

The invention, principles of construction, and uses of unimmovable boats, stated in a letter to H.R.H. the Prince of Wales / [Lionel Lukin].

Contributors

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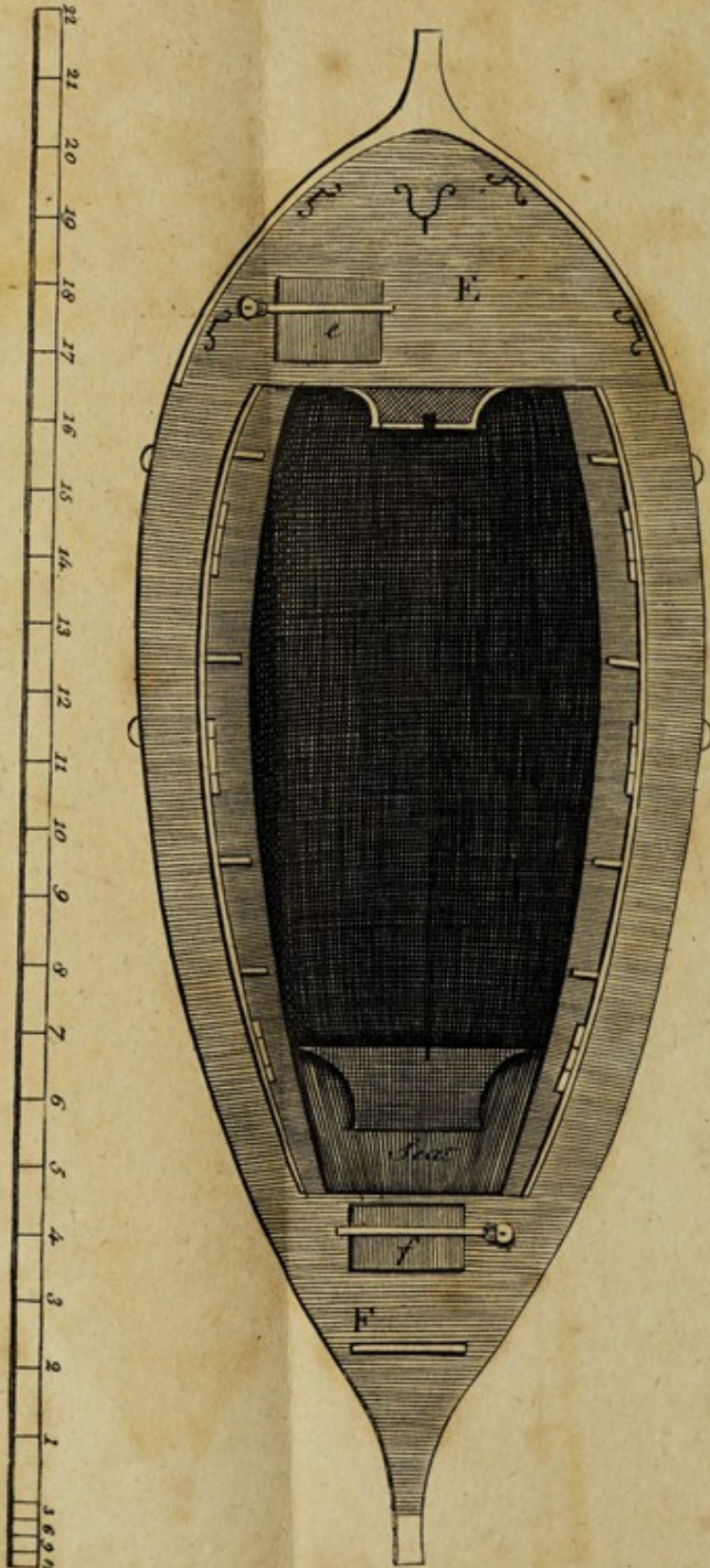
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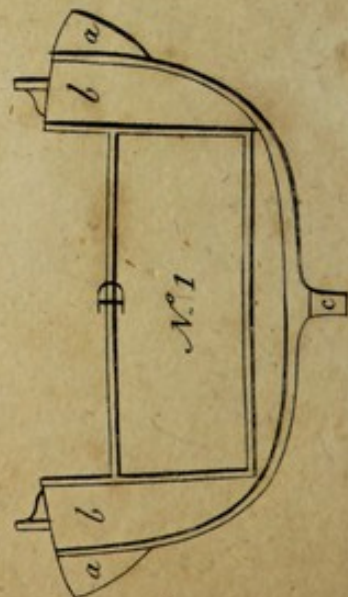
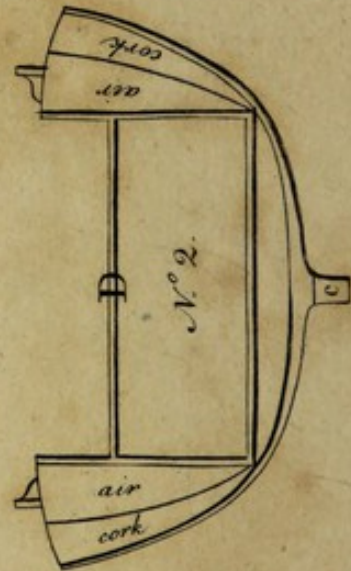
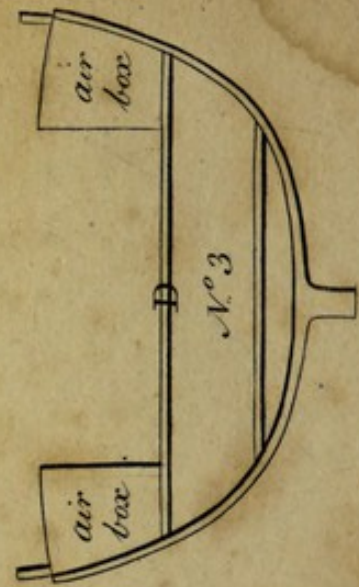
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Lukin's Unimmergible Boat.
Invented 1785.



