Vol. 5

At Pennington
7 Bell Savage
yard Ludgate
Hill —

Monkton Novr 1786

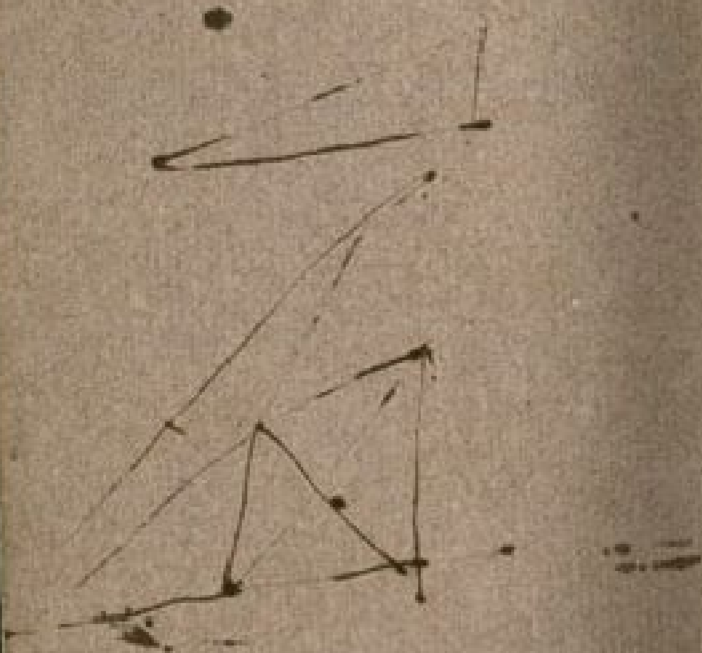
~~728~~. In the gridiron
pendulum there is
M no correction for the Exp:
and Cont: of the Crutch

×

729. To find the point
× of Suspension of the
M bob of a pendulum

~~730~~. What is the reason
that a leather belt
always tends to the
M thickest part of the
Drum? —

~~731~~ How can it be proved
that the Gridiron pendu:
M is accurate? —



~~732.~~ Before the year 1745 there was no regular post to the north of Scotland. The Mail was committed to the carrier — ten days from Edinr. to Aberdeen — Duke of Cumberland —

~~733.~~ Immediately after the Union in Scotland was sent to the English Parliament. pray. "Not the Expences at Courts might not be lessened in Scotland!!

~~735~~. Th 16th Prop. of Euc. 3 book is probably an interpolation — no common measure of Mixtilineal and Rectilineal angles —

~~736~~ Composition and resolution of forces — Parallelogram — not accurate

~~737~~. Colonel Nisbet published his Scotch Image Lord A— was the only Nobleman

who would not subscribe
for the Bank. Nothing
thinking to mortify
his Lordship told him
that he had discovered
his Great Grandfather
What was he said his
Lordship — A Blacksmith
in the North — Give me
your hand Sir
I am glad to hear
it for I always thought
he was a Jay to the
Congress — —

~~738~~. When Admiral Byron's Ship was wrecked at Rio Janeiro every body was leaving the Ship - No helmsman was. They were as if nothing had happened. Admiral B. asked him why he did not leave the Ship. The man replied "I am not yet "relieved".

×739. Do not know who the × rest of the Spanish Ships that most of the guns were mounted

There is a curious custom
of three cannon being
fired together by an iron
bar which was melted into
all the three

7th. The Chain pumps
are of the same dimen-
sion in all the ships
that is 6 1/2 Inch. bore
the large ships have
a greater number
6 or 8 to 1 in a pump
Sloops have hand pumps

4th. Much power is lost
in the Chain pumps

x. 20 feet 20 Men are required to work it perf.
the quant. of water raised does not exceed one Ton P. Minute. Very often out of repair —

#2. Colts improvd. of the hand pumps are making
Men opening in the side below to take out the lower box without drawing the upper —

#3. Patent pumps have both perform movable
in the rod of one setting thro' the center of the other

it is said to raise twice
as much water as the
common pump —

744 Watts it is said
has contrived a method
of regulating the quanti-
ty of steam agreeable to
the weights to be raised
In one of these cont.
is contrived a the pump
rods fell into the feet
the machine continued
to go on —

×
745. The Admiral returns
2 Guns fewer to a ship
of war and 2 to a month

~~715~~ A chain pump
— is supposed to throw
M. 1 Ton of water in a
min.t to do which the
wheel must be turn
26 ½ times which is
23 feet diam. conse-
quently a length of
chain equal to 165 feet
must pass to give a
ton — 15 Gall. of water
in 165 feet are taken
by the chain. The chain
pump cannot be used

if there be 3 feet water

the hold –

III. A Ton of Malleable iron

is made at once out of

2 1/2 Ct. of Cast –

IV. A pump with

pistons worked

– 3

m in a box, the box

with two holes filled

to two i.e. a tree

tube with a fixed

valve between – makes

a Continued Stream –

IL Shot with three

double bows fifteen
about 13 feet down
this prevents with some
~~as much~~ more water
than the chain can
be repaired in 6 feet
water —

