12

(1) பக்கங்களின் எண்ணிக்கை .....

(2) புதுக்கித் திருப்பிய நாள் .....

(3) ஆதாரங் குறிப்பவர் கருக்கொப்பம் .....

தமிழ்நாடு ஆவணக் காப்பகம்.

தமிழ்நாடு அரசு

AD 1V துறை

அரசாணை எண். 113	அச்சகம்
மு. கோப்புத் தாள் எண்.	பலவகை
நாள் : 11.5.1860	199 .

மடிக்கவோ கண்டபடி கையாளவோ கூடாது.

ஆவண. கா. 1—18,006—6-9-90.

பாதுகாப்பு பிரிவு–1

செப்பனிடுபவர் பெயர்

செப்பனிடுவதற்காக எடுத்துக் கொள்ளப்பட்ட நாள் 07/07

சரிபார்க்கும் முதல் மு.நி.பா.எ. கையொப்பம்	சரிபார்க்கும் 2–ம் மு.நி.பா.எ. கையொப்பம்	ஆராய்ச்சி உதவியாளர் கையொப்பம்

To all to whom it may concern

Be it known that I George Leader of Mottingham in the County of Kent Gentleman do hereby declare the nature of the Invention for "Improvements in propelling and steering vessels and in machinery "and apparatus applicable thereto" and in what manner the same is to be performed to be particularly described and ascertained in and by the following Statement thereof that is to say. —

I propose to propel vessels through water by forcing or conveying either air water or air mixed with water through a certain outlet or outlets in such position and of such form as to expose a great surface at the place where the air and water impinge upwards against the vessel and downwards against the water. The air is then to be guided against a suitably attached channel or channels along the bottom or sides or beyond the stern of the said Vessel whereby the buoyant power thereof is effectually expended for propelling the said vessel – I find it advantageous to force the air or water or mixture of air and water [illegible] bottom of the vessel upwards and cause it to ascend in its passage over an incline wedge form channel or channels to the stern or bows as desired. The propelling outlets should be so arranged as to force the air or water or mixture of air and water backward to the stern for moving the vessel ahead or

1.

forward to the [illegible] astern.
The rudder for steering which may be of the
ordinary kind I propose to place either at the stern
the vessel or under the before mentioned inclined to pro

[illegible]
mixture of air and water through the before-
mentioned outlets may be either a fan blower or
hydraulic bellows or air pumps of the ordinar
kind which may be used either separately or comb
provided that the air or water or mixture of air o
water be directed to the propelling outlets or the a
be forced out of closed vessels fitted with
and outlet valves by the direct a
driving out the air before it.
To actuate the fan blower bellows or pumps eit
manual or horse power may be employed a the pow
of gas or steam in the ordinary manner But I pr
to use as being more convenient and for economizin
space a steam cylinder fixed either vertically or
linder to be of the same length a

rod should be of sufficient length to carry both the steam a
air pump pistons said rods passing through air tight stuff
boxes in the lids of their respective cylinders or a pair or
single steam cylinder may be placed horizontally betwe
two or more air pumps the steam piston rod carrying the
steam piston and the pistons of both air pumps.

propelling medium escaping up the sides of the
vessel. A corrugated recessed or ribbed bottom or
sides will answer this purpose or attached beyond
the same. When the propelling medium is forced
a in the direction shown by the
covered with a deck) or it may be
only the stern part so constructed the fore part and
bow being as usual and with a keel the whole
length of the vessel or any part thereof. The
sides of the channel d may be corrugated or
formed in a series of steps or have attached the guides e.
Figure 1 is a longitudinal elevation of a Vessel
with a moveable stern or inclined B which is

closing the outlets a, a and opening corresponding
outlets in the bow the vessel is backed astern.
Figure 3 shews a stern view of a vessel designed
with a channel d to confine the propelling medium
more effectually where the vessel is intended to encounter
a rough sea. This channel may be formed by simply
joining two vessels e, e side by side (in which case I
e arrangements already described are all the
outside apparatus required for a flat bottom at stern
or bow but for a curved bottom guides c, c may be
advantageously used to divide the propelling medium
into separate or various channels to keep the strakes
b, b in the most effective position and prevent the

such being the nature of my improvements I will pro
to describe in what manner the same are performed
reference to the Drawings hereto annexed. —

Description of the Drawings

Figure 1 is a stern view of a ves... Figure
pressure of the propelling medium or in the ha
at b, b. —

An angle of from about 15 to 25 degrees with
horizon answers extremely well for the incline along w
the action of the propelling medium takes place. —

The pressure and velocity of the propelling mediu
depend on the position and area of the outlets the an
the inclined channels and other circumstances ev
understood by every practical Engineer. —

