

DIE
W E R K Z E U G M A S C H I N E N
der
M A S C H I N E N F A B R I K E N
zur Metall-und Holzbearbeitung

von
J. H A R T

Professor des Maschinenbaues an der grossh. polytechnischen Schule
in Karlsruhe.

60 lithographirte Tafeln.

HEIDELBERG
VERLAGSBUCHHANDLUNG VON FRIEDRICH BASSERMANN
1867.

Lith. Anst. v. L. Geissendorfer, Karlsruhe.

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Profefsr des Maschinenbaues an der grossh. polytechnischen Schule
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60 lithographirte Tafeln.

H E I D E L B E R G

VERLAGSBUCHHANDLUNG VON FRIEDRICH BASSERMANN

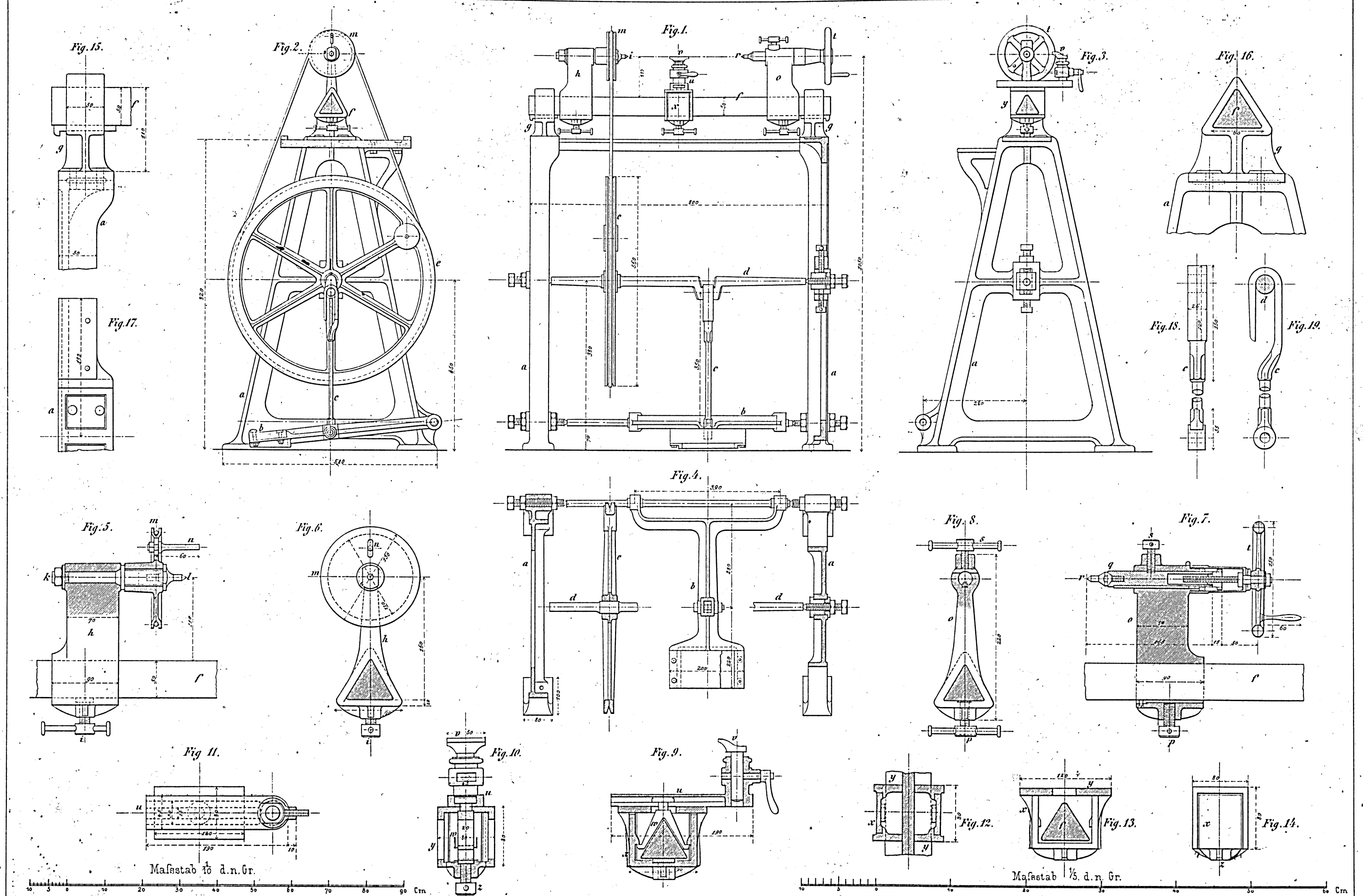
1867.

Lith. Anst. v. L. Geissendorfer, Carlsruhe.

Kleine Prismadrehbank

Hart, Werkzeugmaschinen

Taf. I.



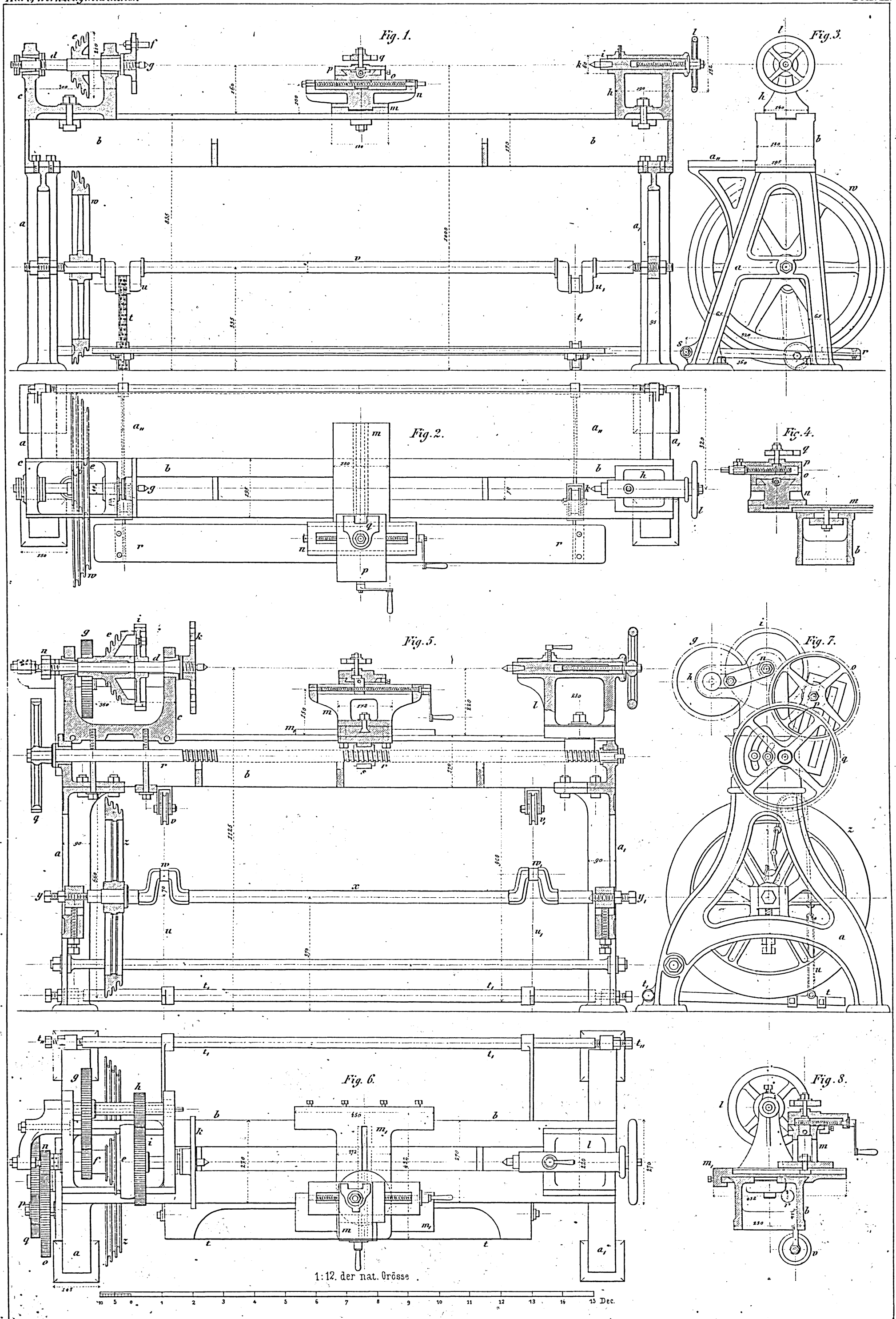
gez. v. E. Blum.

Lith. v. L. Geisenhöfer, Carlsruhe

Grössere Fußdrehbänke.

Hart, Werkzeugmaschinen

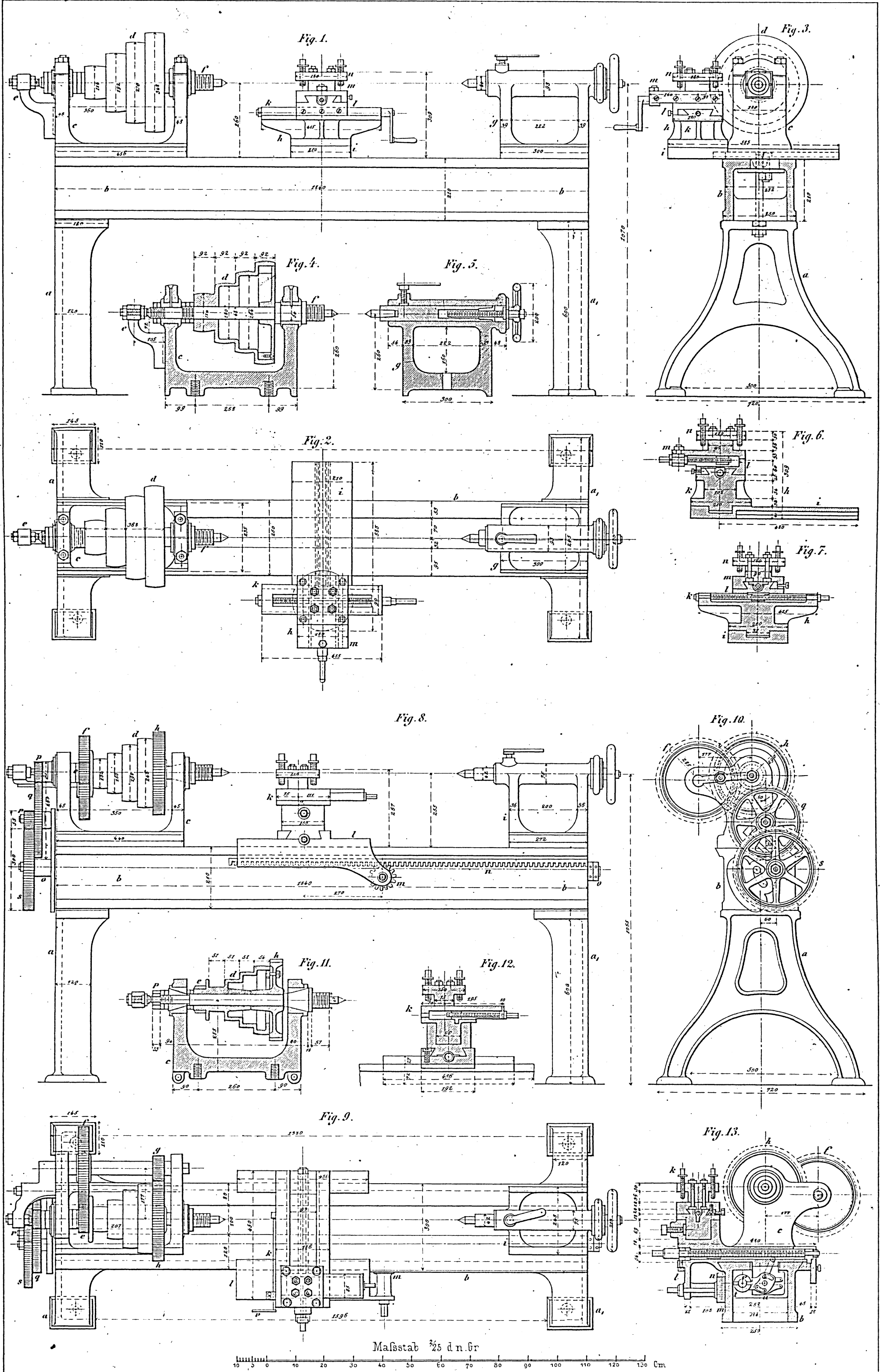
Taf. II



Kleine Maschinendrehbänke.

Hart, Werkzeugmaschinen

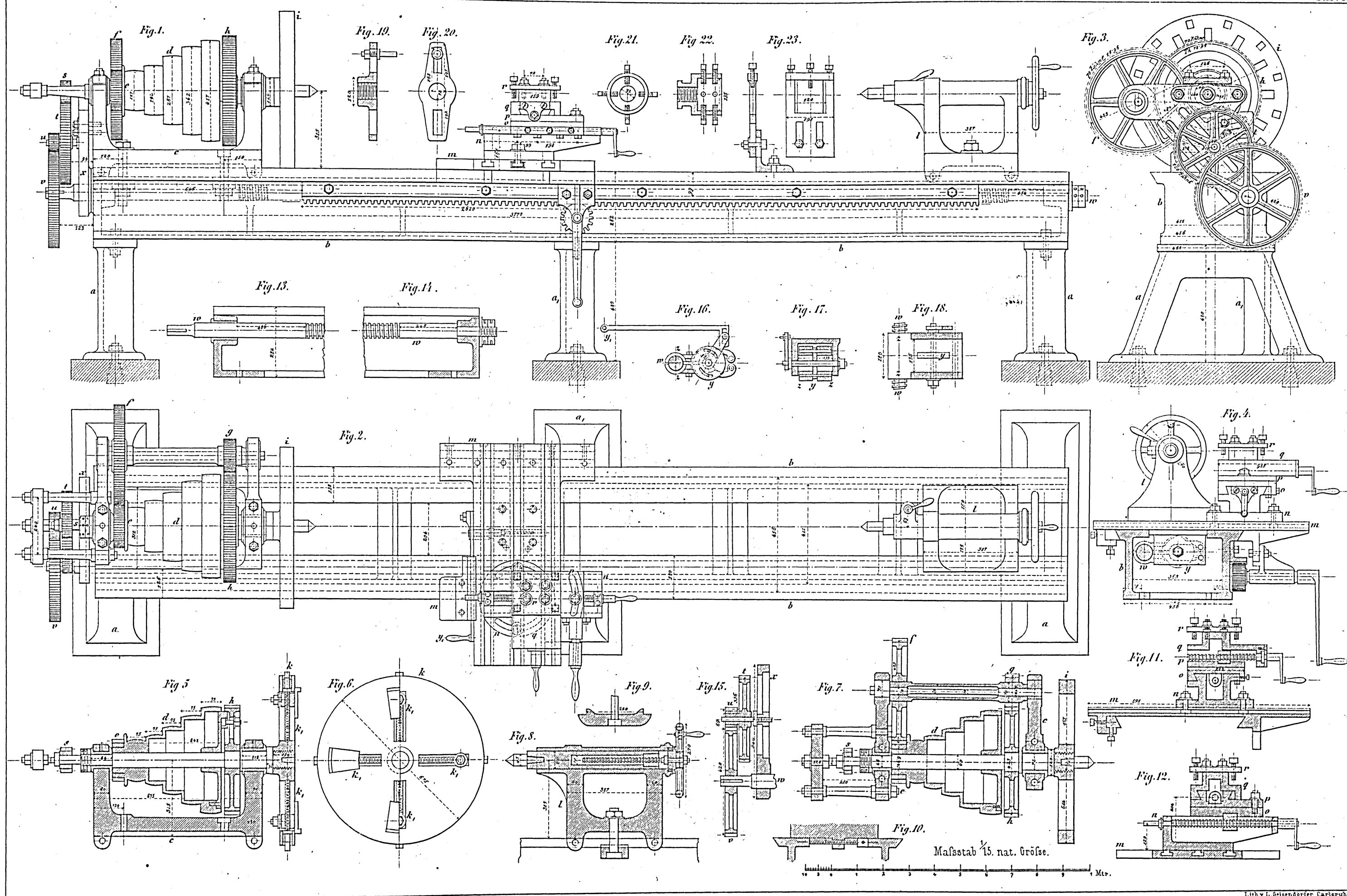
Taf. III.



Grössere Paralleldrehbank

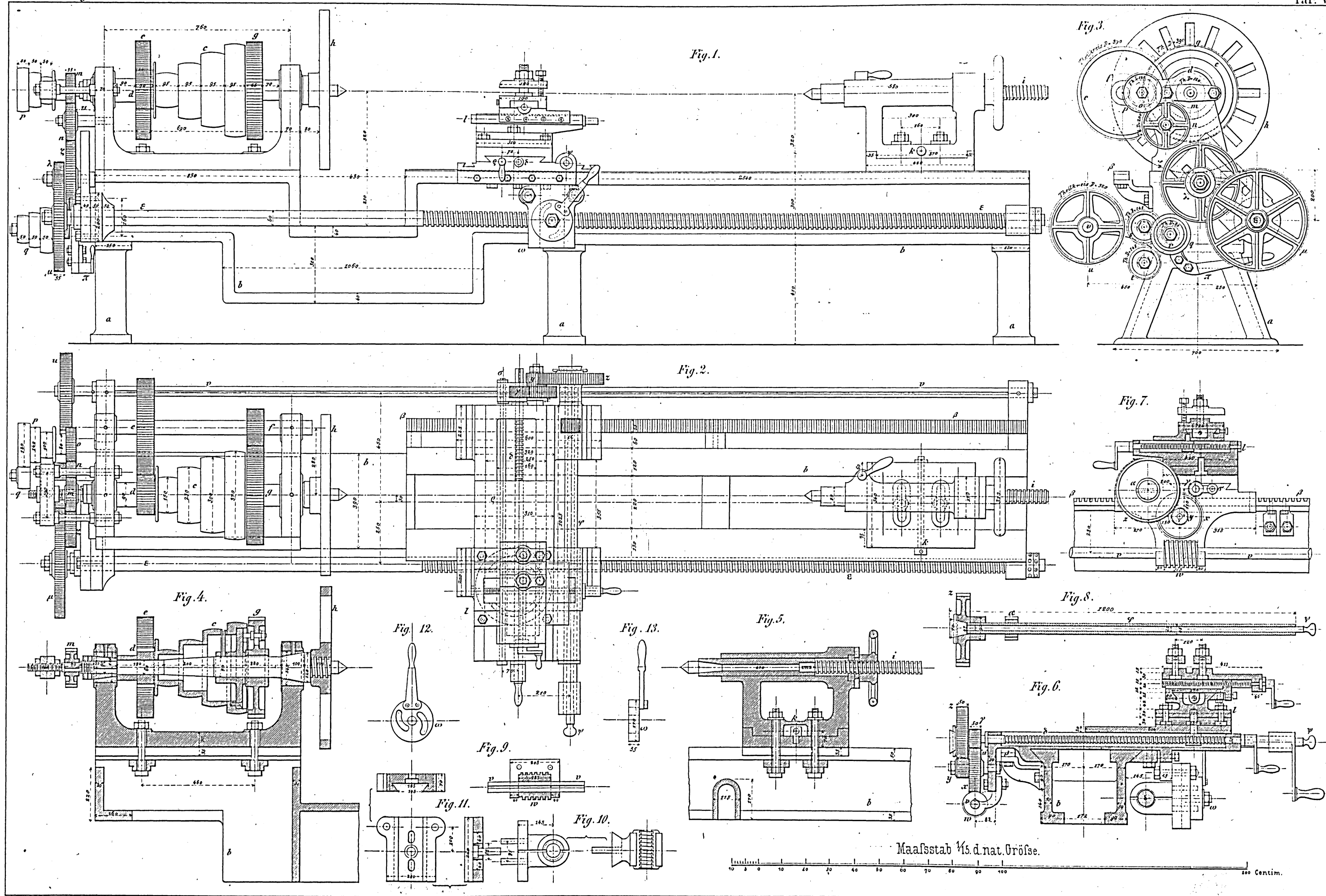
Hart, Werkzeugmaschinen

Taf. IV.



