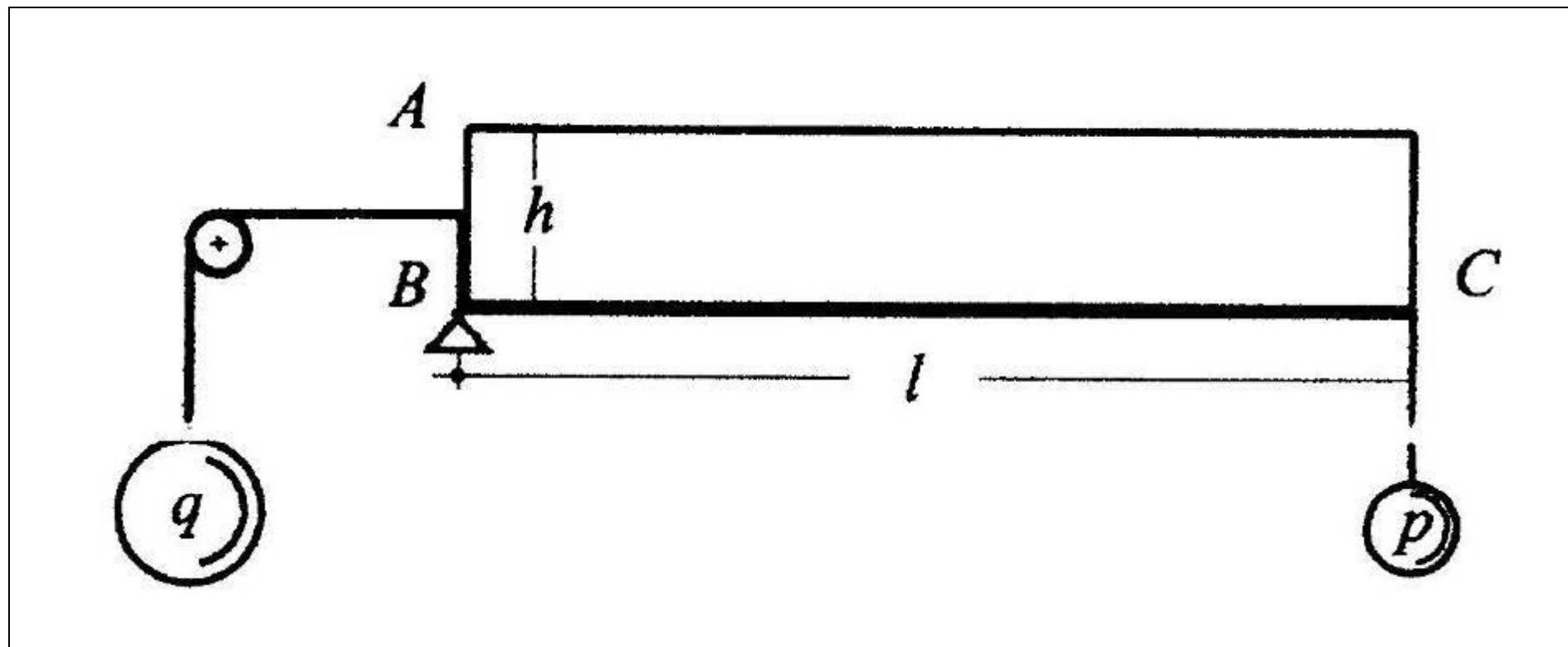
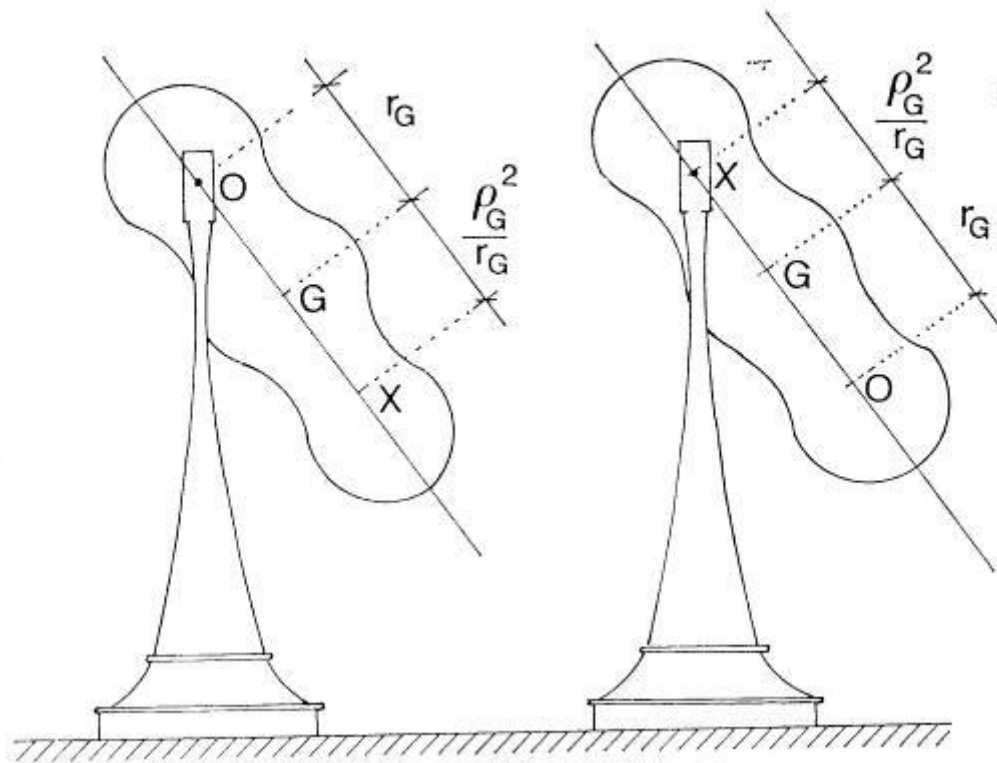


