PHILOSOPHICAL TRANSACTIONS.

June 21. 1669.

The Contents.

Generatio

Corporis Cylindroidis Hyperbolici, elaborandis Lentibus Hyperbolicis accommodati, Auth. *Christophoro Wren L L D.* et Regiorum Ædificiorum Præfecto, nec non Soc. Regiæ Sodali.

Sint (in Fig. I.) Hyperbolæ oppositæ D B, E C, quarum Axis transversus est B C, Centrum A, et una ex Asymptotis G P; item per Centrum sit O M ducta ad angulos rectos ipsi B C.

Quare ſi circumducantur Hyperbolæ circa Axin OM, manifeſtum eſt, ex ea revolutione generari corpus Cylindroides Hyperbolicum *cujus Baſes ſectionesque Baſi parallelæ ſunt Circuli. Dico inſuper, ſi idem corpus ſecetur per Aſymptoton GP, erit ſectio Parallelogrammum.*

Secetur per Axin tranſverſum ſectione circulari BNC; item per O et M in Circulos æquales & æqualiter a Centro diſtantes; item per Axin in figuram Geometricem cujus ſemiſſis eſt BDEC, in cujus plano erit Aſymptotos GP, per quam ad rectos angulos planum BDE ſecetur in plano FHP, jungantur denique HO.

Quoniam Triangulum OGH eſt Rectangulum, Ergo Quadratum OH ſive OD. minus Quadrato OG. eſt æquale Quadrato GH: et quoniam DO parallela eſt ipſi BA, et Aſymptoton ſecat in G, erit (ex proprietatibus Hyperbolæ, quæ in Conicis *demonſtrantur) Quadratum OG unà cum Quadrato AB æquale Quadrato OD, h. e. Quadratum OD minus Quadrato OG æquale Quadrato AB ſive Quadrato AN. Ergo Quadratum GH æquale eſt Quadrato AN. Quare GH et AN æquantur et ſunt ad angulos rectos ipſi GA; idemque demonſtratur de omnibus aliis ſectionibus Baſi parallelis. Quare Cylindroides Hyperbolica recte ſecatur per Aſymptoton in Parallelogrammum. q. e. d.*

Corollarium

Hinc patet, in ſuperficie Cylindroidis, *quamvis e duplici flexura conſtet, rectas nihilominus innumeras duci poſſe: Patet etiam, aliam eſſe hujus Corporis generationem, nimir. ex revolutione Parallelogrammi circa Axin manente angulo ad Axin æquali GAO, vel denique manente Linea Generatrice HR immobili, et maſſam volubilem formante aut ſecante. Et ſi acies Dolabri acutiſſima et rectiſſima ita diſponatur ad Axin, ſicut ſe habet Linea Generatrix, rotante interim Mamphure, manifeſtum eſt, Torno tam accuratas poſſe elaborari* Hyperbolas *quam* Circulos, *cum nihil aliud requiratur ad formandam* Cylindroidem *quam ad* Cylindrum, *niſi quod in Cylindris acies dolabri eſt Axi parallela, hic vero inclinata. Itaque notandum eſt, pro Inclinatione Anguli GAO. variari ſpeciem Hyperbolæ; adeoque facilius accommodatur ad datam Hyperbolam quam ut demonſtratione opus habeat: At ſi manente angulo Generatrix magis ad Centrum accedat, exſurgit inde minor Hyperbola, ſed priori prorſus ſimilis.*

Ex hoc Principio fabrificri jam curavit Ingenioſiſſimus Author Machinam, ſimplicitate ſua perquam commendabilem, cujus beneficio Lentes elaborentur *Hyperbolicæ*. Illius deſcriptionem vna cum Icone brevi nos etiam edituros ſperamus

