

700i

T H E  
LONGITUDES  
EXAMIN'D.

Beginning with a short Epistle to the

*Longitudinarians,*

A N D

Ending with the Description of a smart, pretty

M A C H I N E

*Of my Own,*

Which I am (almost) sure will do for  
the LONGITUDE, and procure me

T H E

*Twenty Thousand Pounds.*

---

By JEREMY THACKER,  
Of Beverley in Yorkshire.

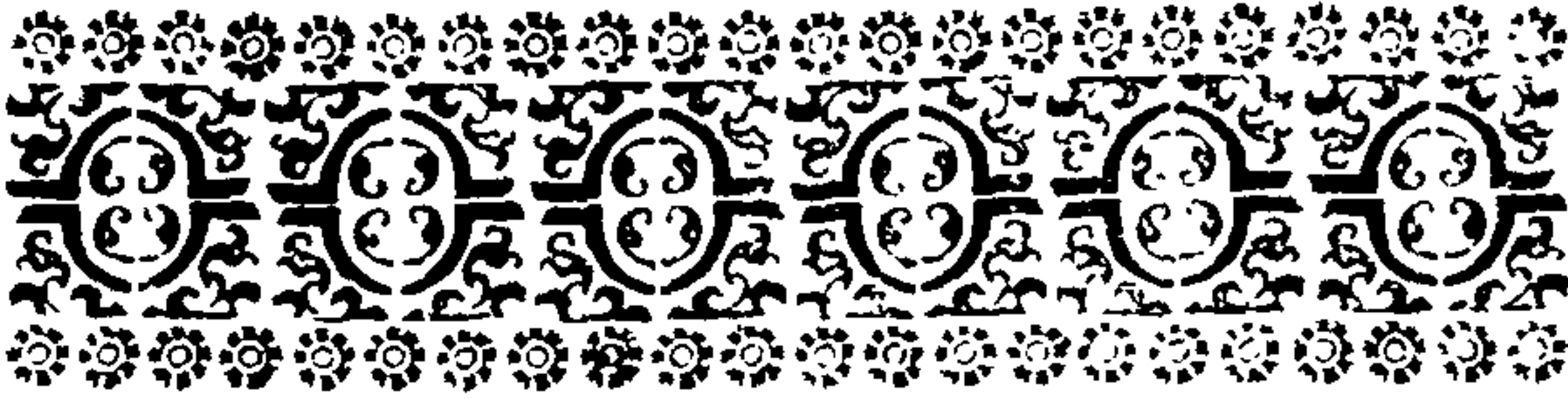
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— *Quid non mortalia pectora cogis*  
*Auri sacra Fames!* —

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L O N D O N:

Printed for J. ROBERTS, at the *Oxford-Arms*  
in *Warwick-Lane.* 1714. Price 6d.



A Short

# EP I S T L E

T O T H E

L O N G I T U D I N A R I A N S .

*Gentlemen,*

**T**HE Books that are written about the Longitude, are so acceptable to the Publick, that the whole Edition is commonly sold off, before any of them can reach our *Northern* Bookfellers ; therefore, I hope you will not refuse to admit me into your Number, tho' my Attempt is publish'd so late ; neither will you look upon me as your Enemy, if I overthrow all your Schemes, to set up mine ; for, if you'll believe me, I am in perfect Charity with you all : But Custom will prevail, and then I must shew

A 2

what

what I can do in the Beginning of my Book, that my Readers may enter upon the Description of my Engine with a good Opinion of my Skill ; tho' the main Reason is, that, without Animadversions upon the Attempts of others, I could not swell this to a Six-penny Book, unless I had embellish'd the Recommendation of my new Device with fine Metaphors, and clever Comparisons ; quoting the *Scripture* in one Place, and the *Poets* in another ; or filling up Voids - with Passages taken out of the *Apostolical Constitutions*. But I never had the Knack of speaking much, when I had but little to say. I might, indeed, with the Printer's good Management, have made four Pages of the Commissioners Names in Capitals, and then *have bubbly submitted my Essay*, and subscrib'd my self *their devoted and obedient Servant* in two Pages more ; which, with the Copy of the *Act of Parliament*, and *Title-Page*, would have made up one Sheet : An *Introduction of Astronomical, Geographical, and Mechanical Definitions*, to shew that I was *Some-body*, might have fill'd the next Sheet ; and the Devil is in't if I could not have made sixteen Pages of my *Movement* ; and so, by the Help of

FINIS

*FINIS* and *ERRATA*, compleated my three Sheets. But then I consider'd, (since I am sure of being right) that it was my best Way to go to Sea first, and give the Mariners such Ocular Demonstration of the Certainty of my Contrivance, that I shall have a sufficient Number of Witnesses of my Success, to vouch the Account of which I shall, at my Return, lay before the Commissioners, and so carry off the *Twenty Thousand Pounds*. As for the Introduction, I should have thought it very ill Manners, to begin my Book, as if I meant to teach First Principles to those Learned Philosophers by whom I am to stand or fall. If it be ask'd why I wrote the Book at all, I'll frankly answer, *That I wanted Money*; and that if I had thought that the Commissioners would have been prevail'd upon to have given me some, to carry on Experiments, I had never set Pen to Paper. For this very Reason, I shan't say a Word about my New Invention, 'till its proper Place. And if the Bookseller does not cut open the Sheets, whoever has a Mind to know what I drive at, must buy the Book: Peeping in, won't do; for I shan't begin a Paragraph with the Description  
of

of my *Curiosities*, or write the Name of any of my *Machines* in *Italick* Characters. All that I shall say here, is, That I have try'd all my Experiments at Land, with desir'd Success, and as soon as the Bookseller has paid me, I'll go to Sea; and if, after all, I fail in the Attempt, yet