gez. v. W. Grossmann

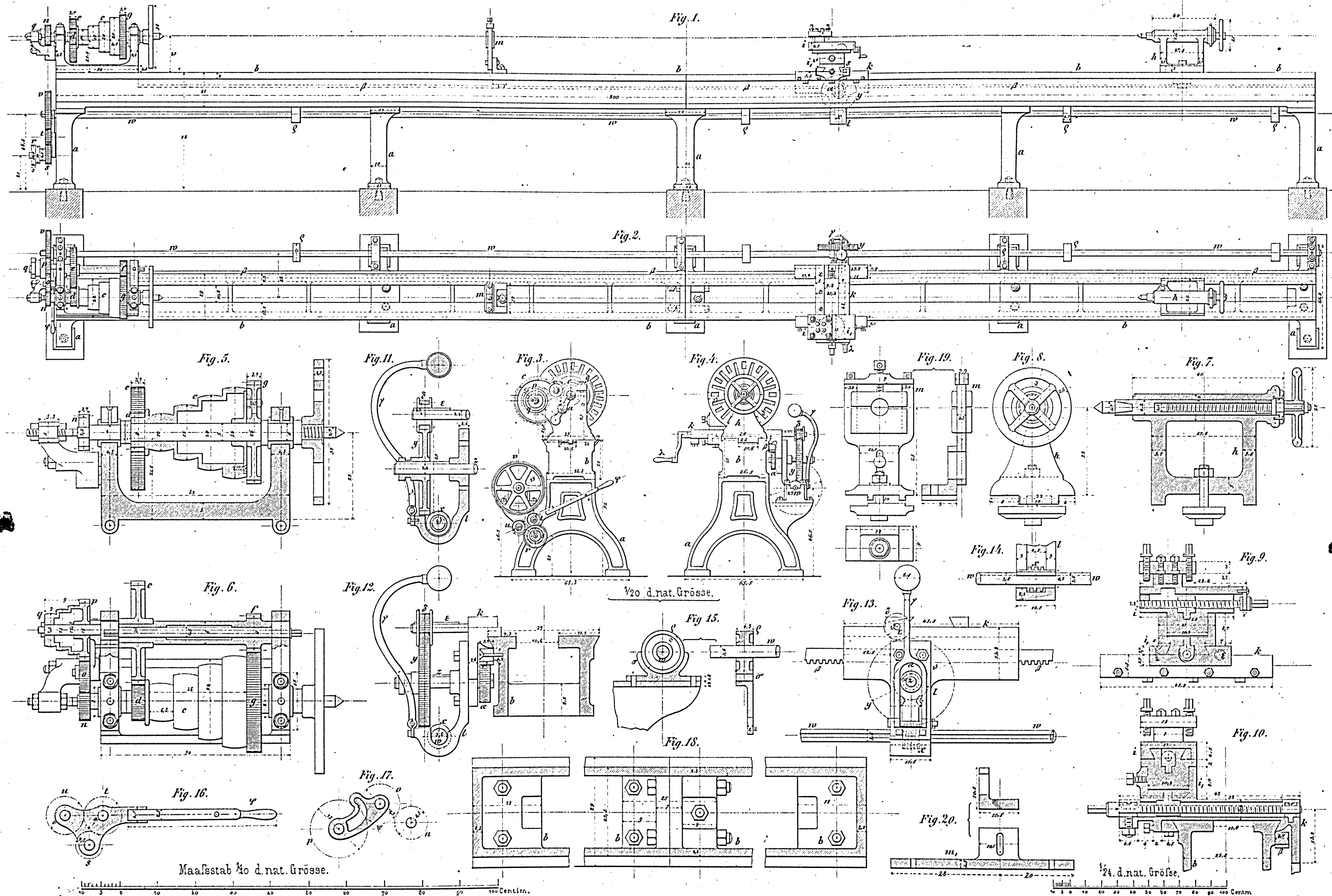
Lith. v. L. Geisenhöfer, Carlsruhe



Lange Drehbank zum Abdrehen von Transmissionswellen.

Mart, Werkzeugmaschinen

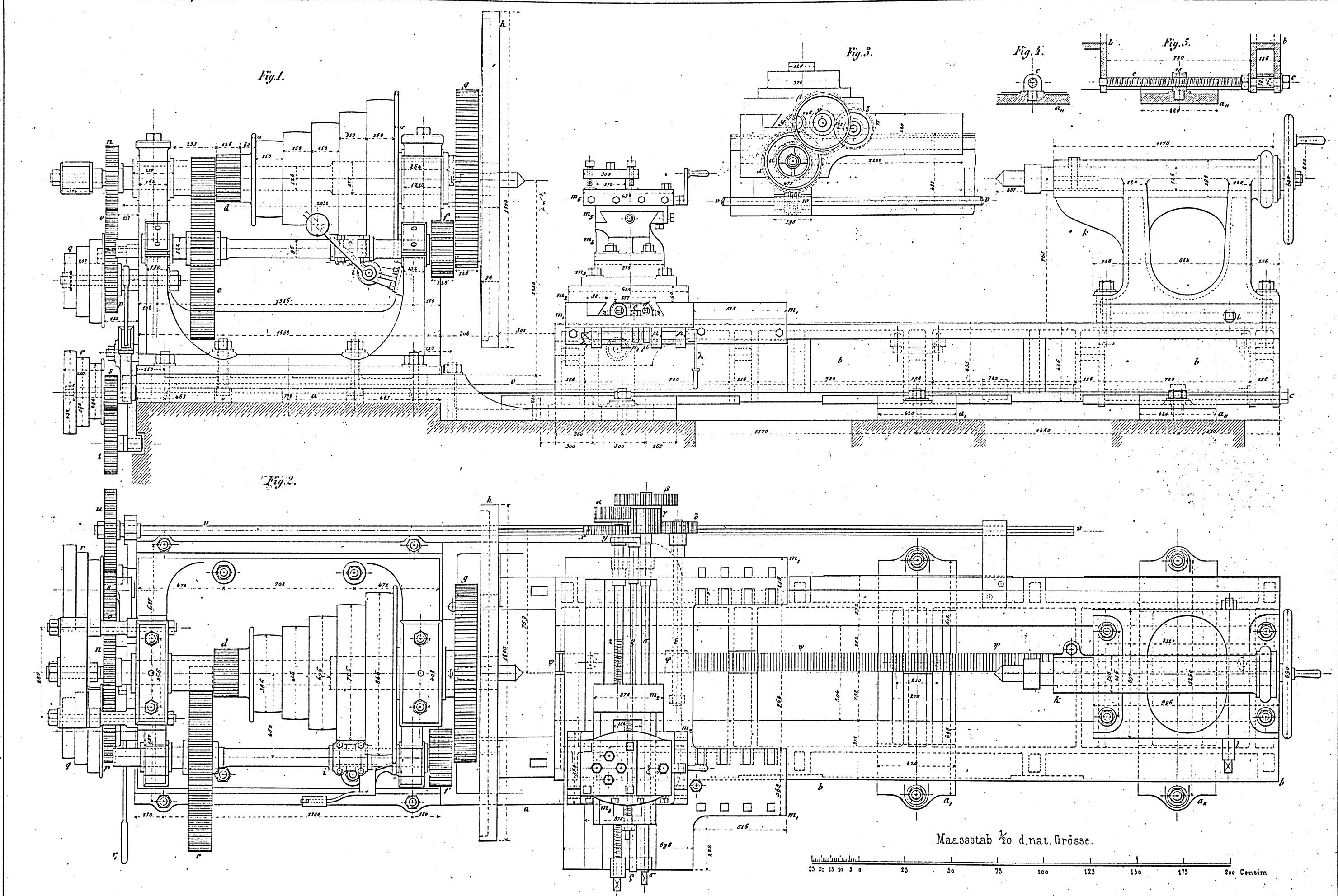
Taf. VI.



Scheibendrehbank mit verstellbarem Bett
aus der Carlsruher Maschinenfabrik.

Hart, Werkzeugmaschinen:

Taf. VII.

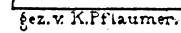


gez. v. K. Pflaumer.

Lith. v. L. Geisendörfer, Karlsruhe.

Hart, Werkzeugmaschinen

Taf. VIII

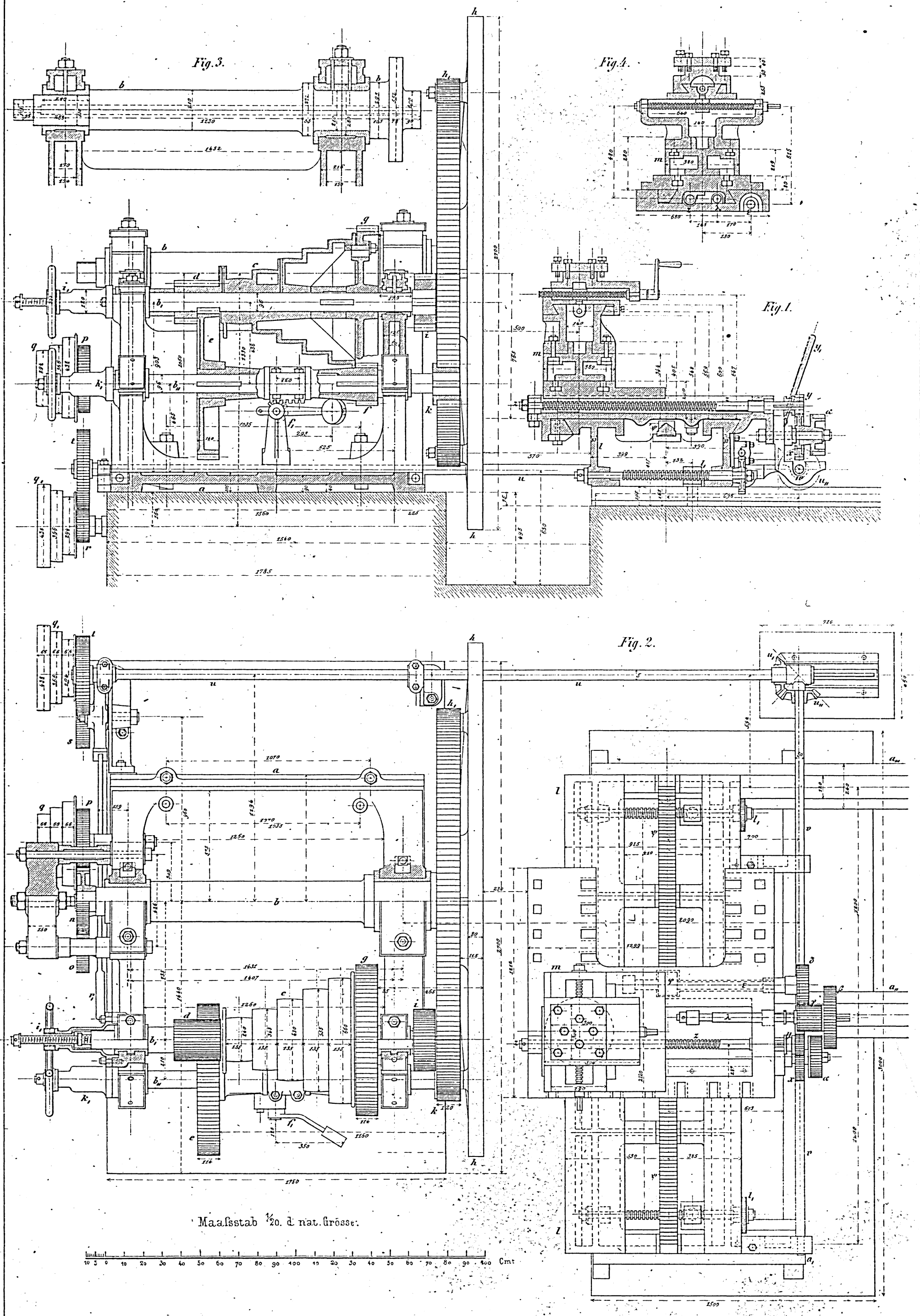


Litn.v. I. Geisendörfer, Carlsruhe

Große Scheibendrehbank mit Querbett.

Mart, Werkzeugmaschinen

Tafel IX



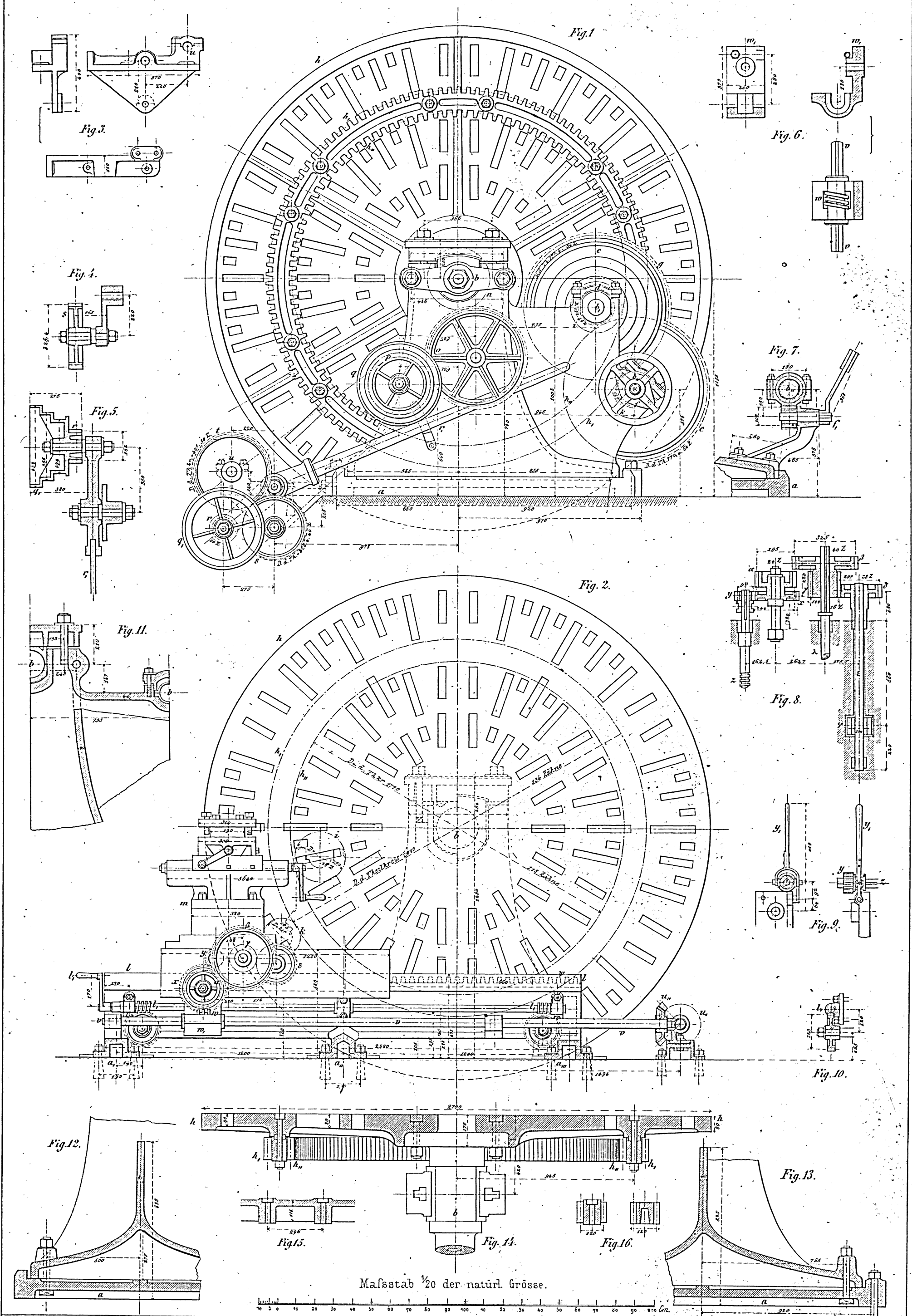
gez. v. L. Kornmann

Lith. v. L. Seisendorfer, Carlsruhe

Große Scheibendrehtbank mit Querbett.

Hart, Werkzeugmaschinen

Taf. X



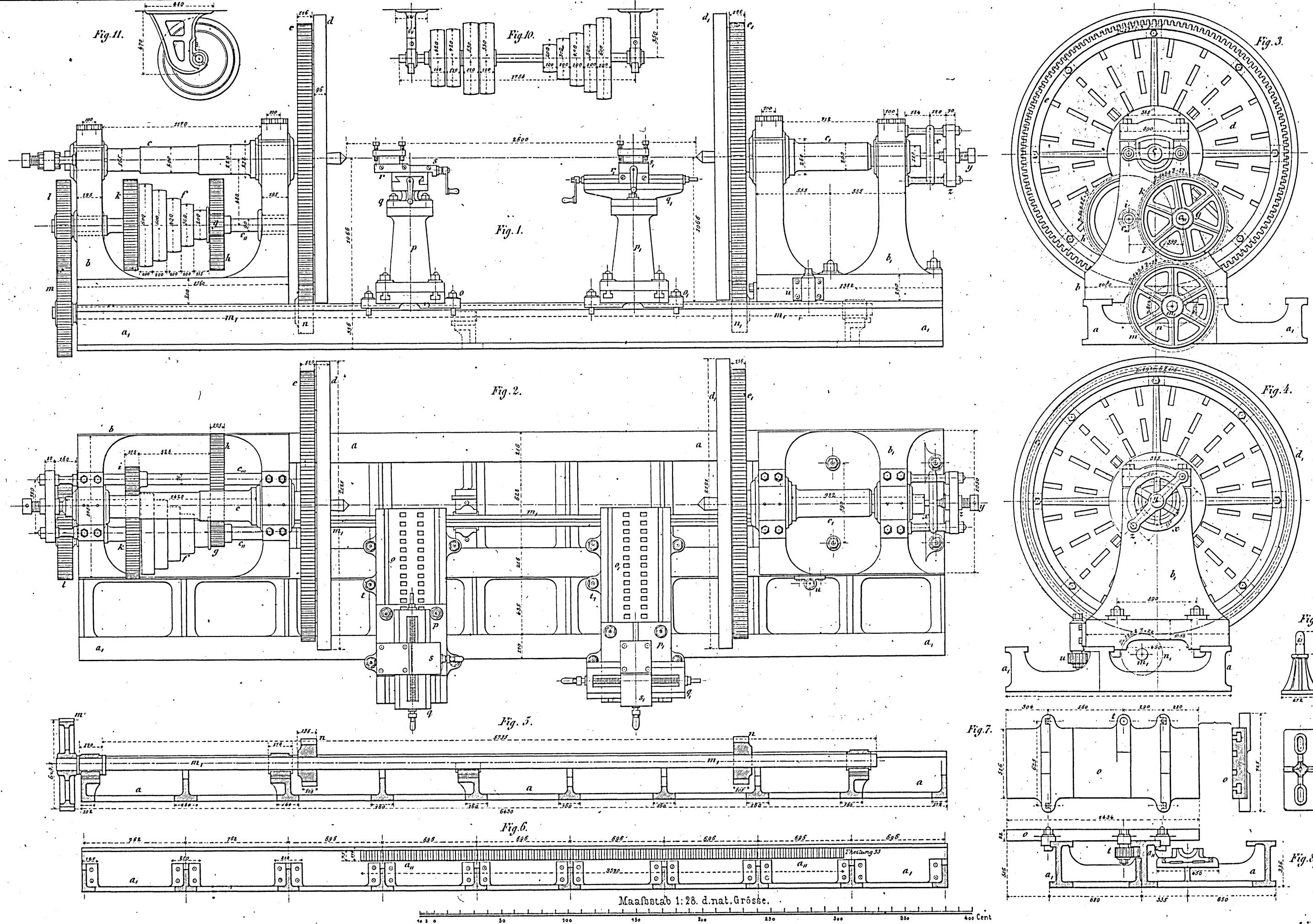
gez. v. L. Kornmann.

Lith. v. L. Geisendörfer, Carlsruhe

Große Räderdrehbank für Lokomotivtriebräder.

Taf. XI.

