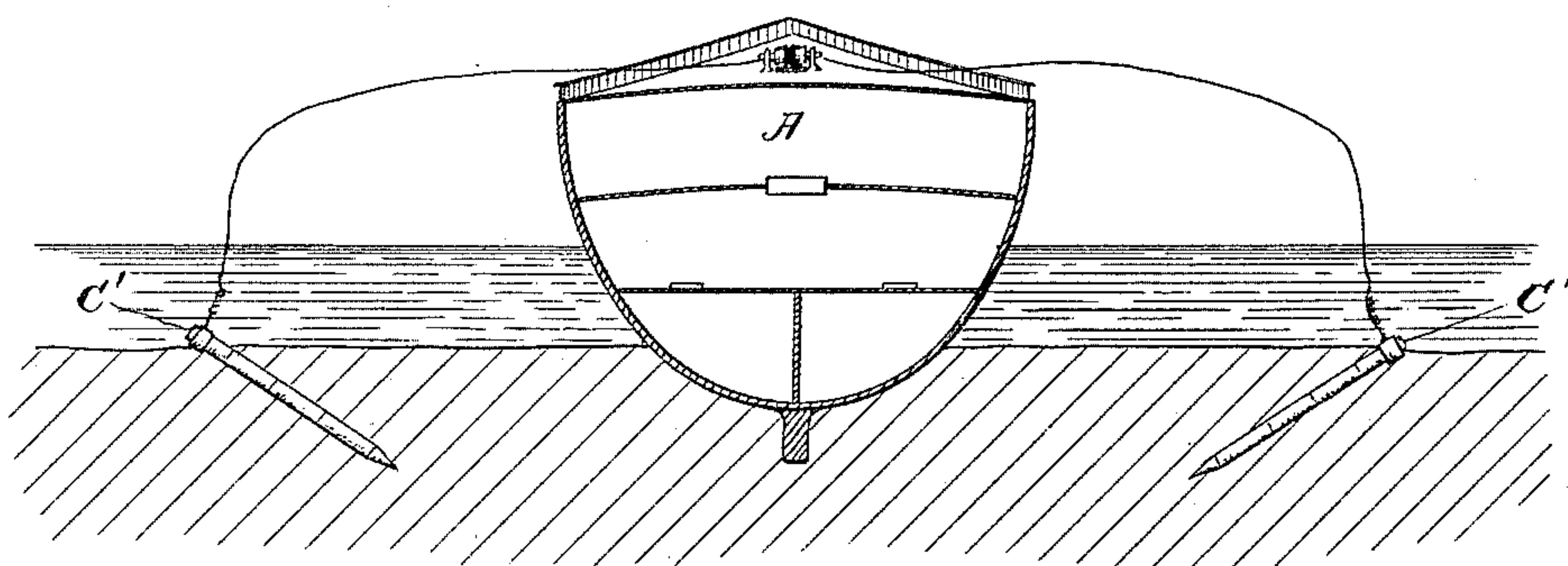


FIG. III.



Attest:
Geo. T. Smallwood.
Notary Public, Hogues

Inventor
Francis M. Barber
by Phelps & Harwood,
his attorneys

UNITED STATES PATENT OFFICE.

FRANCIS M. BARBER, OF WASHINGTON, DISTRICT OF COLUMBIA.

METHOD OF FLOATING STRANDED VESSELS.

SPECIFICATION forming part of Letters Patent No. 435,788, dated September 2, 1890.

Application filed March 5, 1890. Serial No. 342,754. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS M. BARBER, of Washington, in the District of Columbia, have invented a new and useful Method of Floating Stranded Objects, which method is fully set forth in the following specification.

When vessels are grounded and futile attempt is made to pull them off by an anchor or tug, it frequently happens that at the culmination of effort on the part of the tug if the slightest change of position can be produced in the stranded vessel, as by running a gang of men from side to side, or by setting a sail so as to list the ship, or by the wetting and shrinking of a hawser which has been laid out, this perhaps almost imperceptible loosening of the grasp of the ground upon the ship will be instantaneously taken advantage of by the steady pull which is being exerted upon the stern of the ship, which will thus be pulled into deep water.