—— *Vobiscum certasse juvabit.*

I am

GENTLEMEN,

*Your most Devoted,*

*Most Obedient,*

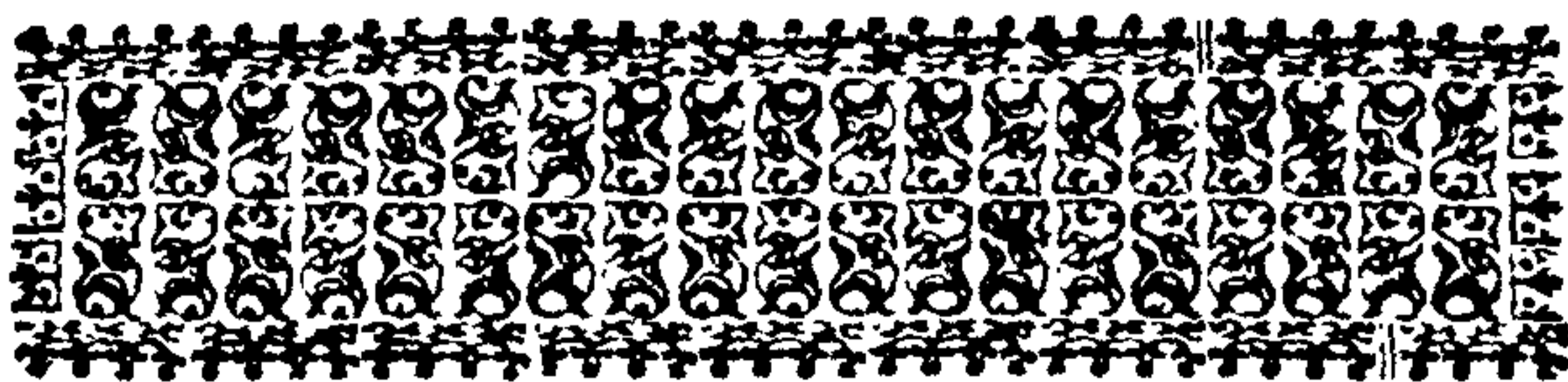
And

*Most Humble Servant,*

Jeremy Thacker, *Philomath.*

Well-wisher to the *Twenty Thousand Pounds.*

ADVERTISEMENT



## ADVERTISEMENT

Concerning the

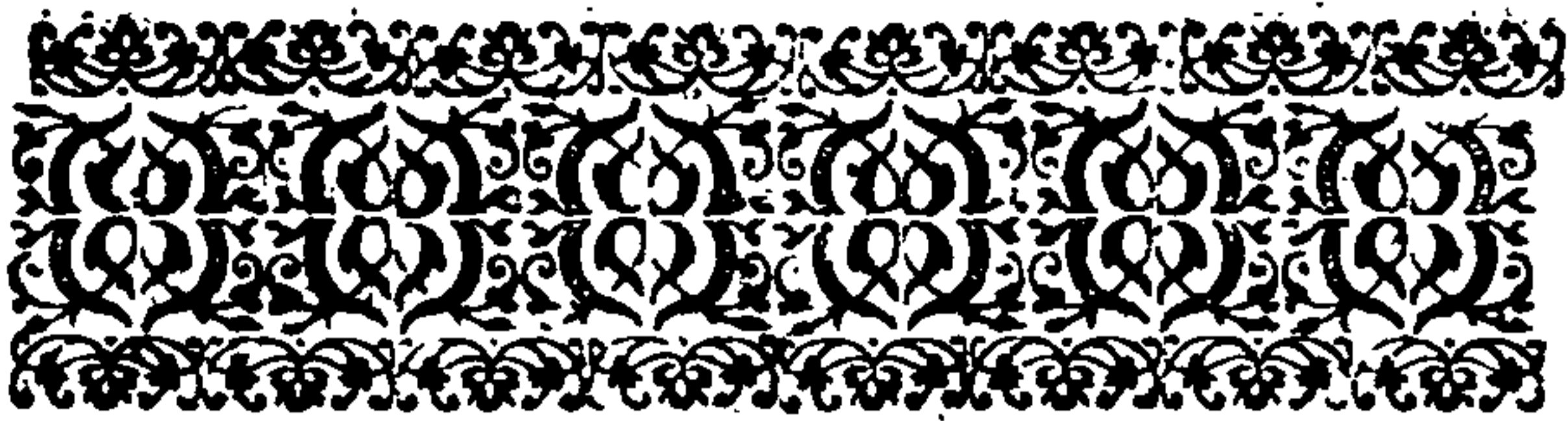
# LONGITUDE.

“ **I** T is now well nigh towards  
“ half a Year, since my good  
“ *Genius*, and *my Self*, found  
“ out a Method for discover-  
“ ing LONGITUDE, which  
“ I had publish'd before, had it not been  
“ on Account of the Creatures of *Trap*  
“ and *Discovery*, who, (I had Reason to  
“ fear) would have run away with *the*  
“ *Secret that Nature had confess'd to ME,*  
“ *and had refus'd to THEM, as often*  
“ *as they have ask'd her for it.* But now,  
“ that Things are so settled, that no Body  
“ can rob me of the Benefit of my In-  
“ vention, I publish this to defy all that  
“ can be done by those of the *Snearing*  
and

“ and *Grinning* Kind; in their proper  
“ Employment of *Ridicule* and *Grimace*;  
“ And therefore I expect all my Readers  
“ to be *Merry* or *Angry*, or *Grave* and  
“ *Serious*, upon this Occasion ; but I must  
“ (and indeed I dare) submit my self to  
“ the *Multitude*, who, if I am not mistaken,  
“ will declare me a *Fool* or *Mad-man*,  
“ with *Pomp* and *Ceremony*, for being so  
“ positive ; and therefore I do, by Astro-  
“ logical *Calculation*, prognosticate, that  
“ some will desire I should be in the  
“ *Wrong* ; others will have a *Suspicion*  
“ that I am in the *Right* ; and the *Ig-*  
“ *norant* will not know whether I am  
“ *Right* or *Wrong*.

*Jeremy Thacker.*

THE



T H E  
 L O N G I T U D E S  
 E X A M I N ' D.