J. G. Fisher.



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THE INVENTION,
PRINCIPLES OF CONSTRUCTION,
AND USES OF
UNIMMERGIBLE BOATS,

STATED IN A LETTER TO HIS ROYAL HIGHNESS

THE PRINCE OF WALES.

BY LIONEL LUKIN.

LONDON:

PRINTED FOR THE AUTHOR,

By J. Nichols and Son, Red Lion Passage, Fleet Street;

AND SOLD BY T. BECKETT, PALL MALL; T. EGERTON,
WHITEHALL; AND J. ASPERNE, CORNHILL.

1806.



TO
HIS ROYAL HIGHNESS
THE PRINCE OF WALES.

SIR,

AS the country in which we have the happiness to live, and in which your Royal Highness holds so distinguished a rank, preserves its power, prosperity, and wealth, and, perhaps, even its political existence, by the degree of perfection to which it hath brought the various branches of nautical science; every attempt to extend this useful knowledge, and introduce improvement into this—the Nation's best barrier—may justly claim to be received with attention and examined with candour; and, should the result of an impartial and well-directed investigation, not in every respect sanction the sanguine expectations of a zealous projector, still the

discussion of a subject so important cannot fail of producing some beneficial effect, which, if not sufficiently considerable to demand the honour of national applause, or the more substantial boon of pecuniary reward, may yet entitle the Proposer to the approbation and gratitude of the publick.

In a Nation—that has, during a long succession of years, cultivated with distinguished and peculiar success both the theory and the practice of navigation;—that has, on the skill and intrepidity of its seamen, founded a naval power far surpassing whatever has arisen in any other age or country;—that communicates by sea with colonies more numerous and extensive than were ever before connected under one head;—that exhibits a naval commerce holding an intercourse with every part of the habitable world, and penetrating into the most sequestered and unexplored seas;—that employs in these services of enterprize and danger a proportion of its population much greater than any other state of equal extent ever engaged in similar pursuits:—in a nation so circumstanced, it might reasonably

be supposed that a proposition, to lessen in a very considerable degree the dangers of a seafaring life ;—to rescue from a watery grave many whom business or pleasure may have exposed to the horrors of a tempestuous sea ;—to reduce the number of distressing and fatal accidents that now so frequently occur on this uncertain and destructive element ;—to save annually a great number of lives highly useful to the state, and invaluable to their several families ;—would be received with the utmost avidity, and awaken an universal desire of subjecting it immediately to the most rigorous test of public examination ; and, if the theory should be found to be supported and confirmed by the unequivocal testimony of fact and experiment, that the improvement should be forthwith introduced into general practice.

That such a proposition has been long since made is not unknown to your Royal Highness ; and that it has not yet received the degree of public notice which its importance seems to demand, is not less to be wondered at than it is to be lamented.