Hart, Werkzeugmaschinen

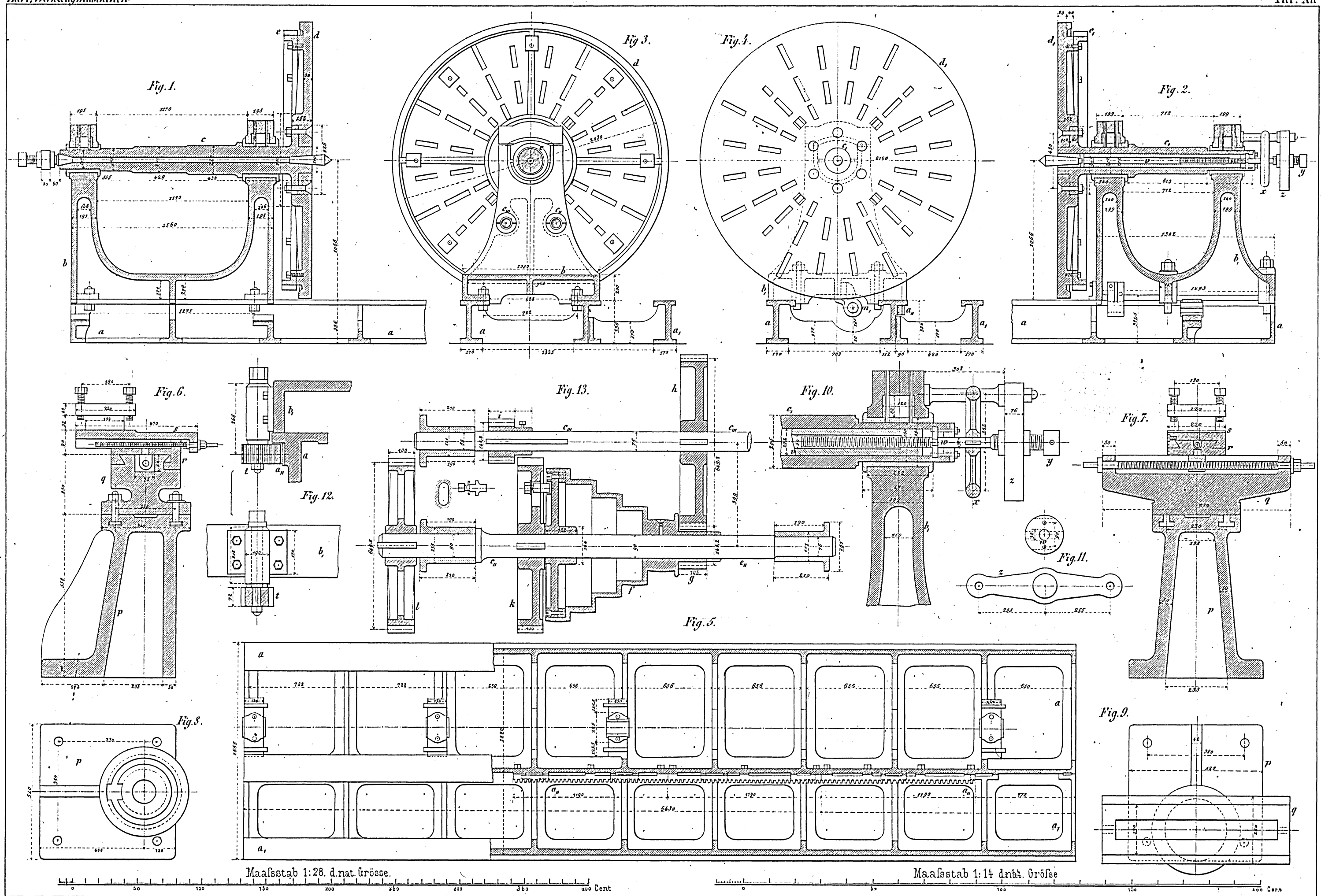


Gez. v. L. Wilhelm.

Lith. v. L. Geisendorfer, Carlsruhe

Große Räderdrehbank für Locomotivtriebräder

Hart, Werkzeugmaschinen



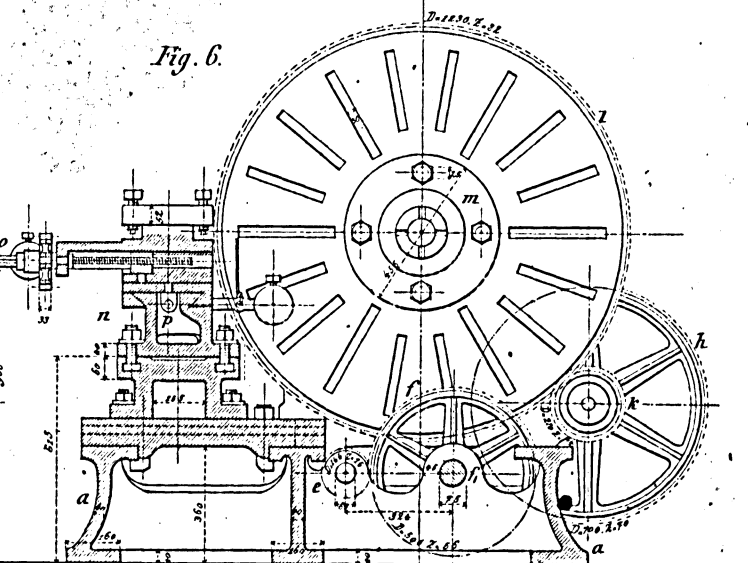
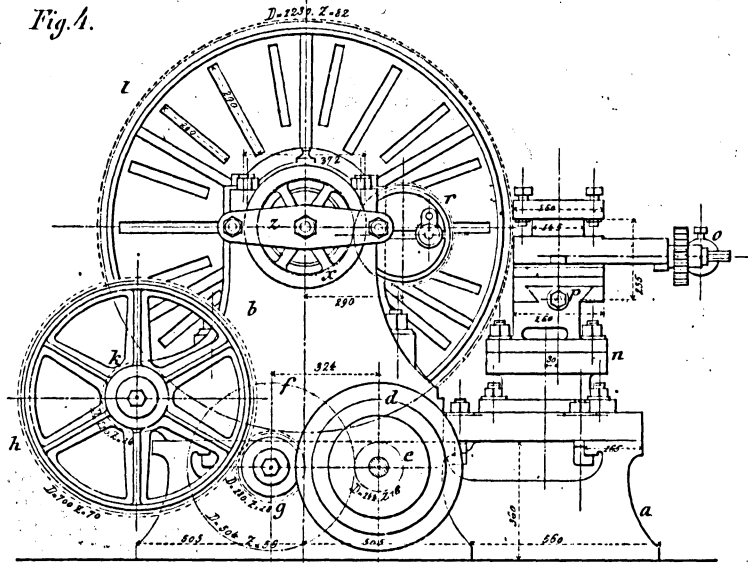
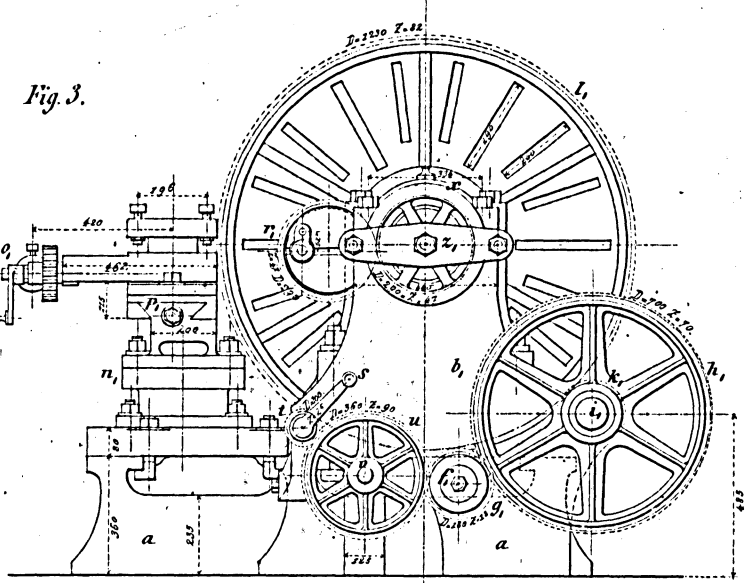
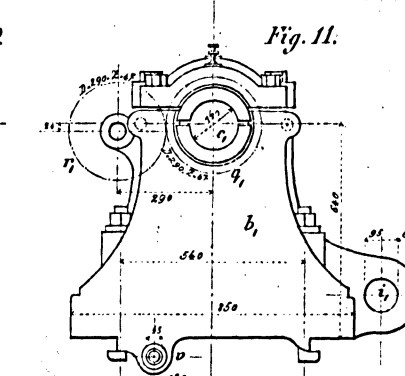
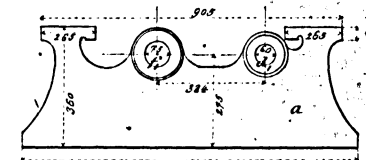
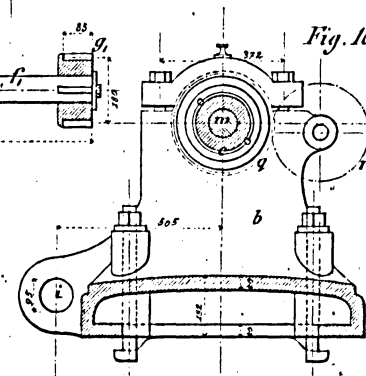
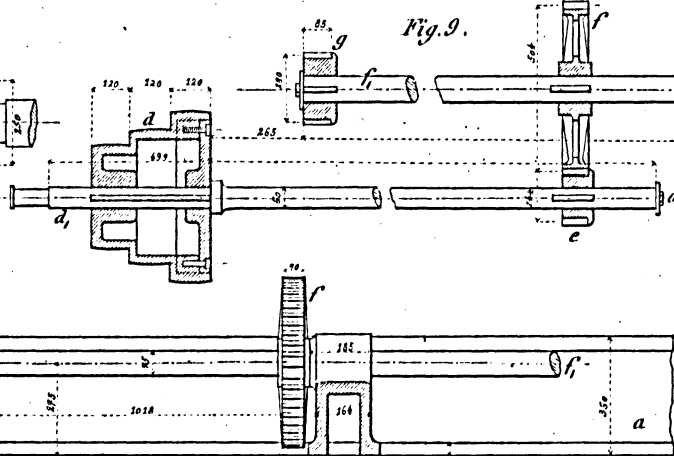
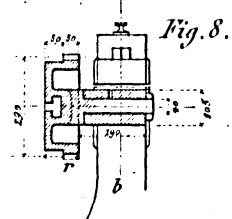
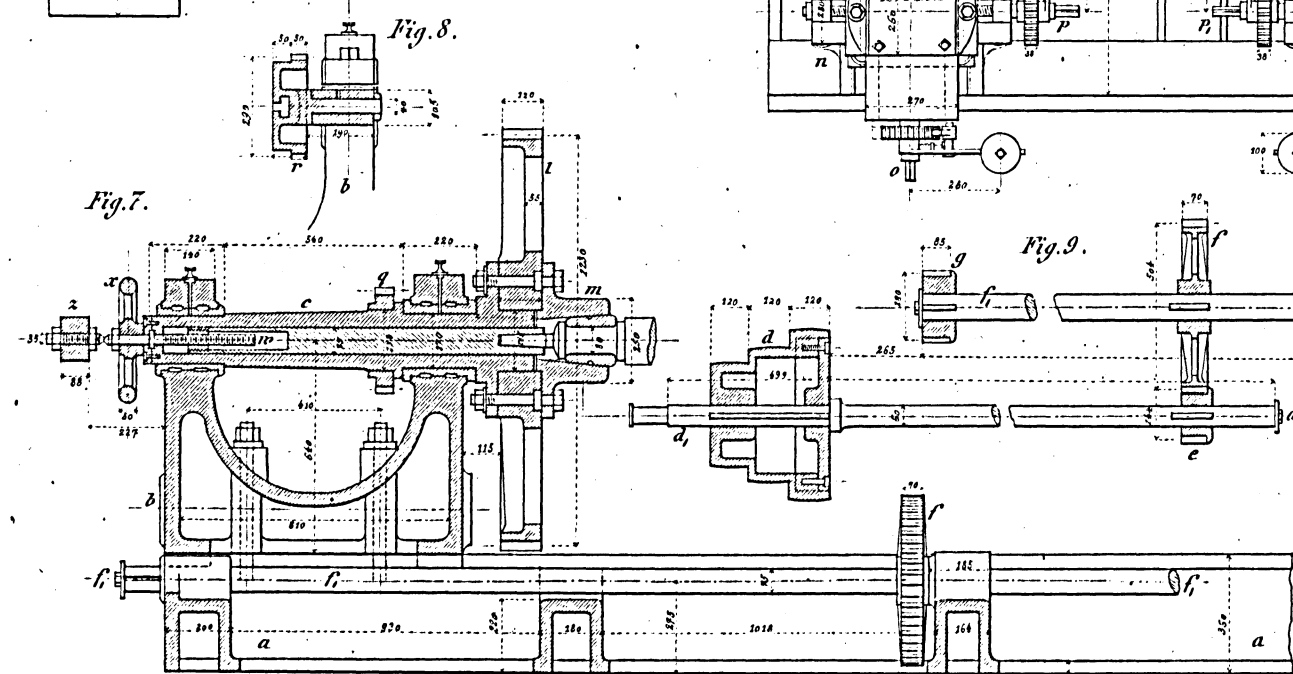
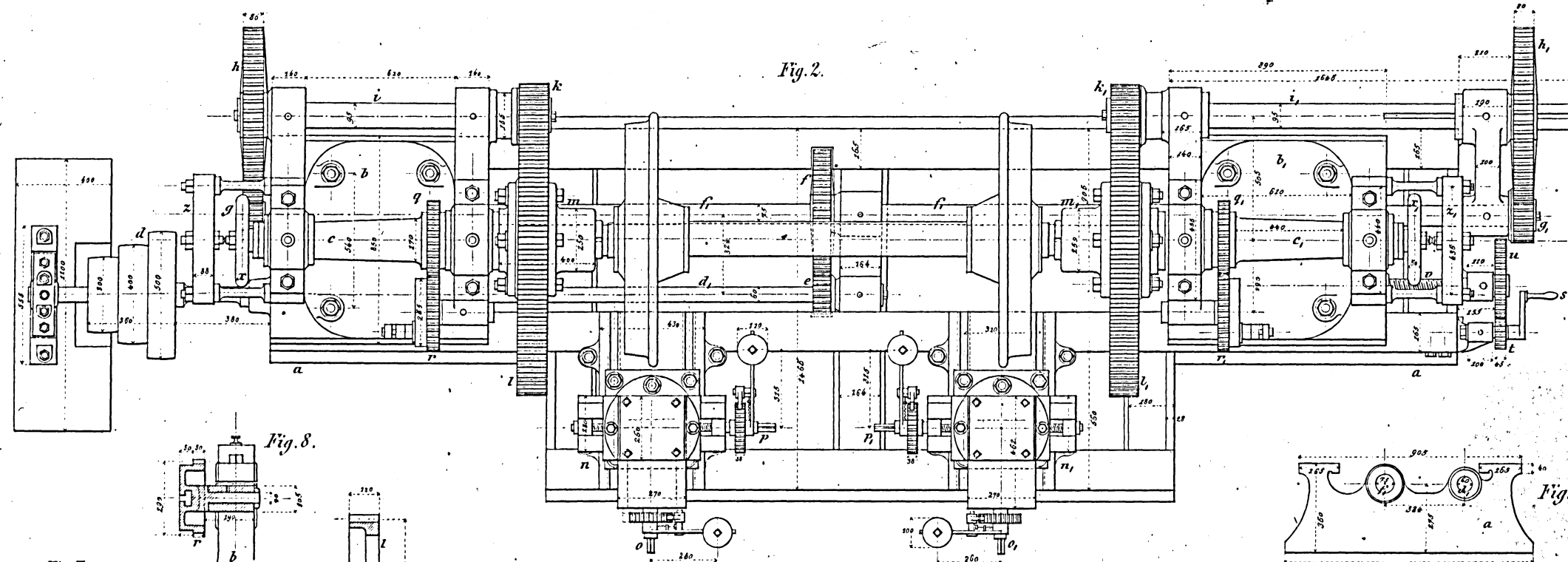
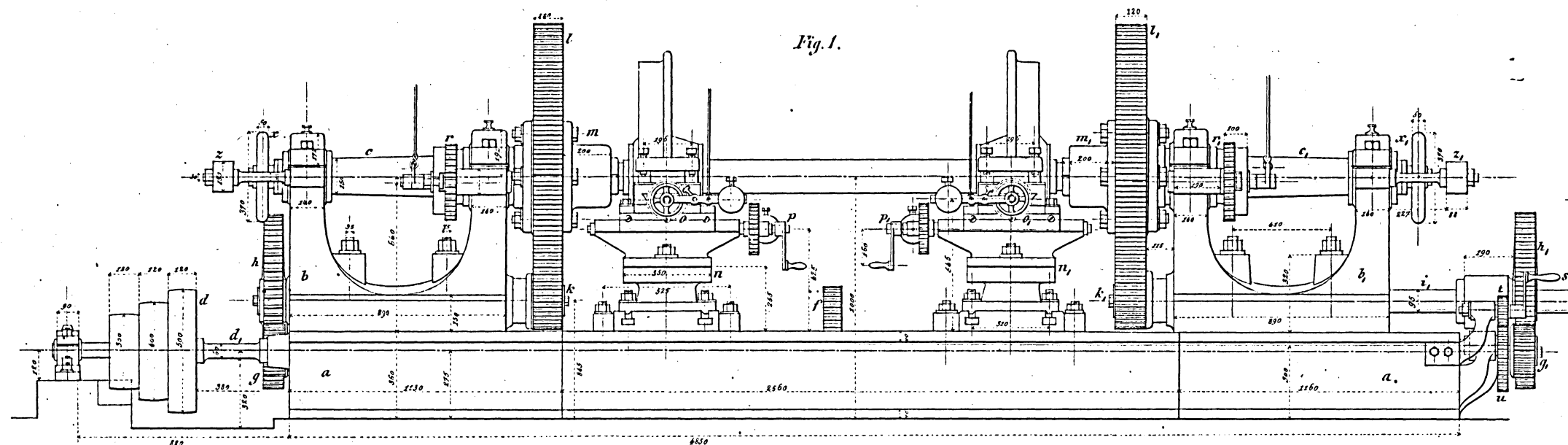
Maßstab 1:28 d. nat. Größe.

Maßstab 1:14 d. nat. Größe.

Räderdrehbank für Tender und Waggonräder von Richard Hartmann, Chemnitz.

Hart, Werkzeugmaschinen.

Taf. XIII

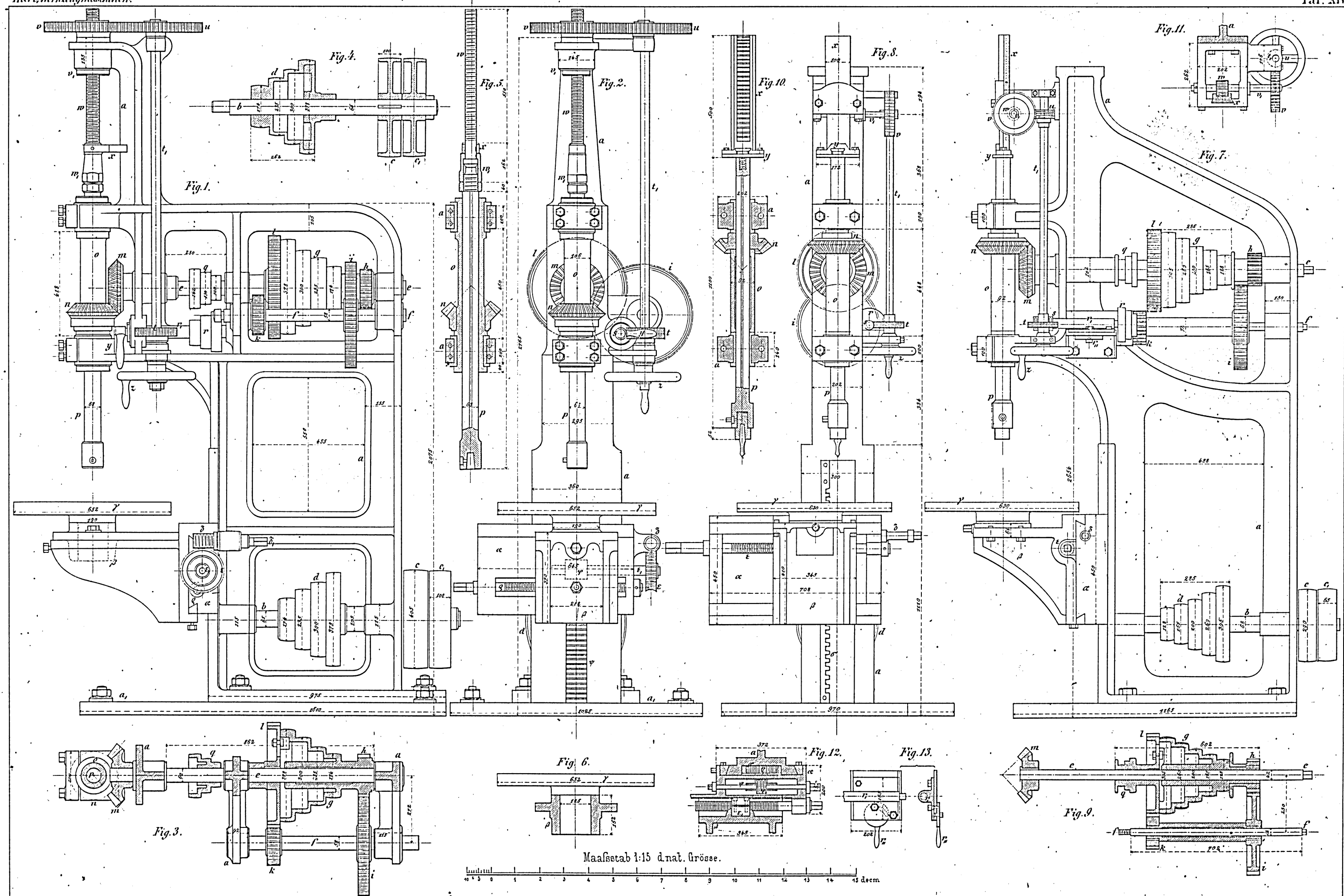


1:25. d. nat. Grösse
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 Centim.

