

02

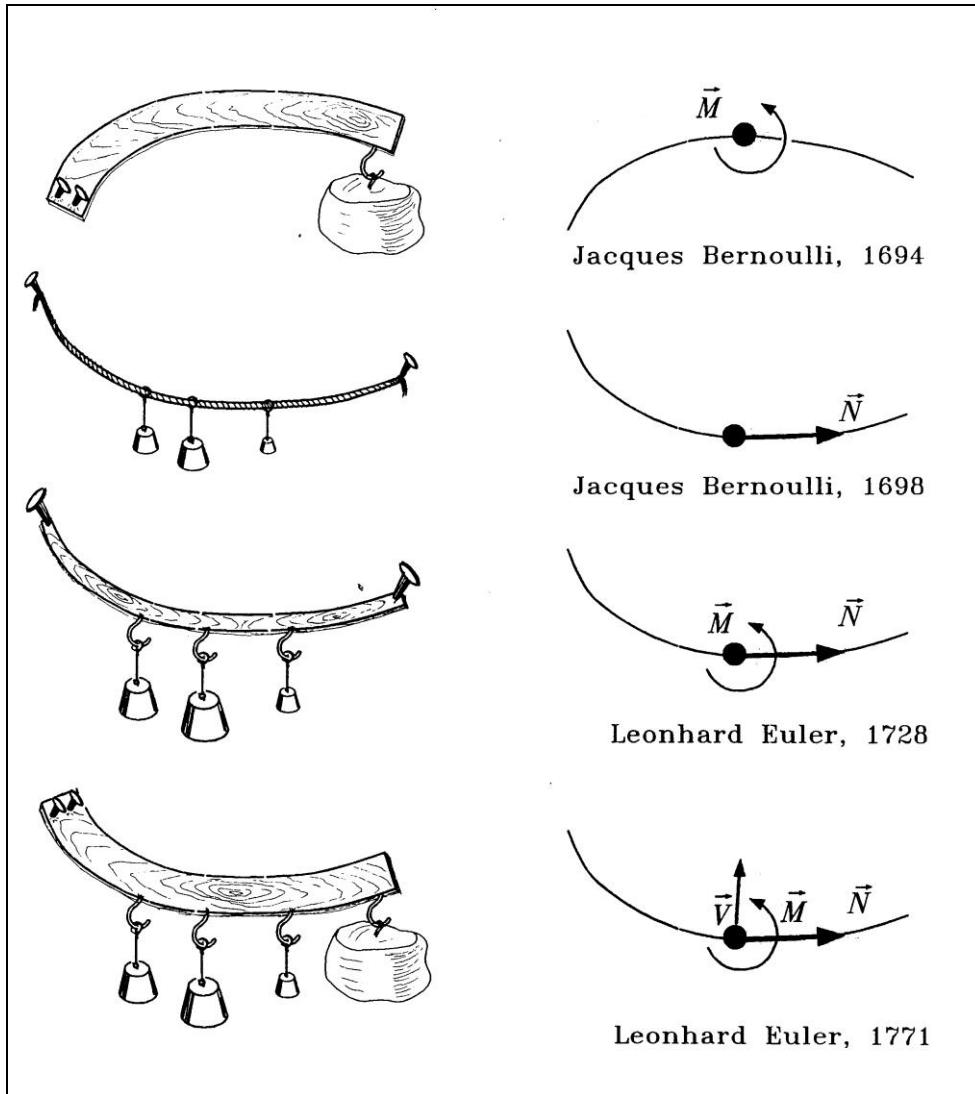
Teorema aureo

$$\frac{1}{r} = - \frac{y''}{(1+y'^2)^{\frac{3}{2}}}$$

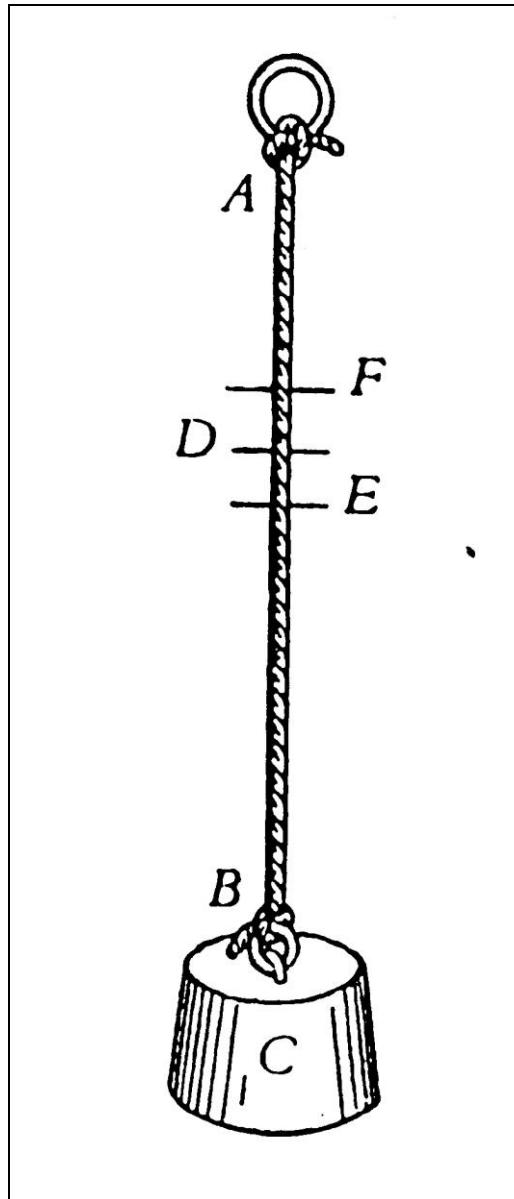


Giacomo Bernoulli

BERNOULLI