As the distinguished humanity and benevolence that leads your Royal Highness to patronise and support every attempt to alleviate distress and console misfortune,—and the patriotic ardour that inspires your breast, whenever the safety or prosperity of your Country is concerned,—induced your Royal Highness, on the first intimation of the plan, to give it your generous patronage;—I think it an act of justice, that a Nation deriving its wealth and glory from the dangerous labours of navigation, should be informed how much they are indebted to your Royal Highness's humanity, for protecting the embryo of a discovery, that may perhaps continue to benefit mankind as long as war or commerce engage their attention;—I therefore entreat permission to recall this circumstance to your Royal Highness's recollection, and to lay before your Royal Highness and the publick a statement of the particulars of my invention;—and as I have never had much, and have not now any, expectation of emolument or pecuniary advantage from the promulgation of the plan; but have ever felt the most anxious desire to lessen, to the utmost of my power,

the occasions of sorrow to my fellow-creatures, and contribute my quota, however small, to the welfare and prosperity of my country; I purpose to give this statement sufficiently in detail to enable any benevolent mind to carry the principles into effect.

Several fatal accidents having come to my knowledge, which had happened by the oversetting and sinking of both sailing and rowing-boats, either from bad weather, sudden squalls, or unskilful management, and which had occasioned to the publick the loss of many valuable lives, and inflicted very severe distress on many private families; my mind was, in the course of the year 1784, powerfully impelled to a consideration of this branch of nautical mechanism; and it soon occurred to me that boats might be constructed upon such principles, and in such a manner, as to render less frequent, if not entirely to prevent, the recurrence of these melancholy accidents. I mentioned my ideas on the subject, in various conversations, to many of my friends, and found a great diversity of opinion respecting the practicability of the plan; but

all wished to have the fact ascertained by a full and sufficient trial. During the discussion, it by some means reached your Royal Highness; and as I had at that time the honour of frequently waiting upon your Royal Highness on other business, on one of those occasions your Royal Highness asked me, “if it were true that I had an idea that boats might be built in such a manner that they would neither overset nor sink, even if filled with water; and whether I really thought that such a scheme was practicable.” I assured your Royal Highness that I was in my own mind fully convinced of its practicability. Your Royal Highness then humanely and patriotically desired me to make without farther delay such experiments as should put the matter beyond the possibility of doubt; and with the noblest generosity added that, “if I feared the expence, I might charge the entire amount to your Royal Highness, but on no account to delay the decision of a question of so much interest and importance.” This was to me a command.

I immediately purchased a Norway yawl

as the subject of my first experiment; and having altered it, and made the additions which appeared to me necessary to effect the intended purpose, I tried it in the river Thames with all the severity that the situation allowed; and in repeated trials I found that it could not be upset, and that it would continue to move forward without sinking even when filled with water; and therefore had the satisfaction of ascertaining, that the possibility and practicability of my plan was by this evident fact placed beyond all possibility of doubt.

My theory being thus fully substantiated by experiment, I was prevailed upon by the persuasion of my friends (contrary to my own judgment and inclination) to take out a patent for this invention. The Patent was dated the 2d of November 1785; and the specification was afterwards printed in the third volume of the "Repertory of Arts;" and as this patent was obtained with the hope and expectation that it might be productive of ample remuneration and reward, I did not think myself at liberty to place any part of the charge to your Royal

Highness's account ; although the first experiment and subsequent trials were made at a much heavier expence, and occasioned a much greater loss of time from my regular business, than I could at that period incur without considerable inconvenience.

The principles upon which I proceeded were :

1st, To give the vessel such a power of buoyancy in its upper part, as to render the specific gravity of the whole vessel and its contents, less than the specific gravity of the body of water it would displace in sinking. And,

2ndly, To give it a weight or ballast under the keel sufficient to keep it in an upright position ; or to give it the power of regaining, in a fluid medium, that position, when thrown out of it by the violence of the winds or waves.

The first I effected (*vide* PLATE, No. 1, a cross section of the Norway yawl) by adding a projecting gunwale (*a*) of cork to the outside of the upper frame of the boat, about nine inches projection along the middle, and gradually diminishing to very little

at the head and stern; and forming an hollow inclosure (*b*) within the boat from the top to the floor, running nearly from head to stern, made water-tight, and containing a sufficient quantity of air to give the buoyancy required.