Vertikalbohrmaschinen. Aeltere Construction.

Hart, Werkzeugmaschinen.

Taf. XIV



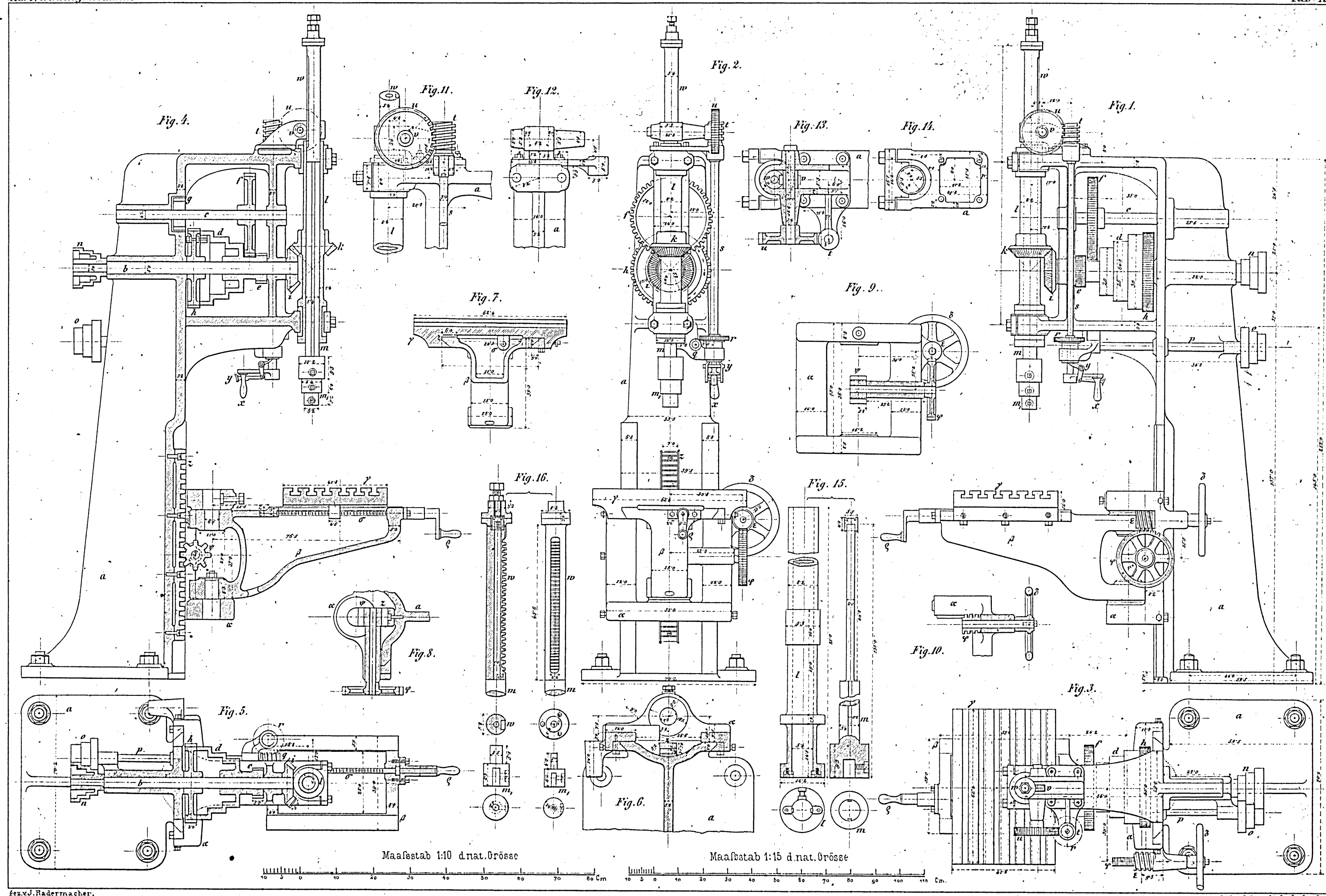
gez. v. K. Rittner

Lith. v. L. Geisendorfer, Carlsruhe

Vertikalbohrmaschine mit drehbarem Bohrtisch.

Hart, Werkzeugmaschinen

Tab. XV

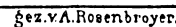


gez.v.J. Radermacher.

Lith. v. L. Gieseler, Carlsruhe

Hart, Werkzeugmaschinen

Taf. XVI



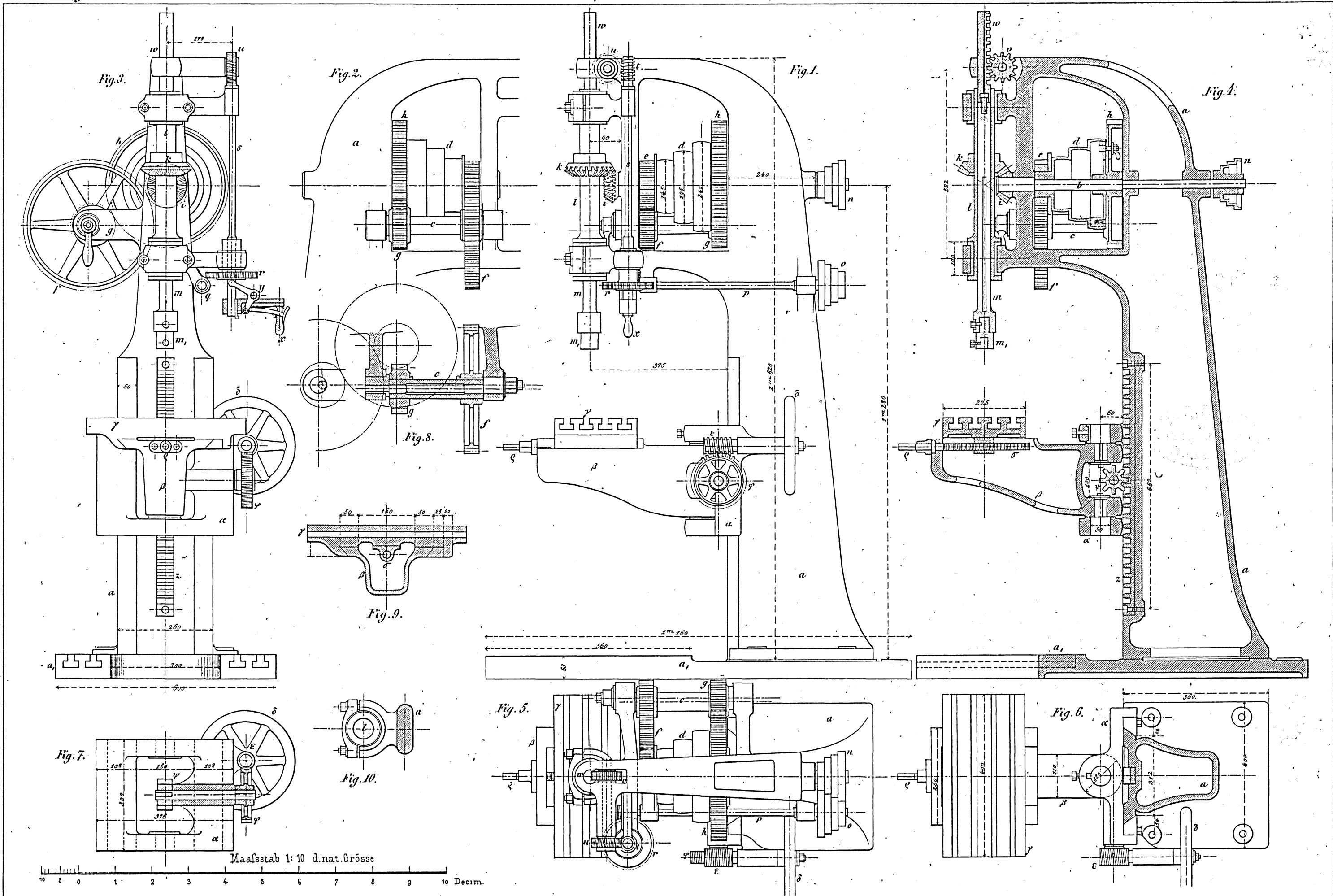
Lith.v.L.Geisendörfer,Carlsruhe

Vertikalbohrmaschine

mit Hohlgußgestell.

Taf. XVII.

Hart, Werkzeugmaschinen



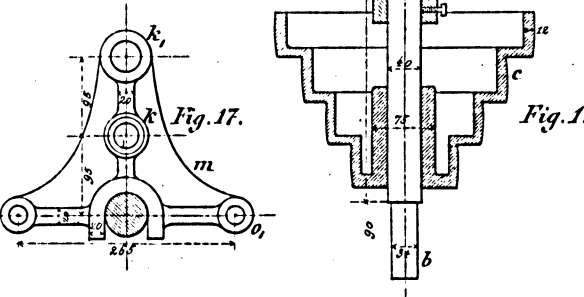
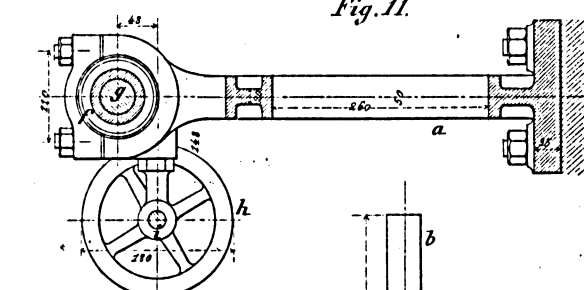
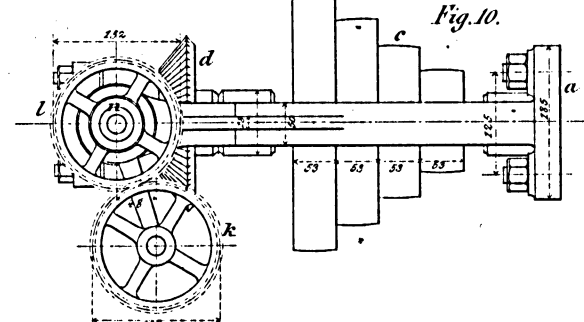
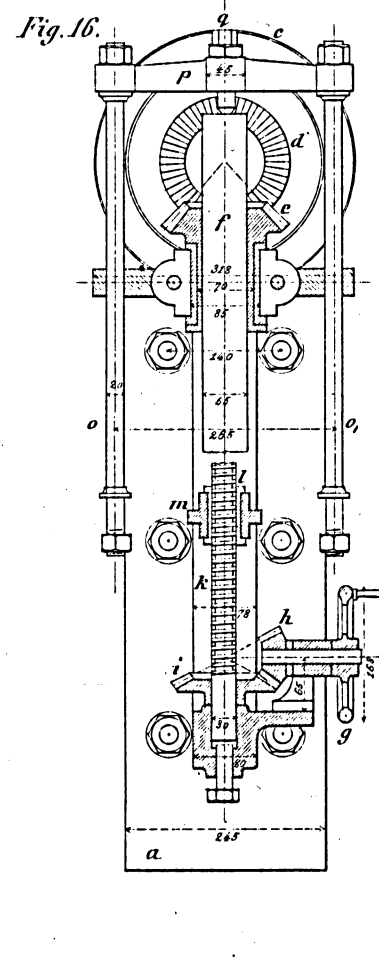
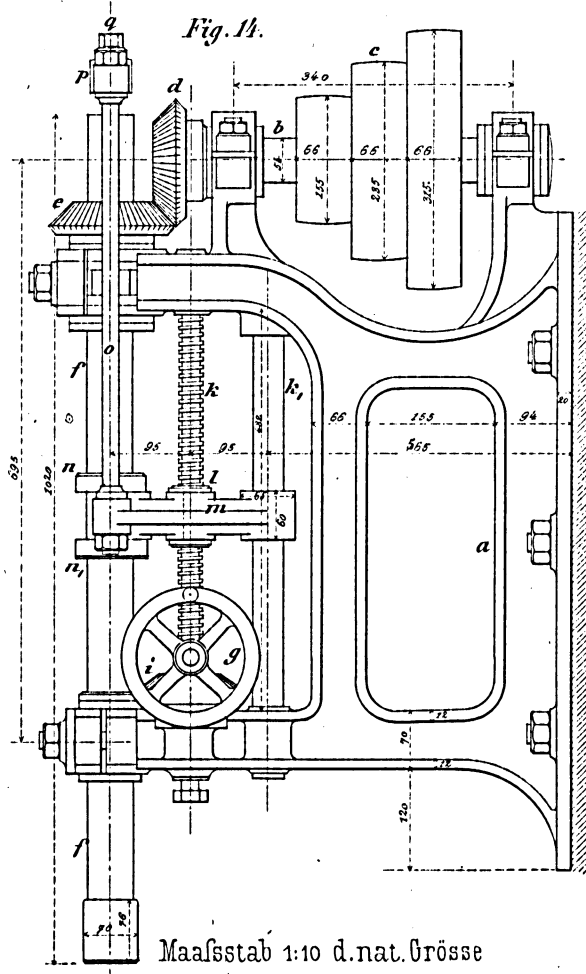
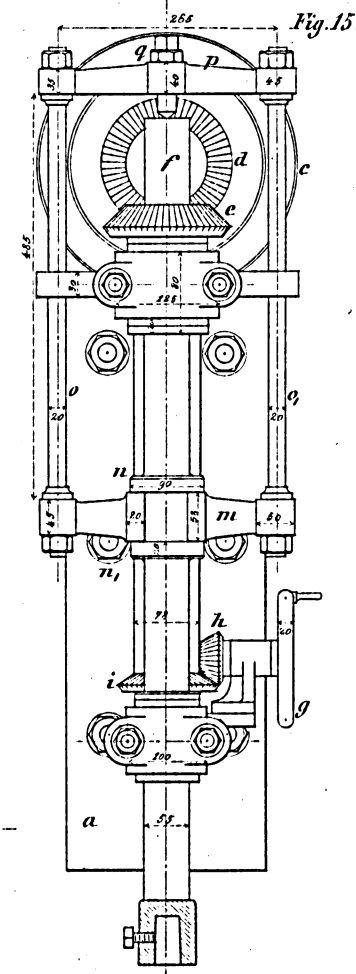
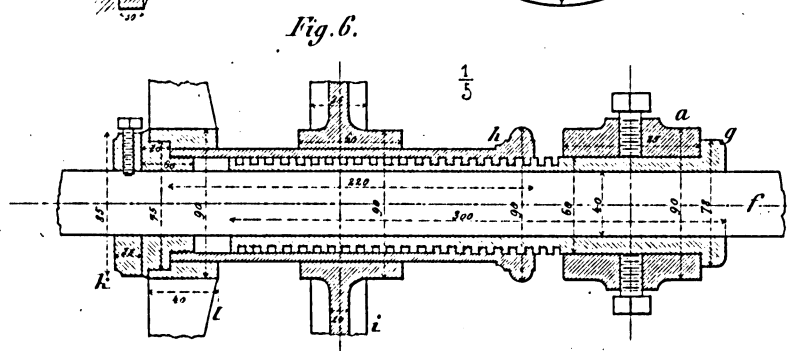
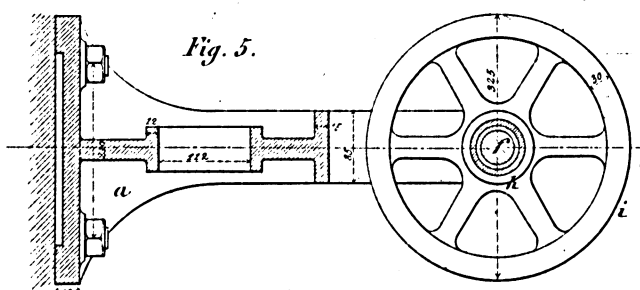
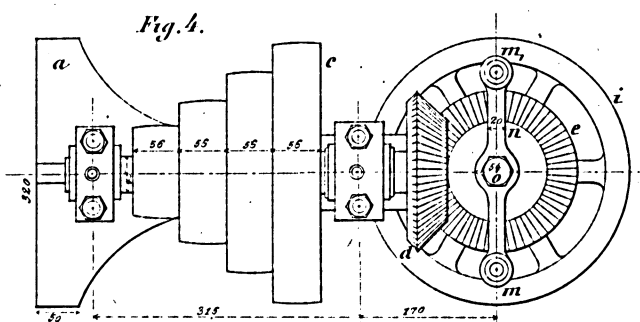
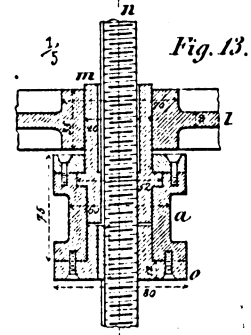
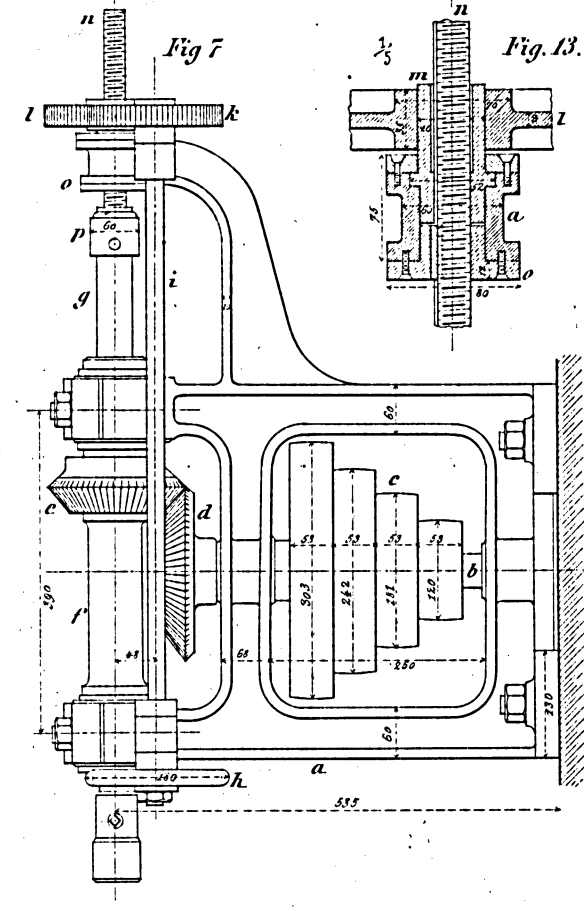
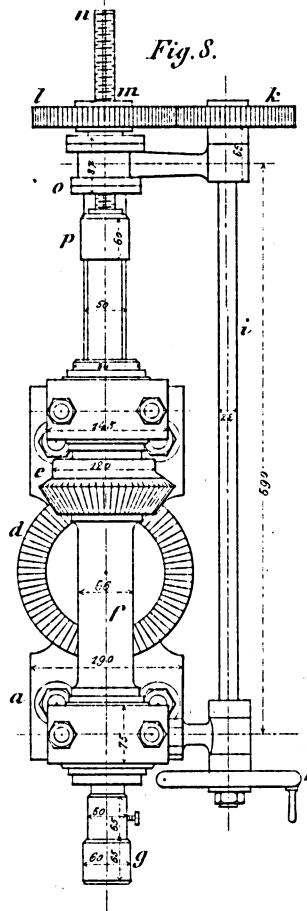
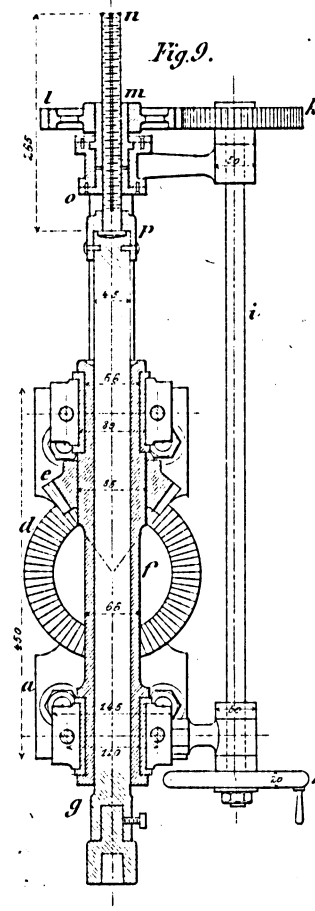
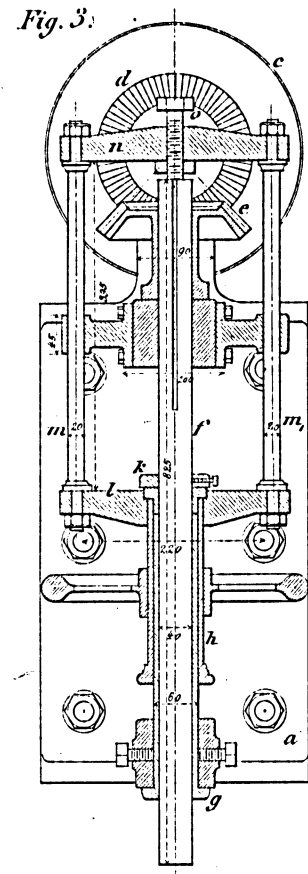
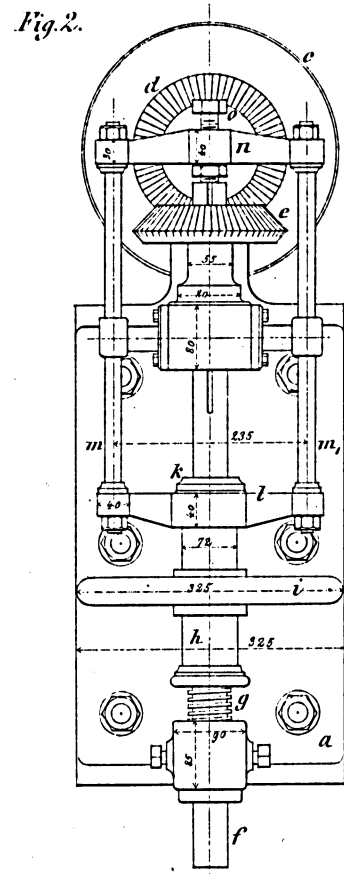
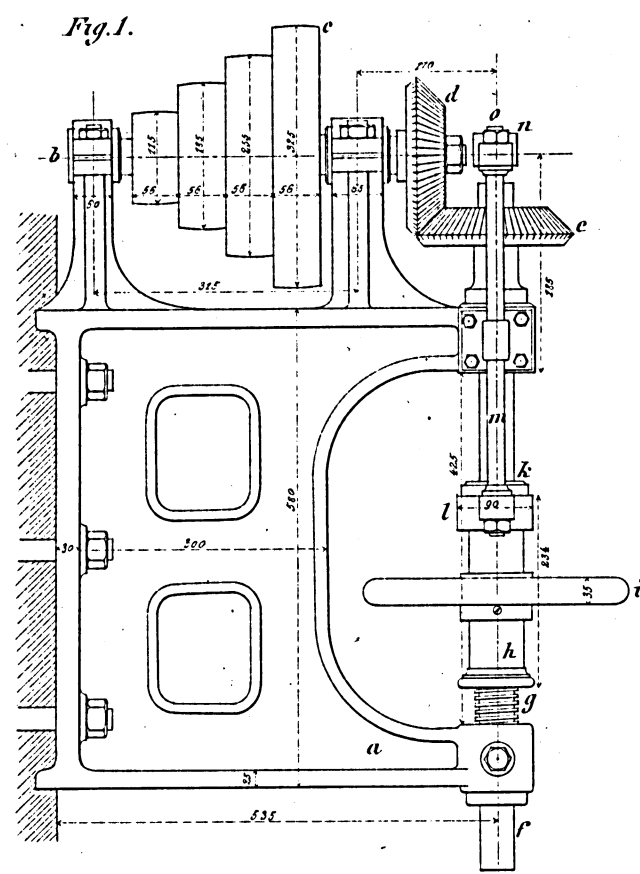
Gez. Jgnaz Mayer.