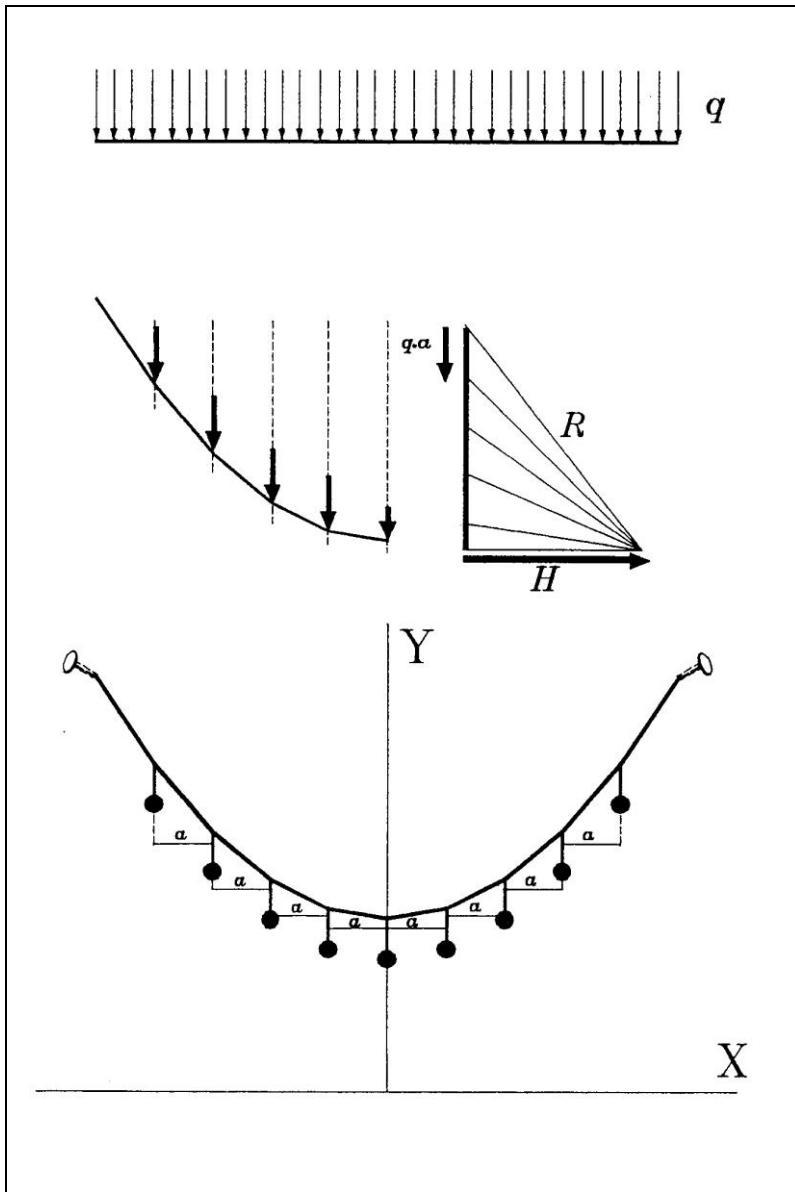


03

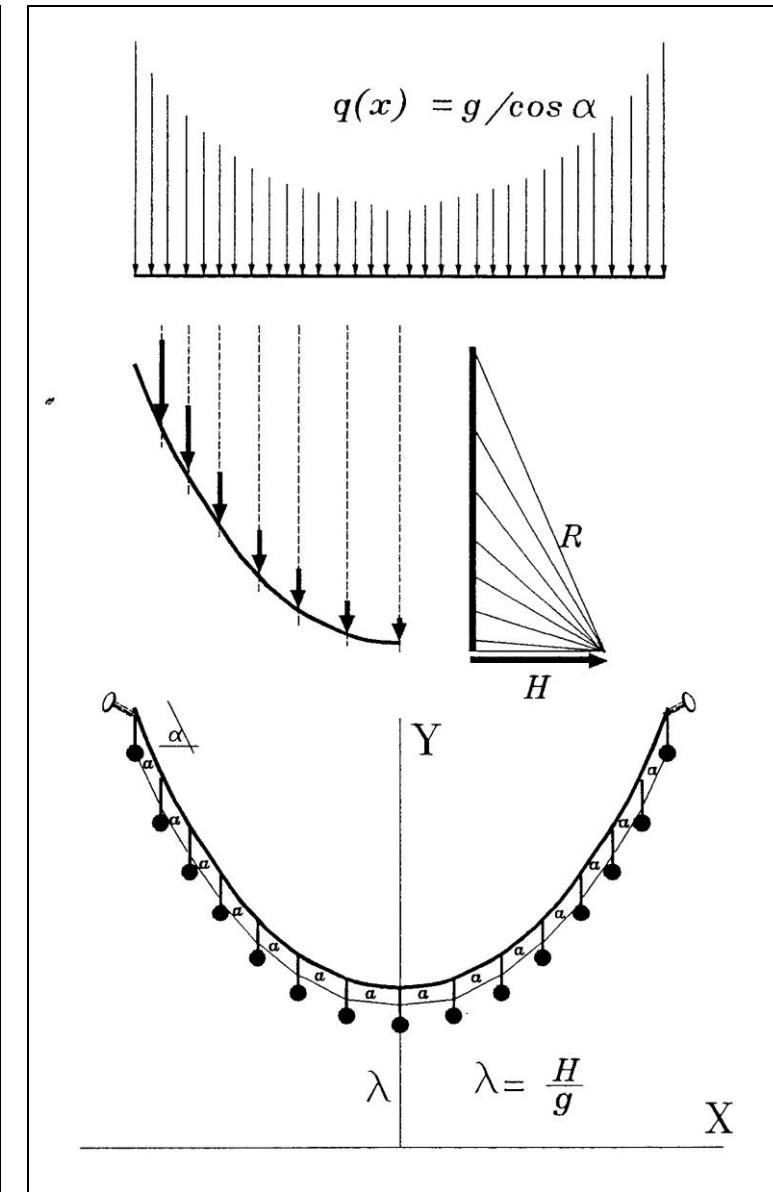


04

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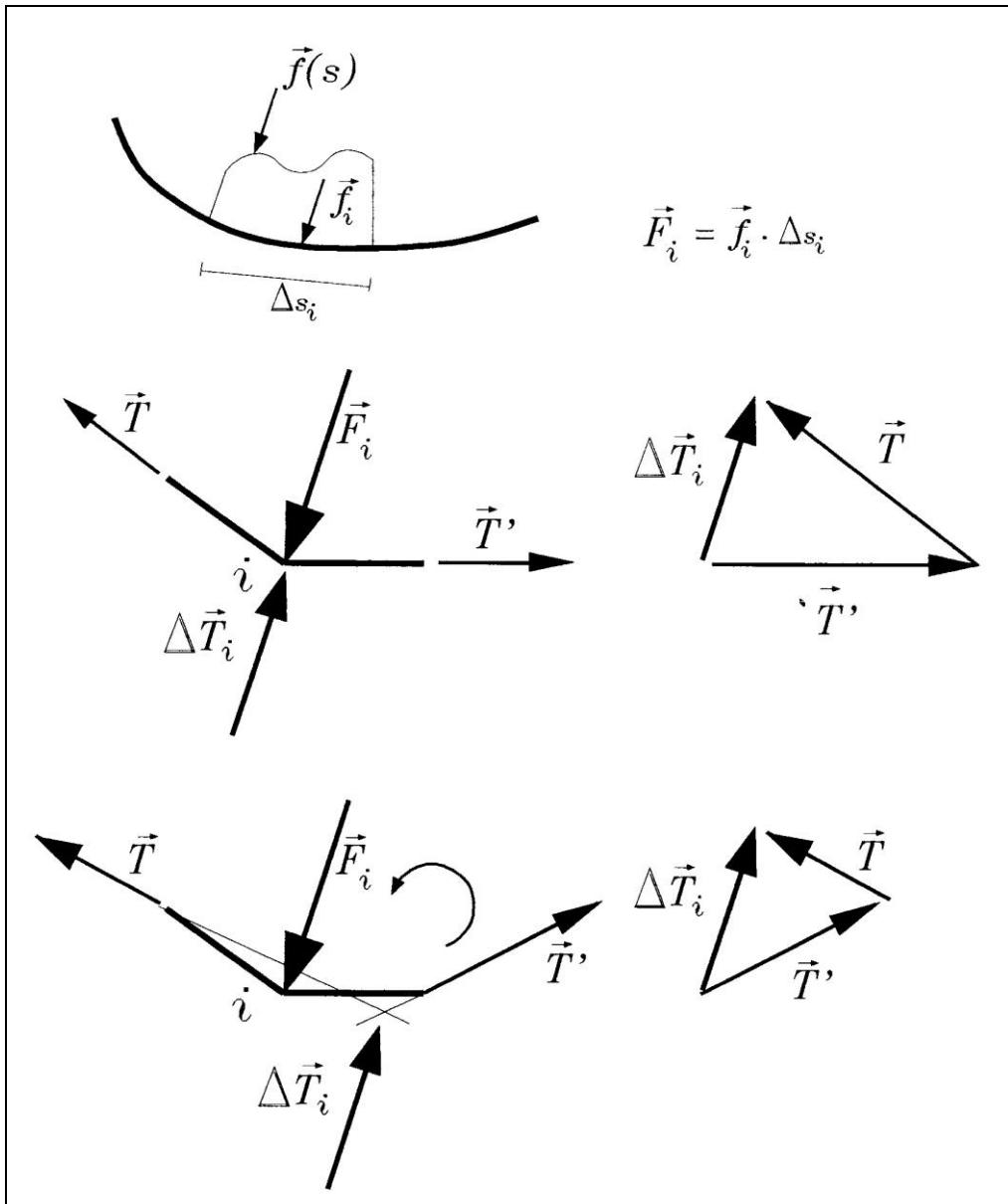