The second I obtained by a false keel (*c*) of cast-iron bolted under the common keel; —and as the cork and air at the upper part will always keep above-water, and prevent sinking, so the cast-iron false keel will act as ballast, and prevent oversetting, and also protect the boat's bottom in landing on a rough shore. (*D*) is a thwart or bench across the boat, of which there may be more or less in number, and placed higher or lower as convenience may require. The principal figure on the Plate shews the upper face or plan of the boat; the darker part is intended to mark the floor, the lighter the upper part of the gunwales, &c. The general safety of the vessel was also increased by an inclosure (*E*) at the head made water-tight, and a similar one (*F*) at the stern; in these may be put cloaths, or any other light stores requiring to be kept dry. (*e*) and (*f*) two small hatchways. These inclo-

asures have been found sufficient to keep up the head and stern, when the sea has broke over one in beating to windward, or over the other in running before a heavy sea.

No. 2. is the section of a pleasure-boat built new under my directions, and named The Witch. The sides of this vessel being made to spread out much wider at the top than No. 1, and the inclosure for air on that account being considerably larger, the external projecting gunwale of cork was not thought necessary, as an internal lining of cork was fixed to the body of the boat, the greater part *above the water line*, and occupying about one-third of the inclosed space. The inclosures at the head and stern, and the cast-iron false keel, were the same as in No. 1.

As the expence of constructing these Unimmerrigible Boats necessarily amounts to about one-third more than the price of boats of equal dimensions built in the common way, it may possibly be some impediment to their general introduction. I have therefore thought that, until this most desirable event takes place, much distress and misery might be prevented upon various parts of the coast

and other situations of danger, by applying the principle of this invention to boats already built; and that in most cases they might be easily converted into Life Boats, by preparing and keeping in readiness wooden boxes each about two feet in length; and, whenever occasion requires, placing them along the inside of the boat, as marked in the section No. 3. These might be very securely fastened, and yet be removeable at pleasure, and by occupying a considerable space, to the exclusion of an equal body of water, and by lifting or supporting the boat with a power equal to eight pounds for every gallon of air contained in them, they alone would, I think, in most cases, prove effective; but if the outside projecting gunwale of cork were added, and also the inclosure at the head and stern, (or an empty cask lashed securely down in the head and stern might answer the purpose,) there would be no doubt of their absolute safety, and the expence by these means be considerably reduced.

In addition to the conversation with which your Royal Highness honoured me, I had also the satisfaction of stating and ex-

plaining my ideas upon the subject to his Grace the Duke of Northumberland ;—his Grace the Duke of Portland ;—Admiral Sir Richard King ;—Admiral Schank ;—Capt. Grindal, of the R. N. ;—and several other scientific Noblemen and Gentlemen.

When my patent was made public, the late Earl Howe was First Lord of the Admiralty ; and his Lordship soon after sent to me, requesting to see me, with a drawing of my boat. I waited upon him accordingly ; and, after he had inspected the drawing, he asked me, “ if any body doubted the safety of such a boat ? ” I replied that many still doubted it :—his Lordship immediately answered, “ I hope they are not seamen then, for I never saw a more self-evident proposition in my life ; I am satisfied that such a boat will possess even greater powers of safety than can ever be required ; ” and observed farther, that they were very desirable for packet-boats, pilot-boats, and pleasure-boats, and also for ships’ boats, where they could be had large enough to carry the whole of the crew ; but for ships of war, where that purpose could not be obtained,

his Lordship thought their utility doubtful. The noble Lord's argument appeared to me to hold equally against boats of any description; and in this opinion I have found myself supported by many professional men and officers of the highest rank and greatest experience and respectability, who have thought with me, that no ship either for war or commerce ought to proceed to sea without at least one Unimmergible Boat.

A melancholy illustration of this opinion has recently presented itself in the loss of the *Lady Burgess* East-Indiaman. The official account of this accident states that, after the ship had struck, boats from the other ships came out, but could not approach near enough to save all the crew, because of the violence of the surf. Had there been with each ship of the Fleet only one boat built upon my plan, the surf would have been no obstacle, the unfortunate sufferers might all have been brought off in safety, and their valuable lives preserved to their country.

I was also recommended to call upon Captain James, then Deputy Master of the Trinity House, as an officer likely to promot,

and extend the benefits of my invention. He approved very much of the plan, and said that for the last thirty years he had seen frequent occasions to lament the want of such boats ; but added, “ that until some
“ First Lord of the Admiralty would take up
“ the business, and enforce the use of them
“ with all his influence and authority, they
“ would never be brought into general use ;
“ for that the great body of sea-faring men
“ were governed by strong prejudices in fa-
“ vour of old practice, and but little ac-
“ quainted with philosophical or mechani-
“ cal theories ; nay, he believed that many
“ of them would rather be drowned in a
“ boat of their own, than get into one
“ of mine, considering such an offer of
“ safety as a reflection upon their cou-
“ rage.” As he wished to promote the suc-
cess of my plan, he advised me to put my boat into the hands of a Ramsgate Pilot then in town, that he might make proper trial of its powers, and report to me on its success and utility. I accordingly delivered my boat, (being the first, I had named it *The Experiment*,) with all its sails, rigging, and furniture, to the Pilot ; but never heard any

more from *him*, nor ever received any remuneration for my boat; although I have from other persons been assured that it frequently crossed over to France and returned in weather so violent, that no other boat would venture out.