H A T if the greatest Part of  
 the Pack have run upon a false  
 Scent, may not the hindmost  
 Dog hit it off? Perhaps, from  
 my comparing the *Seekers* af-  
 ter the *Longitude*, to a Pack of Hounds,  
 some arch Waggs will say, that if one or  
 two Dogs run mad, it is ten to one but all  
 the rest will catch the Infection, and so  
 look upon me as a Mad-Man; let 'em  
*sneer* on; for if I can but demonstrate my  
 self to be in the Right, and all the rest in  
 the Wrong, (as I am confident I can) their  
 Laughing will be turn'd into Admiration;

B and



and when I receive the Reward, they'll say, *Who wou'd have thought it ?*

If I should follow the Example of the greatest Part of the Longitudinarians, that wrote after the first Attempt, I should take Mr. *W——n* and Mr. *D——n* in Hand, shipwreck their *Hulls*, drown their *Souls* in a Tempest, lift up the Waves to intercept the Sight of their *Fires*, and break their *General Peace*; but Gratitude forbids: They sprung the Twenty Thousand Pounds, and as I hope to get it, I ought to be civil to them. Then let Mr. *D——n* rest assur'd, that I will neither meddle with his *Longitude*, nor his *New Law of Fluids*; and poor Mr. *W——n* has been so often handled as a *Longitudinarian*, and a *Latitudinarian*, so amaz'd at the bursting of his *Mortar*, and one of his *Shells*, and so frighten'd with the Fall of another *unlighted one*, that it would be as barbarous as ungrateful for me to insult over him. No, I shall always own him the Maker of my Fortune. I had no great Acquaintance, no Friends at Court; I could by no Means have procur'd an Act of Parliament for my Encouragement: My Engine was ready these three or four Years; so I was glad when he stirr'd. I lay still,  
well-

well-knowing that he was beating the Bush for me to catch the Hare.

Before Mr. *H——bs* thinks of sending his Spring-Movement to Sea, let him know how to make the Month of *June* in one Year, just as hot as the same Month in another, and so of every Day and Month in all Years; then his Instrument will be equally hasten'd and retarded at the same Seasons; and then he may polish his Pivots, and make an *Ætherial Oil* that won't thicken and increase the Friction of his Watch.

Mr. *Bill——y* (after having acquainted us with several *admirable* and *surprising Phenomena* of Nature, which he took to be *Conjuring*, the first Time he saw them, but now dares venture to perform himself, (and by himself) very reasonably tells us, That since the *Phosphorus*, *Glass-Devils* in Water, &c. which would, to a Stranger, seem to be actuated by Magic; to us that are wiser, appear to be the Effects of no other Arts, but *Chymistry* and *Legerdemain*; his finding out the Longitude, after so many have attempted it in vain, is a Thing no *stranger* than it is true. His *Movement* is still behind the Curtain, but I'll think the best of it; and since he has

vouchsafed to tell us, *That he will, by Means of a long Pendulum, have a steady Motion in an irregular one*, I'll help him out, and assure him, that he will succeed, if he'll do one Thing more, and that is, — prove *Sir Isaac Newton's* first Law of Motion, to be false.

I have little to say to Mr. *Br—e*, the Corrector of the Moon's Motion; but if his Application of it, be practicable for trying to find the Longitude, I'll turn him over to the Astronomers, for the *Examination of his Theory*; and I would not be in his Case, if he should fall into the Hands of Dr. *John Keil*, who knows how to revenge the least Injury done to Dame Nature his Mistress, by the false Reports of bad Philosophers.

The Latitude, no doubt, may be exactly found by *Signior Al—ri*; but if he would discover the Longitude by his Machine, he should desire his Work-men to make him a long Leaver, not to *move*, but to *stop the Earth*; or if *Ptolemy* has done that for him already, let him shove up his Leaver, and stop the *Primum Mobile*: If he wants Help, Mr. *K—tb* will lend him an Hand, and tell him what *Star* he shall chuse for an *Eastern* or a *Western Pole*.  
However,

However, let not our *Italian Gentleman* be discourag'd from giving us the Figure of his Engine ; for he is not the first Professor of Mathematicks that has fallen short of the Longitude : And tho' I can't commend his Scheme, because I am his Rival in this Case, yet, if he'll try for the Philosopher's Stone, or *square the Circle*, I'll *subscribe* to it. And if my Friend *K—tb* would have his Method effectual, let him take a Journey to the Moon, where he will be certain of his *Longitude*, by his Observations of the impending Earth ; he may find a sufficient Number of *Ganza's* among the *Longitudinarians* to carry him thither, and the *Lunatick* Attraction between the *Moon* on the one Hand, and himself and the *Ganza's* on the other, will make his Voyage speedy.

Mr. *J. H.* Writer of the Essay, has such a fertile Brain at Invention, that I know not how to deal with him :

— *He'll raise Objections dark and nice,*  
*And after solve 'em in a Trice.*

And if I demolish one of his Movements, he'll pop upon me in a Moment with another. If I tell him, that the Mercury is  
his

his portable Barometer with the spiral Bafon, will vibrate ten or twenty Inches by the very Shake of the Ship, (because the common portable one, which is ten or twenty times lefs fenfible as to the Mercury's Rife and Fall, will, with the leaft Shake, vibrate half an Inch) he'll substitute Dr. *Hook's* Marine Barometer, and have me there again : But then (granting him his Theory of the Tides) he must confider, that the Moon raifes a Tide in the Atmosphere, as well as the Ocean ; and as he rife from his Level with his Barometer in hand, where he expects the Liquor to defcend, he will find himfelf baulk'd, because the Height of the counterpoifing Atmosphere, will not decrease in that Cafe, as it would do at Land.

But then the *Pendulum* in the *Center of the Gravity of the Ship*, must it not always vibrate ? That it will be in Motion all the while that the Ship goes, I readily grant ; but then it must be in *absolute Motion* ; for if ever the Ship goes fteady, it will be at *relative Rest* ; (that is, (in mechanical *English*) at Rest in Refpect of the Things about it in the Ship) and therefore it will not move his Watch-Work. If he would have this Instrument go, let  
him

him consult about it with the Inventors of a Perpetual Motion ; \* and for his Time-keeper by a *Vacuum*, let him ask Advice of that Metaphysical Gentleman who has wrote a *Book to disprove the Existence of Matter*.

I have seen no more Attempts for the Longitude, except Mr. *Wa—n's* Advertisement, wherein he promises a Clock to make the Longitude known to those of the meanest Capacity ; therefore, since I think myself none of the Vulgar, the Expectation of his Wheel-Work shan't delay my Book ; let the *Tars* examine the Machine, and judge of it.