05



06

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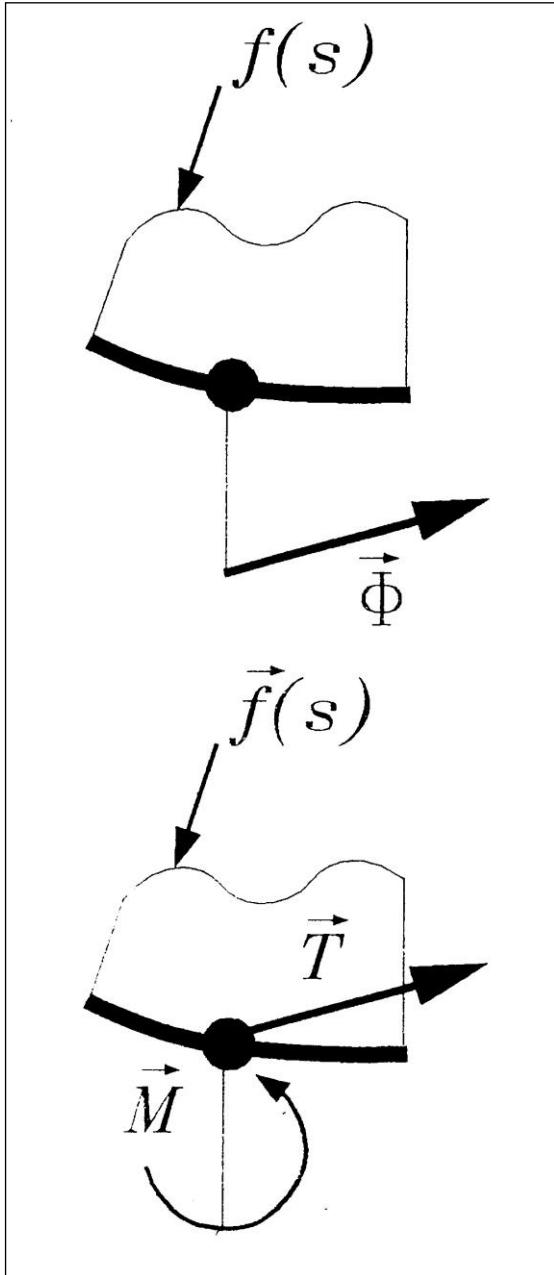
07

$$\vec{t} \wedge \vec{T} = 0$$

$$\vec{f} + \frac{d\vec{T}}{ds} = 0$$

08

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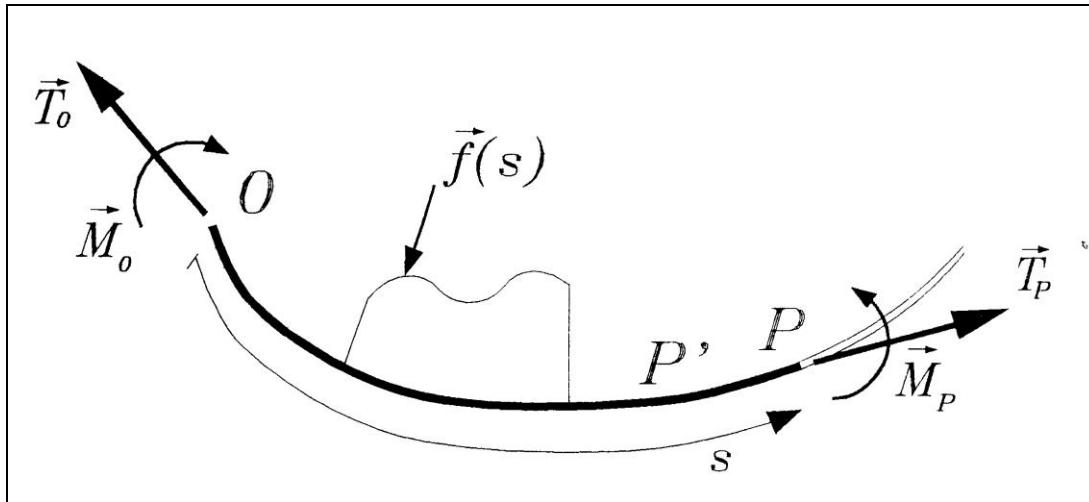


$$\vec{f} + \frac{d\vec{T}}{ds} = \vec{0}$$
$$\vec{t} \wedge \vec{T} + \frac{d\vec{M}}{ds} = \vec{0}$$