Having thus disposed of my first boat, I immediately built a new one for my own use, which from the seeming prodigies it performed I called *The Witch*; this, as well as *The Experiment*, was an open boat about twenty feet long, of the Peter-boat form, and cutter-rigged. I subjected it myself to many severe trials, and lent it to several of my friends for the same purpose, in all which we found it completely successful. The present Admiral Sir Sidney Smith borrowed it for the express purpose of making himself a full trial of its powers, in his passage down the river to go on-board the *Carysfort* frigate, then I believe at the *Nore*. He afterwards informed me that, having desired the man that attended the boat to draw the sails fore and aft, and taking the helm, he placed her directly across the wind, and, of course, threw her on her

beam-ends, and forced her gunwale under water; she nearly filled with water, but immediately righted, and to his great surprise continued her course;—on a second attempt she threw out a part of the water, and all that remained, being below her external water line, had the effect of ballast, and prevented her from taking in any more on this and the subsequent trials, and seemed to be little impediment to her sailing: and here I cannot but observe that I think fluid ballast for pleasure-boats, and in every other case when it is practicable, might with great advantage be preferred to solid, either by means of a well as in fishing-boats, or by small casks made broadest at the bottom to keep them steady.

The repeated trials made by Sir Sidney Smith having demonstrated that this boat could neither be overset nor sunk by the united powers of wind and water, and that it was therefore strictly unimmovable by those powers; we by a farther experiment endeavoured to ascertain what addition of positive weight it would require to overcome its buoyancy:—the boat was filled with

water, and a quantity of cast-iron was placed in it, which was gradually increased till, with the weight of the four men who managed the boat, it was brought nearly to an equilibrium; we were thus enabled to judge that even this small boat would, *when filled with water*, carry ten men with safety; and it appeared evident that if by any accident or violence even a whole plank should be torn from the bottom, that the power of buoyancy would still be preserved as long as the main timbers and upper works held together;—the powers of safety would also be considerably increased, if the capacity of containing water were reduced, by enlarging the proportion of air-vessels, or increasing the quantity of cork, either externally or internally:—upon this principle we found also that this boat would, when full of water, carry several more men *when they sat down in the water*, than when they kept themselves above it on the gunwale, &c. This may be an useful observation in all cases of danger where the boats are either partially or entirely filled with water, and liable to be farther overloaded,

as the power of buoyancy arising from the difference of specific gravity between the human body and water, may perhaps not be generally understood ;—our immortal Bard seems not to have been aware of this circumstance when he makes Sir John Falstaff say—“ you may know by my size that “ I have a kind of alacrity in sinking,”—as so far from alacrity, it is very certain that a human body, such as the jolly knight’s is described to have been, whatever it might do in the Thames, would not sink if thrown into the sea with several pounds of lead tied to his heels ; and it has been ascertained that an additional buoyant power equal to about four pounds, given to any human body immersed in water, would be sufficient to save it from sinking.

I afterwards myself ran this boat from the Tower to Margate in eight hours ; and when there some of the boatmen of the place sported their jests upon the man who had the care of her, laughing at what they called her clumsy appearance, and deridingly enquired if we expected she would ever sail. An opportunity occurred the

next morning of deciding this question. I had fixed an hour with a friend to take a little voyage of pleasure; after I was aboard, finding he was not punctual to his time, I set sail without him; but he almost immediately coming down to the water, and expressing some disappointment that I had left him ashore, one of the boatmen told him, he would put him aboard me in ten minutes, and accordingly took him into his boat, and hoisted sail; this not being observed by me, I continued my course, and after having stood out to sea about an hour and half, I tacked, and in returning met the Margate boatman, not a little disconcerted at the defeat of his boastful promise; when I heard the occasion of the attempt from my friend, who had been much entertained at the boatman's jealous and angry but ineffectual exertions, I told him he had now a fair opportunity of trying his skill and the powers of his boat, that we would now both start for the shore together, and that I would show him what my clumsy boat could do; in this short run I beat his

utmost efforts by nearly one-third of the distance.