DOPO GALILEO

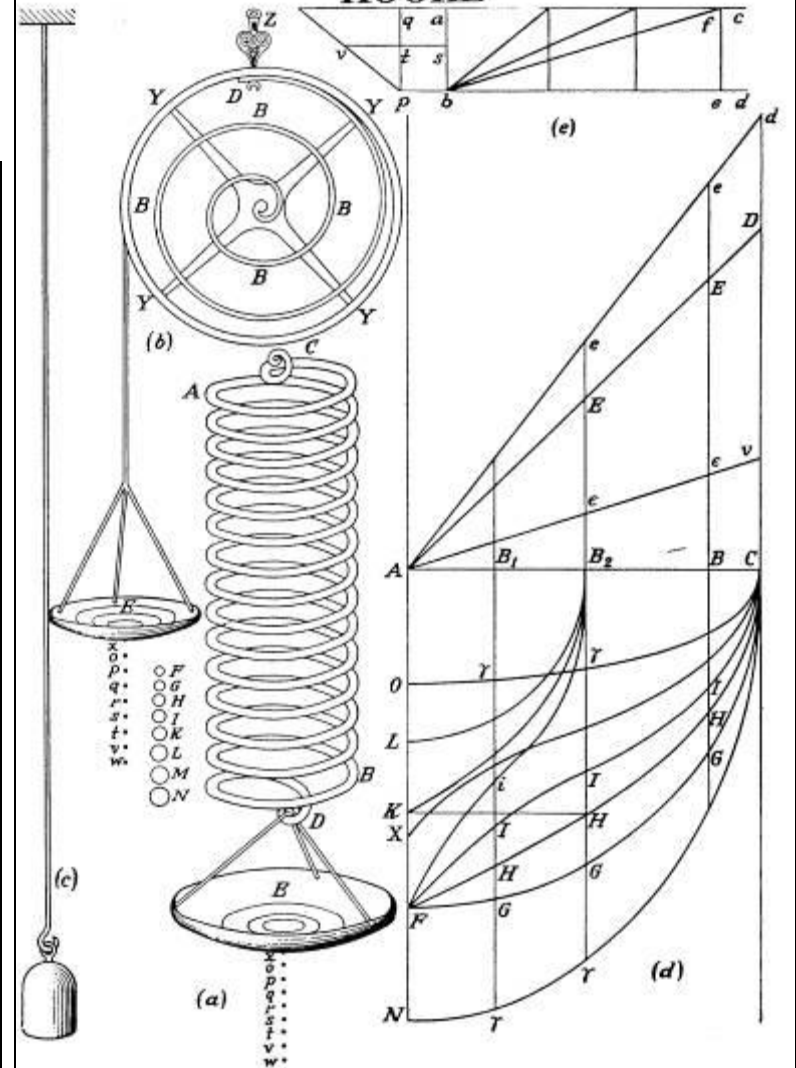


HUYGENS



01

HOOKE



02

ceiinossttuu
cioè
ut tensio sic vis

*un pezzo di legno duro sia incurvato con
un'estremità fissa in posizione orizzontale e
con l'altra estremità caricata da un peso*

*il lembo superiore si estenderà e il lembo
inferiore si accorcerà in proporzione alla
flessione; di conseguenza saranno
conservate le medesime regole e proporzioni
per il loro sforzo ed il loro ritorno a riposo*

MENSIS OCTOBRIS A. MDCLXXXIV. 467

NOVA METHODUS PRO MAXIMIS
 & minimis, itemque tangentibus, quæ nec fractas, nec irrati-
 onales quantitates moratur, & singulare pro illis
 calculi genus, per G. G. L.

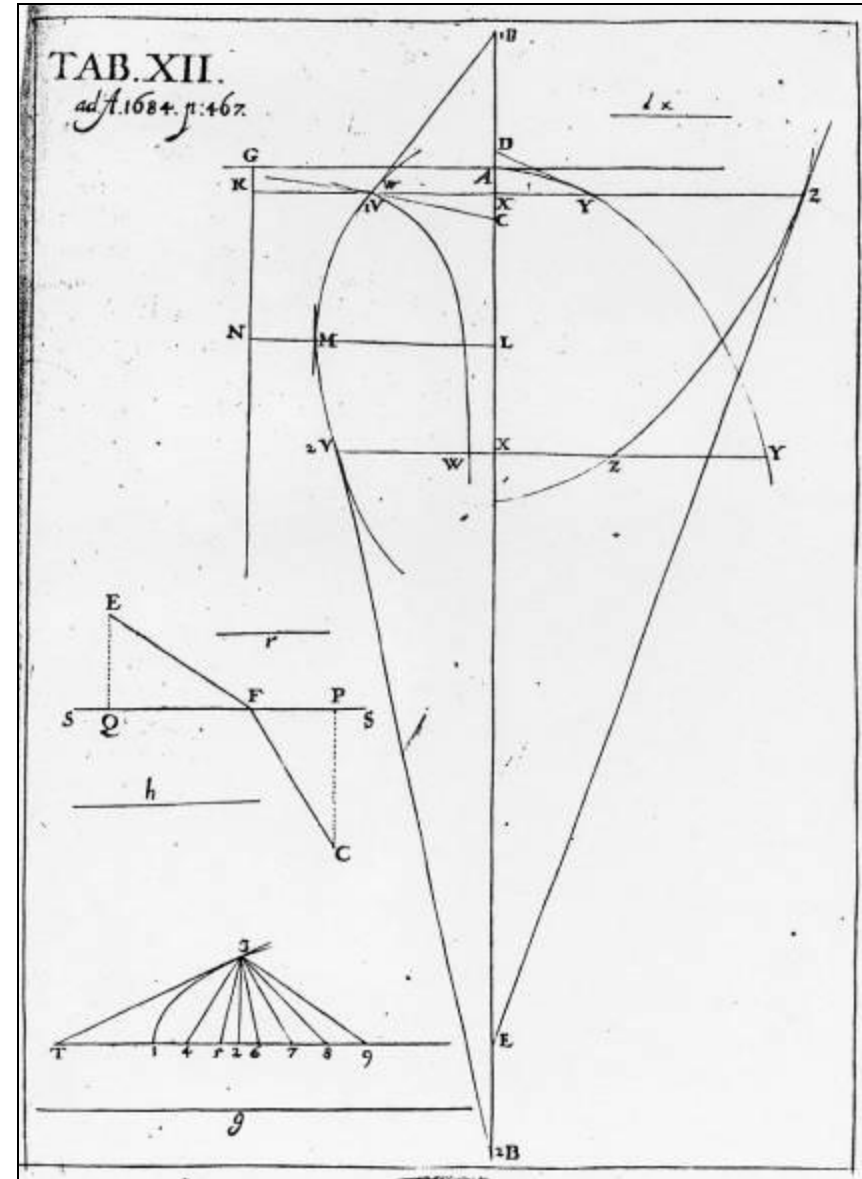
TAB. XII.