There is another Gentleman that has a great Volume coming out, for which he hopes to have the Twenty Thousand Pounds. His first Page of the *Quarto* sent before, (to tell the World that he is coming) he dedicates to the KING, his next to the PRINCE, the third to the *Royal Society*, and the fourth to the Reader : So far I read of him ; for the Language look'd like *English*, and the Printer had shew'd himself a well-bred Man in the Distances of the Lines, and Bigness of the Letters,

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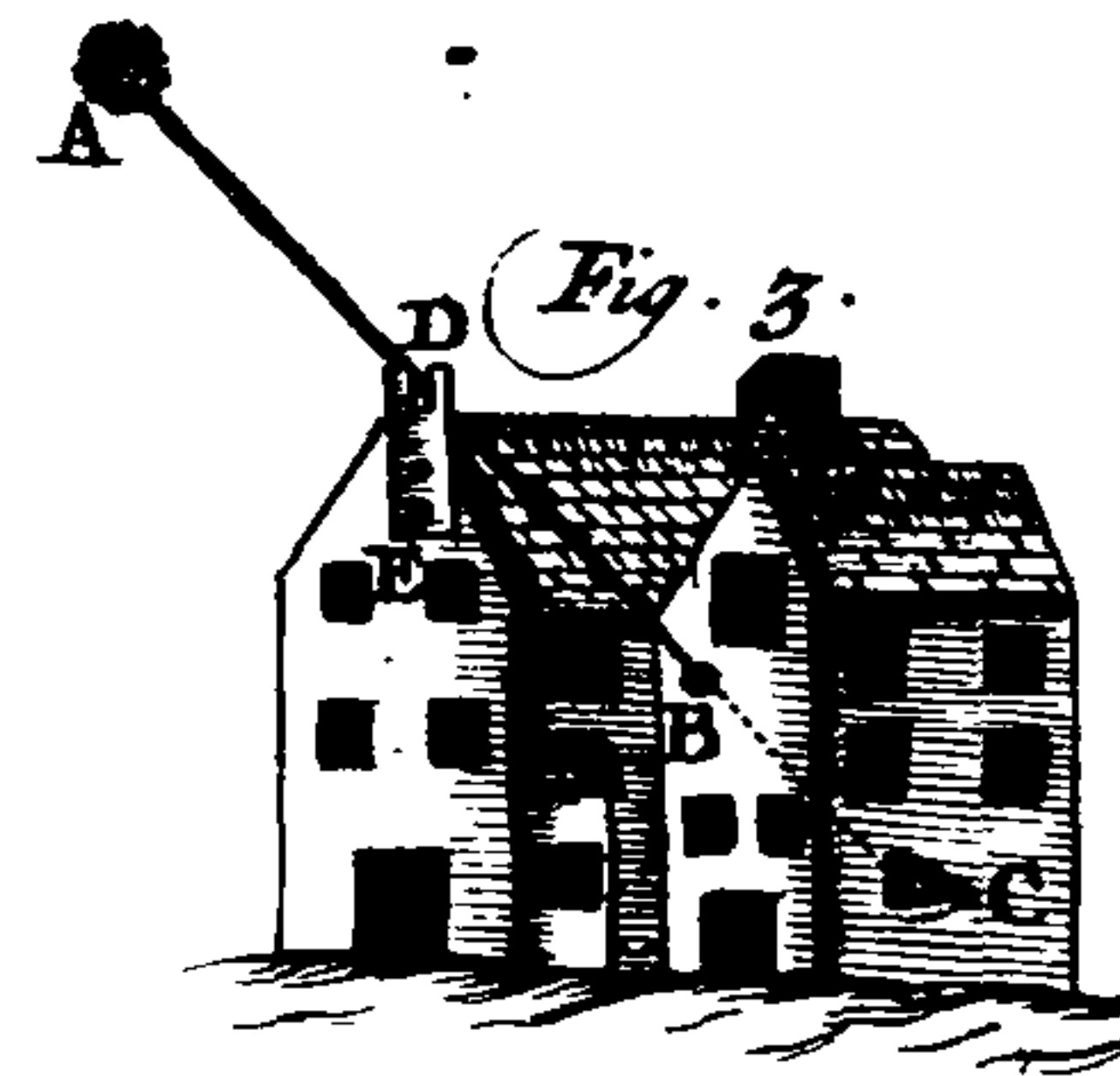
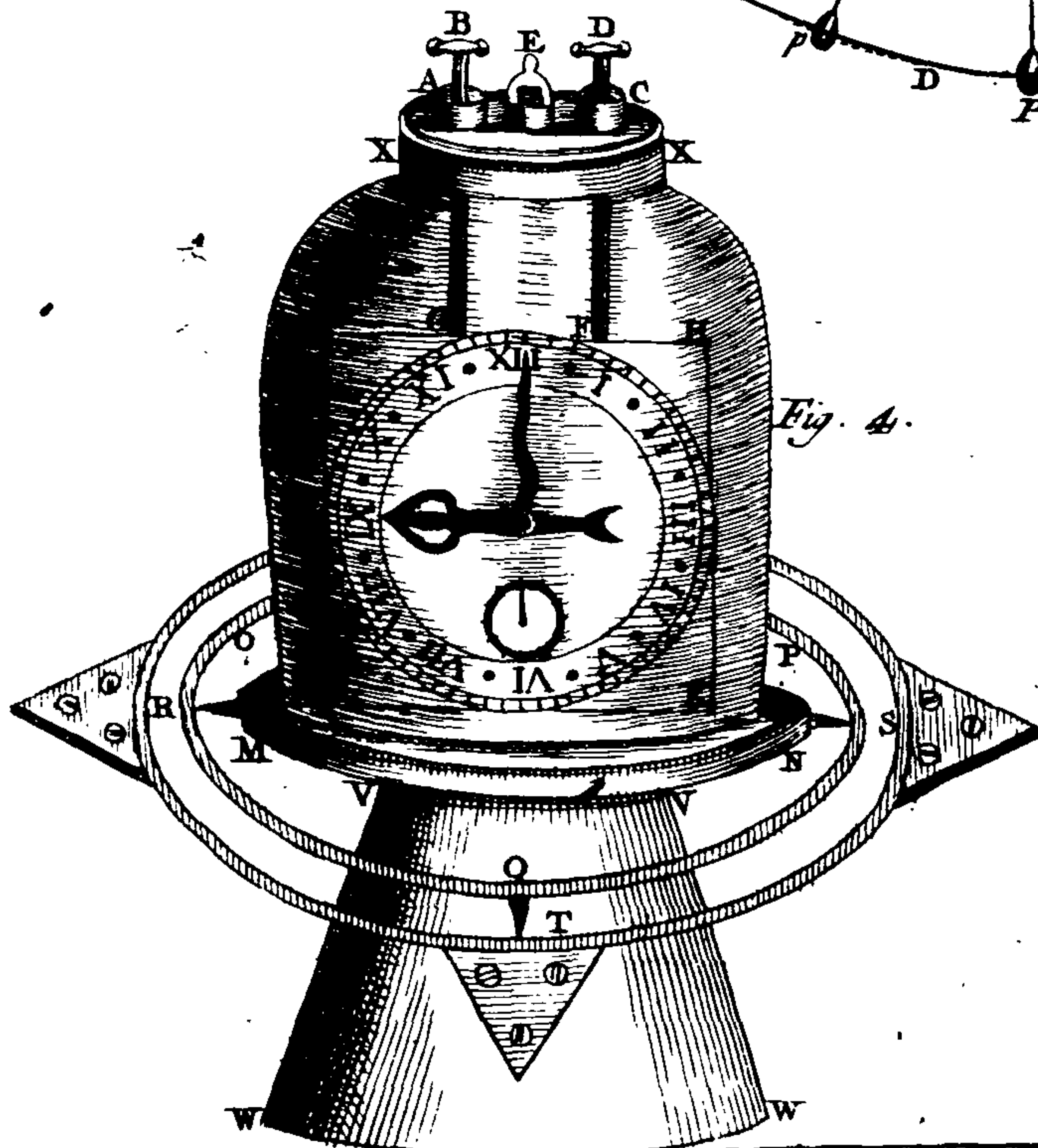
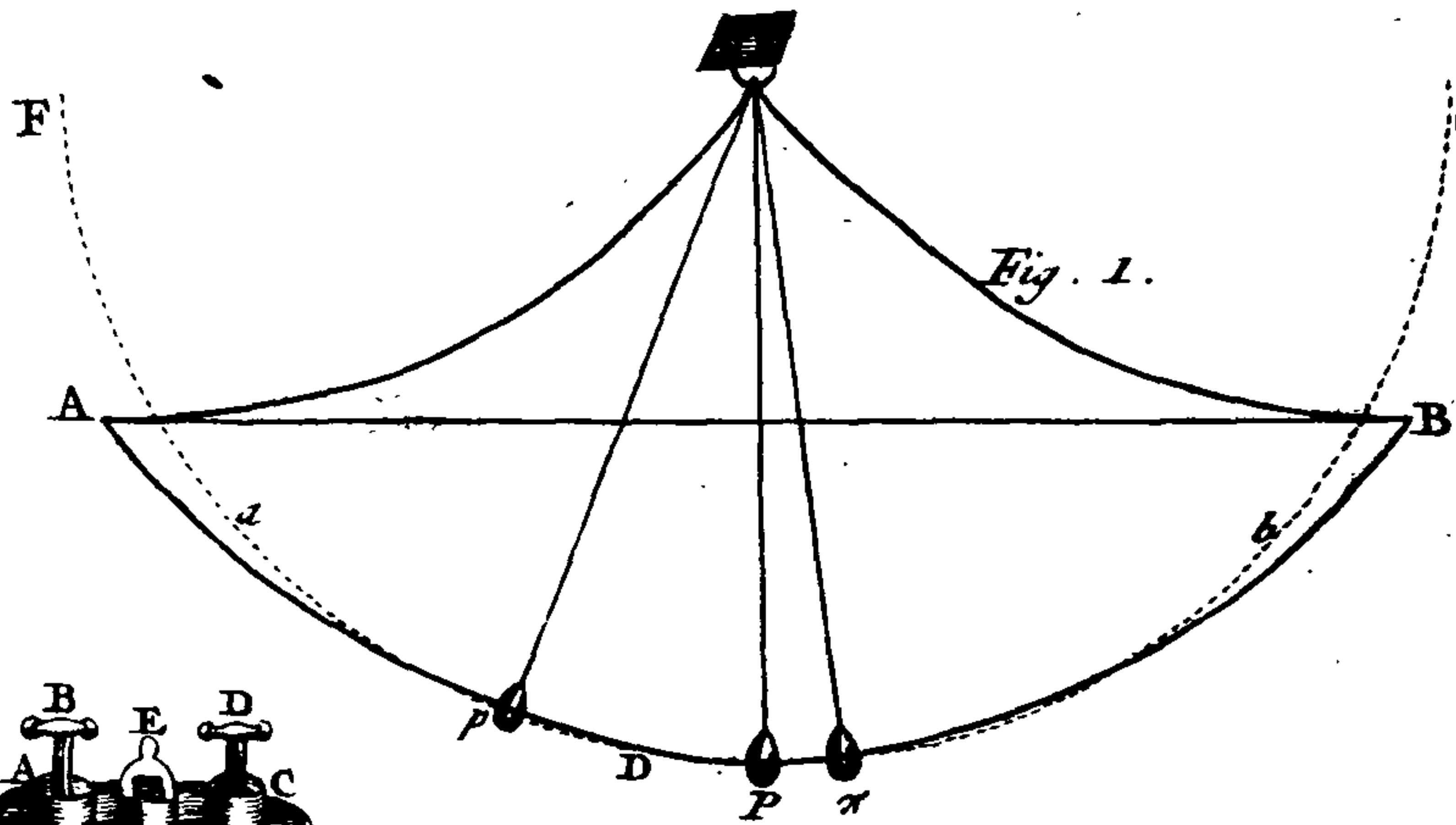
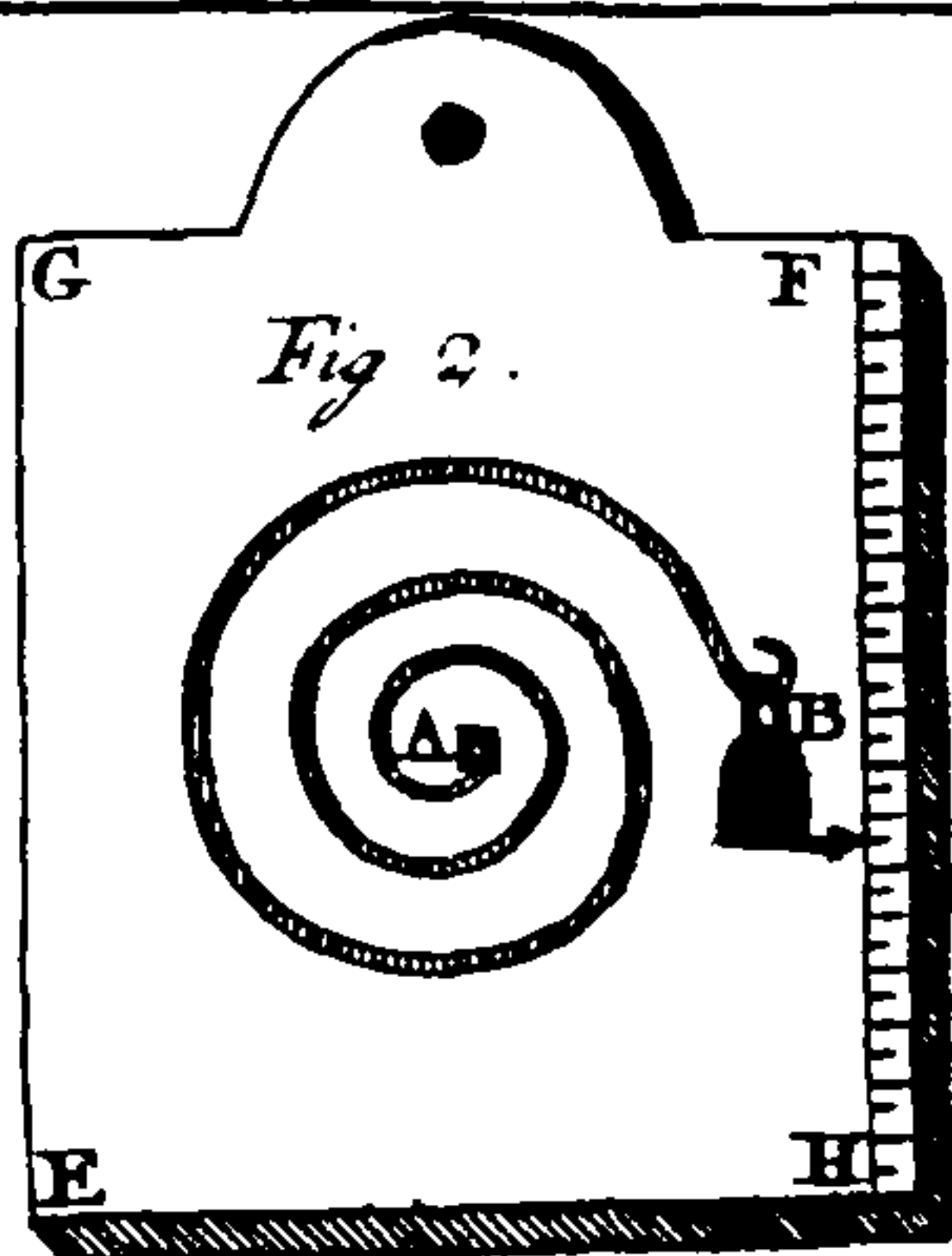
\* He may hear of several at Birmingham or Sheffield.