10

09

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11

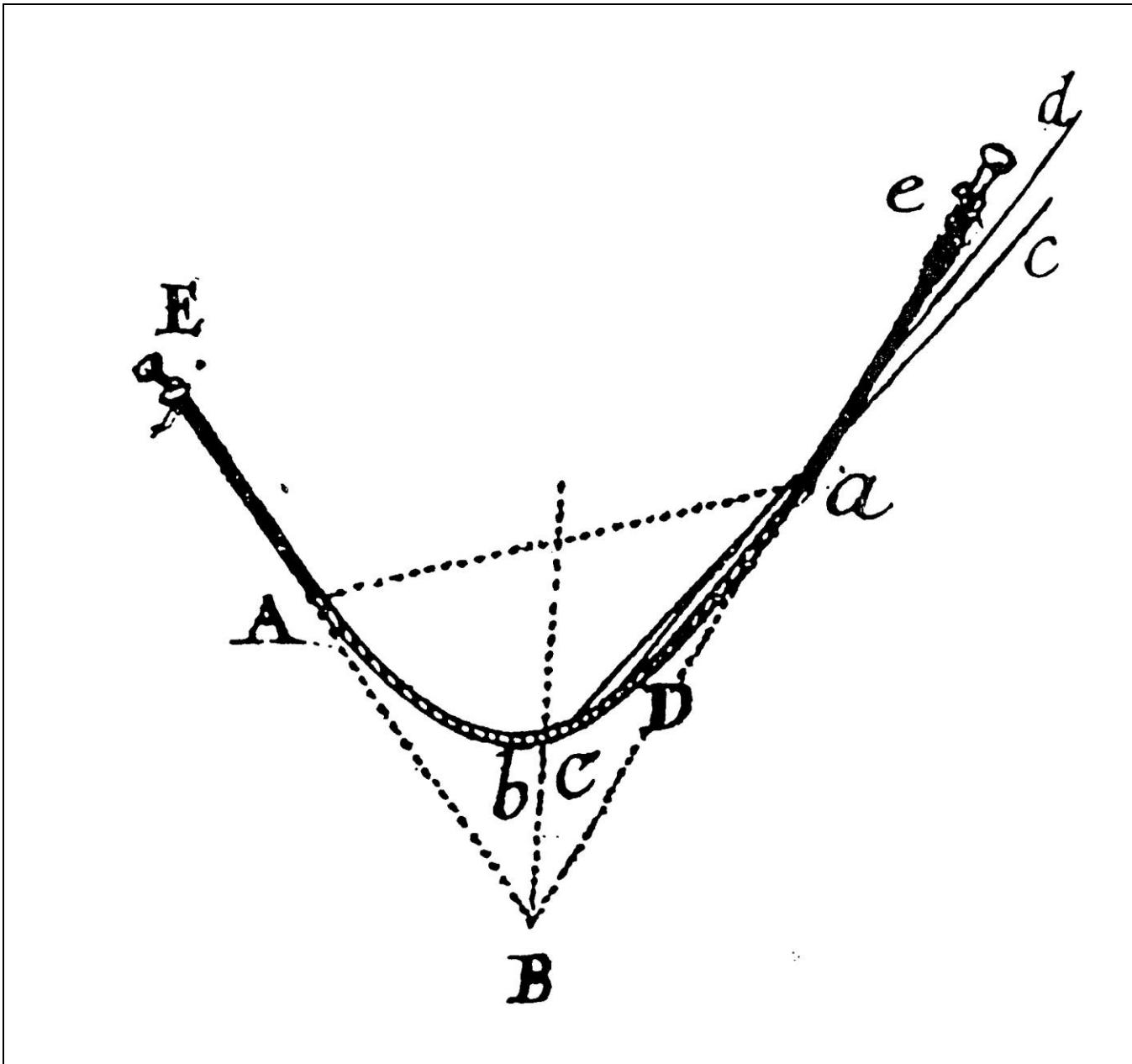
$$\vec{t} = \frac{d\vec{P}}{ds}$$

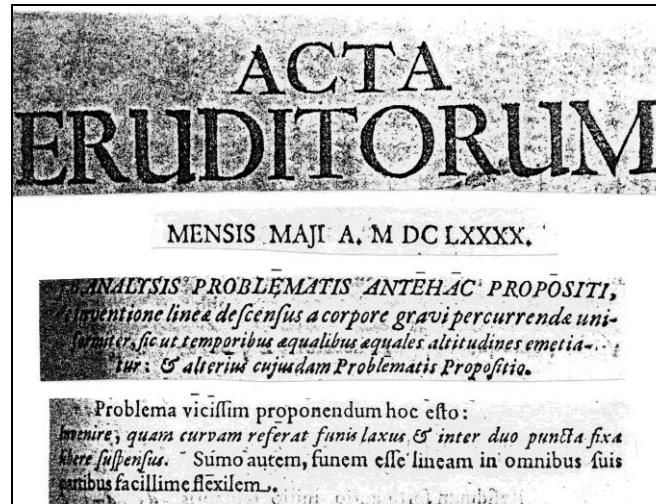
$$\vec{T}(0) - \vec{T}(s) + \int_0^s \vec{f} \cdot d\vec{P} = \vec{0}$$

$$\vec{M}(0) - \vec{M}(s) - (O - P) \wedge \vec{T}(0) - \int_0^s (P' - P) \wedge \vec{f}(P') \cdot d\vec{P} = \vec{0}$$

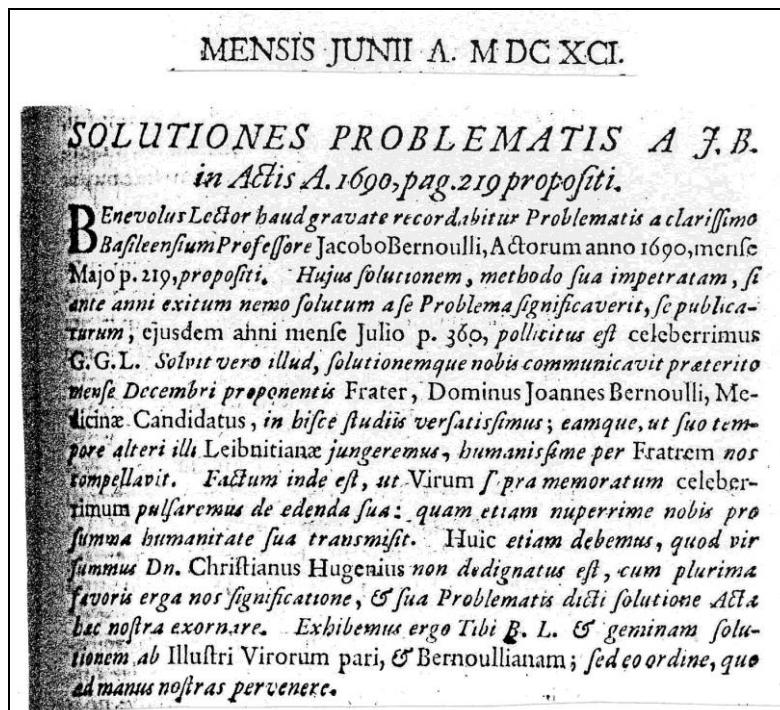
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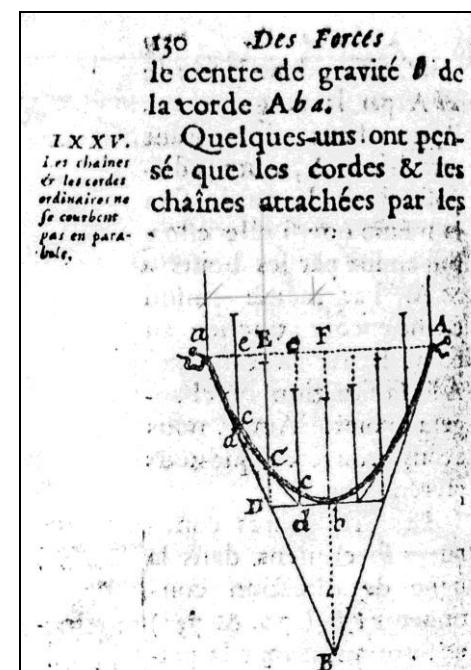




