

RESERVE

# PATENT SPECIFICATION

167,221



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Complete Left: Jan. 24, 1921.

Complete Accepted: July 22, 1921.

## PROVISIONAL SPECIFICATION.

### Improved Means for the Propulsion of Navigable Vessels.

I, WILLIAM BRITAIN, of 28, Lambton Road, Hornsey Rise, London, N., Manufacturer, a subject of the King of Great Britain and Ireland, do hereby declare the nature of this invention to be as follows:—

This invention relates to the propulsion of navigable vessels and the object is to provide a simple and effective means embodying the use of compressed air as the propelling medium, which, whilst being of especial utility for use with toy boats may be also applied for use with other vessels.

Near the rear of the boat is an outlet leading to the exterior of the hull well below the water line and the hull is constructed or caused to have its maximum draught at that point. From said outlet there extends upwards in a rearwardly inclined direction under the stern of the vessel, a channel or channels into which the air emitted from said outlet is caused to exert impact on the water and displace the head of water from the outlet

upwardly and rearwardly in the channel or channels according to the depth of immersion of the vessel at the stern, and this displacement will cause the effective propulsion of the vessel in a forward direction at a speed depending upon the amount of compressed air allowed to be discharged through the outlet.

The air may be driven through the outlet by air or steam injector or pumps of any suitable description that will exert sufficient pressure to overcome the head of water opposed to it by reason of the depth of the outlet below the water level.

It will be obvious that according to requirements I may provide more than one outlet and channel and arrange the control of said outlets to emit air from any one or more as may be required.

Dated this 22nd day of April, 1920.

For the Applicant,  
HERBERT HADDAN & Co.,  
Chartered Patent Agents,  
31 and 32, Bedford Street, Strand,  
W.C. 2, London.

## COMPLETE SPECIFICATION.

### Improved Means for the Propulsion of Navigable Vessels.

I, WILLIAM BRITAIN, of 28, Lambton Road, Hornsey Rise, London, N., Manufacturer, a subject of the King of Great Britain and Ireland, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to the propulsion of navigable vessels and the object is to provide a simple and effective means embodying the use of compressed air as

the propelling medium, which, whilst being of especial utility for use with toy boats may be also applied for use with other vessels.

The invention relates to that class of vessel in which compressed air is caused to issue from an outlet leading to the exterior of the hull below the water line, from which outlet there extends upwards in a rearwardly inclined direction under the stern of the vessel, a channel or channels into which compressed air

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emitted from said outlet is caused to exert impact on the water and displace the head of water from the outlet upwardly and rearwardly in the channel or channels this displacement causing the effective propulsion of the vessel in a forward direction at a speed depending upon the amount of compressed air allowed to be discharged through the outlet.

10 The invention comprises a container within the vessel in which compressed air is stored, the compressed air issuing from said container through a needle valve or equivalent leading to a narrow chamber in the base of the hull provided with transverse outlets.

An embodiment of the invention as applied to toy boats is illustrated in the accompanying drawings.

20 Fig. 1 being a sectional side elevation. Fig. 2 a cross section thereof on line 2—2 of Fig. 1.

Fig. 3 a sectional detail view.

Referring to the drawings the hull *a* of the vessel, near the stern or under the counter, of each side of the keel *b* is provided with a bilge keel or deflector *c* forming between itself and the hull a channel or wide groove *c*<sup>1</sup> inclined upwardly and rearwardly. Within the hull of the boat is a cylinder *d* serving as a container for the compressed air which may be pumped in through the valve *e* and which is discharged from the container under pressure through a pipe *f* into an outlet *g* the passage *g*<sup>1</sup> through which is controlled as by a needle valve *h* operated by a handle *i*. The compressed air passes through the outlet to a narrow chamber *j* in the base of the hull, this

chamber having two discharge transverse apertures, *k*, one to each side of the keel through which the air will issue transversely of the length of the vessel at high pressure and be deflected by the bilge-keels *c* up along the grooves or channels *c*<sup>1</sup> to act on the water to propel the boat.