Figure 2 is a longitudinal elevation of the same, shewing the ou
a through which the air is passed in an extended
or stratum and presses or acts at b, b between the vessel
the water and which does not act as a mere jet ag
the water but being directed over the bottom of the Ve
and prevented from escaping at the sides forms a strat
or film propelling medium which tends to separate
Vessel from the water with a force corresponding to
supported on an axis c allowing the end of the
incline to be raised or depressed to suit the best
angle for the propelling medium to act against, al
moveable side ways for steering. —

Figure 3 represents a vessel with a portion of her side
removed forming a recess f f on each side of the vessel

so that she may be propelled from the middle or any
convenient distance foward or astern or from an increased
number of recesses f f I prefer to have that part of
the heel g in the recess like a plate iron hollow girder
but it may be solid or otherwise covered. The recesses
f f may be reduced in size and a series of them made
along the sides of the vessel to obtain the required amount
of propelling surface. Instead of removing the sides two
or more vessels may be placed end to end and may
be decked over if required; such vessels can be propelled
ahead or astern at pleasure by using the outlets
a a or A A as may be required. —

In Figure 6 a is one of the outlets with a valve
h which is moveable on an axis i, a crank or arm
j is joined to a chain or rod leading to a lever which
is movable on an axis k; the other end of this lever
is connected to a float l placed in a receptacle or
channel m at the sides or stern of the vessel and having
free communication with the sea and large enough to
let the wave act on the float quickly. The operation is
as follows. When the wave ascends it enters and rises in
the receptacle or channel m lifting the float l rocking
crank arm j which opens the valve h and allows the
propelling medium to escape through the required outlets
a. When the wave falls or recedes the waters leave the
receptacle m and the action is reversed and shuts the
valve h so that the propelling medium cannot escape

and so on varying continually with the rise a
fall of the wave or the tossing and rolling of the
this arrangement I propose to use in paddle or s
vessels attached to the throttle valve of the engine

the Vessel. In small boats or where convenient the
b may be placed outside the vessel and thus act on a
covering the outlet a but I prefer to have all the app
removed from the chance of external injury This opera
I prefer to have self acting by means of the float l
the valve h may if desired be regulated by hand
gearing similar to a steering wheel. When the
h are shut and the motive power still in action
be accumulated in a reservoir or a series of them fo
of metal flexible bags or any suitable material in
which the propelling medium is forced until the ve
takes a position which gives to the stern and bottom
most effective angle for the propelling medium to act
The outlets a may have a pipe or a series of pipes to
a connection with the motive power either direct or
the reservoirs and may be numbered at the same or diff
and separate forces or pressures of the propelling mediu

Figure 7 is a stern view and Figure 8 is a longit
elevation of a steering apparatus p is a vane or rud
worked by the shaft q and a steering wheel in the
manner. If the vane p is moved in the direction sh

6

by the arrow, the propelling medium is made to escape through an opening r in the rib or guide piece c. The reaction of the propelling medium on the vane or rudder p turns the vessel in the direction desired. If the vane or rudder p is turned to the other side the vessel turns in a contrary direction. I prefer to have the vane or rudder p hang on the shaft at the end but it may be connected near the centre having a portion shown by the dotted line t extending across the stern to direct all or nearly all the propelling medium to either side desired. The vane or rudder may turn on a fixed axis and be actuated from the other end or between the two there may be extra rudders on the same plane capable of being worked separately or in conjunction. Various modifications may be made of the arrangements all tending to give a quick and certain means of steering and manauvring vessels.

The machinery to force or pass the air or the propelling medium under the bottom and stern of the vessel consists of either a fan blower common or hydraulic bellows pumps or any apparatus in general use for forcing or creating currents of air or water or the air or water or air mixed with water may be forced out of closed vessels or cylinders fitted with proper outlet or inlet valves for that purpose by the direct action of the steam driving out the air &c before it. These machines may be used separately or in conjunction provided the propelling medium is made to act as hereinbefore described.

7

Having now fully described and set forth the
and object of my said invention of "Improvements in t
mode of propelling and steering vessels and in the
machinery and apparatus connected thereto" togethe
with the best means I am acquainted with for
carrying the same into practical effect. I wish it
to be distinctly understood that I do not claim
as of my invention the exclusive use of the applicat
of compressed air for the propulsion of vessels But wh
I claim is the propelling and steering vessels by
means of air or water or a mixture of air and
water acting on the underside of vessels in inclin
channels either attached to or forming part of such
said vessels as above described said channels being
either fixed or moveable for steering or for alterin
the angle of inclination of the aforesaid inclined
channels

Geo. Carter

8

Lords 8 Jany 1860

13/6

To Patents

Public 1860 Depart.

From
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No. 113

In conformity with
Sec: X Act XV of 1859,
I forward Specification
of an Invention for
"Improvements in pro-
-pelling & steering vessels
and in Machinery and
apparatus applicable
thereto"

113/4

FIG 1

113/8

FIG 2

FIG 3

FIG 4

112/10

FIG 5

FIG 6

FIG 7

FIG 8