Sit axis AX, & curvæ plures, ut VV, WW, YY, ZZ, quarum ordi-
 natæ, ad axem normales, VX, WX, YX, ZX, quæ vocentur respec-
 tive, v, vv, y, z; & ipsa AX abscissa ab axe, vocetur x. Tangentes sine
 VB, WC, YD, ZE axi occurrentes respective in punctis B, C, D, E.
 Jam recta aliqua pro arbitrio assumpta vocetur dx, & recta quæ sit ad
 dx, ut v (vel vv, vel y, vel z) est ad VB (vel WC, vel YD, vel ZE) vo-
 cetur d v (vel d vv, vel dy vel dz) sive differentia ipsarum v (vel ipsa-
 rum vv, aut y, aut z) His positis calculi regulæ erunt tales:

Sit a quantitas data constans, erit da æqualis o, & d ax erit æqu.
 a dx: si sit y æqu. x (sive ordinata quævis curvæ YY, æqualis cuivis or-
 dinatæ respondentis curvæ VV) erit dy æqu. dv. Jam *Additio & Sub-*
tractio: si sit $z = y + vv + xz$ æqu. v, erit $dz = y + vv + x$ seu d v, æqu.
 $dz = dy + d vv + dx$. *Multiplicatio*, d x v æqu. x d v + v d x, seu posito
 y æqu. x v, fiet d y æqu. x d v + v d x. In arbitrio enim est vel formulam,
 ut x v; vel compendio pro ea literam, ut y, adhibere. Notandum & x
 & d x eodem modo in hoc calculo tractari, ut y & dy, vel aliam literam
 indeterminatam cum sua differentiali. Notandum etiam non dari
 semper regressum a differentiali Equatione, nisi cum quadam cautio-
 ne, de quo alibi. Porro *Divisio*, d^p vel (posito z æqu. $\frac{p}{y}$) d z æqu.
 $\frac{p}{y} dy + y d \frac{p}{y}$

yy

Quoad *Signa*: hoc probe notandum, cum in calculo pro litera
 substituitur simpliciter ejus differentialis, servari quidem eadem signa,
 & pro + z scribi + dz, pro - z scribi - dz, ut ex additione & subtra-
 ctione paulo ante posita apparet; sed quando ad exegefin valorum
 venit, seu cum consideratur ipsius z relatio ad x, tunc apparere, an
 valor ipsius dz sit quantitas affirmativa, an nihilo minor seu negativa: quod
 posterius cum sit, tunc tangens ZE ducitur a puncto Z non ver-
 sus A, sed in partes contrarias seu infra X, id est tunc cum ipsæ ordinatæ
 Nnn 3 z decre-



QF ad FP, hoc est sinus angulorum Incidentiæ & refractionis FP & QF erunt reciproce ut r & h, densitates mediorum in quibus fit Incidentia & refraction. Quæ densitas tamen non respectu nostri, sed respectu resistentiæ quam radiis lucis faciunt intelligenda est. Et habetur ita demonstratio calculi, alibi a nobis in his ipsis Actis exhibitæ, quando generale Opticæ, Catoptricæ & Dioptricæ fundamentum exponebamus. Cum alii doctissimi Viri multis ambagibus venati sint, quæ hujus calculi peritus tribus lineis impofterum præstabit. Quod alio adhuc e-