Letters, whose Size he proportion'd to the Quality of the Patrons. The Body of the Book was wrote in a Language that I could not understand, and so I must suspend my Judgment, 'till I have sent it to be perus'd by my learned Friend Mr. *Gr—n*, of *Cambridge*; for this Book may contain some of the Conclusions which follow from the Principles of his New Philosophy.

In a Word, to put an End to all the Methods for discovering of the Longitude that have been publish'd, that are in the Press at present, or will be publish'd hereafter, (always excepting my own) there are but two Ways by which it can be found, *viz. By the Improvement of Astronomy, or by the perfecting of Clock-Work.*

It is not to be hop'd that Astronomy will soon be carry'd so far as to serve for this Purpose, unless the great Mr. *L—*, with an Industry equal to his Candour, should join the *Fluxions* and *Series, which he invented*, to his known Skill in the Laws of *Centripetal* and *Centrifugal Forces*, and so vouchsafe to perform the Work for the Benefit of Mankind.

But if Astronomy was much more improv'd, Telescopes of a competent Length,  
for





For Observations of such a Nicety as is requir'd in this Case, would not be manageable an Sea, even tho' the Observer should place himself in the Center of Gravity of the Ship, where there is the least Motion of all; besides, in foul Weather, when the Longitude is most wanted, no Cœlestial Body would be seen, to make Observations.

What remains, is a *Time-Keeper*.

A long Pendulum-Clock measures Time better than any other Machine whatever, on Land; but it can by no Means be brought to do it at Sea with the same Exactness, for the following Reasons:

1. Because the Pendulum does not vibrate in a Cycloid.

Because the circular Arcs which it describes, are, by the Motion of the Ship, made to be unequal, and therefore not *Isochronal*, or perform'd in the same Time.

This is demonstrated by Mathematicians, if a Pendulum (*Fig. 1.*) swings in a Circle, as  $A P B$ , all its Swings or Oscillations, whether great, as  $A P B$ , or small, as  $D P \pi$ , are perform'd in the same  
C Time;

Time ; but the Pendulum P being fasten'd to the Center T of the *Semi-circle* F P G by the Thread or Wire T P, tends to swing in the *Semi-circle* F P G, in which unequal Arcs are not gone thro' in the same Time by the Pendulum. Some Clock-makers indeed have us'd *Cycloidal Cheeks*, as A T and T B, to guide the Thread or Rod of the Pendulum ; but the great Friction between the Cheeks at T, and against them along A T and T B, has made the Remedy worse than the Disease ; and therefore Pendulums have again been made to swing in Circles ; but the Thread or Rod of the Pendulum, being made pretty long, and vibrating only short Arcs of a large Circle, the Swings are *Isochronal*, because the small Arcs of a Cycloid, and the small Arcs of a large Circle, coincide. As for Example, if the *Semi-circle* F P B be of about nine Inches Radius, and the Pendulum describes nearly a Quadrant of it each Vibration, as it will do in going from *a* to *b*, then the Arc describ'd, will run pretty much out of the Cycloid ; but if the Radius of F P D, or what is the same, the Rod of the Pendulum, be four times as long as that which is made use of to swing Seconds, and the Pendulum

lum it self pretty heavy, it will swing in the Arc  $D P \pi$ , where the Circle and the Cycloid are sensibly the same Line; and therefore, if no Force makes the Pendulum fly out farther than ordinary in its Vibrations, they will be all perform'd in the same Time, because then the Cycloidal Arcs are describ'd.