×
748. To know when a
leak filth the ship
with water, or with
smoke

×
749. A ship of war on
foreign service has 3
suits of sails, at home
only two — 2 top masts

×
750. All the mortar beds
at Gibraltar are laid
on a platform of wood
covered with plank—

751. Water Mills were in
use among the Romans
— the remains of one were
M lately discovered at Man-
chester—

×
752. On the 12th of
April when 9 ships
were cut off by the Eng:
fleet De Grasse broke
through the Eng: fleet
to join his 9 ships—

X
763. The Locks introduced by Sir Chas. Douglass at the Conclusion of the war were found extremely useful, the man who pointed the Gun found a line which from his feet was attached to the trigger, by this means the gun was much better pointed than in the common way —

~~754.~~ In stormy weather the Log should be loaded with an additional piece of lead to

make it sink 2 or 3 feet
when it should be sup-
ported by a small buoy
at that depth the waves
do not much affect the
buoy —

755. At Gibraltar a fur-
nace is built of brick
behind each battery
for heating balls —

756. In the Engagt. on
the 12th April 1782
the rear division of the
Eng: fleet was the van
Comd. by Admiral Affleck

757. In the Engagt on the 12th Sept the Valiant was twice on fire by her own wads being to the Leward —

758. Through the Fleet there is a Signal for every day of the year. —

759. What are the principal advantages of the Main Pump? —

760. A machine for making Combs, both at once —

761. May not small light
ships be moved by mag-
Mr nets in a sea fight? —

762. The frame, Art: 747
makes a good model for a
Mr Column —

763. An Equatorial is often
the use in an observatory,
it cannot be depended on
for the right Ascension
more than two minutes.
M.K —

×
764. The Marines are taught
the exercise of the Great
Guns, and the Sailors that
of the Musket. the former
of little use in a battle
unless where every man

~~1765.~~ The magnifying pr. of the Solar Microscope is equal to the quotient arising from the Division of the Distance of the Screen by the focus of the Magr.

X
1766. On board a French Ship the Discipline is much inferior to the English, at most times the Quarter Deck will be crowd with the Men taking their Victuals, in an English Ship no Seaman ventures on the Quarter Deck unless on Duty

767. The Indians do not work their guns with the same care as the English more than —

768. In the last war the Virginia top sail was always backed — The Jib was powerful and useful.

769. When a petition for redress of grievances is drawn up by the men they sign their names in a circle, by this means the ringleaders cannot be discovered — this they call a round robbin —

×

772. A vessel lies in a small harbour her bow inwards, a strong buoy unto the harbour the end of the pier to Leeward what is the best method of warping her out of the harbour?.

A Hawser is made fast to the ring of the Buoy Another Hawser ~~on this~~ to the ring ~~Ready~~ off the side of the Buoy, stop a spring on the Cable made fast about ten fathom from the Buoy heave on this at the

Windlass till the Ship
has the Buoy abreast
set the main sail and
top sails, and cut away
the Riggings — Capt.
G— observed this method
with the Nancy in St —
Davids Castle ——

771: When the Royal
Oak took possession of
the Glorious the R.O.
had not a Barl. of Pr.
~~on board~~ — left ——

772. What is the reason
that there is no Ad-
miral of the Red? —

1773. It is said that the Dutch, once took on ev flag, and that that is the reason why we have no Admiral of the Red —

1774. To Box the Compass is to repeat the points opposite to each other NbE, Sby W &c —

~~1775~~. Purchasing land in getting principle without interest without principle mortgages both Princ. and Interest —

~~776~~ 776. A Chaldron of Coals weight 27 Cwt. price from 30 to 40/.

777. All the Cordage of a Ship is bought by weight about 2 Guineas per Cwt.

~~778~~ 778. Mr Evans Monday 19th Febry of Flam the Dark through of the moon appears more distinct than I ever saw it

~~779.~~ Aspasia mistress
to Pericles, taught Socra
tes Politics and Rheto
ric —

×
780. Every sailor ~~in~~
on board a Kingsship
is allowed 1 lib Bread
about 5 biskit and
7 pints of small beer
⅌ Day — 7 lib of beef
and pork — it is comm
for 5 to mess on 4
mens allowance and when
the ship is paid off they
receive the add mony
there for the Remainder

~~71~~ The Dutch comp.
are said to be more
— ready than the Engl.
M tho' cheaper and more
ver in Workmanship

~~72~~ What is the advan-
tage that Vessels
M have over cogs?

~~73~~ The Albion melts
grind 100 Quarters
of wheat in 24 hours
M 1 Bushel one Pr
from 58 to 64 Lib
Q Bushell — under
abt 62 Lib Troy?
Q Bushell —

784. The Albion Mills consume Tons of Coals p

785 How is the Mill set a going? how are the Diff.t systems Diseng.d from each other?

786. Method of Calculatg Timber, and ~~other~~ Centers, Roofs Engine frames &c —

~~787~~. See the series of Lbriate Mill stones grind with any Hardy Contt.?