Lith.v.L.Geisendörfer,Carlsruhe

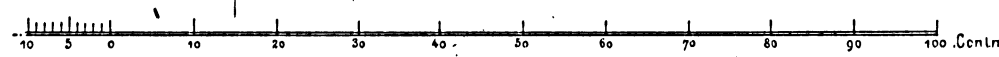
Wand-Bohrmaschinen.

Hart, Werkzeugmaschinen.

Taf. XVIII



Maßstab 1:10 d. nat. Grösse



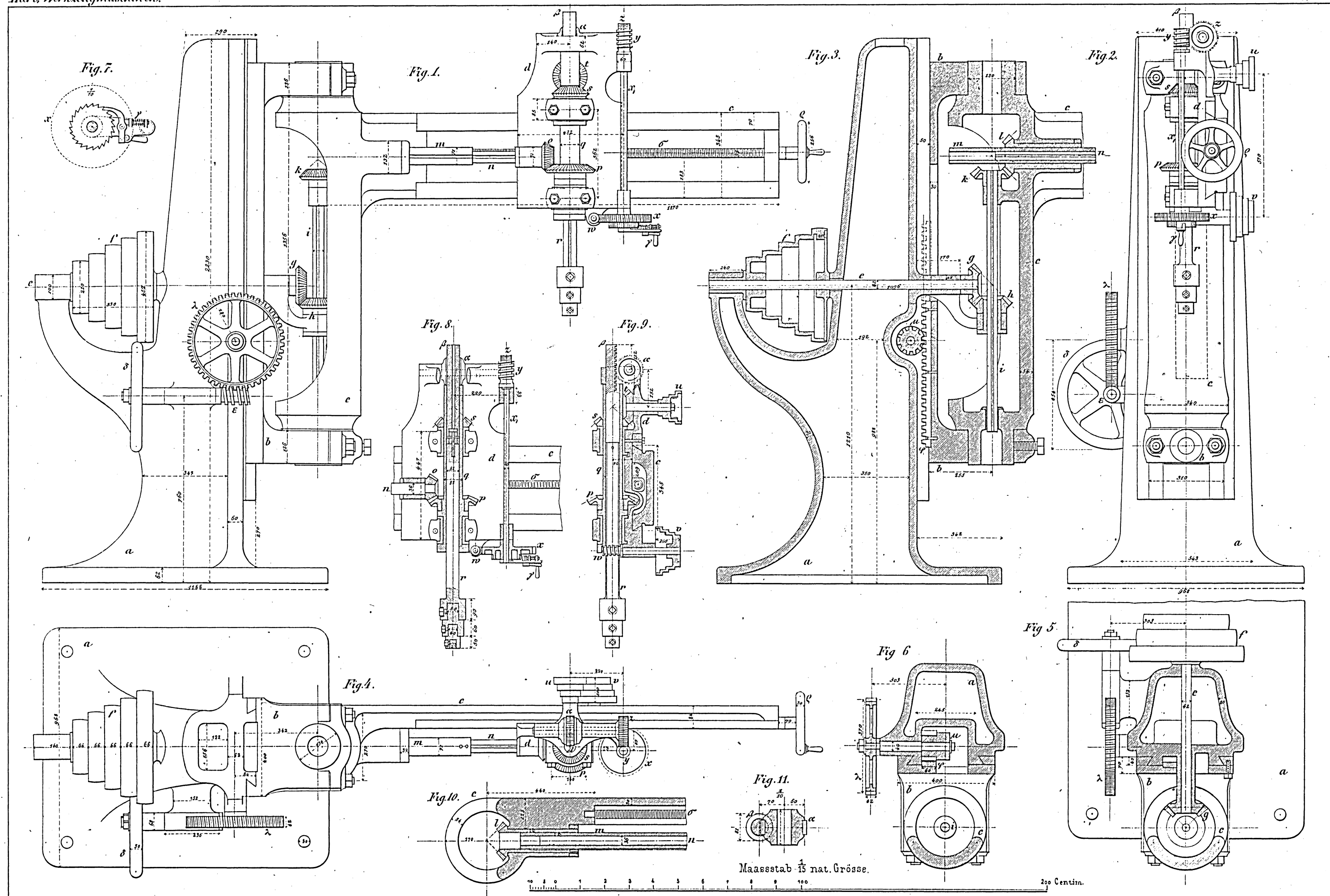
gez. v. Ad. Müller.

Lith. v. L. Heisenhöfer, Carlshausen

Radial-Bohrmaschine. (System Whitworth.)

Hart, Werkzeugmaschinen.

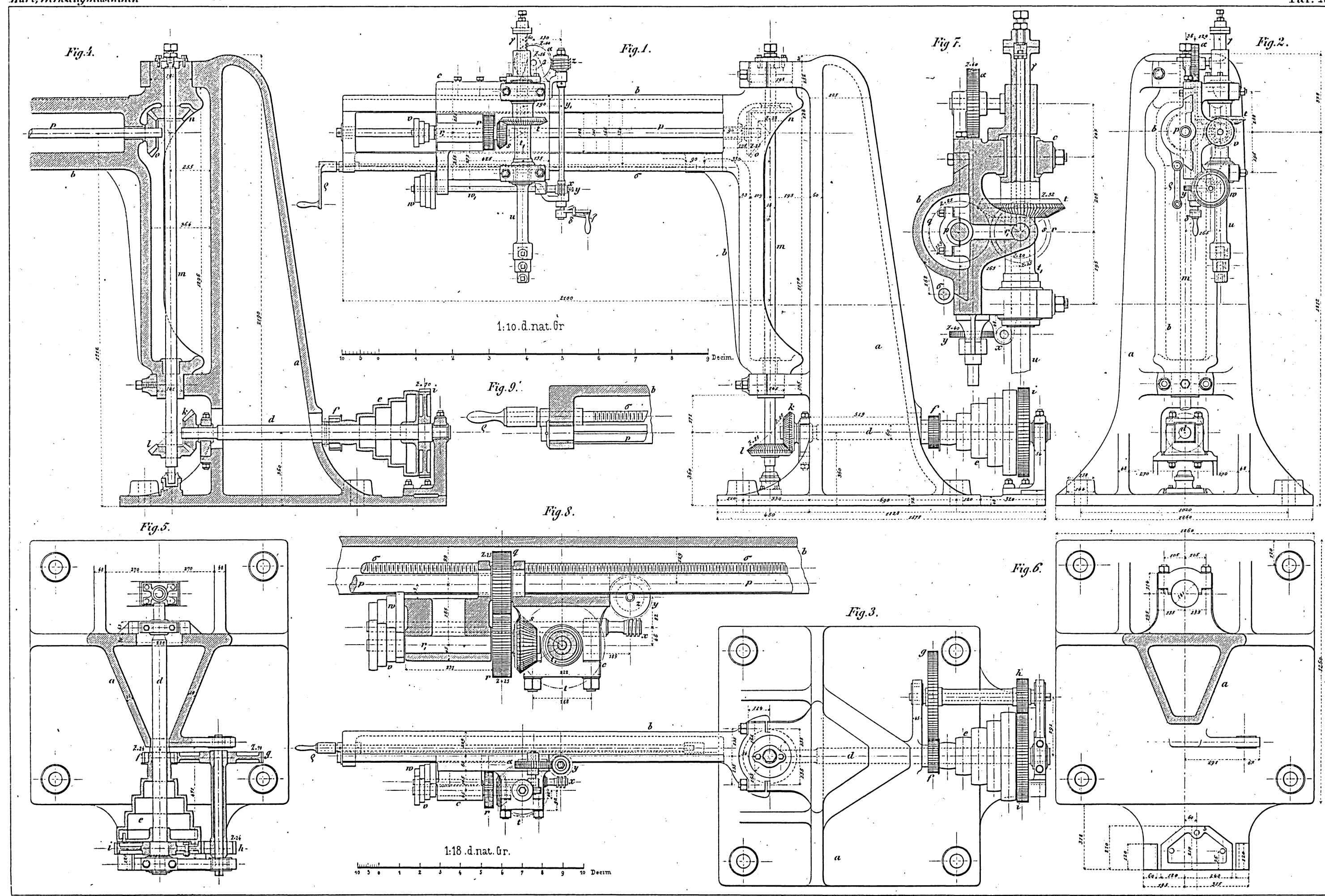
Taf. XIX.



Radial-Bohrmaschine ohne Vertikalschlitten

Hart, Werkzeugmaschinen

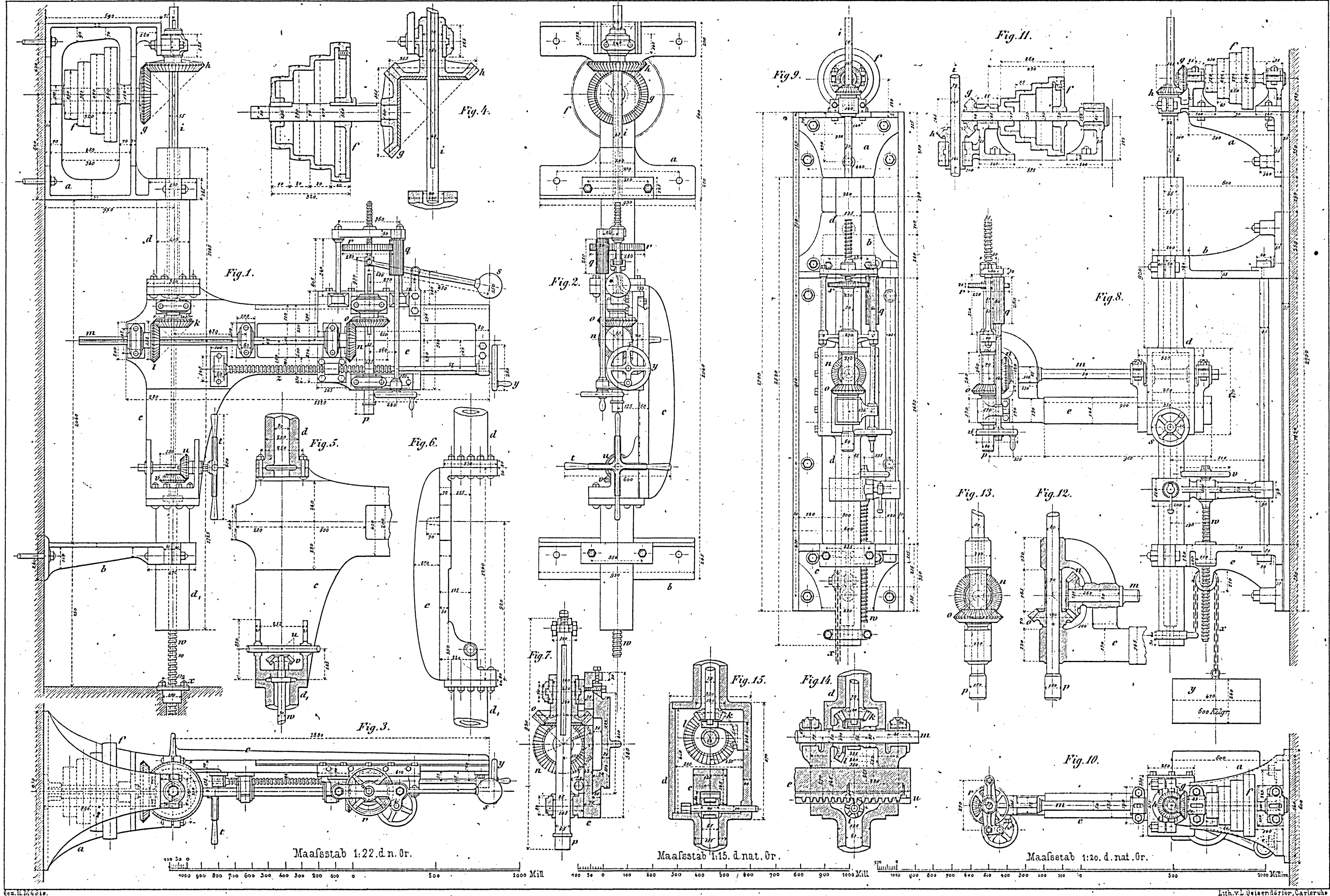
Taf. XX.



Wand-Radialbohrmaschinen.

Taf. XXI.

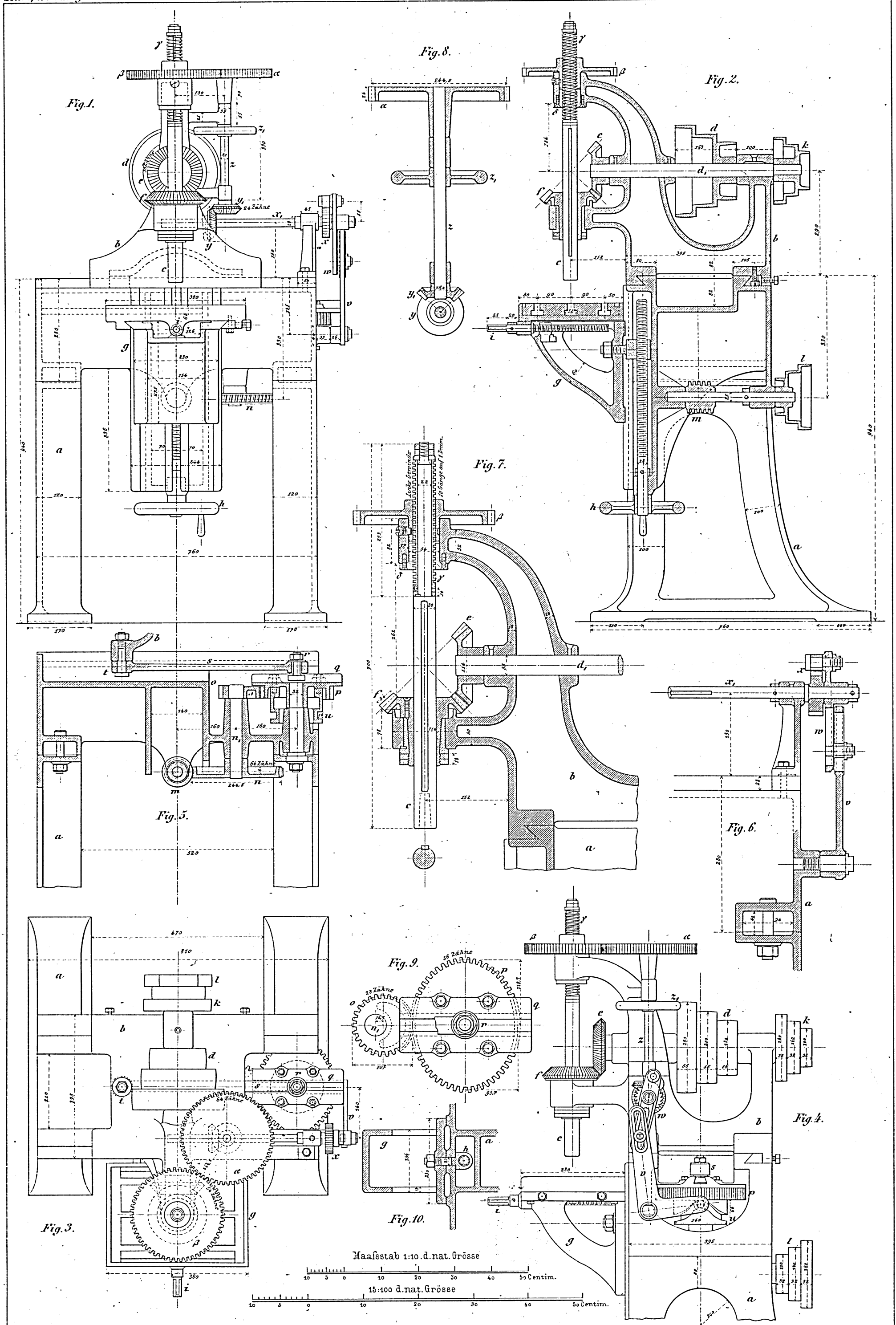
Hart, Werkzeugmaschinen.