The hull of the boat is constructed or caused to have its maximum draught at the stern and the compressed air issuing from the respective outlets into the grooves or channels *c* will displace the head of water, existing according to the depth of such immersion, upwardly and rearwardly in said channels and thus propel the boat.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

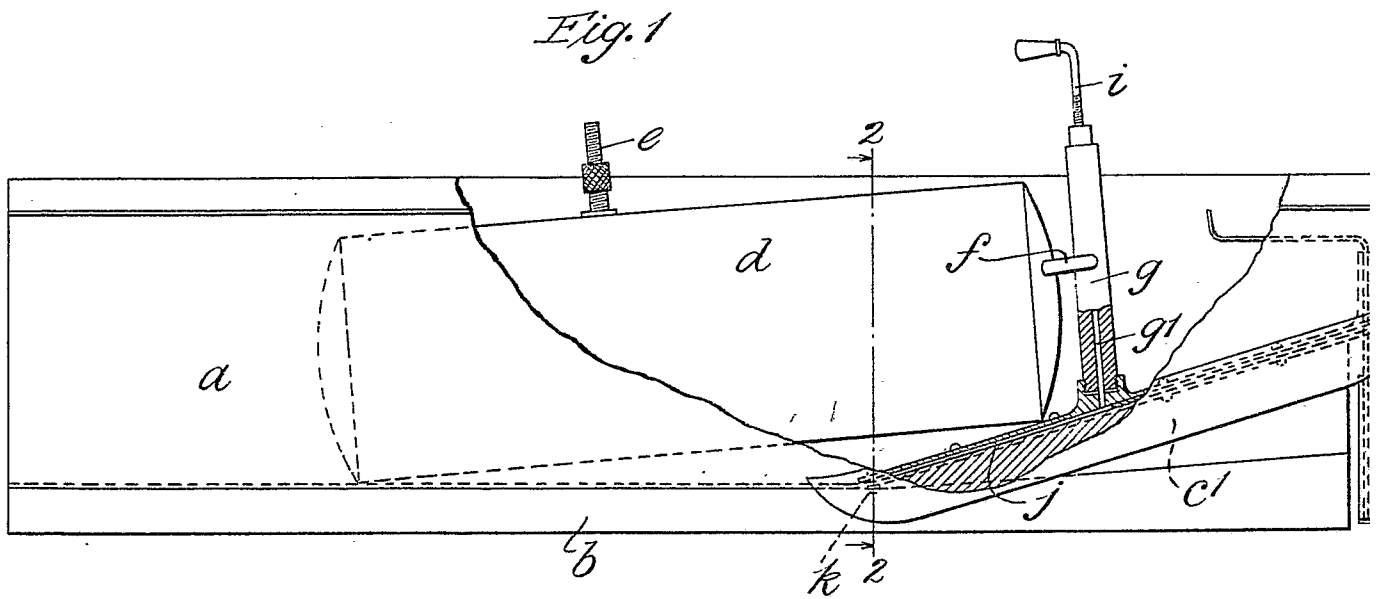
1. Means of the character hereinbefore specified for propelling vessels in which the compressed air is stored in a container within the vessel, and issues from said container through a needle valve or equivalent leading to a narrow chamber in the base of the hull provided with transverse outlets, substantially as described.

2. Means for propelling vessels having parts arranged, combined and adapted for operation as hereinbefore specified.

Dated this 24th day of January, 1921.

For the Applicant,  
HERBERT HADDAN & Co.,  
Chartered Patent Agents,  
31 and 32, Bedford Street, Strand,  
W.C. 2, London.

[This Drawing is a reproduction of the Original on a reduced scale]



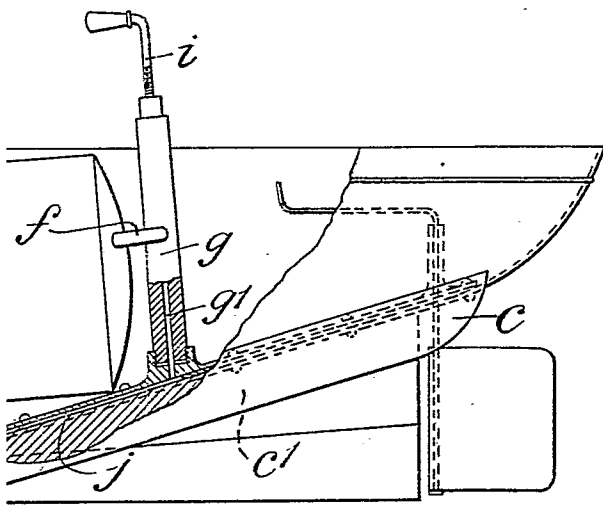


Fig. 2.