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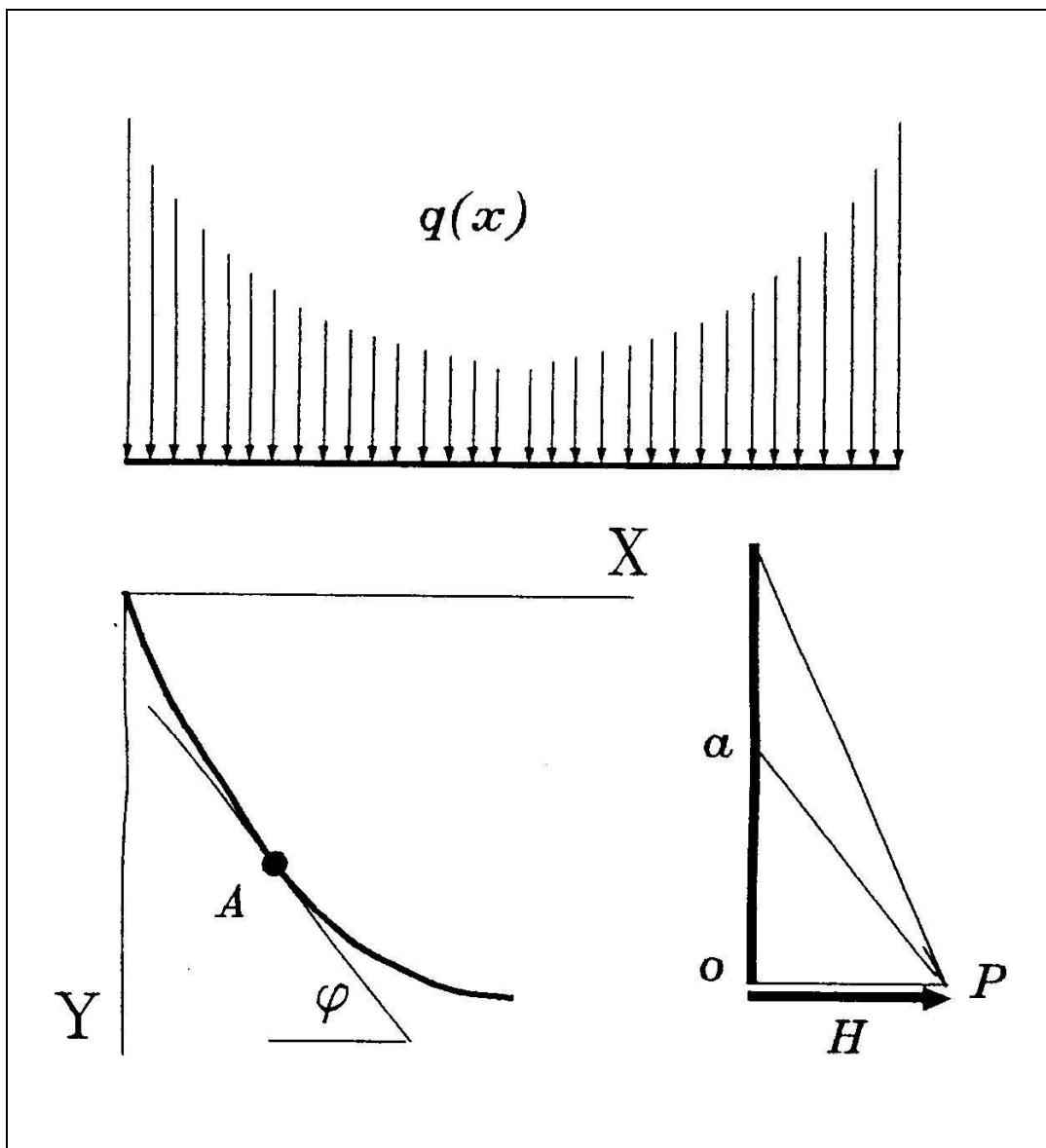


15

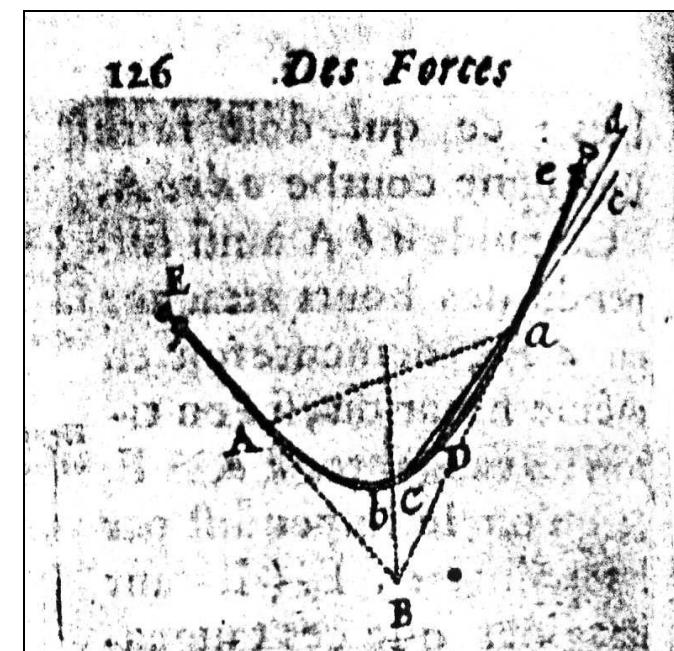


16

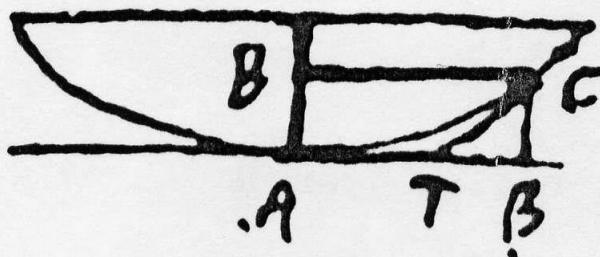
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18



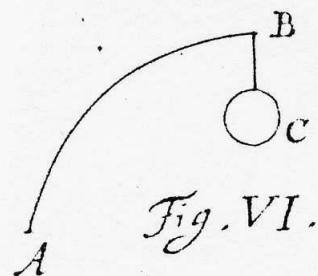
LEIBNIZ's figure for explaining
to HUYGENS his solution of the
catenary problem (1694)

*AT, retranchée par la tangente, est
la distance entre l'axe et le centre de gravité de l'arc AC.*

19

in nundinis autumnalibus communicaturus. Si lamina elastica graviatis. expers AB; uniformis ubique crassitiei & latitudiniis, inferiore Fig. VI. extremitate A alicubi firmetur, & superiori B pondus appendatur, quantum sufficit ad laminam eosque incurvandam, ut linea directionis ponderis BC curvatæ laminæ in B sit perpendicularis, erit curvatura laminæ sequentis naturæ:

Qrzumu b.apr dxqopdabpp poyl fy bbqnfqlfp ly ge murs udtbh.
tubs tmixy yxdksabxp gqsrkfgudl bg ipqandtt tcpgkbp aqdbkzs.



