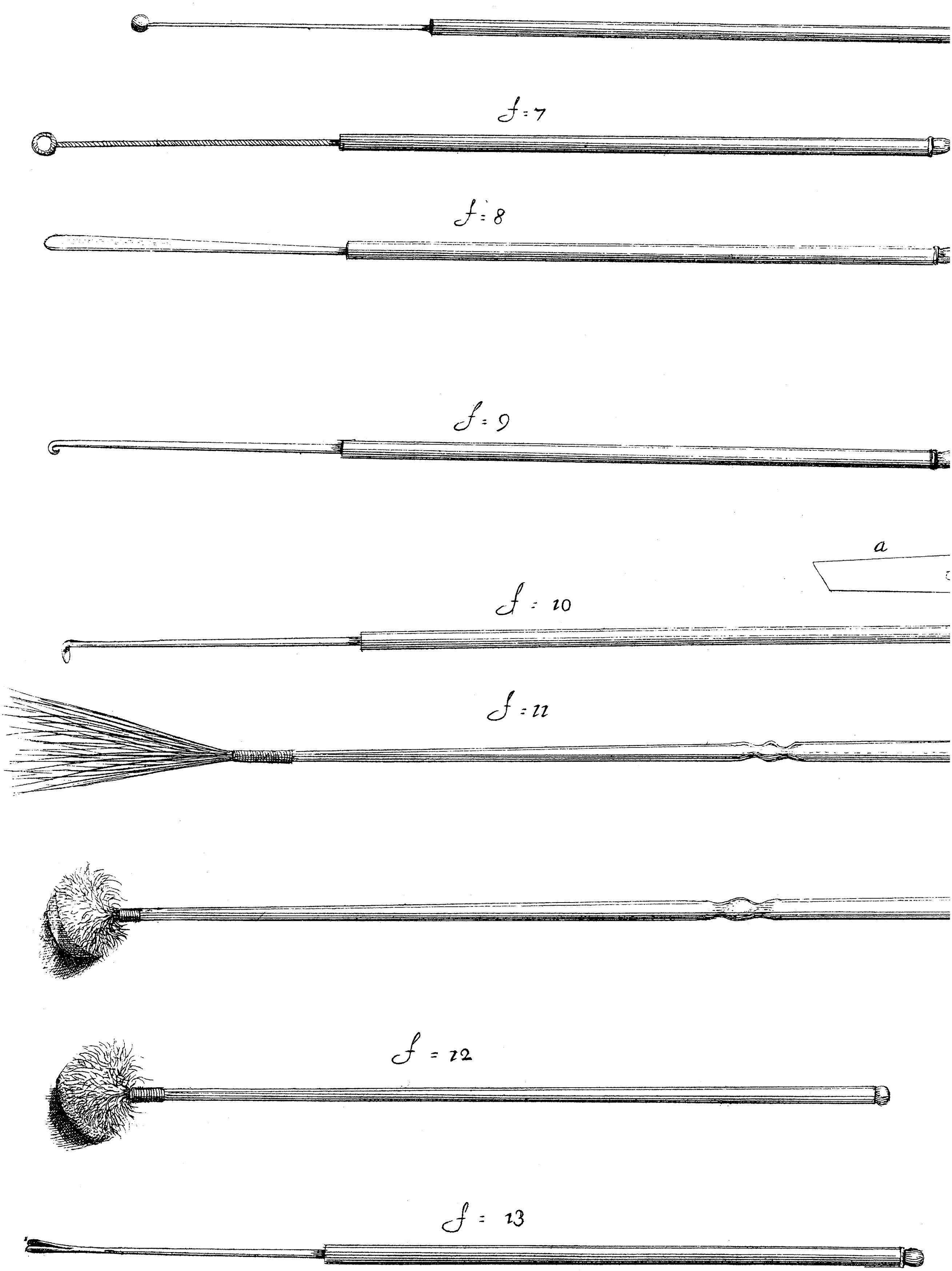
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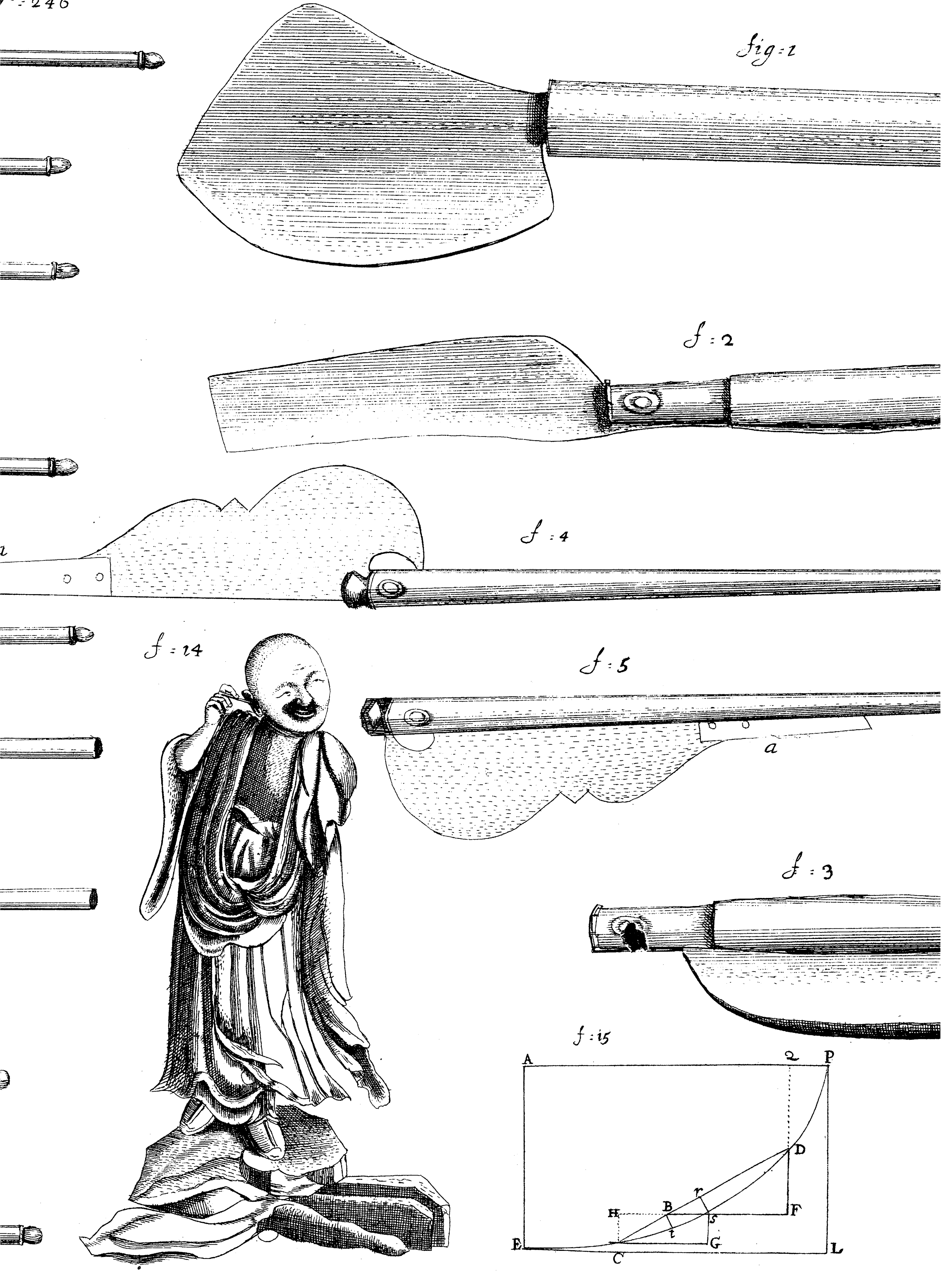
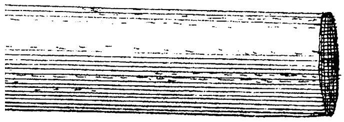
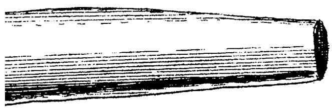
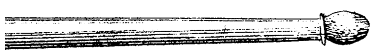
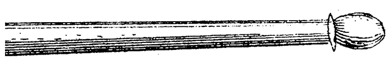
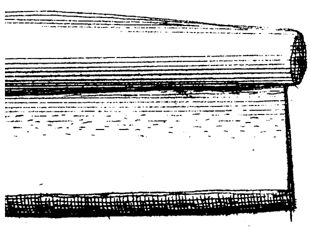