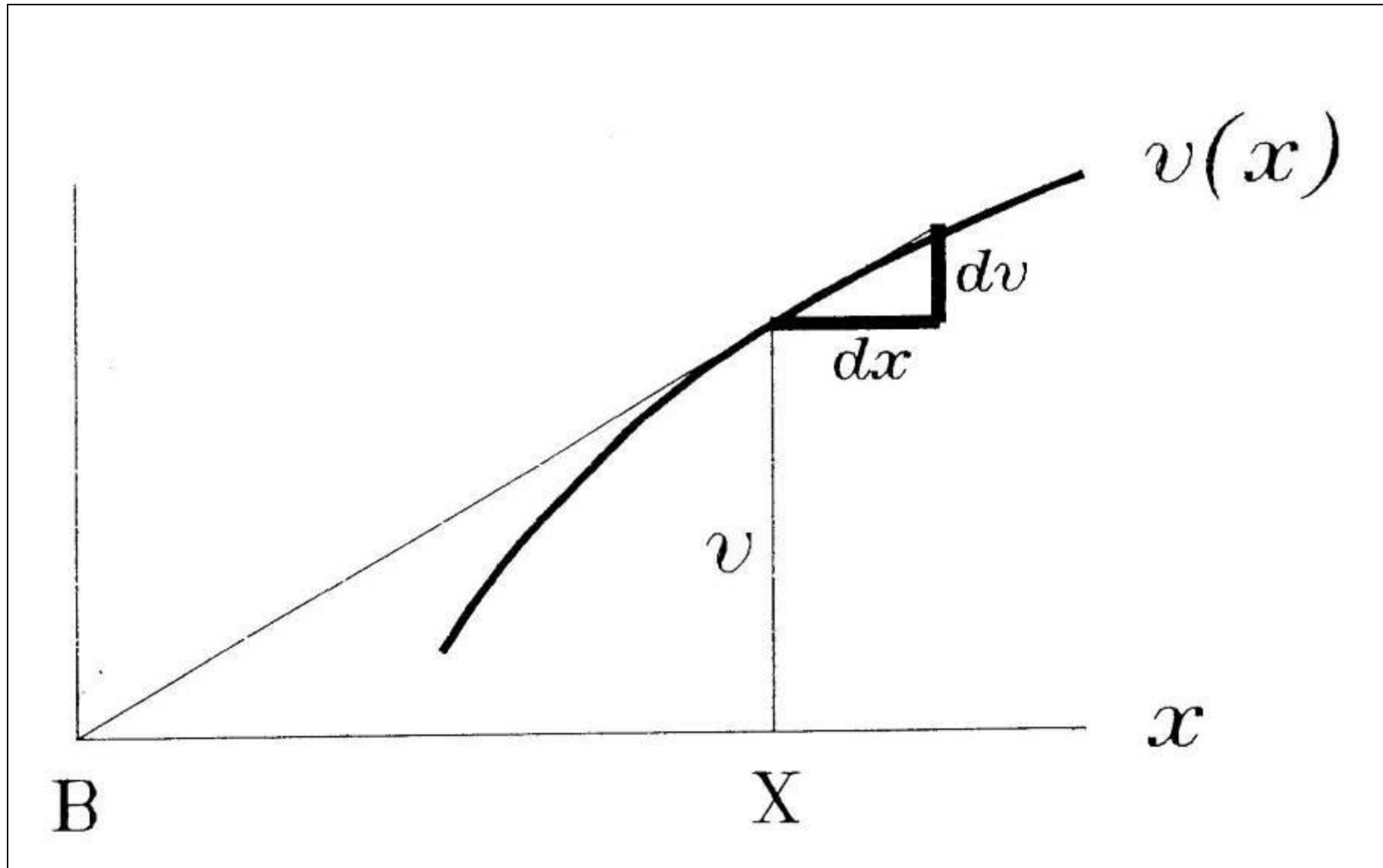
05.1

*G. G. L. DE GEOMETRIA RECONDITA ET
 Analysis Indivisibilium atque infinitorum, Addenda
 his quæ dicta sunt in Actis a. 1684, Maji p. 233; Octob.
 p. 264; Decemb. p. 586.*

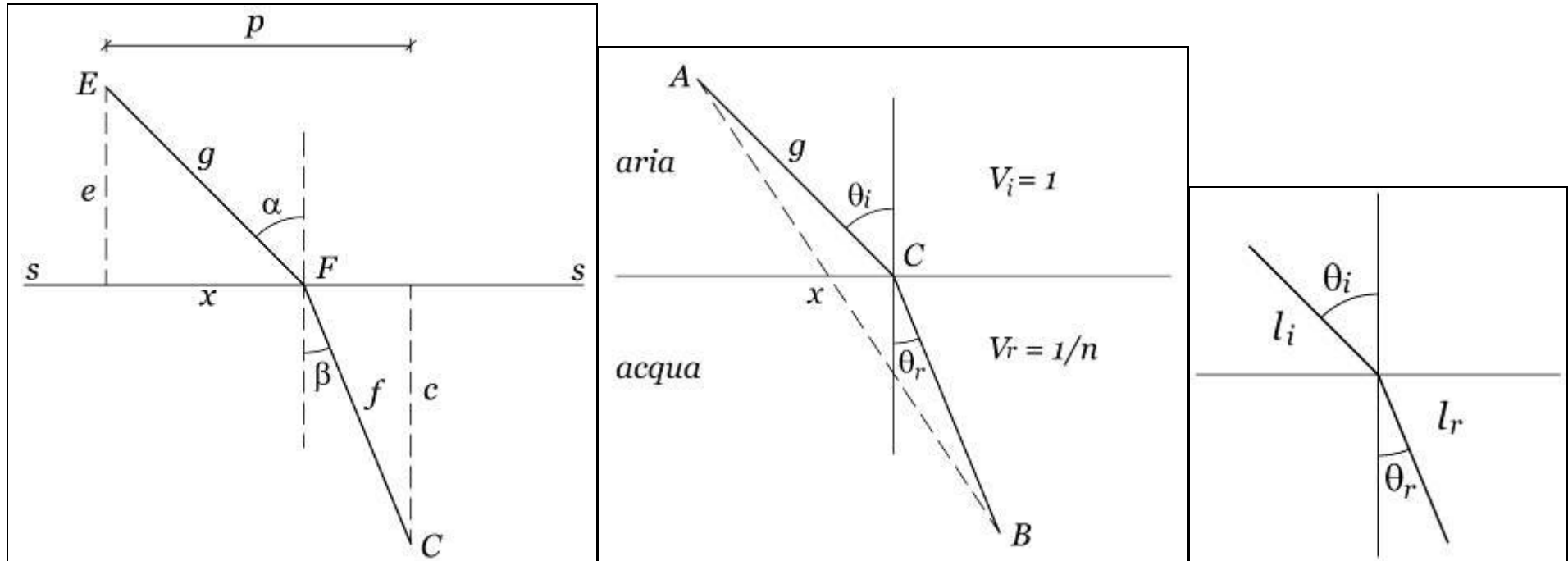
05.2

dicto procedo. Sit ordinata x, abscissa y, intervallum inter perpendicularem & ordinatam quod dixi sit p, patet statim methodo mea fore $pd y = x dx$ quod & Dn. Craigius ex ea observavit; qua æquatione differentiali versa in summatricem, fit $spdy = sx dx$. Sed ex iis quæ in

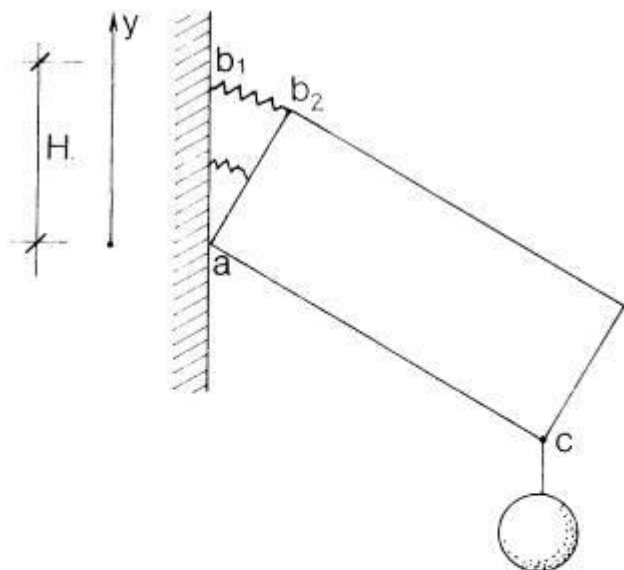
05.3



DOPO GALILEO



(dagli *Acta Eruditorum* di Lipsia, 1684)