Experiments

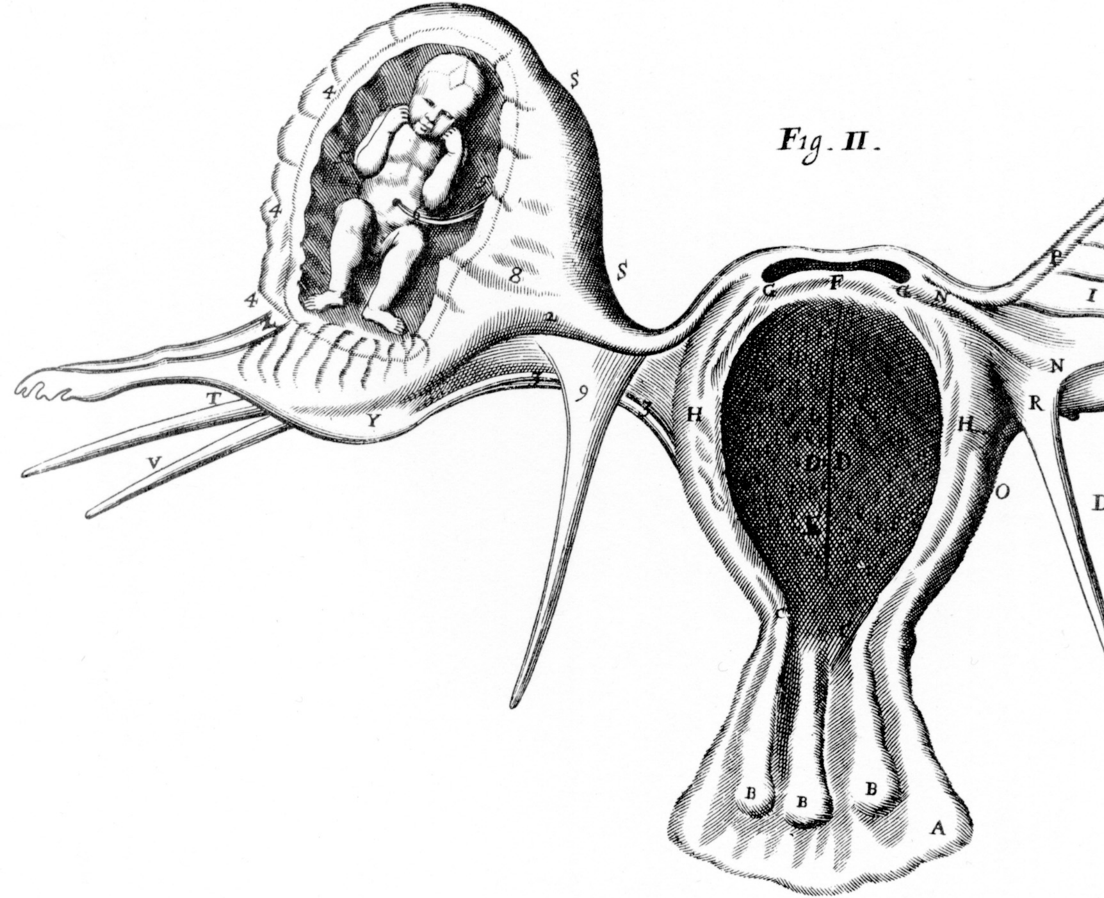
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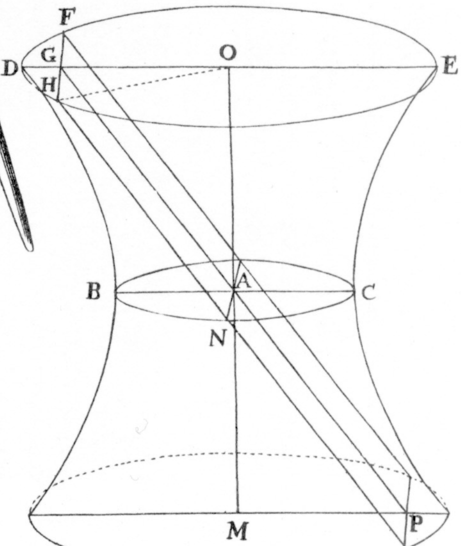
Fig. II.

Fig. I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