Langloch-Bohrmaschine von Collet u. Engelhard in Offenbach.

Hart, Werkzeugmaschinen

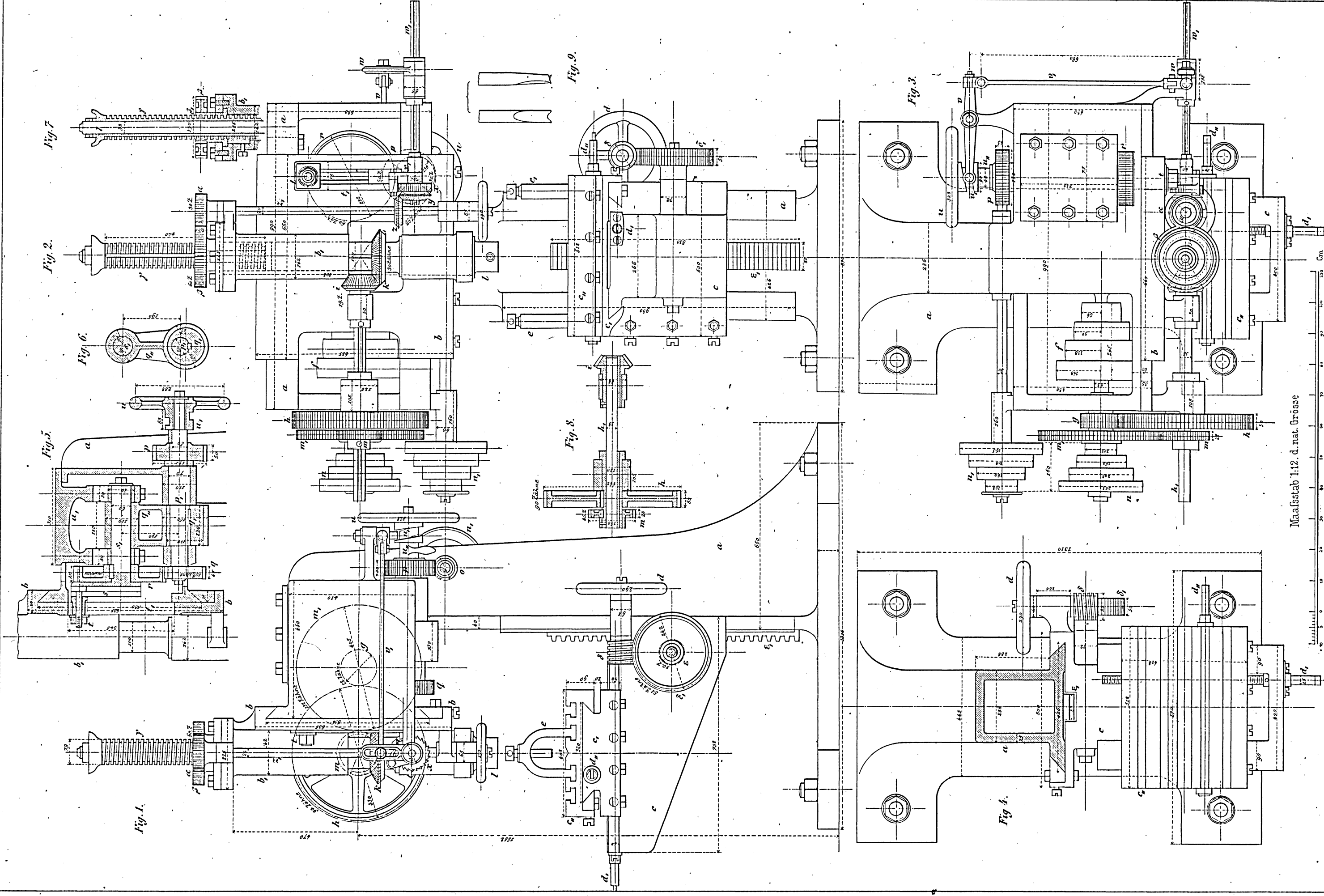
Taf. XXII.



Langloch-Bohrmaschine (System Whitworth)

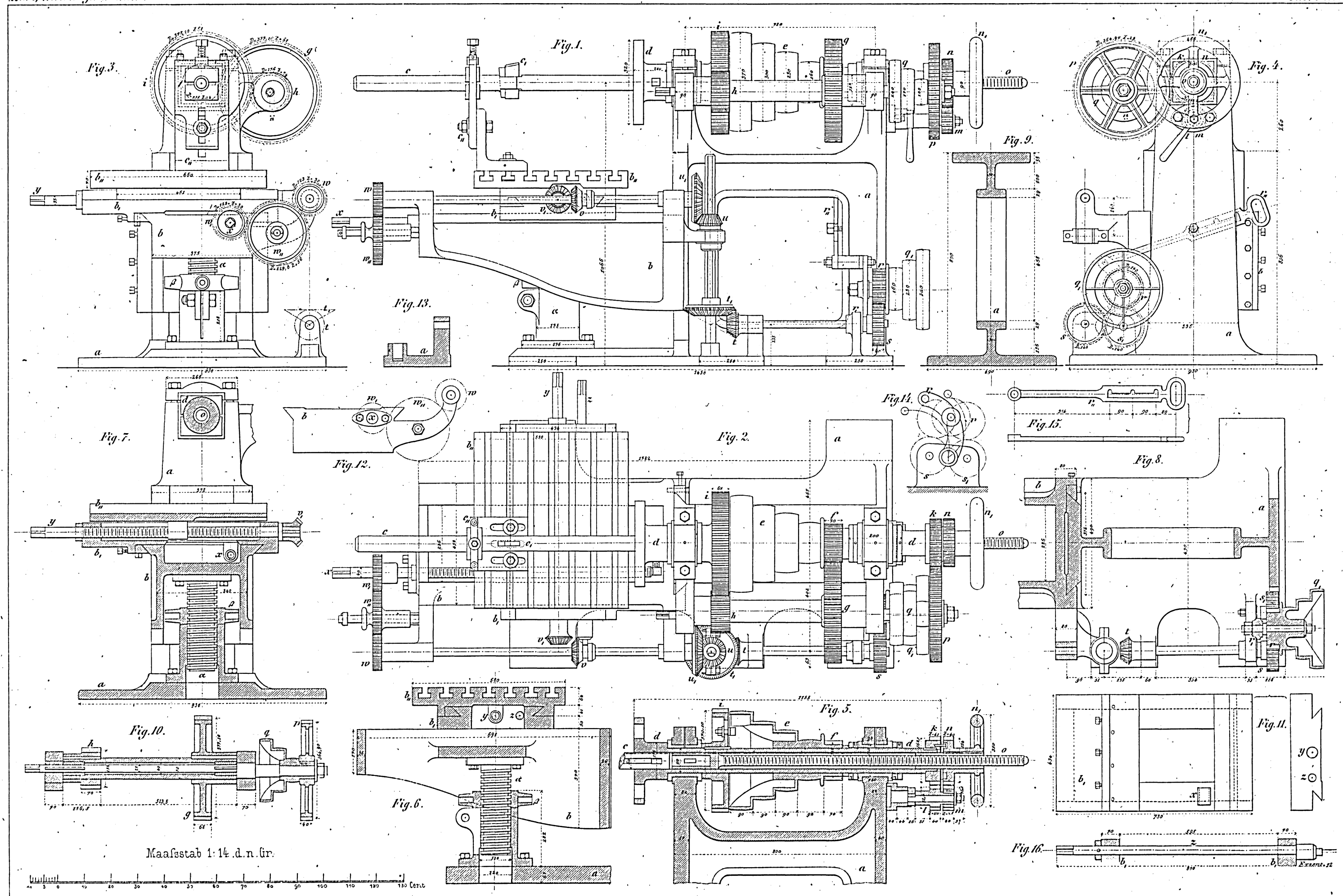
Mart, Werkzeugschneidmaschinen

Tafel XXIII.



Gewerkschaft

Langloch-Bohrmaschine



Bohr- und Fraismaschine

von Collet u. Engelhard in Offenbach.

Taf. XXV.

Hart, Werkzeugmaschinen.

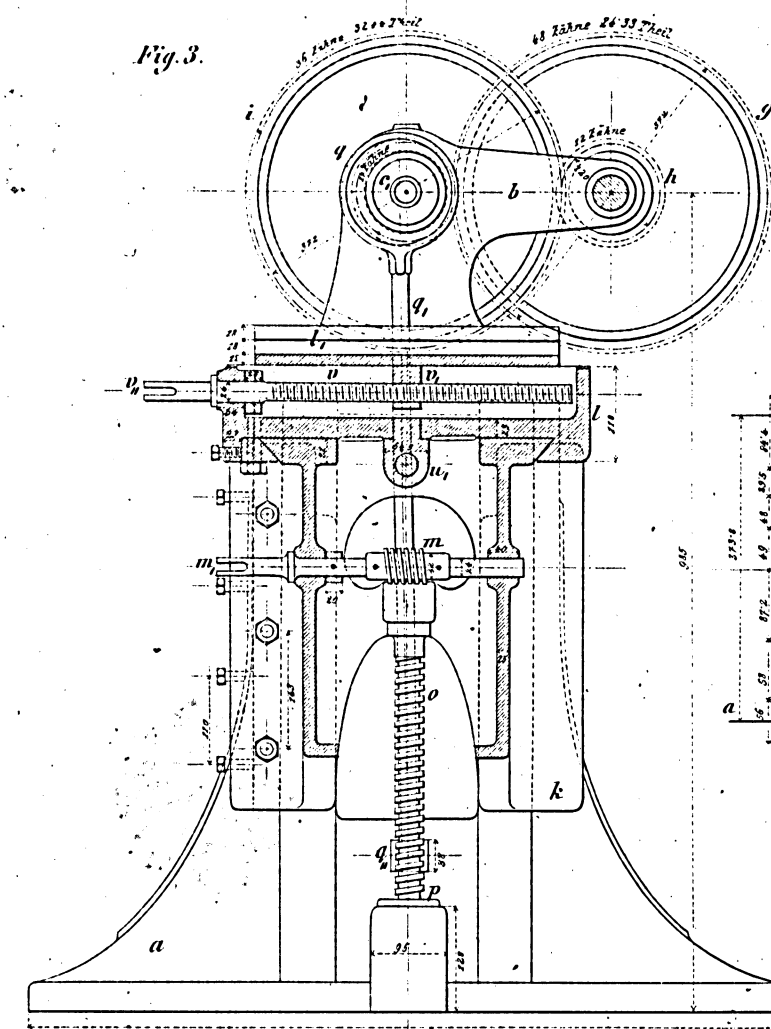


Fig. 3.

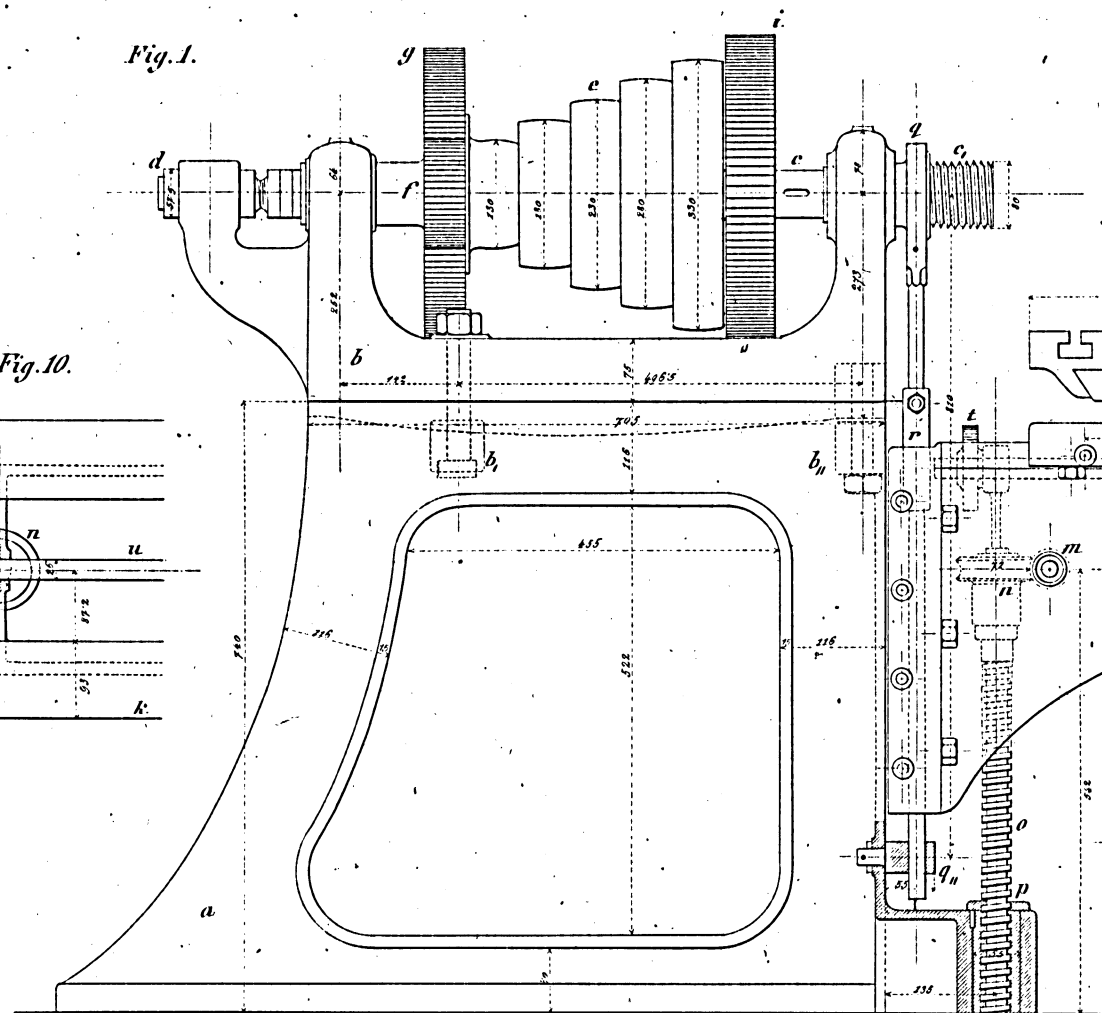


Fig. 1.

Fig. 4.

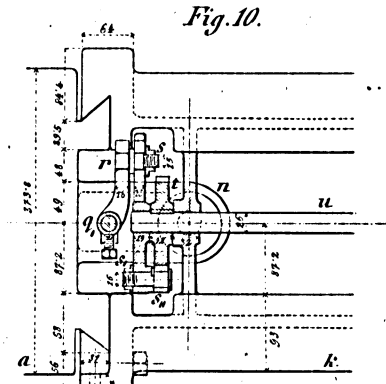
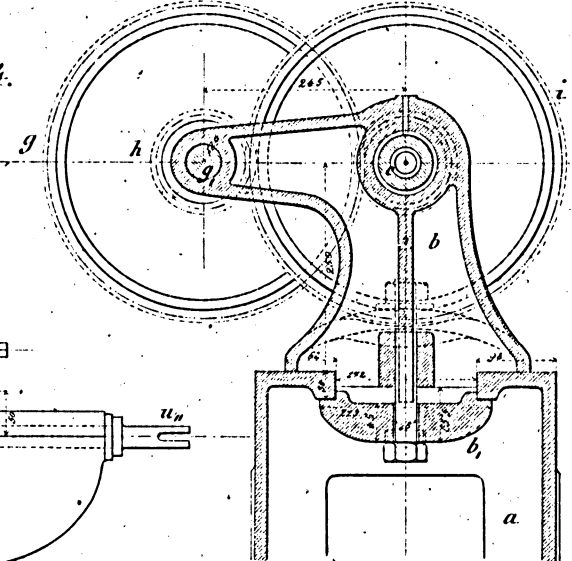


Fig. 10.

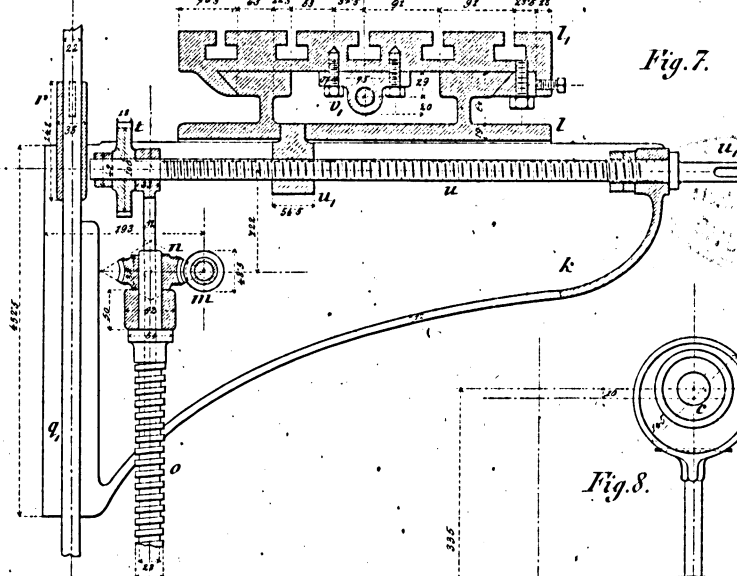


Fig. 7.

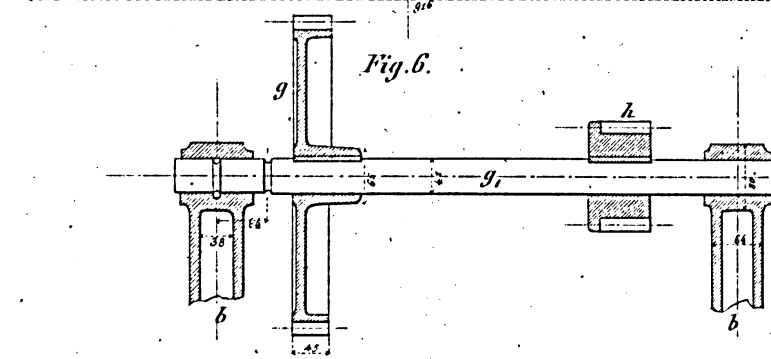


Fig. 6.

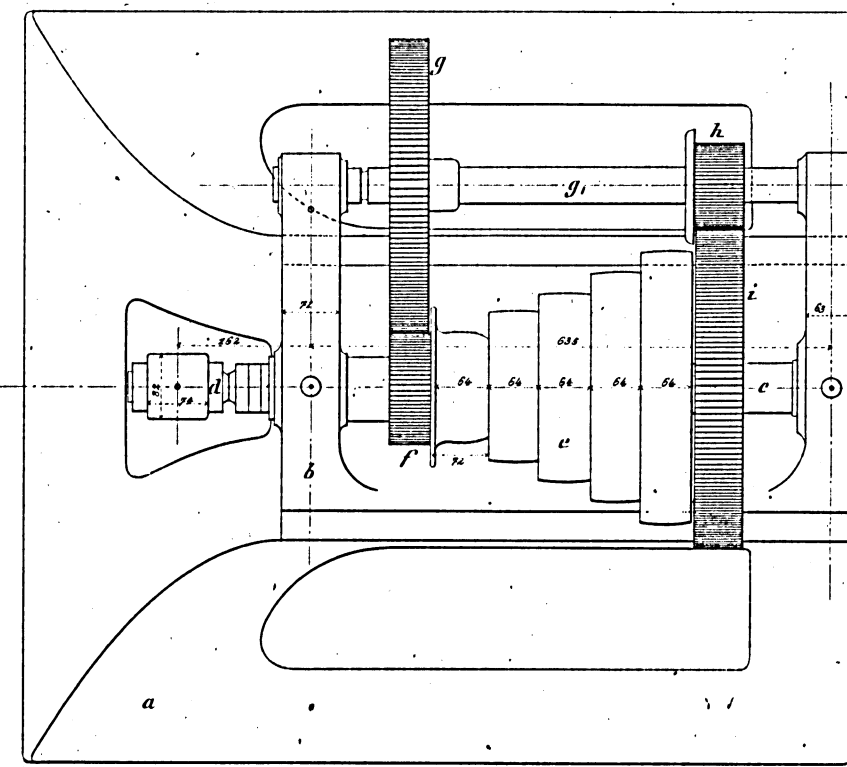


Fig. 2.