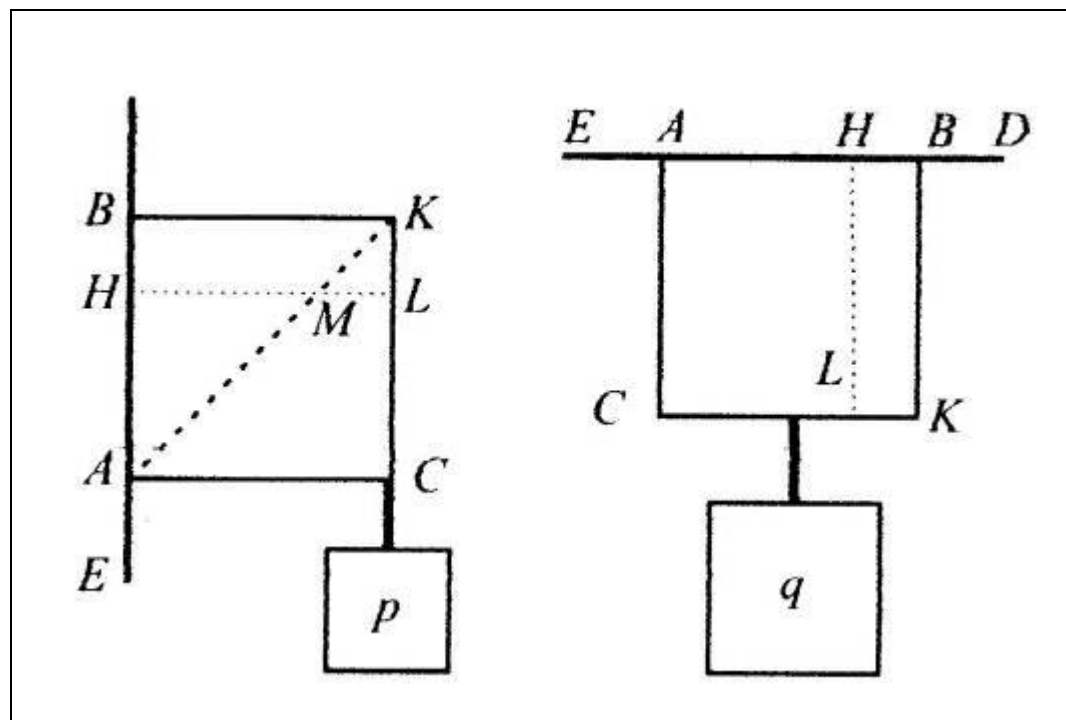
$$M_R = \int_A \sigma_{\max} \frac{y}{H} y \, dA$$

e cioè:

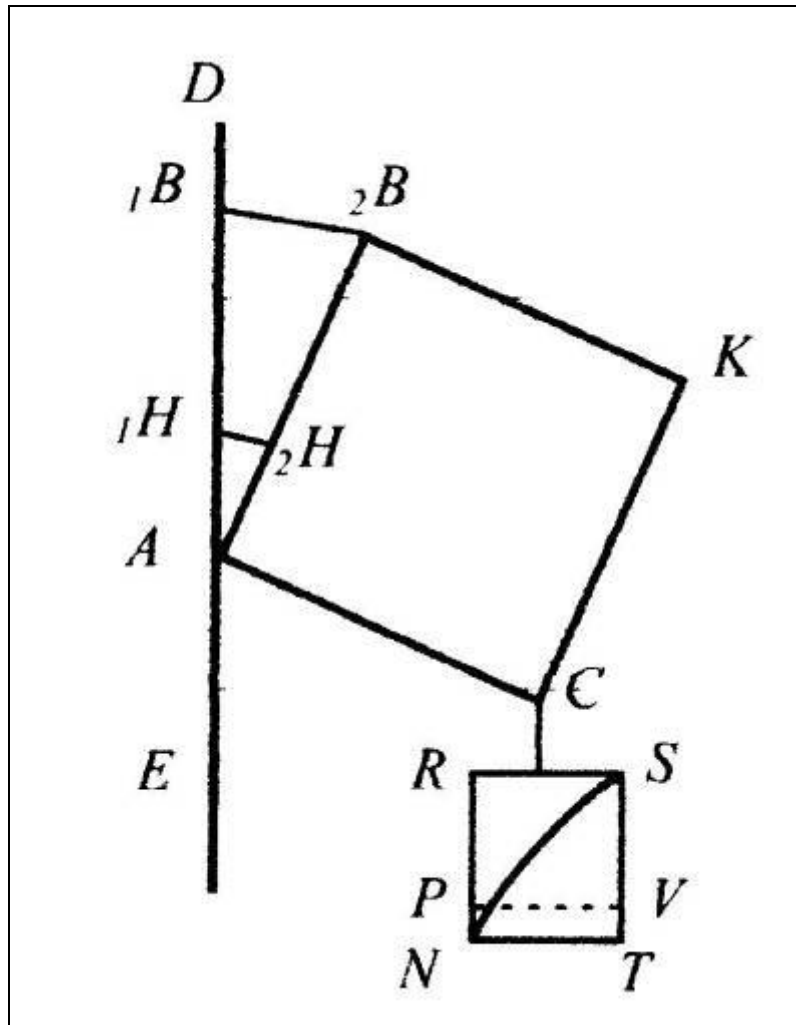
$$M_R = \sigma_{\max} \frac{J_a}{H}$$

dove:

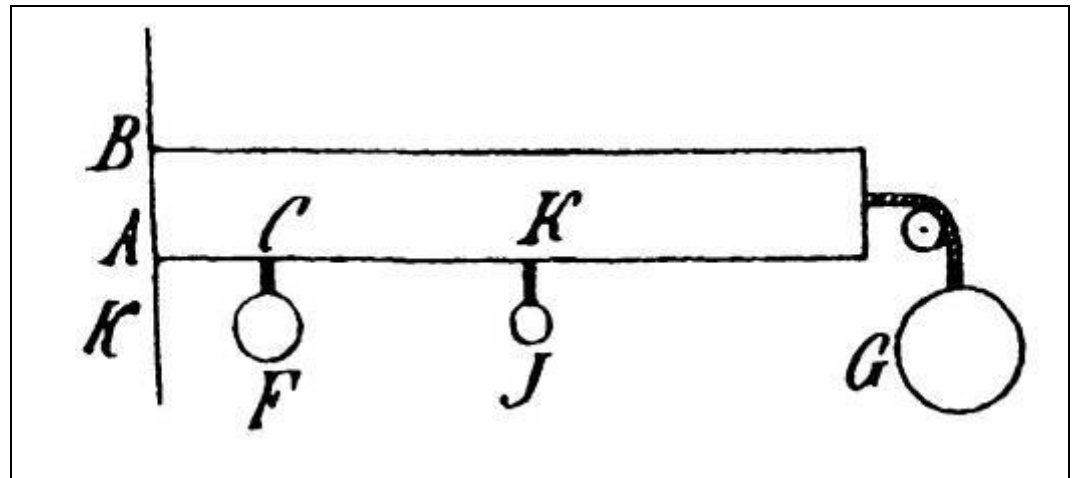
$$J_a = \int_A y^2 \, dA$$



DOPO GALILEO

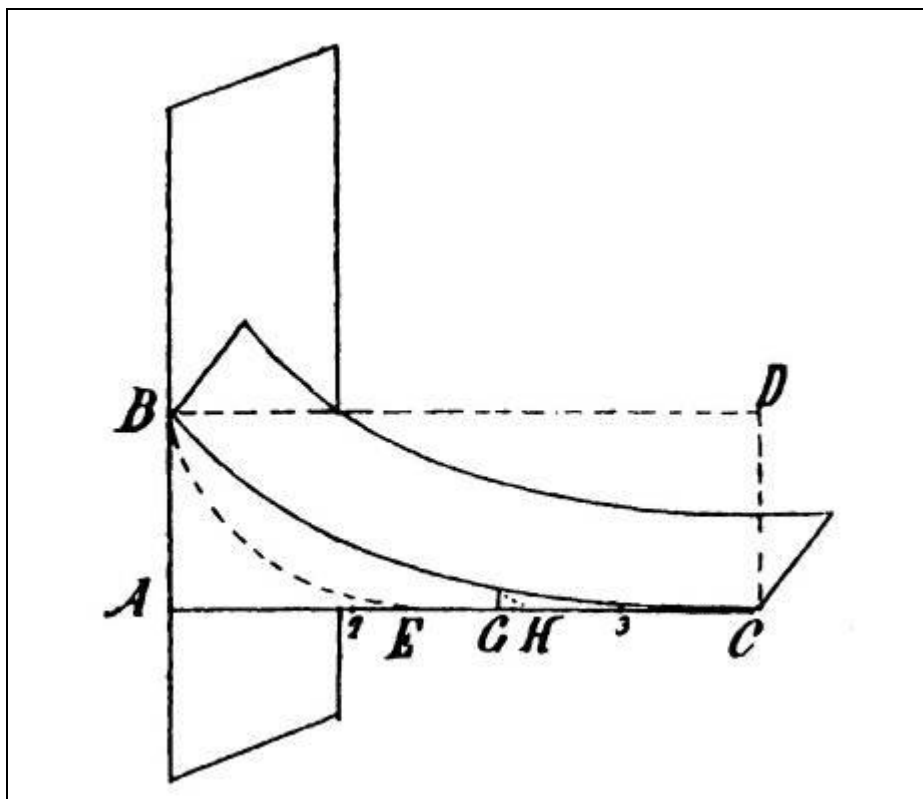


07.2

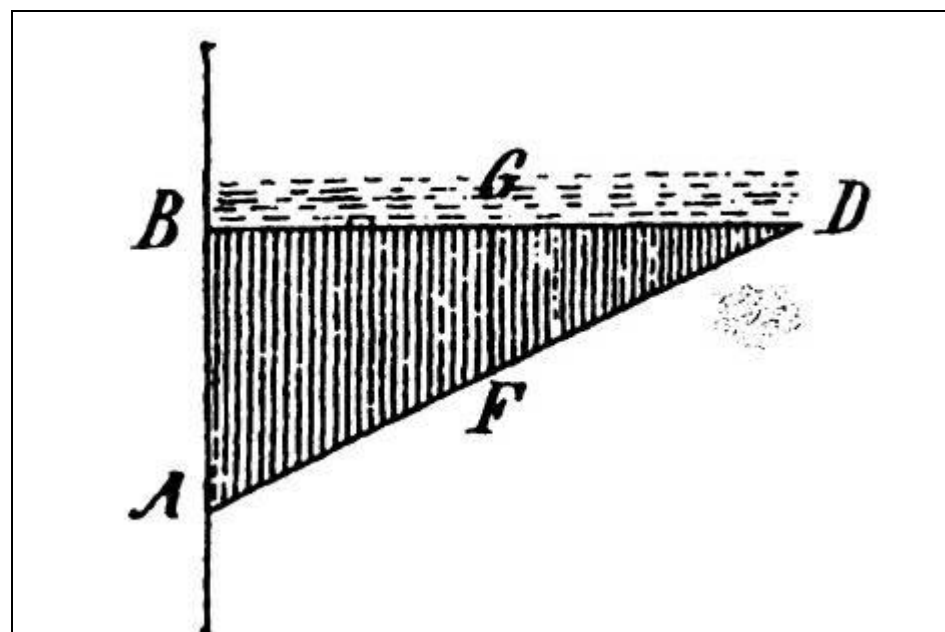