It will readily occur to persons acquainted with nautical affairs, that this superiority of sailing arises from the perfect safety of the boat, enabling us to carry much more than the usual proportion of canvass.

Soon after I took some friends out, and sailed from Margate to Ramsgate, to the great astonishment of many persons who witnessed it from the shore, in so violent a gale of wind, and so heavy a sea, that only one other boat would venture out, and she returned in a few minutes, not daring to proceed to sea. This fully satisfied all who saw it of the wonderful powers of my boat, and of the immense probable advantages of the invention; but they pronounced me a madman for making such an experiment, still considering that I had done it at the risque of my life.

The Rev. Dr. Sharp, of Bamborough, on the coast of Northumberland, as treasurer of a charity founded there for the express purpose of saving persons and property from wrecks or ships in distress, sent me from that place a boat called a *Cobal*, to

be fitted up according to my patent, and applied to the purpose of affording relief in cases of accident or shipwreck; he informed me that the people of that coast consider this sort of boats, on account of the keel being curved from head to stern, to be much better suited to their particular shore than any other. Of the success of this boat, after it had received my alterations, I had very satisfactory accounts, having been informed that by the use of it many lives were saved in the course of the first year. The publication of my patent, with the consequent experiments and advertisements in the public papers, brought the subject of these Unimmergible Boats into very general discussion both at home and abroad; but, notwithstanding the powerful testimonies that I had obtained of their utility, I had little demand for them. I do not remember that I built more than four besides my own; but, feeling the utmost desire to extend the knowledge and benefit of this invention, I gave sketches, information and assistance, to several persons in different parts of the country, with the hope that if

I derived no profit, I might at least have the satisfaction of making more fully known this important invention ; — and three or four years after, I heard with pleasure that the subject had obtained some notice at Shields, and that a boat had been built there for the preservation of shipwrecked seamen.

Nothing very material occurred to call my attention to this subject, till some time AFTER MY PATENT WAS EXPIRED, I learnt from the public papers that Mr. Greathead, a boat-builder of Shields, had obtained a medal and premium from the Society for the Encouragement of Arts, &c. and was about to receive a pecuniary reward from Parliament, for the invention of a Life Boat. I certainly concluded that this must be a new invention of his own, and that he had been more fortunate than myself in obtaining notice and reward ; but I never saw any drawing or model of it, until I happened to be requested by some Members of the Society of Arts, &c. to inspect a design the application of an iron keel under the bottom of boats as a means of preventing their over-

setting. This appearing to be a specific part of my patent, the medal of the Society was not given to the person who sent in the design with the expectation of obtaining that honour; and on this occasion I saw for the first time the model of Mr. Greathead's Life Boat, and on examination found, to my great astonishment, that it was only a *partial application* of the principles of my invention; being, AS TO ALL THE ESSENTIAL PRINCIPLES OF SAFETY*, *precisely according to my Patent, and differing from it in no considerable respect but the CURVED KEEL, which contributes NOTHING to the general principles of safety, but renders it UNFIT for a SAILING BOAT.*

What occasioned the Society of Arts in the first instance, and then the Honourable House of Commons, to overlook my patent, though publicly enrolled in the proper Office, I have yet to learn; as also, why a Parliamentary reward was thought necessary for a partially useful and imperfect production, applicable only as a row-

* See the note in next page.

ing-boat to the case of relief in shipwreck, and not to the prevention of oversetting and sinking of sailing-boats; when no such remuneration was allotted to an invention calculated for *general use*, and fitted to *prevent* as well as relieve such misfortunes. I certainly did hope, that the very considerable expence I had incurred in obtaining the patent, and making the previous and subsequent experiments (and which has never been in any way repaid to me), might have intitled my invention to more notice and investigation from those learned bodies to whom the applications were made, than it obtained from them.

* Soon after this little work was sent to the press, I for the first time obtained a sight of a pamphlet by Mr. W. A. Hails, of Newcastle, on the subject of the Life-Boat. Having lately sustained a short controversial correspondence with this gentleman in the two last numbers of the Gentleman's Magazine, I perused his pamphlet with much interest: the open and candid manner in which he states his evidence and discusses the subject, will, I think, convince every disinterested and unprejudiced mind, that he has so far attained the object of his enquiry, as fully to prove, that Mr. Greathead is *not* the inventor of the Life Boat, and that the