20

JAC. B. CURVATURA LAMINÆ ELASTICÆ. Ejus Identitas cùm Curvatura Lintelii a pondere inclusi fluidi expansi. Radii Circulorum Osculantium in terminis simplicissimis exhibiti, una cum novis quibusdam Theorematiis buc pertinentibus, &c.

Post triennale silentium promissi tandem fidem Isbero, sed ita, ut moram, quam Lector alias inque ferre posset, nonnullo fœnore compensem, dum Elaterum curvaturam non in una sola, (ut initio feceram pollicitus,) sed generaliter in quacunque Extensionum hypothesi constructam exhibeo; quod primus ni fallor exequor, postquam a multis inutiliter tentatum Problema suisset. Extitit enim

21

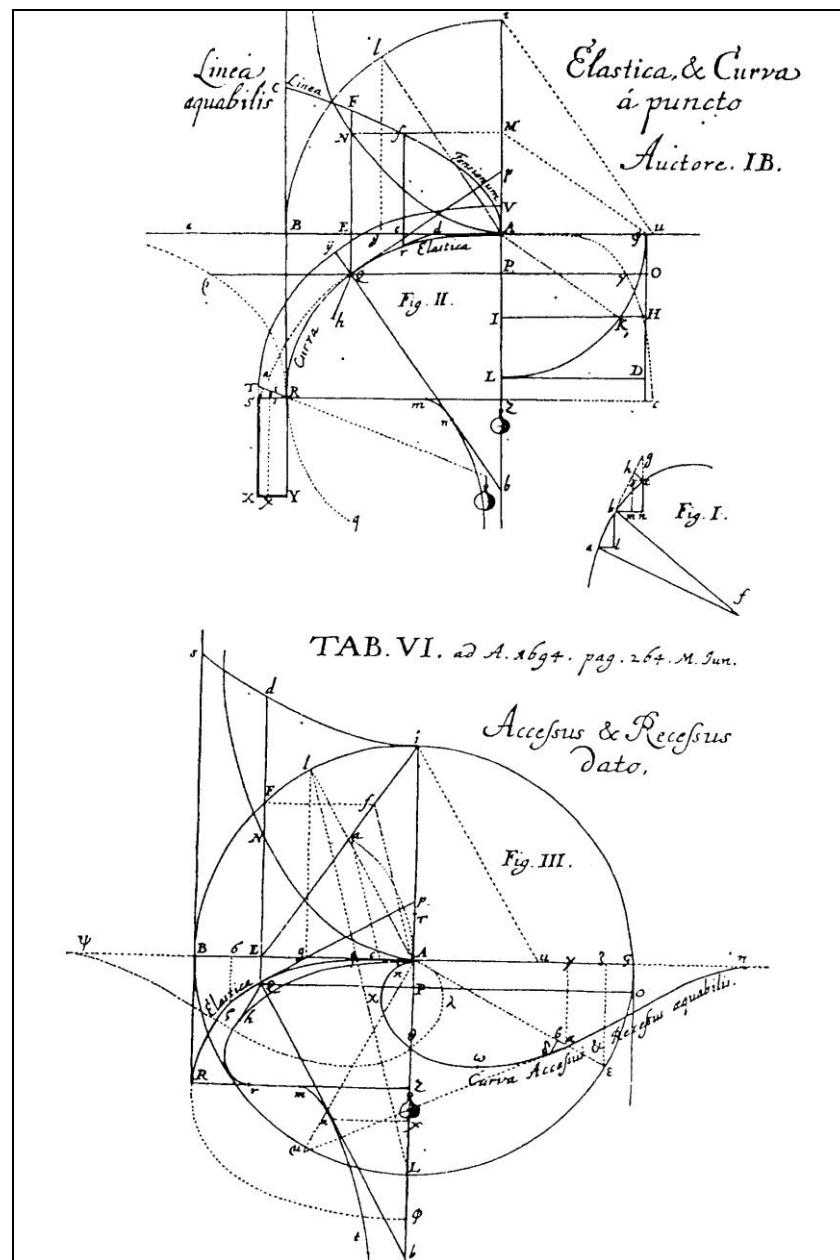
Funiculario; nec sine ratione. Ut enim alia taceam, notandum, duas vixto esse claves in Catenarii investigatione, quæ ad duas differentes equationes viam sternunt, quarum una naturam Curvæ per relationem ipsiusmet ad coordinatas ejus, altera per relationem fili evolventis ad easdem exprimit; cum ad Curvæ Elasticæ naturam indagandam posteriore tantum clavis aditus pateat: hinc enim manifesto se-