07.3

DOPO GALILEO

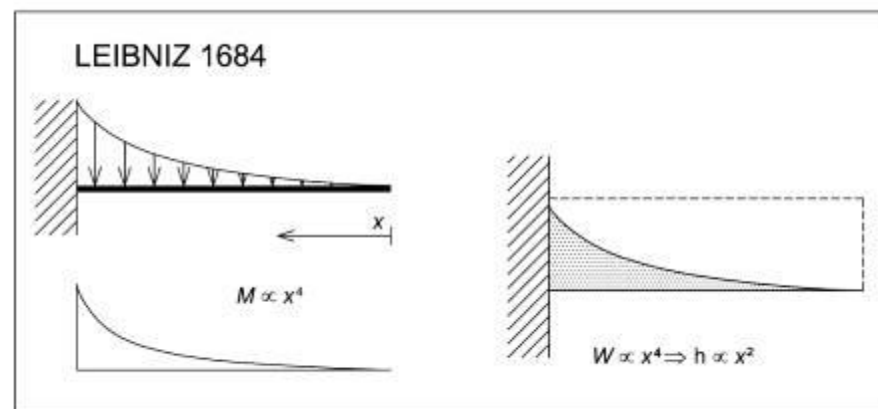
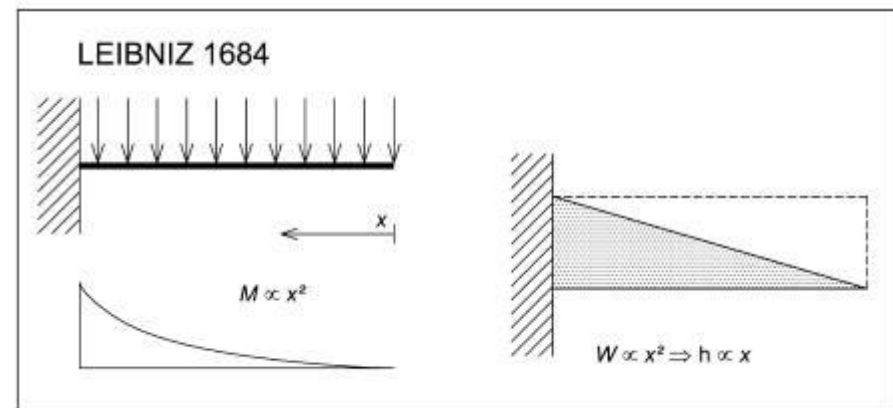
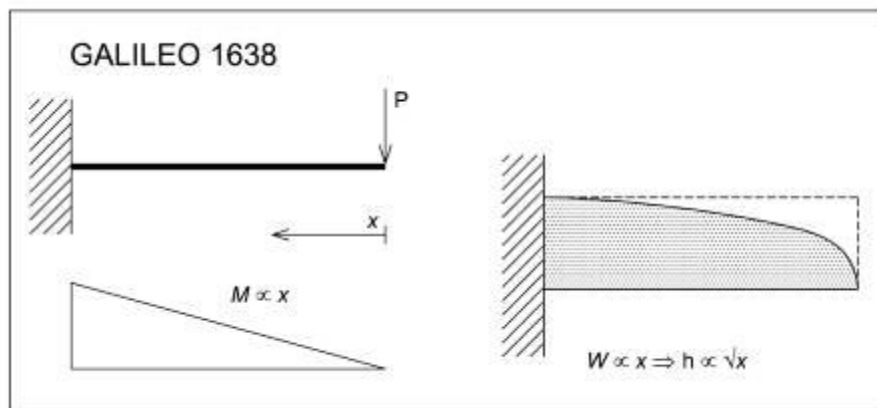