honourable rewards of which the invention has been thought worthy, have not been bestowed on the individual to whom a more minute investigation might justly have assigned them. Whether Mr. Hails has been equally successful in designating the original promulgator of the invention, I shall leave to the impartial judgment of my readers. As he has not even alluded to my patent, I must, in justice to his candour, suppose he had never heard of it, or of the great and general discussion of the subject which it introduced; but I have the satisfaction of observing that his book most completely and undeniably confirms my opinion, in the passage to which this note is added, “*that as to all the essential principles of safety,*” the invention he describes was “precisely according to my patent.” This may be made evident from a few extracts: at page 13, Mr. H. says—“the excellency of the Life boat, and in which it differs from all other boats, is two-fold; viz. the buoyancy, and the capacity of retaining the proper position of flotation. Any other property is not worth mentioning along with these, and therefore shall not be brought forward in this place. It is necessary, in the first place, that the Life Boat should be incapable of being sunk; but as this would be of little service could they be overset, it is also necessary that the parts of the vessels should be so disposed as always to float in the proper position.” Again at page 26: “the whole excellence of the Life Boat consists in its size, the cork, and its flaunching sides. That the cork is the material part of the construction, may be gathered from the circumstance of her having gone to

“ sea with a hole in the bottom, and when filled with
 “ water, still retaining sufficient buoyancy to bring
 “ the men safe to shore. The idea of rendering her
 “ buoyant by cork is allowed to have been suggested
 “ by Wouldhave, as is exhibited by his model.” At
 page 36 : “ the two essential properties of a Life Boat,
 “ it can neither be upset nor sunk.” And at page
 47, commenting on a letter written by a Mr. Hinder-
 well, Mr. Hails says—“ Thus undesignedly has he
 “ proved Wouldhave to be the inventor ; as none can
 “ deny him the merit of the cork, which is, without con-
 “ troversy, the cause of the boat’s superior buoyancy,”
 and also, according to Mr. H. the cause of her pre-
 serving the proper position in the sea. “ The author
 “ does not wish to pursue his advantage over this gen-
 “ tleman, farther than to ask, if, after these two pro-
 “ perties are found in a Life Boat, we may not safely
 “ allow every other property to be the invention of
 “ Mr. Greathead ?”

Without wishing to deny Mr. Wouldhave the merit
 of the cork, or any other merit his industry and genius
 may entitle him to, and without wishing to pursue any
 advantage for myself which *dates* and *facts* will not justly
 award me, I would only observe that, in November 1785,
 my patent was obtained under the express designation
 of boats that would *neither upset nor sink by the united
 power of wind and water*. Upon what principles my
 boats were constructed ;—how far they attained these
 important points ;—and how far Mr. H. can deprive me
 “ without controversy of the” *original* “ merit of the
 “ cork,” the foregoing statement may have enabled
 the reader to judge ; but it is necessary for me to state,

in justice to myself, that all the experiments I have stated were made, and the utmost publicity I could give to my invention had been effected, *several years before* the premiums were offered, or model made, on which Mr. H.'s book is written.

But to proceed also in confirmation of my assertion respecting the curved keel: at page 19 Mr. H. says, "Greathead's allowed invention seems only to respect the curvature of the keel, which, in my humble opinion, will turn out a defect, if the subject should be closely investigated." And at pages 25 and 26, Mr. H. ably and effectually proves not only the inutility, but the absolute defect and injury of the curved keel; and at page 45 confirms "the curvature of the keel to be an error in the construction;" which fully coincides with the opinion I have stated in the passage preceding this note.

At page 38 Mr. Hails declares himself "perfectly willing to allow to the Gentlemen of South Shields every honour which is due to them. They are, without controversy, the original proposers of a scheme that does honour to their humanity: had they not proposed the premium, it is more than probable that no such invention would ever have had birth. Let their names live for ever in the memory of their fellow men."

Whether the proposal of a premium *four years after my patent was made public*, and all the experiments and circumstances I have detailed had taken place, be entitled to the whole of this eulogium;—and if the original proposer of the principles upon which the Life Boat is founded, be thought worthy of honour and er-

ward,—whether, “without controversy,” the Gentlemen of South Shields are entitled to them,—or whether I may not, without rendering myself chargeable with presumption, present my claim for a share of such honour,—the decision of an impartial Publick must determine for me.



IN the month of May last a projector applied to a Gentleman in my neighbourhood for pecuniary assistance to enable him to take out a patent for a Life Boat. The Gentleman recollecting that I had long since obtained a patent for boats that would neither upset nor sink, referred to my specification, and found that it exactly corresponded with this supposed new invention, and, of course, kept his money; but assured me, that from his conviction of the incalculable benefits and utility of the Life Boat, he should have desired no better fortune than to have been the inventor. I am not aware how he would have proceeded, for in upwards of twenty years the invention has not returned me the money I expended upon it by several hundred pounds.