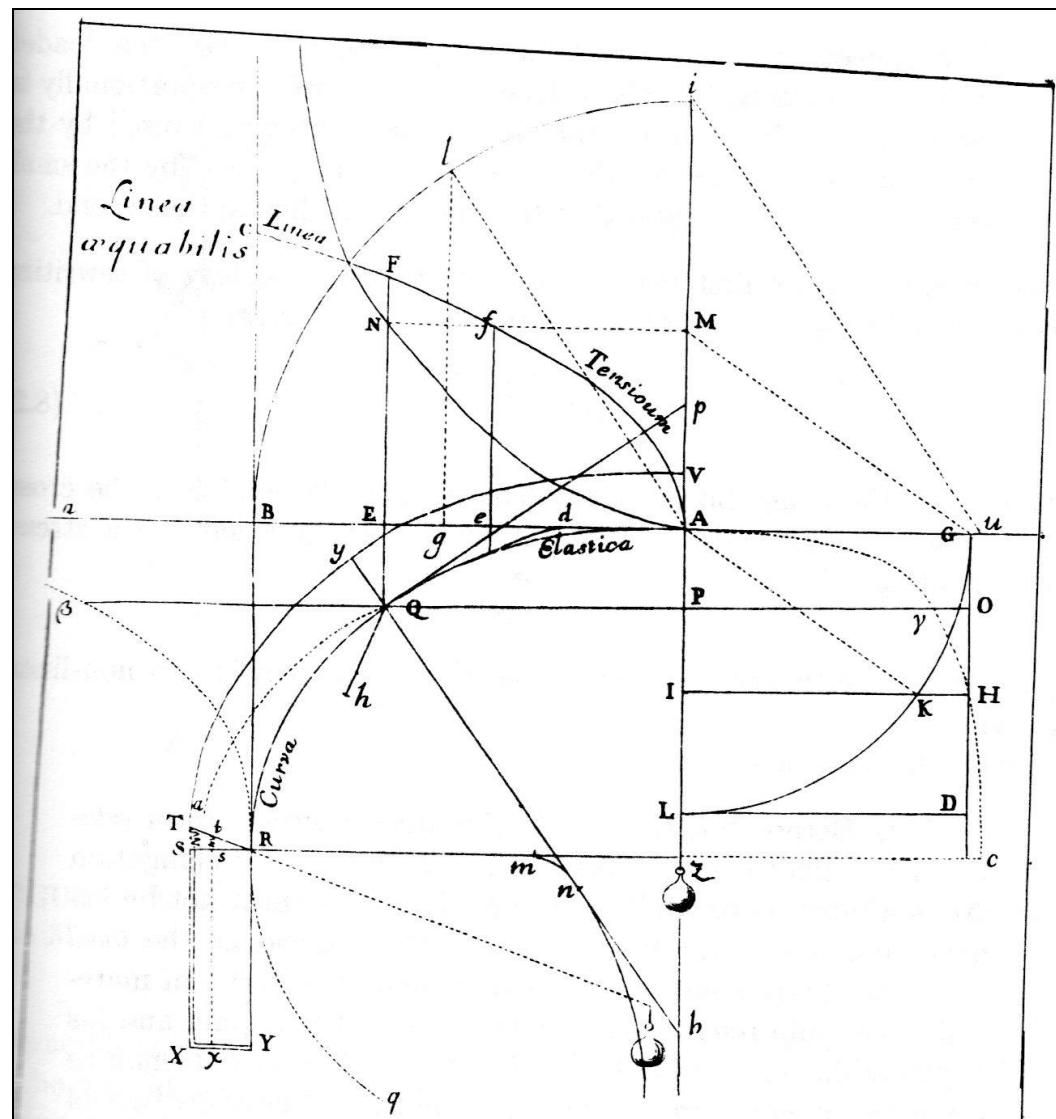
22

in resolvenda Velaria, & hac quam præ manibus habemus Elaterum Curvatura, aliisque sublimioribus, quotidie magis magisque sese mihi explicuit, effecitque tandem, ut non possim publico aureum Theorema diutius invidere; præsertim cum hoc unum adhuc Geometris defuisse videatur, quo minus æque feliciter in recensitis Problematis, atque in altero illo, versati fuerint.