VII. Curvæ Celerrimi Descensus *investigatio analytica excerpta ex literis R. Sault, Math. D°.--------*

CUM me novissimé Societate tua dignatus es, collocuti sumus de *Curva Celerrimi Descensus*, Mundo Mathematicò, Domino Bernoulliano, proposita. Interq; cætera mentionem fecisti de demonstrationis meæ publicatione quam e pluribus retro mensibus inveni: quamvis autem problema illud nunc obsoletum videatur, libentius tamen publici juris faciam, quia celeberrimus Leibnitius omnes Mathematicos, hujus problematis solutionis compotes, enumerare suscepit, necnon ne tesseram observantiæ meæ tibi ipsi debitam, omittam.

Sit *AP* (Fig. 15.) linea Horizontalis; *P*, punctum a quo corpus grave descendit, per Curvam lineam quæsitam *ADE*, *C* & *D* puncta duo infinité propinqua, per quæ corpus decisurum sit, *CD* recta duo puncta connectens, *DC* & *sC*, *DF* & *SG*, *FS* & *GC* vel *sH*, momenta curvæ, abscissæ, & ordinatim applicatæ respective. Capiatur $Dr = Ds$ & $tC = BC$.

Quoniam in lineolis nascentibus, tempus est ut via percursa directé & velocitas (i. e. in hoc casu, ut radix quadrata altitudinis corporis descensi) inversé, per Hypoth. $\frac{Ds}{\sqrt{QD}} + \frac{sC}{\sqrt{QF}} =$ Tempori *Minimo*. Et quia velocitas in punctis æquialtis *S* & *B* per curvam *DsC* & rectam *DBC* eadem est, tempus per *DC*, quod evidenter *minimum* est, erit ut $\frac{DB}{\sqrt{QD}} + \frac{BC}{\sqrt{QF}}$; æquentur ergo hæc tempora, & $\frac{Ds}{\sqrt{QD}} + \frac{sC}{\sqrt{QF}} = \frac{DB}{\sqrt{QD}} + \frac{BC}{\sqrt{QF}}$. hoc est $\frac{DB-Ds}{\sqrt{QD}} = \frac{sC-BC}{\sqrt{QF}}$ vel $\frac{Br}{\sqrt{QD}} = \frac{ts}{\sqrt{QF}}$.