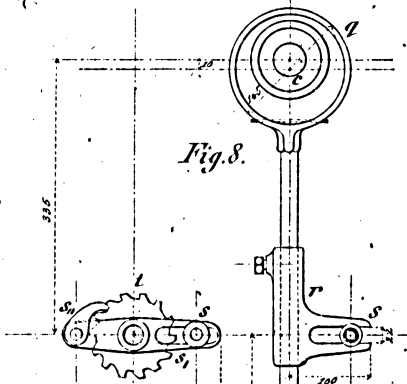


Fig. 8.

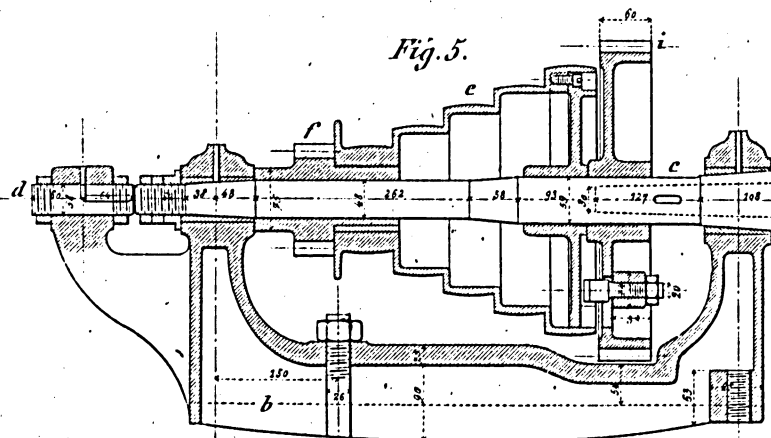


Fig. 5.

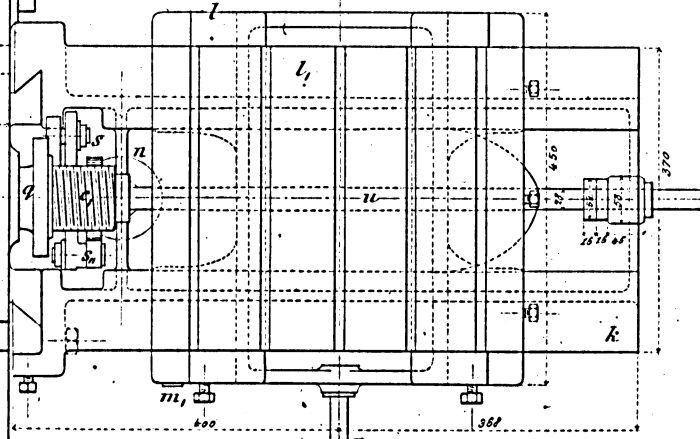
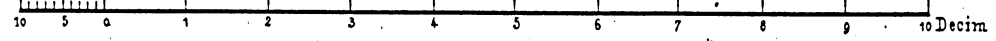
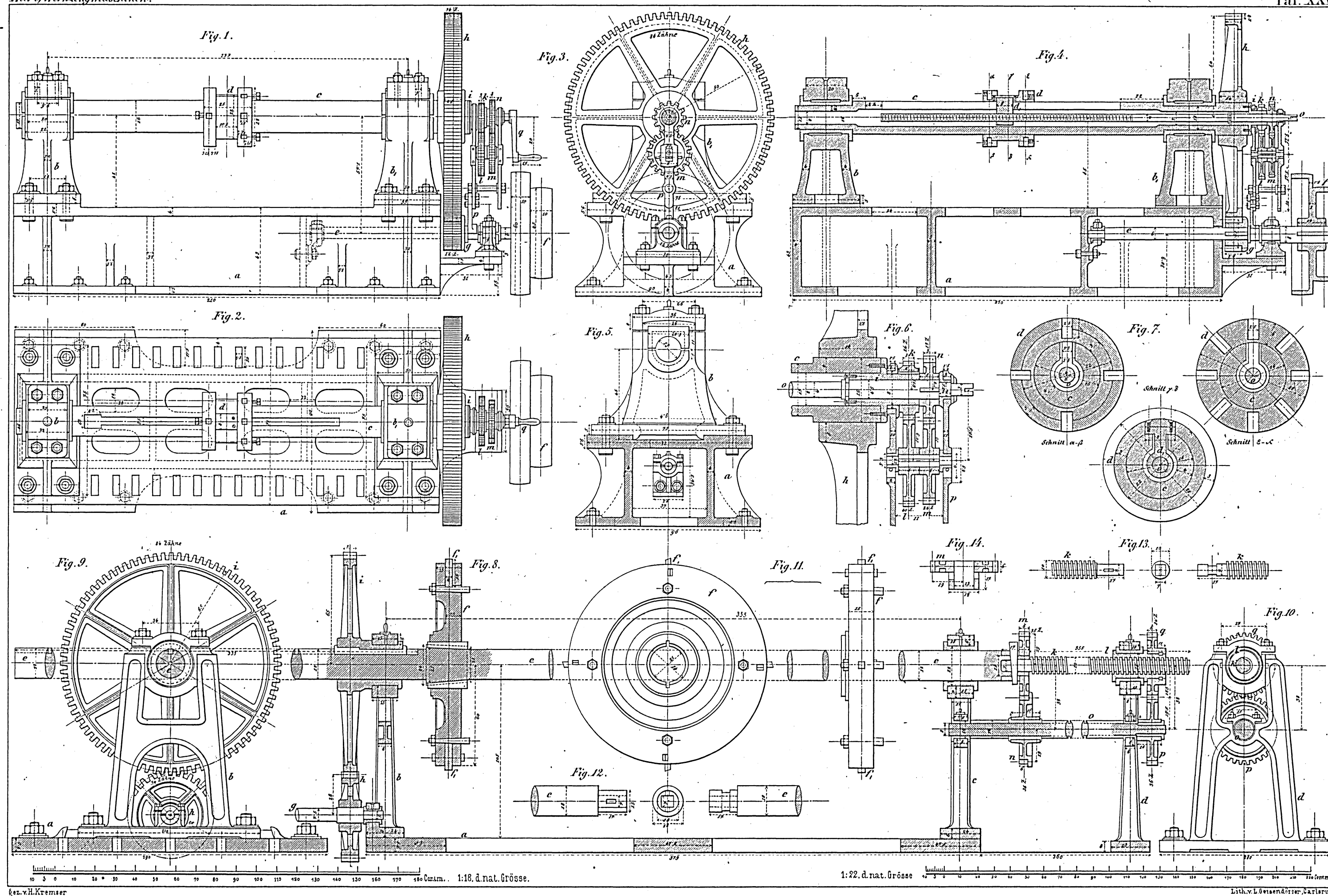
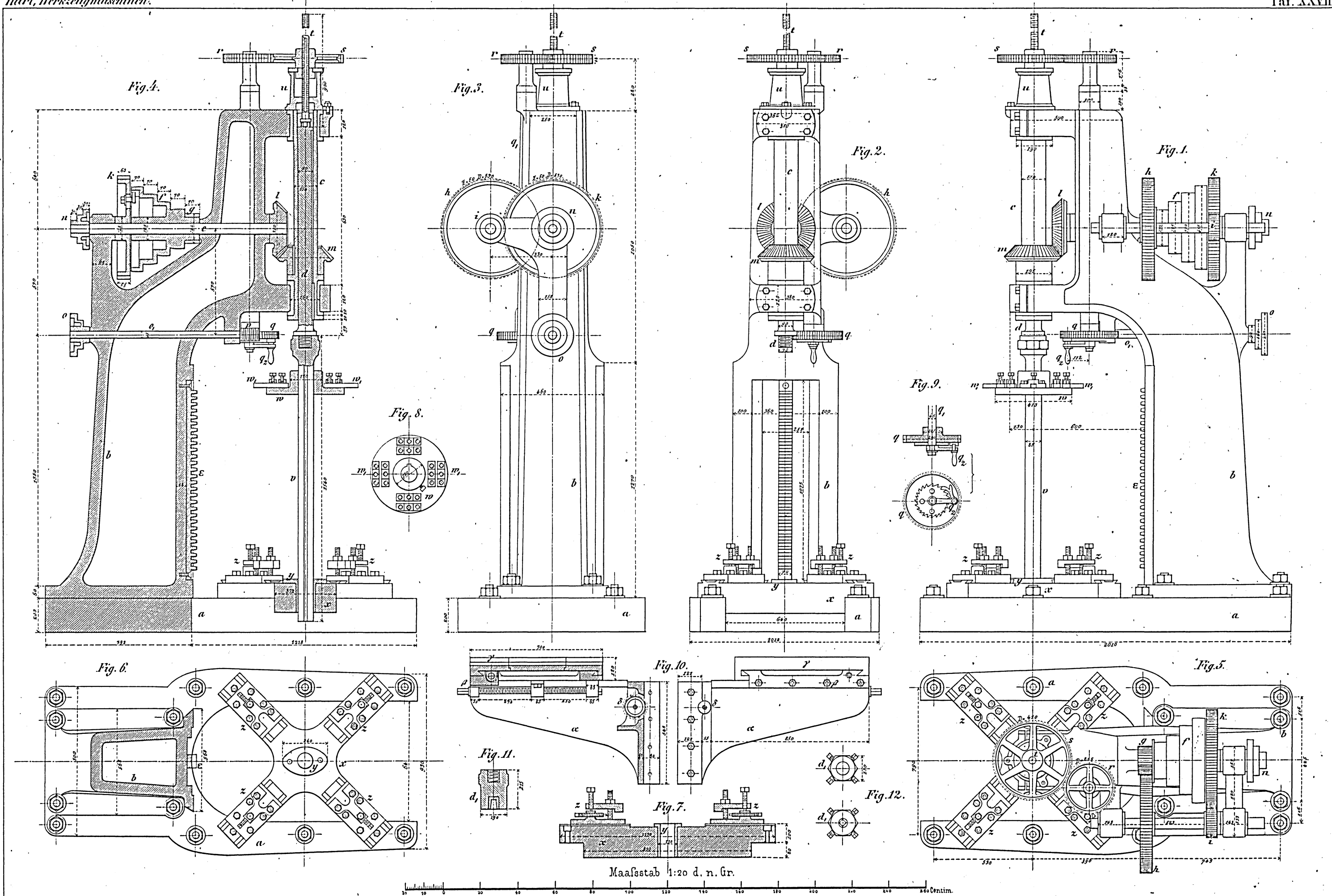


Fig. 9.

Maßstab 1:10 d.nat.Größe



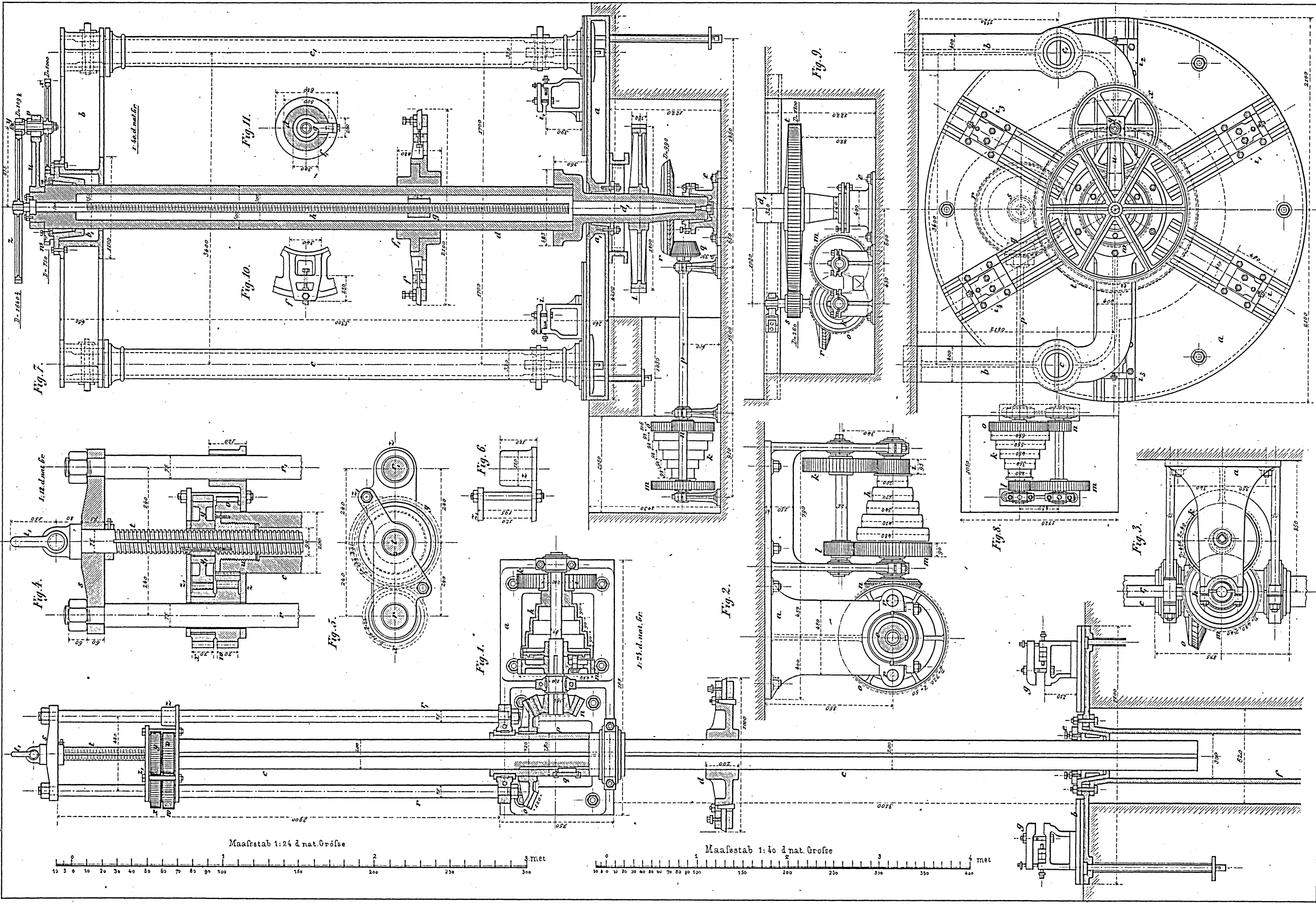




Große Vertikal-Cylinderbohrmaschinen.

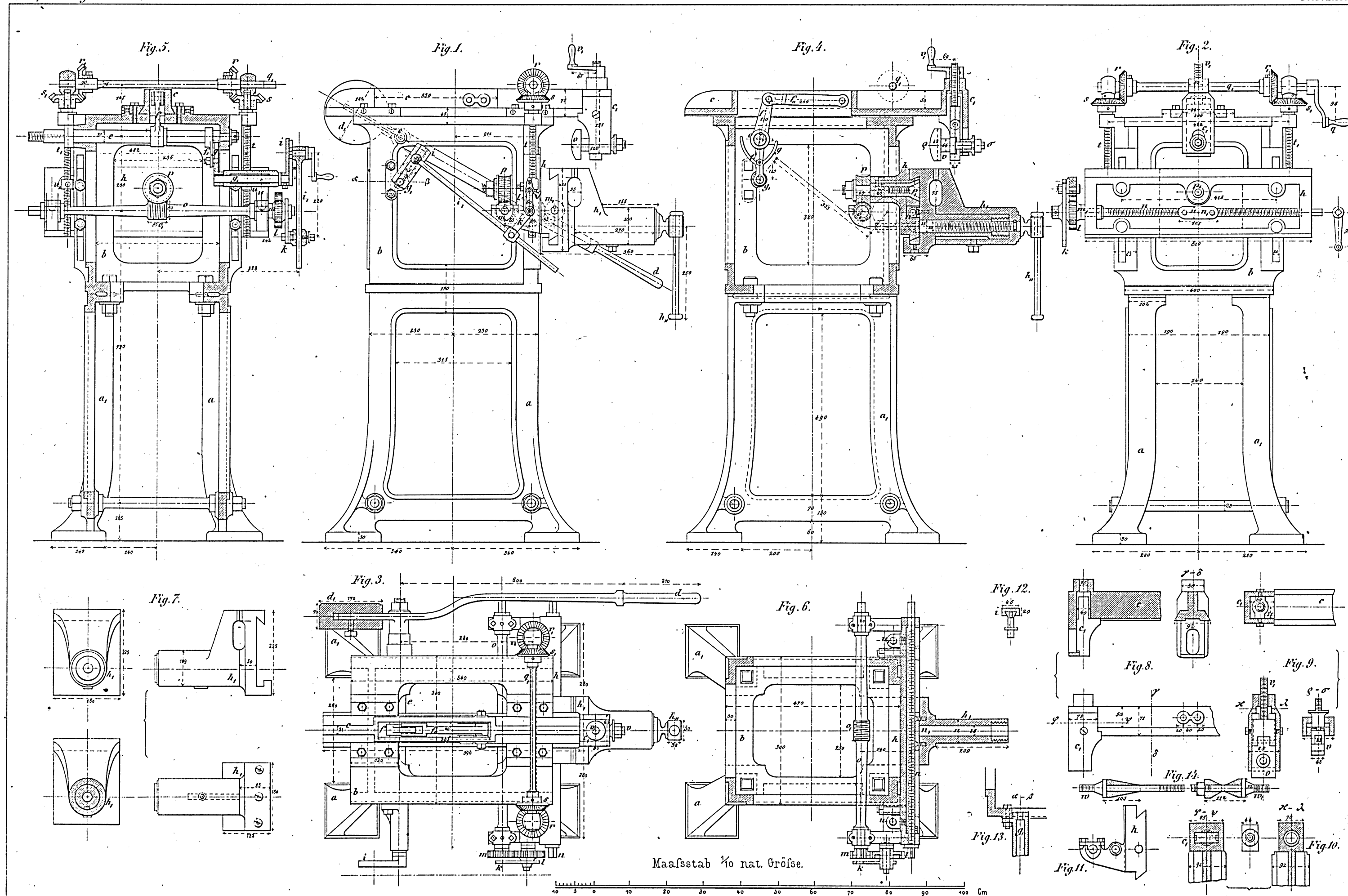
Haut, Maschinenmaschinen

Taf. XXVIII



erw. J. Hart

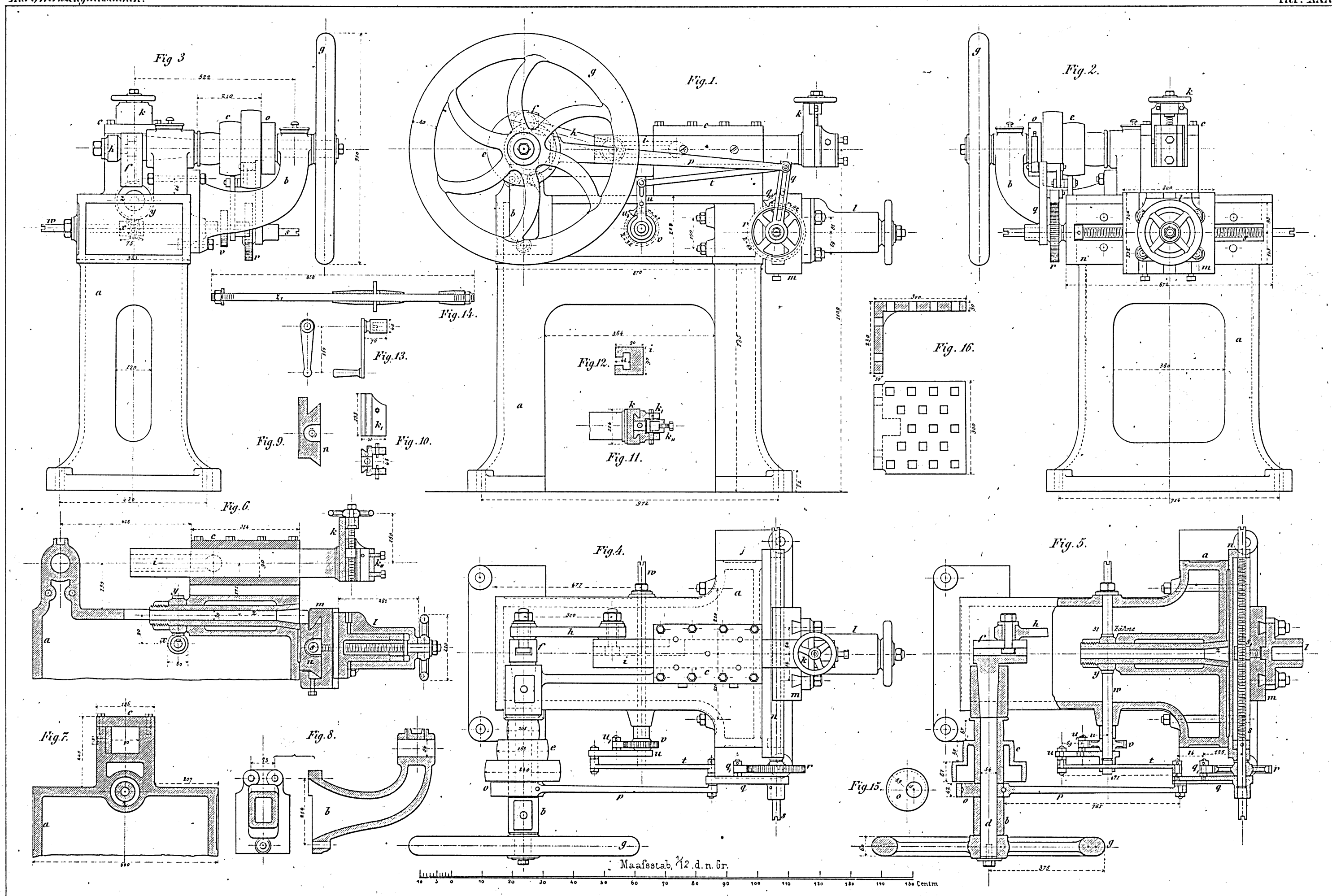
Lith. v. I. Gieseler, Gießen



Kleine Feilmaschine.