I have found in experimenting with torpedoes that all degrees of shock and consequent jar and vibration can be given to a vessel according to the quantity, nature, and locality of the explosive. Thus one hundred pounds of gunpowder or thirty pounds of gun-cotton will infallibly blow a hole in the side of a ship with which it is in contact; but at a distance of twenty-five feet horizontally and ten feet vertically from the vessel using the torpedo the latter vessel while receiving a heavy jar is entirely uninjured. This is the regulation distance in the United States Navy. If the torpedo be near the bottom of a harbor, a deep hole will be made in the ground and the vessel using the torpedo will receive a heavy double shock.

My invention consists in producing by means of explosives—such as torpedoes or equivalent agencies—a jar or concussion upon a stranded vessel or other object at a time when the latter is under a heavy strain produced by a tug or other source of power. The explosives may be employed in such manner as both to produce the jar or concussion, as above stated, and also to excavate the ground or sand beneath or adjacent to the stranded object, thus opening a way for the water to enter and exert a lifting force. This plan should be pursued in cases of difficulty where

the stranded vessel does not yield to the combined action of the jar and pull.

Where considerable time has elapsed before attempt is made to remove a stranded vessel, the action of successive tides causes it to become very firmly embedded, so that ordinary methods are of no avail. In such case the torpedoes should be buried as deep as possible at low tide and in considerable number, so as to thoroughly loosen the bed formed by the vessel and open numerous fissures or channels beneath and around it. The water takes advantage of every opening thus formed and contributes materially toward the desired end of freeing the ship from the grasp of the sand. The greatest effect can of course be secured by firing the torpedoes at high tide. The torpedoes may be placed in such position that their explosion will exert upon the stranded object a pressure in the direction it is to be moved.

While it is preferred for greater convenience in carrying out the invention to employ torpedoes, it would obviously be an equivalent mode to prepare mines, as in blasting operations, and to explode these by electricity, as desired; or rockets may be at the proper moment discharged into or against the ground, preferably in an oblique direction, toward the vessel.

For the purpose of more fully explaining the said invention, reference will be had to the accompanying drawings, which form part of this specification, and in which—

Figure I is a diagram in plan; Fig. II, a side elevation, and Fig. III a cross-section showing the use of rockets.

A represents the stranded vessel or object, and B a tug for exerting a strain or traction upon the vessel through hawsers *b*. At the points C, a short distance from the vessel on either side, and preferably also ahead of the same, are placed the torpedoes or mines or other explosive agents, these being placed under water or upon or buried to a greater or less depth in the ground, according to the nature of the case. The explosives may be operated simultaneously or progressively.

As shown in Fig. III, rockets C' may be placed in proper position, preferably so as to point obliquely downward and toward the

stranded vessel, thus producing fissures or channels, causing the sand beneath the vessel to subside and opening a way for water to enter.

- 5 If the vessel A be very deeply embedded, it may be found necessary to effect a thorough disintegration of the bed formed by it before attempting to draw it off, and the number and position of the torpedoes or other
10 explosives that will be required to accomplish the desired result will depend on the conditions of each case. The effect of these operations may be such as to render it unnecessary to cause a further concussion where the
15 strain or traction is applied.

I claim as my invention—

The method of floating a stranded vessel or other object by exploding torpedoes or like agents beneath the surface of the water in the vicinity of the same, thereby causing a 20 shock or concussion and at the same time exerting traction thereon, as by hawsers, from a point outside the vessel, substantially as described.

In testimony whereof I have signed this 25 specification in the presence of two subscribing witnesses.

FRANCIS M. BARBER.

Witnesses:

PHILIP MAURO,
RAPER L. HOGUE.