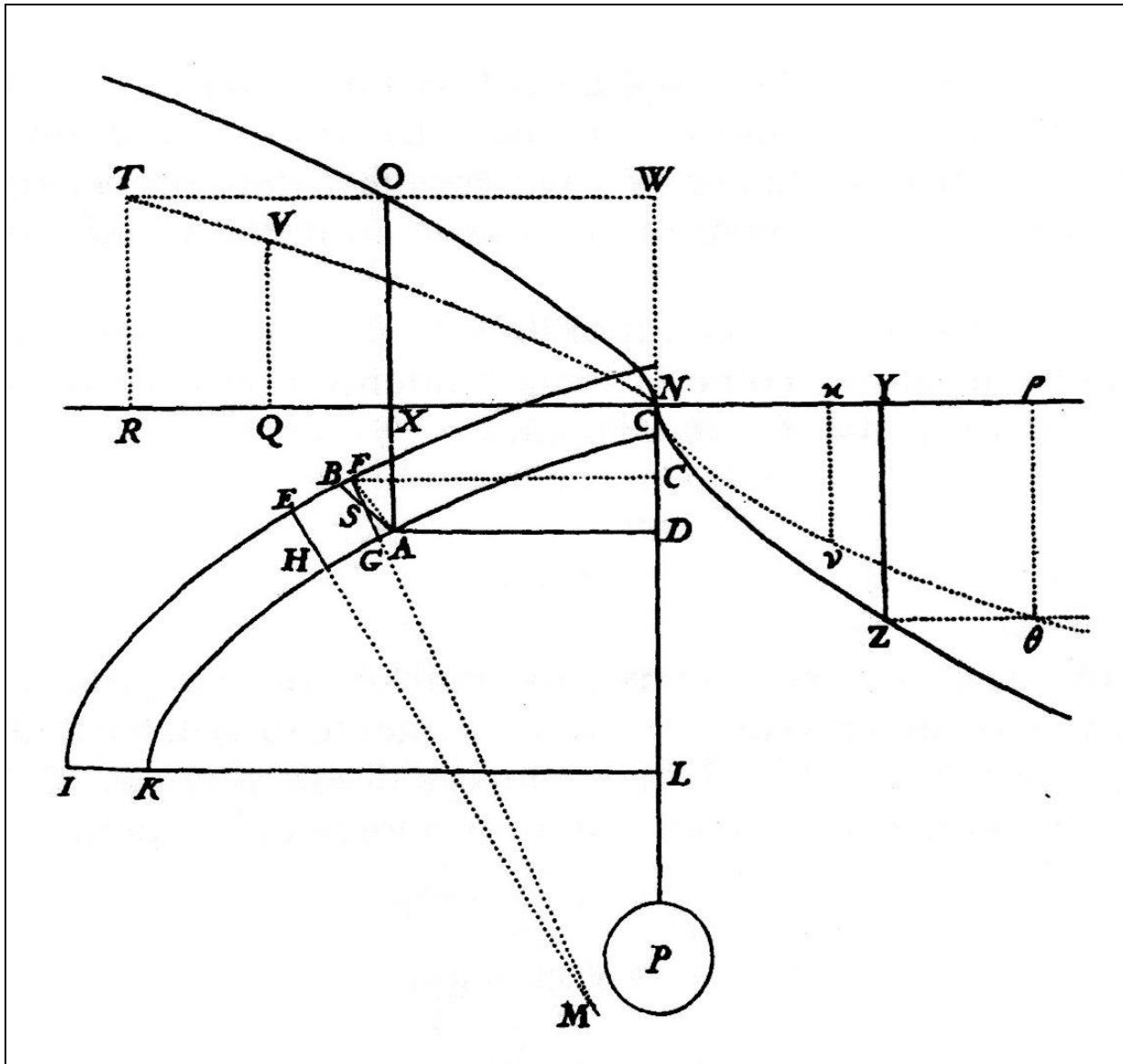
23

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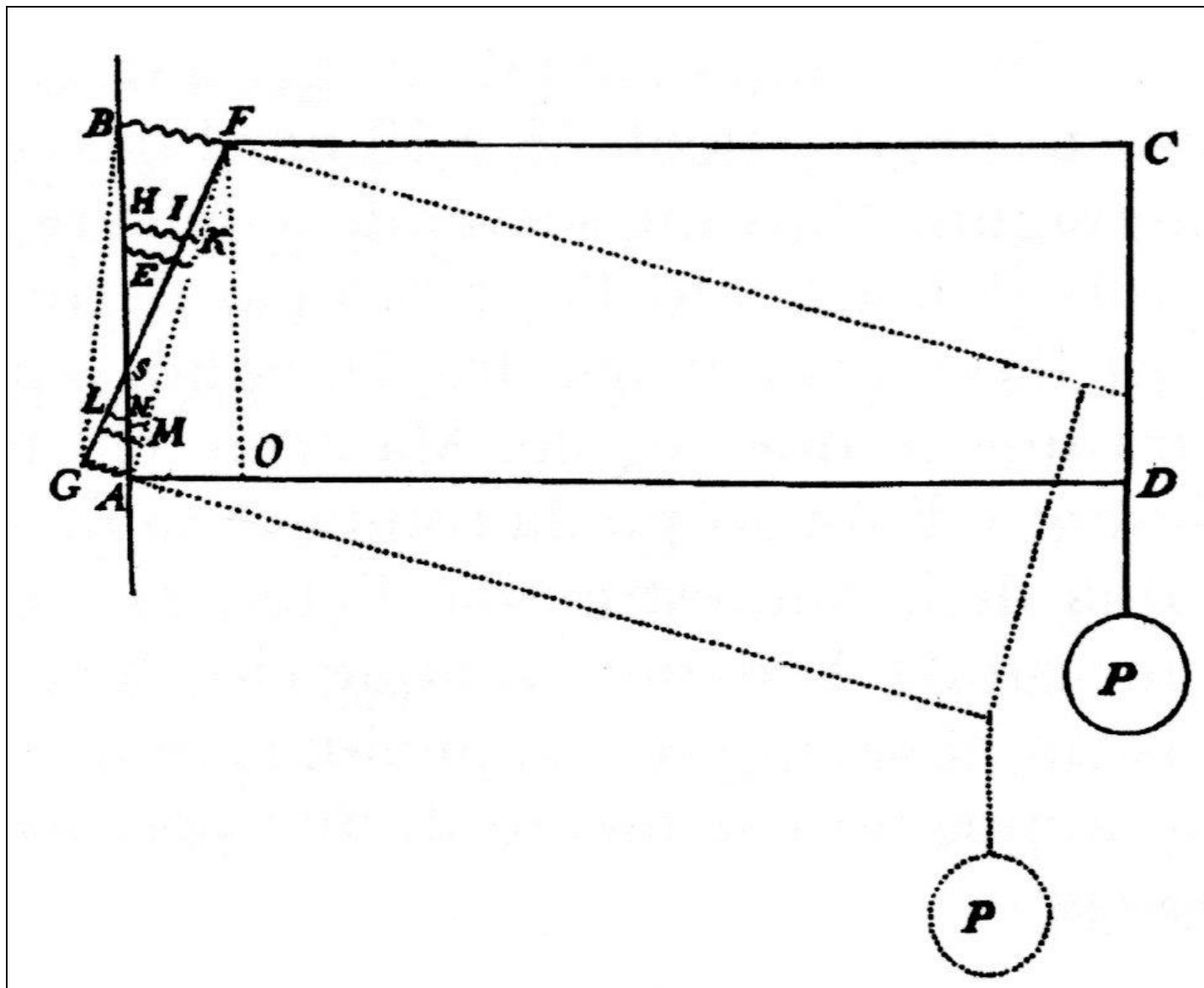


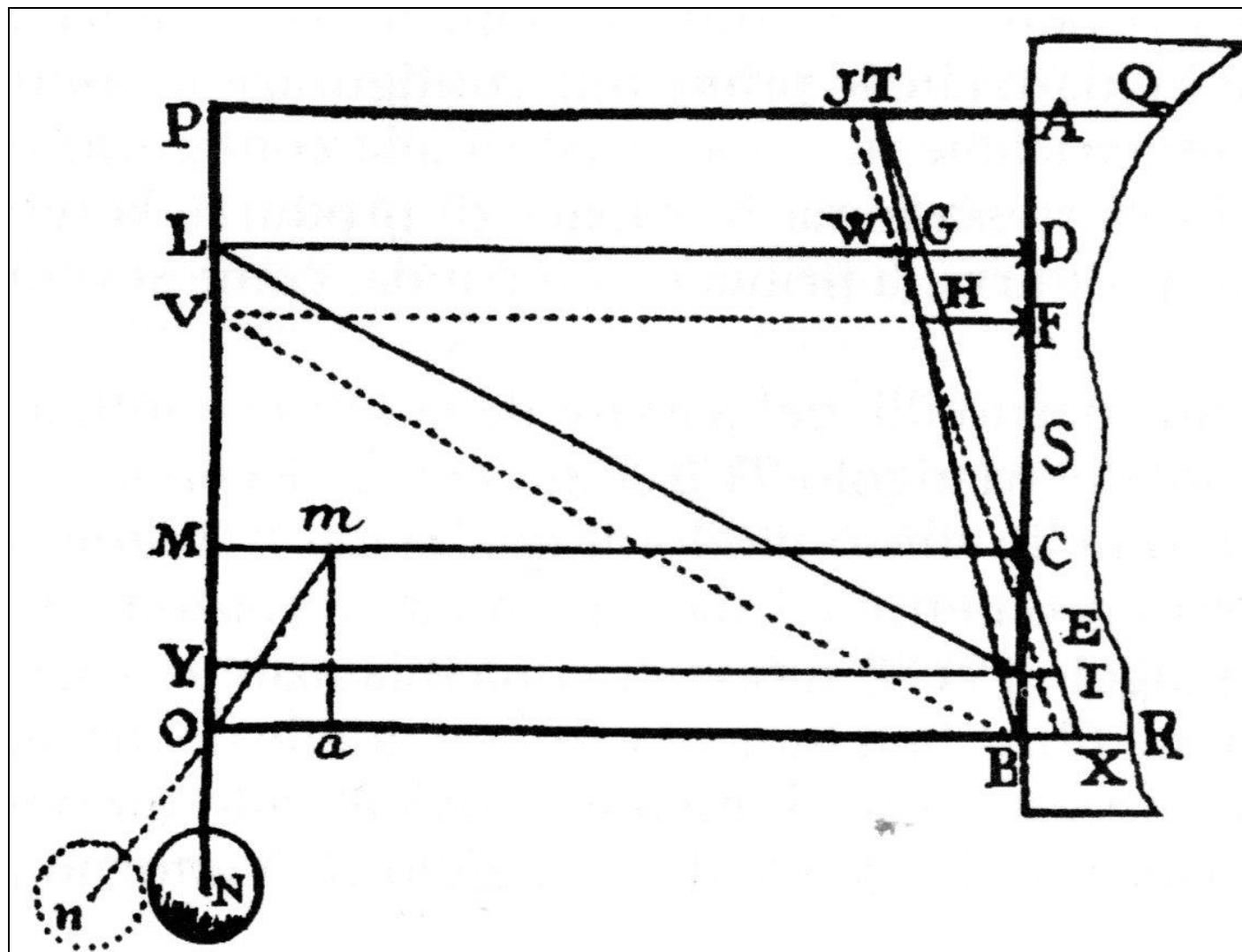


BERNOULLI



26 (1705)





28 (Parent, 1713)