~~[illegible]~~. What is the term of the Albion Mills?

M

~~[illegible]~~ If two bars of metal are of the same length but of different diam.rs will they be equally lengthened by an equal application of the same degree of heat?

M

~~[illegible]~~ In Capillary attraction whether is the water suspended by the attraction of the upper or lower annulus?

791. In Boston Engehouse Instant air Pistol a single dress of ether is sufficient to charge the Pistol the contents 10 Cubic Inches

X

792. Young's Index ... Relation — Properties of Matter

1 Extension a relative term — ... of ...

2 Divisibility — infinite in Idea — actual divisibility Light of a Candle fills a sphere of 4 miles ... — ... 1 Grain ... 20 years — other ...

— Gold leaf — Gilt wire

— Cinnamon in water —

— Sulphur burnt warm

a Raspberry — Copper

dissolved in Aquafortis +

[illegible] — Iron in Aquafortis

3 Impenetrability — Micro-

scope —

4 Solidity — resistance of-

fered to the hand by a

piece of lead is said to be

owing to its solidity —

resistance offered to lifting

it from the table cannot

be said to be owing to so-

lidity nor solid body resting

the table and the lead lying.

Repulsion of two magnets
Rest on end of the scale
between them, this not
owing to solubility, suppose
this strong enough, if
the two magnets could
be more to overset
together than the hand
with the cylinder of lead
in it. — Bladder of air —
— 5. Boiling — Madam
Philosophy supposes that
all bodies consist of ultimate
particles — how else can bodies
common alter or change —
and that all the changes

that happen in bodies
arise from different combi-
nations of these particles
This has not been proved
there is on the contrary
good reason to believe
that all matter is permu-
table and that the identity
of bodies takes place in
consequence of certain
powers of attraction and
repulsion which will
be explained below

2nd Lecture —

The pores in Gold are suppos
equal to half the Quantity
in Glass very great, but
the quanty quite uncertain-

3 – Preuss[illegible]
Ohmstat –
Exp: Dot Eigen Sch[illegible]
Salts Sour.. –
when [illegible]
more water to [illegible]
– solid produced –

Affinity
— Steady —
— 1 part of Vin[illegible] Emuls
— Lime earthenware
an' for [illegible] [illegible]
— Jug & water from the
bottle, oh fire and after
the ear —
Eff[illegible] + Sal. ann and
[illegible] [illegible]
in smooth [illegible]
the smooth — [illegible]
[illegible] loose —

Expt. Sol: of [illegible]
gives smell and
absorbed by the [illegible]
acid – and restored
by Oil: Tar – stry
in alk. —

Expt. Sol: of Sulph.
with [illegible]
[illegible]
[illegible] 12 [illegible]

Expt. Sol. of [illegible]
[illegible] Oxalic
[illegible]
[illegible]
[illegible] clear –

Roving Machine
Velocity in Throughs
about 5 to 1 ——
Two kinds Can with
Rollers and without them
In Use as in all the cyl-
In the Front Roller is usually
made larger than Rear
behind, This renders the
Diff: in the Calcul: less —
+ on the Scale of mine
Instr: to the Last —
— model —

794 Dimensions of a Carding Engine made to a scale of nine Inches to the foot

	F	Inch
Diamr of Larg Cyl:	2:	2
Do of Lesser Cyl.	1·	7½
Length of both	1·	2
Leng of Cards on the Gr Cyl:	1	~
Breadth Ditto	0:	3½
No of pieces		
Distance of Cards	0·	1½
Two Bevel Wheels whereof one on the Gr Cyl the other on the Iron Shaft –	0·	3.4
	No. teeth	14 –
		4.4
Two Wheels for the Endless Screws on the oblique Shaft	teeth	40 –

Pulley on the Shaft of the great Drum } Ft 0:5½

Ditto on lesser Drum & Diff. Grooves } 6 Ft

Ditto on Crank Diff. Grooves 2.25

Pulley on lower roller Diff. Gr. } 2

Diam. of the two Dischargers 3.25

Pulley .5

Crank

upright part of the Crank 1=3

Horizontal part 1–

Curved groove part } 0.10

nine Scrib Cards of 2 Yards } 1.6

What cards on the little
Cylinder & breaths close
together —

Feeding rollers one fluted
the other plain } for
upper one fluted } 1. 25
weight hung on each end
of the upper roller —
Wire cloth Roller of wood
The instrument for taking
off the cotton moved by the
Crank & describes a
circle. It takes under the
cards a little —

Pyng — Flint Glass
Carb. Amm. — Acet. Acid —
Tar Worth —

[illegible]
Mr. G.R. caught the gout
in the end of bed
which he found to be
inf: a. he threw
the face of a house
while describing an
unmarked —
— Pitch with [illegible]
a stream [illegible] —
— Sympt.: on the
present [illegible] [illegible]