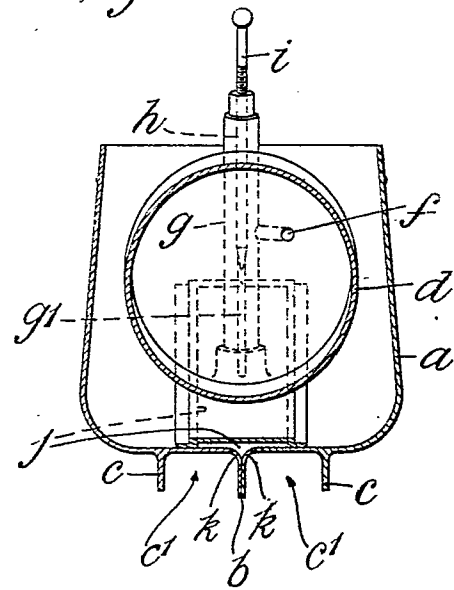
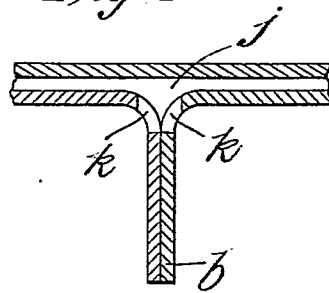
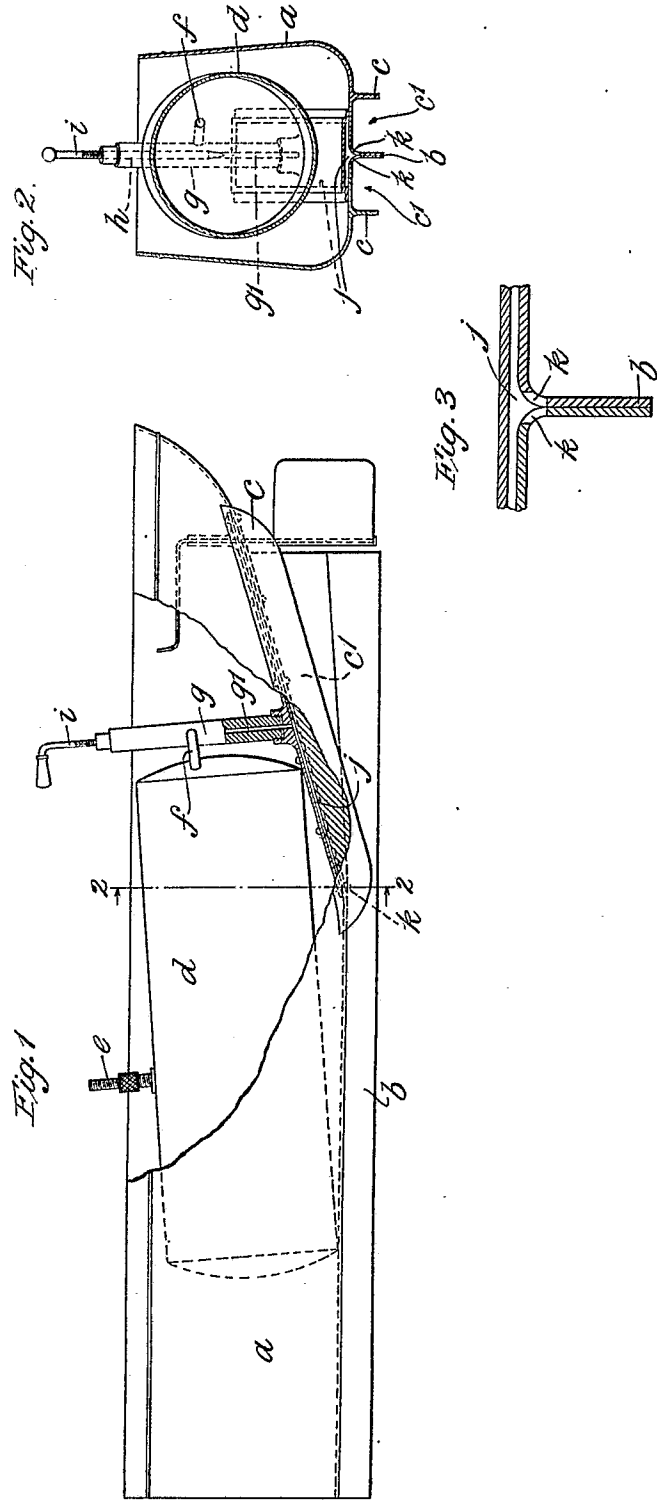


Fig. 3





[This Drawing is a reproduction of the Original on a reduced scale]