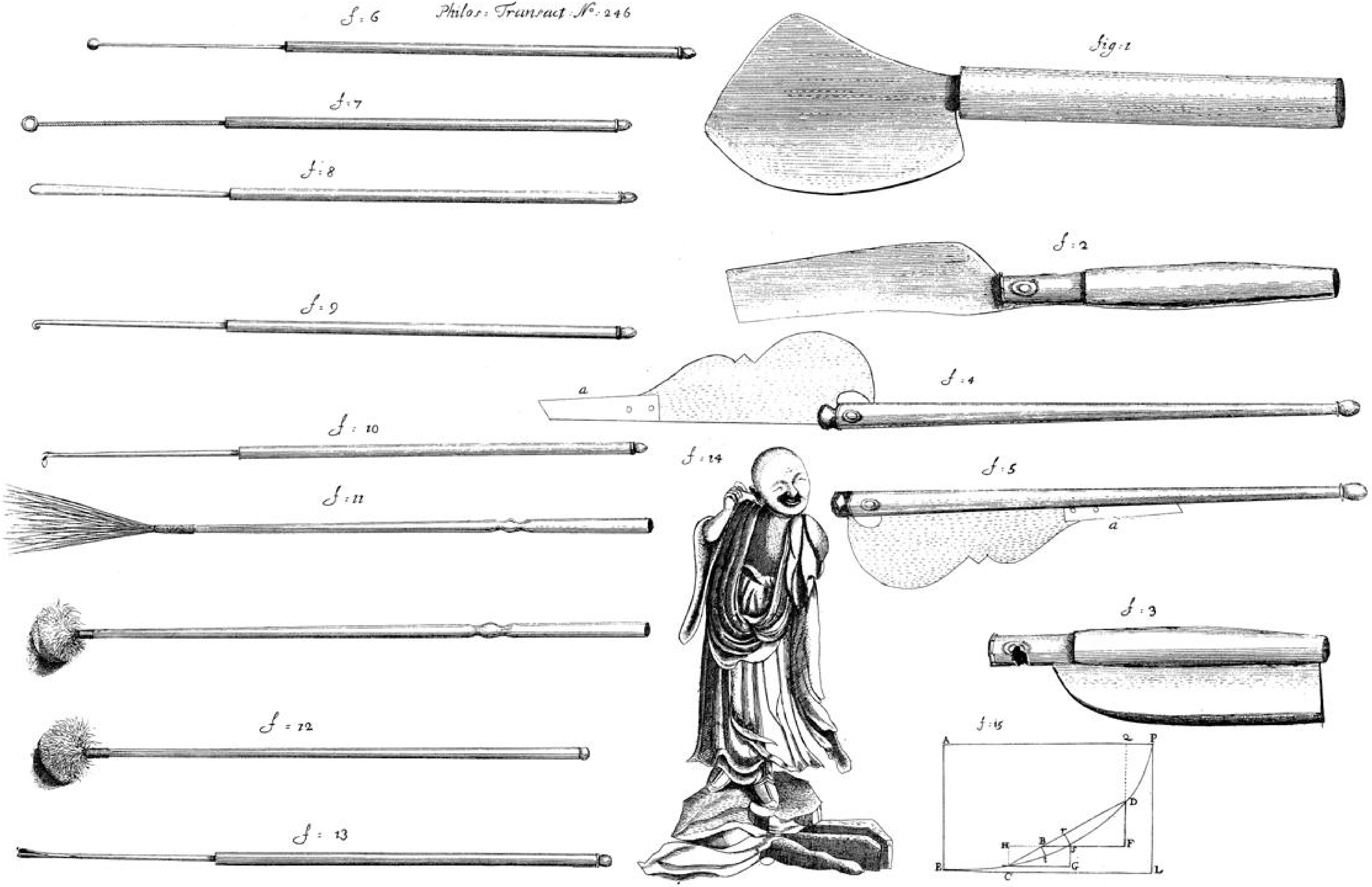
Sed triangula Evanescentia *Brs*, *Bts* æquiangula sunt triangulis *DsF*, *HsC*; Erg. $\frac{Bs}{Ds} = \frac{Br}{sF}$ & $\frac{ts}{Hs} = \frac{Bs}{st}$ componantur hæ duæ rationes æqualitatis & $\frac{Br}{Ds \times Hs} = \frac{ts}{sF \times st}$. Ex æquo $\frac{VQD}{sF \times st} = \frac{VQF}{Ds \times Hs}$. Quandoquidem autem quidvis ex Elementis æquabiliter fluere ſupponatur, ponamus $DS = SC$ & evadet ſimpliciſſima Curvæ expreſſio $\frac{VQD}{sF} = \frac{VQF}{Ds}$. ubiq; i. e. in puncto flexuræ Curva ſemper erit in ratione compoſita velocitatis directé & momenti applicatim ordinatæ, inverſe. Sit $\dot{x}$, $\dot{y}$ & $\dot{z}$ fluxſiones abſciſſæ, ordinatim applicatæ, & curvæ reſpective, $\frac{x^{\frac{1}{2}}}{\dot{y}}$ conſtans eſt, ut ſupra. Erg. $\frac{x^{\frac{1}{2}}}{\dot{y}} = 1$ ſed poſſuimus $\dot{z}$ ($= \sqrt{\dot{x}\dot{x} + \dot{y}\dot{y}}$) conſtans. Ergo ut hæc unitas conſtans ſit & dimenſiones debitas retineat $\frac{x^{\frac{1}{2}}}{\dot{y}} = \frac{a^{\frac{1}{2}}}{\sqrt{\dot{x}\dot{x} + \dot{y}\dot{y}}}$, & poſt reductionem, $\dot{y} = \frac{x^{\frac{1}{2}}\dot{x}}{\sqrt{a-x}}$ Expreſſio notiſſima Cycloidis *PEL*. *Q. E. J.*

VIII. *A Catalogue of Books lately printed in* Italy.

COllectanea Monumentorum veterum Eccleſiæ Græcæ ac Latinæ quæ hactenus in Vaticana Bibliotheca delituerunt. Laurentius Alexander Zacagnius Rom. Vaticanæ Bibliothecæ Præfectus, e ſcriptis codicibus nunc primum edidit, Græca Latina fecit notis illuſtravit 4to. Romæ 1698.

Oſſervationi Hiſtoriche ſopra alcuni Medaglioni del Sig. Cardinale Carpegna dell' Abbate Filippo Buonarotti. 4to. Roma 1698.

Ema-



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