Now, at Sea the Motion of the Ship will sometimes cause the Pendulum to make large, and sometimes small Vibrations: But if it be answer'd, That a Check may be put to confine the Pendulum to vibrate in the Arc  $D \pi$ ; I say, That as much as that Spring or Contrivance, which checks the Pendulum, is acted upon by the said Pendulum when it endeavours to fly out beyond its Bounds, so much Motion is there added to the returning Pendulum, (because Action and Re-action are always equal and contrary) and therefore its Velocity is too much increas'd, &c.

This will always remain an unconquerable Objection against Pendulum-Clocks; for tho' the Ship should not roll, (which never was known) yet such a Clock would be useless: For, let us suppose the Ship to go very steady, upon the least increase of the Ship's Velocity, the Pendulum will

swing fore or aft with too great a Force, as for Example to *p*. If the Ship's Velocity be diminish'd, the Pendulum will go on with too great a Force forward. If the Pendulum swings from Side to Side, the rolling (which we now consider again) will, by its Irregularity, produce the above-mention'd Effect; and this is all built upon this certain Principle, *viz.* That all moving Bodies, if acted upon by no extrinsecal Agent, always continue in their State of Motion: So the Pendulum, which, together with the Ship, was going forward with a determinate Degree of Velocity, continues to go on with the same Velocity, even when that of the Ship is diminish'd, and so flies out too far, &c. And so likewise the contrary happens, if the Ship is accelerated, &c. the Pendulum either making too long, or too short Vibrations.

I take no Notice of the lengthening of the Pendulum-Rod by Heat, and its contracting by Cold, because that may be rectify'd by a Thermometer, and the Pendulum may be shorten'd, as you approach the Equator by a Table of the different Lengths requir'd to swing Seconds in different Latitudes.

What

What I propose therefore, is, a Spring-Movement.

Methinks I hear Mr. *H*——*bs* answer, That I rob him of his Invention: But let us come to the Description of mine, and then let my Readers judge; \* *but first take the several Steps that I made, before I came to a Certainty.*

It is some Years since I thought the Matter feafable, conceiving that if I could by an exact Time-keeper, find in any Part of the World, what a Clock it is at *Dover*, or any other Place assign'd, and at the fame Time what a Clock it is where the Ship is, the Problem was solv'd; therefore I was resolv'd to spare no Pains and Cost to bring Clock-work to Perfection. When first the Pivots in Watches were made to go in Gems, I was resolv'd to try what that would do; but after having us'd Diamonds, I found that the Pivots would run in highly hammer'd Brafs, almost as well; but upon second Consideration, I imagin'd that the Difficulty of polishing the Inside of the Hole in the Diamond, was the Cause that I had fail'd of Success: Then I try'd Rubies, which I easily drill'd and  
polish'd,

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\* See the ERRATA.

polish'd, and then they succeeded beyond Expectation ; for my Pivots being very hard, and very little Oil put in at first, I found the Oil was gone in a little Time, being as it were suck'd into the Stone ; but the Movement went then as regular as before. One of my Watches was about five Inches Diameter, and instead of a Spring, I apply'd a long Pendulum, and it went four Years without differing above 3, 4, or 6 Seconds from the sydereal Time ; but the great Difficulty, was, how to make a Spring and Balance perform the same as a Weight and long Pendulum, which I thus found out, after having almost given over the Thoughts of it. I knew, by Experiment, that the Pendulum-Rod was by almost  $\frac{1}{5}$  of an Inch longer in the greatest Heat of Summer, than in the coldest Winter Weather, and therefore kept a Table of Equation to correct that Error. This made me imagine, that the Irregularity of the Spring, (which I sometimes substituted, instead of the long Pendulum) was not so much owing to a Defect in the tempering of it, as to the Alterations made by different Degrees of Heat and Cold. Accordingly, taking a Spring made in the Manner represented in

in *Fig. 2.* and fixing it to the Board F G H E; so that one End was fast to the Nail A, and the other loose, with a Weight hanging at it as B, I found that upon the Scale behind it F H, the Weight descended in hot, and ascended in cold Weather; so that Heat not only lengthen'd, but weaken'd my Spring, and Cold contracted it, and added to its Elasticity. It was in *December* that I try'd my Experiment, and hanging my Board with a Thermometer by it in a Green-house, I made it, from the Coldness of the Weather, gradually to sustain Heat, which I increas'd 'till it became greater than the greatest in Summer, so as to reach and exceed that in any Latitude, and thereby had a new Thermometer made of the Spring. I try'd several Springs this Way, and made a Spring-Movement with Springs thus try'd, and also apply'd 'em to my above-mention'd Clock, (which has gone four Years without any Oil, that which was us'd at first seeming dry'd up) instead of Weights, and a Balance instead of the Pendulum, in such Manner, that all the Wheels stood vertical, that the Friction might be equal on the Pivots. I made this new Watch sustain all the Degrees of Heat and Cold, as it had before done when single, and  
made

made an *Equation-Table*, by the Help of the Thermometer, as mention'd before, to correct the Time, always suffering the Machine to take its Course. I likewise try'd what Effect Moisture and Dryness had upon this Movement, by making a Steam in the Room, with a large Vessel like one of Mr. *Savery's* Boilers, and successively dropt cold and warm Water upon my Wheels, which I found to cause a considerable Irregularity on the Watch, tho' it did not seem to affect the Spring singly, unless according as the Vapour was hot or cold. I made no Table to settle the Matter of the Moisture and Dryness, because I keep my Machine in a Vacuum, and can wind it up without letting in the Air, as will appear in its Description. All that I am to do at Sea, is, to keep it as perpendicular as I can, that the Axes of the Wheels may be horizontal; but the Want of that now and then, can cause no great Error, especially since I suspend it like the Com-pals in concentrick Circles, and fix the whole to the Center of Gravity of the Ship.