This latter application, and a letter in the Gentleman's Magazine for May 1806, stating the invention of the Life Boat to be one of the most important discoveries of the last century, and giving the honour of that invention to another person, determined me publicly to state my case; and I trust your Royal Highness will do me the justice to believe, that, as my expectations of profit or personal advantage from this invention have been long since given up, I present this statement to your Royal Highness and to the Public,—not with a view to depreciate the merit of any man,—but to assert that fair and equitable claim, which truth and justice, supported by dates and facts, must allow me; and above all in the sincere and earnest hope, that your Royal Highness's humane and patriotic sensibility to the sufferings and dangers of a numerous and valuable class of your future subjects, seconded by your exalted rank and influence in the state, may be the means of introducing this invention into more general use, under the sanction and authority of government,—and that all our harbours and

points of danger upon the coast, as well as the ships of war and mercantile fleets, may be supplied with a proper proportion of *Unimmergible Boats*.

Under patronage so illustrious, I solace myself with the hope of still living to see this improvement rising into public notice, and its importance more fully appreciated.

The principle is applicable in some degree to nautical vessels of every description, from the smallest skiffs, to the largest ships that ever crossed the ocean; and I have no doubt, that by a judicious and scientific extension of this principle, that means might be adopted to prevent Merchant ships from foundering at sea in many cases, though perhaps not in all; a consideration surely of great magnitude to a nation whose colonies and commerce expose much wealth, and a large and valuable portion of its population to the dangers of the sea:—the application of it to ships of war must be more difficult, though I am strongly persuaded of its possibility; and surely in so important a concern, difficulties ought not to relax our efforts, but

stimulate us to perseverance and still greater exertions.

The advantages of this mode of constructing *Packet Boats* must be obvious and striking. By it dispatch and safety are both attained. Boats thus built may proceed to sea, without danger, in the roughest weather, and from their perfect safety may carry more sail, and of course outsail all other vessels, independent of the time gained by not waiting for fair weather: this was strikingly illustrated by the short run from Margate to Ramsgate before mentioned, which, from the considerable offing kept round the Foreland, could not be less than 30 miles, and was accomplished in two hours and an half, the wind blowing very hard from the N. E. and a very heavy sea running. The importance of this circumstance, where dispatches of much concern and moment are to be conveyed, need not be farther expatiated upon.

If *pleasure boats*, both for sailing and rowing, were in general built upon this plan, we should not so frequently hear of families suddenly plunged into distress and misery

by the loss of some of their most interesting relatives ; and the satisfaction of a pleasurable sail would certainly be much enhanced by the conviction that it was not in the power of a sudden squall or unexpected storm, or even the most unskilful management, to overwhelm the little bark with inevitable destruction.

The frequent *upsetting of ships boats*, and consequent loss of officers and men, in passing and repassing between ships of large burthen and the shore, is surely a strong and irrefragable argument in favour of Unimergible Boats, which, if generally employed on these services, must lessen the frequency, if not prevent the possibility, of such accidents.

The periodical publications afford numerous instances of such melancholy accidents as those here alluded to : I shall only mention one which occurred very lately off Hythe : Mr. William Pitts, midshipman, belonging to his Majesty's ship Pomone, and son of Lieut.-col. Pitts, of the Bridlington Volunteers, having been dispatched from the ship with a master's mate and six seamen to procure a supply of water, a sud-

den squall of wind upset the boat, and the whole number perished: the frequent loss of such valuable lives must surely direct with peculiar force the attention of those officers who have the conduct of our Naval Department, to the probable means of preventing such misfortunes.

In all cases of *shipwreck*, the power of carrying relief through the most violent surf, which may be done by these boats, must be productive of benefits evident to the least reflection. This particular part of the subject has already obtained considerable notice in the various discussions that have taken place respecting Life Boats; but even in this respect much remains to be done, and the number of valuable lives that might be saved every year by the general introduction and use of these boats on our extensive and dangerous coasts, is surely an object not unworthy the attention of a wise and humane Government.

Should any part of the foregoing statement appear imperfect or obscure, I shall feel a real gratification in giving, to any who may be seriously disposed to promote

the use of those vessels, every explanation and elucidation in my power.

I have the honour to be, with the greatest respect,

Your Royal Highness's

most faithful, and

most obedient Servant,

LIONEL LUKIN.

Long Acre, September 22, 1806.