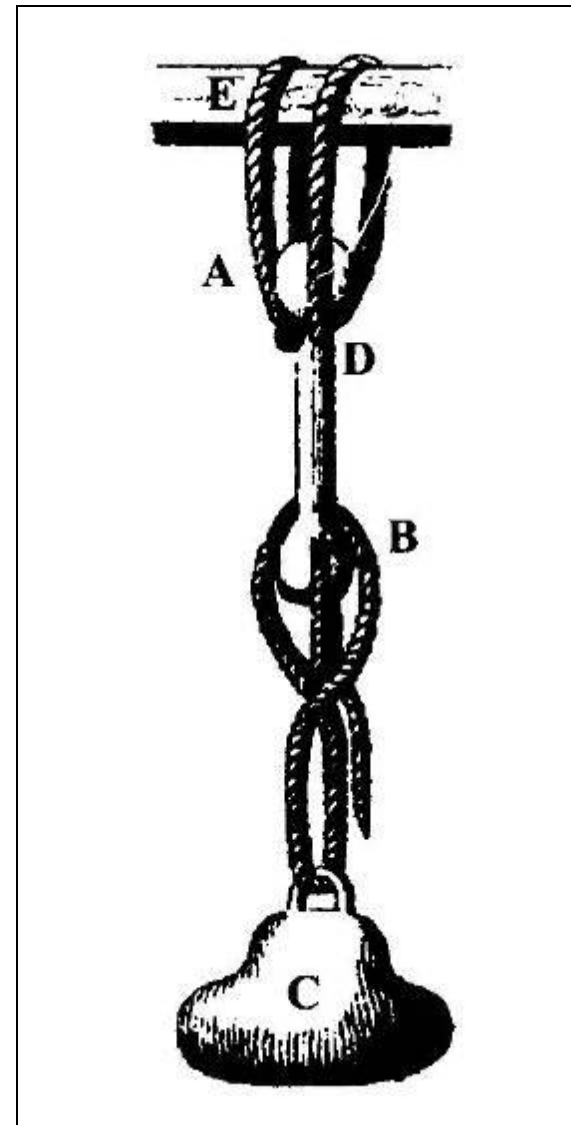
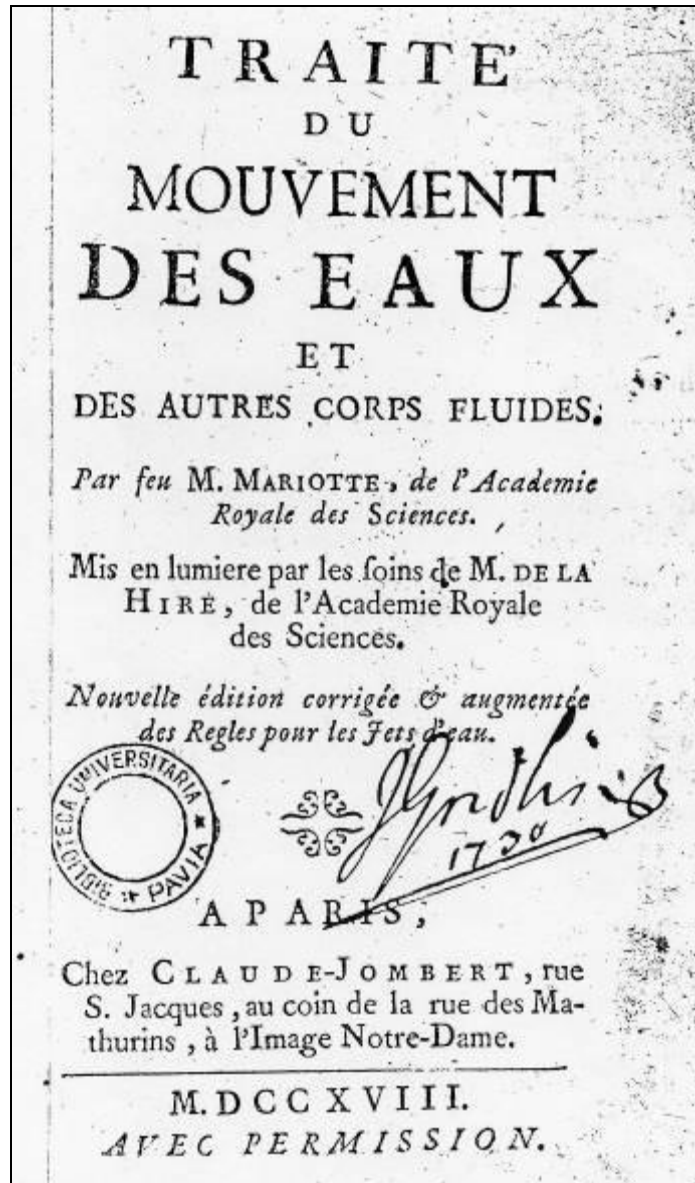
07.4



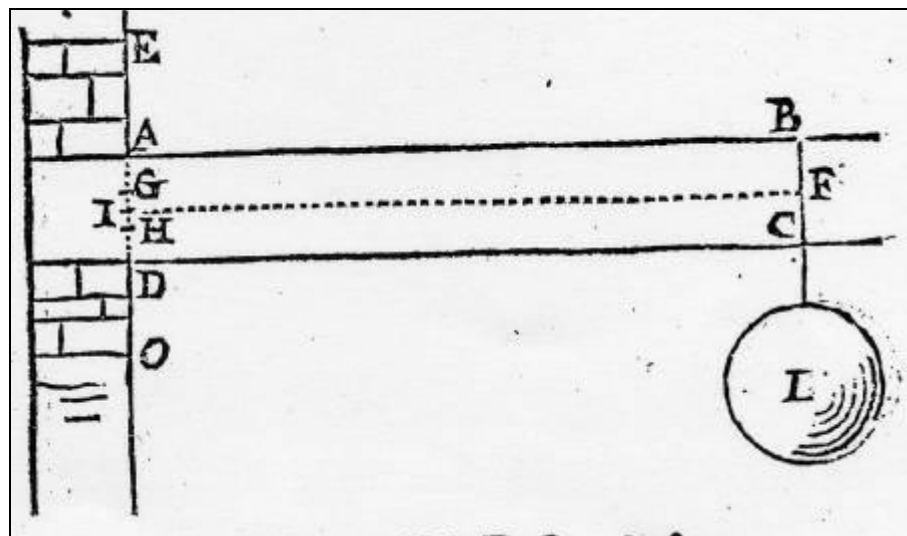
07.5

DOPO GALILEO

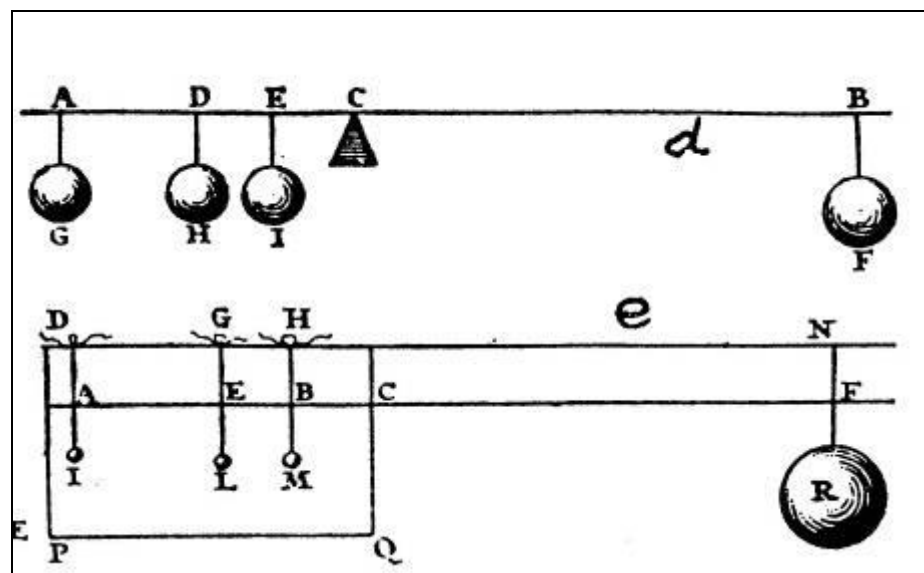




DOPO GALILEO



09



10

DOPO GALILEO