The Way that I compar'd the going of my Watches with the true Time, was this: I made an Hole thro' a Wall about  
half



half an Inch Diameter, and upon the Gable End of an House, at some Distance, fix'd a strong Iron made in the Shape of DE, (*Fig. 3.*) so that looking thro' the Hole in my Wall, and the Slit D in the Iron, I cou'd see the *Bull's Eye* in the Slit; and when I could see the Bull's Eye again the next Night in the said Slit, I call'd that a sydereal Day, with which comparing my Machine as oft as the Darknes and Clearnes of the Night wou'd permit me, I found it not to vary above 6 Seconds. I must, by the by, take Notice, that I cou'd not by this Contrivance find any sensible Parallax of the fix'd Stars, whether I look'd with the naked Eye, when the Star seem'd to fill the whole Slit in the Iron, or with a small Telescope, when ceasing to twinkle it appear'd like a lucid Point in the Middle of the said Slit.

Here follows the Description of my Time-keeper. (*See Fig. 4.*)

HIKL is the Movement, with its vertical Dial-Plate, and its three Hands, viz. Hour-Hand, Minute-Hand, and Second-Hand, fix'd to the horizontal Brass Plate MN.

MXAECXM is a Glass Receiver from which the Air is drawn out at the  
D Passage

Passage E, which has a Valve to apply an Air-Pump or Syringe to, and then a Brass Head to screw over the Valve, and more firmly binder the Return of the external Air; but yet so as it may be taken off to apply the Syringe at any Time, if any Air should have insinuated it self into the Receiver; but to secure it, there is a wet Piece of Sheep's Leather on the Brass Plate, which is always kept moist by Means of Water that lies constantly on the Plate between the Receiver and the Brass Rim MN made high for that Purpose.

A is a Brass Collar full of oil'd Leathers, thro' which a Key passes, to wind up the Movement at G, in such manner, that no Air shall pass in whilst the Clock is winding up; and that the winding up may not stop the Movement, thro' the Collar C slips another Key, to give Liberty to a Spring at F, which keeps the Watch going, whilst the other Key winds it up.

XX is the Rim of the Brass Cap of the Receiver, which rises so high as to hold Water to keep moist the oil'd Leathers of the Screws of the Collars A and C, and of the Screw at E.

At M and N are two Ends of an Axis for the Movement, Receiver, and Plate to run  
freely

freely in the strong Brass Hoop P O Q, which likewise, by means of the Iron Point Q T, and another (which is here suppos'd behind the Machine) moves in the other Brass Hoop R S T) which last Hoop has four strong triangular Plates, three of which appear in the Figure) by means of which the whole Engine is to be screw'd fast at or near the Center of Gravity of the Ship.

V V W W is a Weight of Lead so fix'd to the Plate on which the Movement stands, as to keep the Watch always perpendicular, or at least to bring it back to a vertical Position, when it is shak'd out of it; for our Watch is not accelerated or retarded by the mere shake out of a perpendicular Position, but by lying so long in another Position, as to have one End of the Axes of the Wheels suffer more Friction than the other.

By means of the Glass Receiver, the Watch is kept from being affected with the Moisture and Dryness of the Air.

And the Thermometer, which is always to be near the Movement, shews, by Help of my Table, when the Work goes too fast, or too slow, and how much too fast, or how much too slow.

As for my Method of knowing what a-Clock it is at the Place where the Ship is,

I shan't trouble my Reader with it, 'till I come back and mention it in the Memorial which I shall present to the Commissioners, and prove by Witnesses; for that is a Postulatum to a *Longitudinarian*, and I don't know one of 'em who makes any Difficulty of it.

Now, gentle *Mechanico-Mathematical* Reader, I humbly submit to thee, and leave thee to judge whether or not my Method will do for finding the *Longitude* at *Sea*, and whether all those that have been hitherte publish'd do not much fall short of mine — —

*Lenta salix quantum pallenti cedit oliva.*

*Famq; Opus exegi — —*

**F I N I S.**

**POST.**



# POSTSCRIPT.



Thought my Book finish'd, and the Printer was working off the last Sheet, when the Carrier's Man brought me two Three-penny *Longitudes*, viz. Mr. C—r's *Marmeter* in *Quarto*, and a small *Octavo* by H—y, Esquire. The Dignity of the Author (who has put his Name in the Copper Plate to shew the whole Invention to be his own) ought to make me take notice of him first, tho' he is the last *Longitudinarian*. His Work then consists of a Copper Plate, grav'd by *John Senex*, a *Title Page*, *Commissioners Names*, a fine *Dedication* to *General Stanhope*, (whom he professes not to know) two Pages of his *Intention*, and two Pages of his *Invention*, with a short *Apology* for his *Brevity*, which is *very good*, not like *Hudibras's*, for not being understood; but because it is so easily

easily understood ; the whole Matter being known to every common Seaman. I'll say no more about him, because he tells us, that *when all his Instruments are compleated, they will shew that his Method will attain to the perfect Discovery of the Longitude.*

I humbly conceive, that Mr. *J. C—r's* *Marmeter*, tho' it cou'd go as well in Salt-Water as if it was kept in a Box, will neither be of Service in Storms, nor Currents. If it be fix'd but just below the Surface of the Water; in Storms, or when a Side-wind blows, it will have some Part above Water every Time that the Ship inclines towards the Side where it is not fix'd. But if to prevent that, it shou'd be put as deep under Water as the Keel of the Ship, or deeper, every Mechanick knows that its Power against the Motion of the Ship will be prodigiously increas'd, and that in Proportion to the Length of the Pole which fixes it to the Ship; and therefore the Ship will be so retarded by this new Device, that knowing the Run of the Ship will by no Means make Amends for the Loss of Time. Besides, as Mr. *Dryden*

— *When*

— *When Tides against the Current flow,  
The native Stream runs its own Course below.*

and moves our *Marmeter* one Way, whilst  
the Ship (carry'd by the Water above) goes  
the quite contrary Way.

In a Word, I am satisfy'd that my Rea-  
der begins to think that the *Phonometers,*  
*Pyrometers, Selenometers, Helimeters, Ba-*  
*rometers,* and all the *Meters* are not wor-  
thy to be compar'd with my *Chronometer.*



### E R R A T A.

**P**Age 13. Line 6. instead of, *but first take the  
several Steps that I made, before I came to a  
Certainty,* read — “ *but first I beg leave to add  
“ from what Occasions, and by what Steps this my  
“ Method was first discover'd, and has arriv'd at its  
“ present Degree of Maturity.*

### F I N I S.

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