Hart, Werkzeugmaschinen.

Taf. XXX.



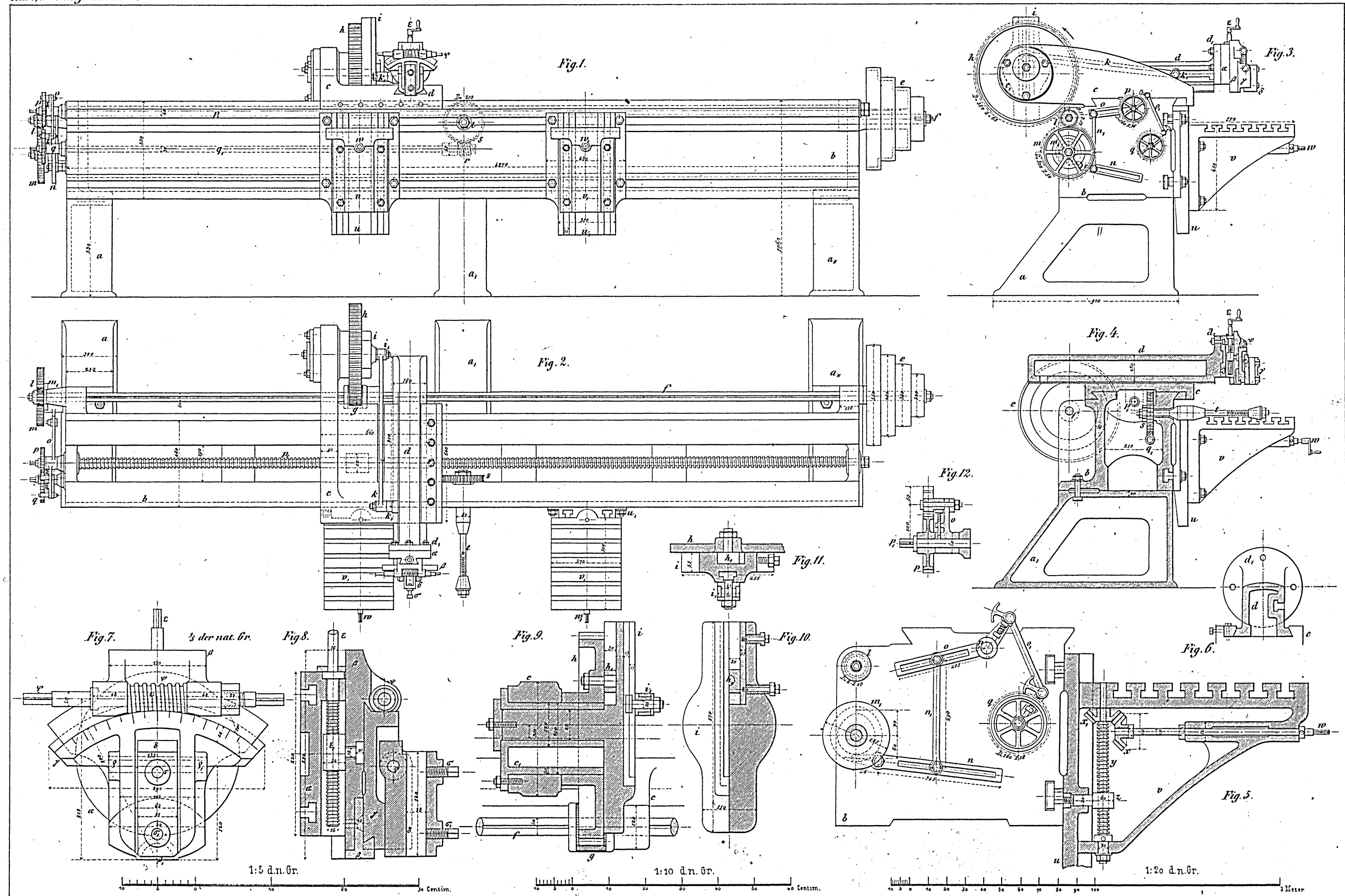
gez. v. A. Rosenbröyer

Lith. v. L. Geisendorfer, Carlsruhe

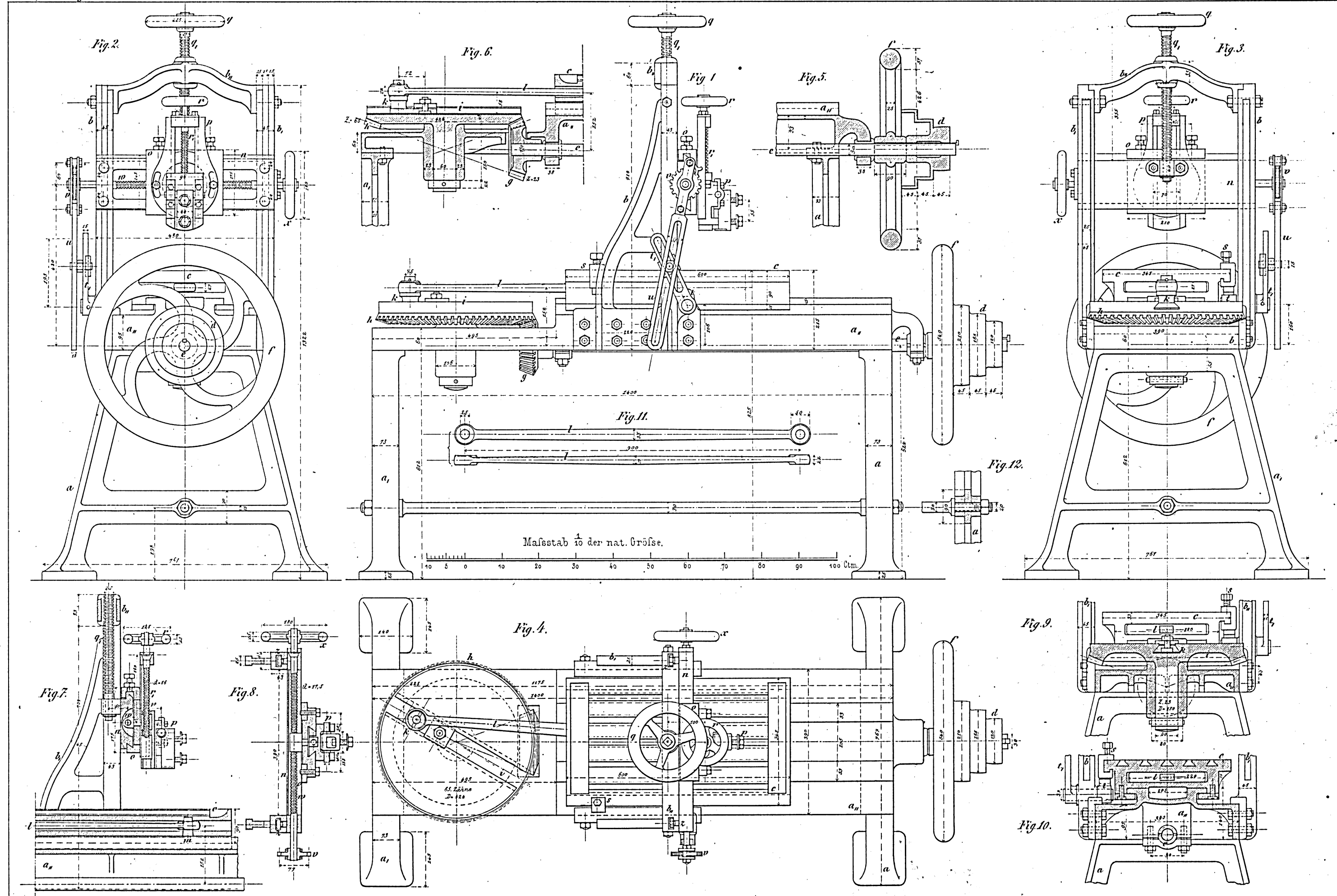
Grosse Feilmaschine mit zwei Supports. (System Whitworth.)

Hart, Werkzeugmaschinen.

Taf. XXXI.

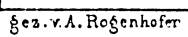


Kleine Planhobelmaschine mit Kurbelbewegung.



Hart, Werkzeugmaschinen

Taf. XXXIII.

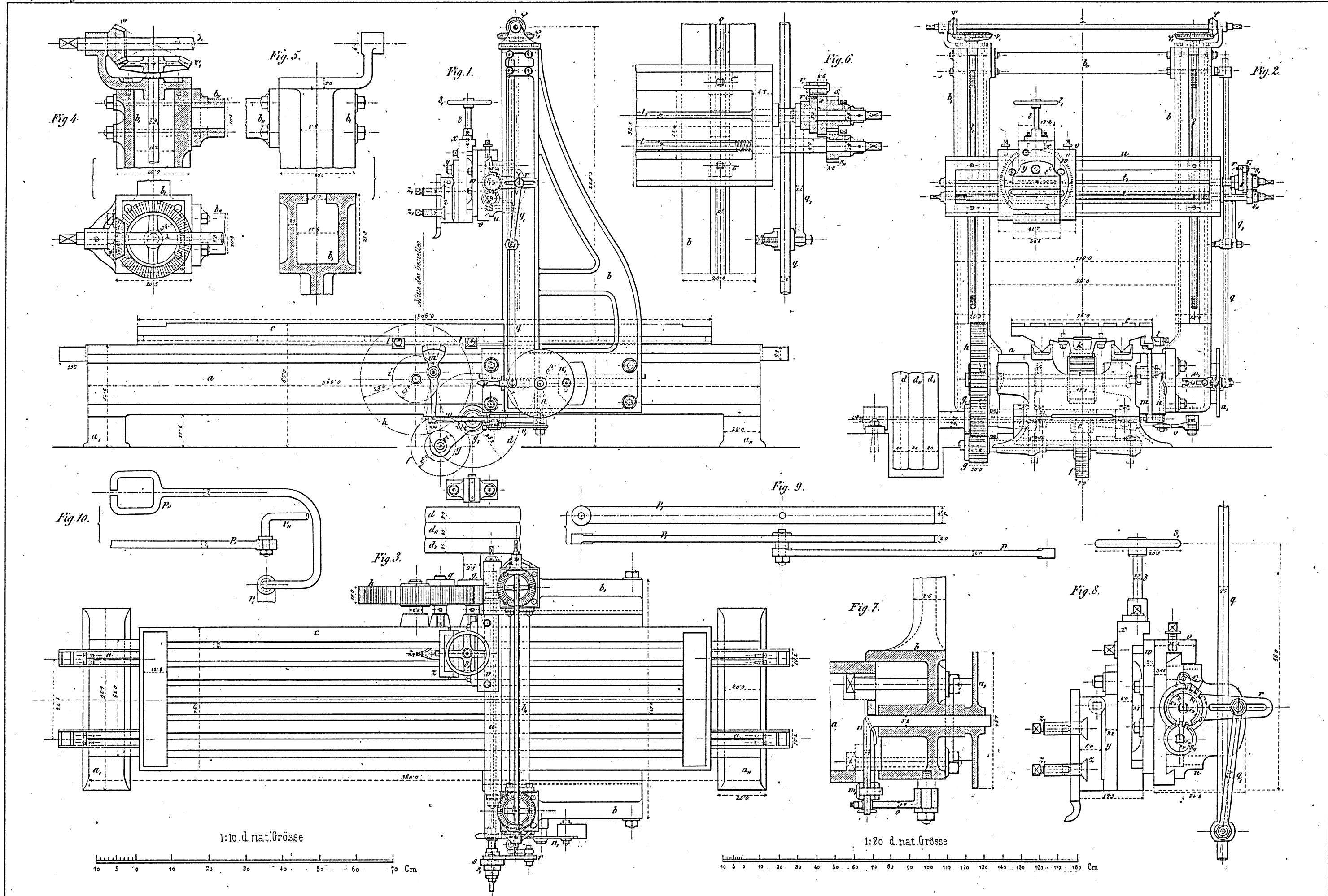


Lith. v. L. Geisendorfer, Karlsruhe

Große Planhobelmaschine

Maschinenbau.

Taf. XXXIV.



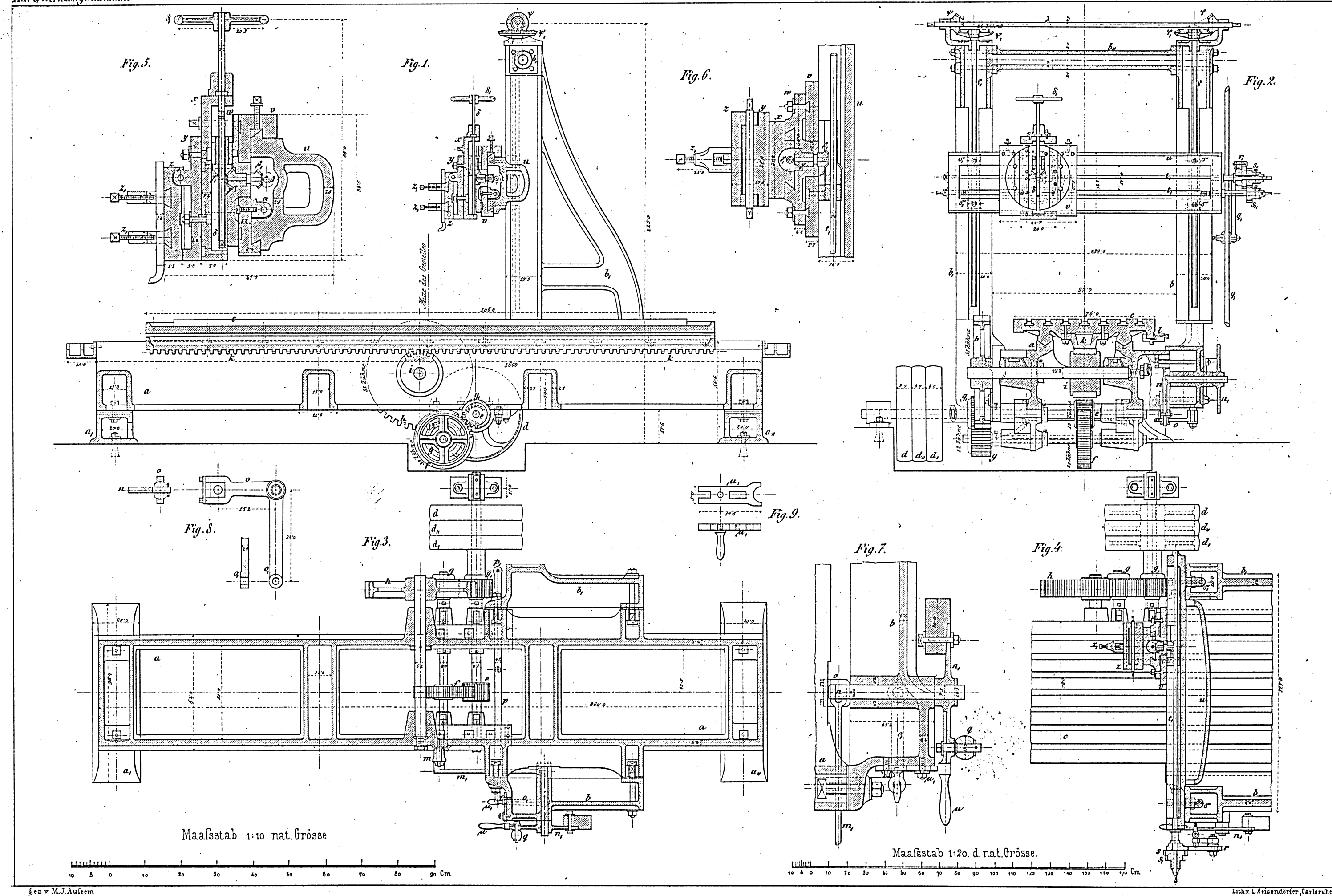
Gen. v. Masch. Jos. Ausserm.

Lith. v. L. Giesendörfer, Carlsruhe.

Große Planhobelmaschine.

Hart, Werkzeugmaschinen.

Taf. XXXV



(System Whitworth)

Taf. XXXVI

Fig. 3.

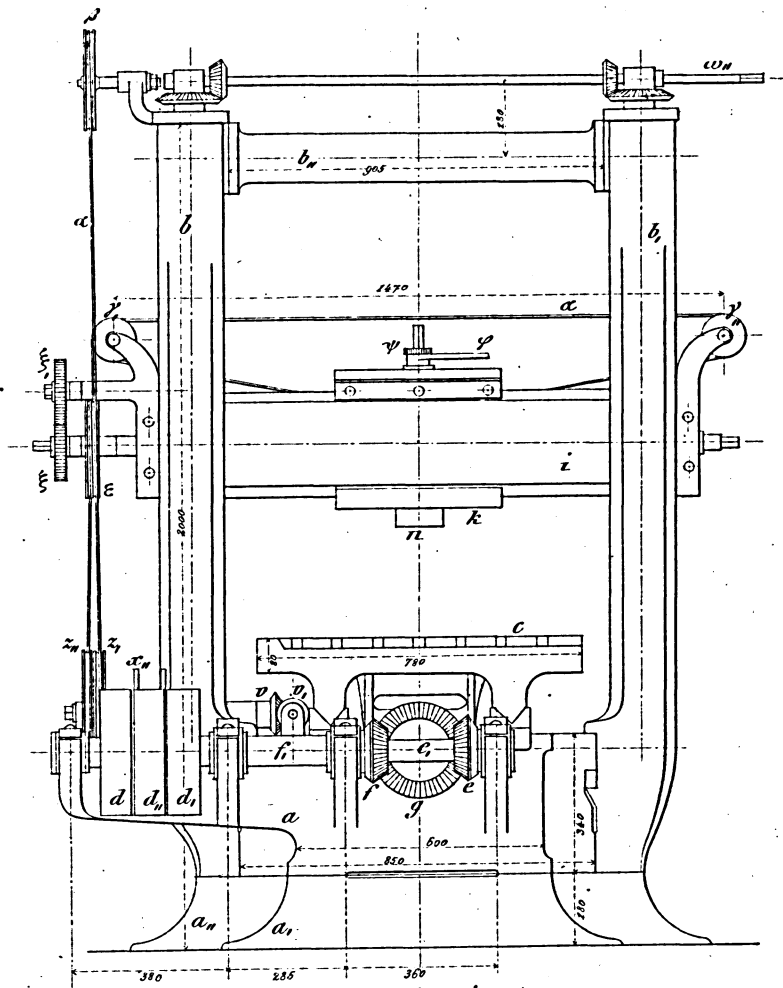


Fig. 1.

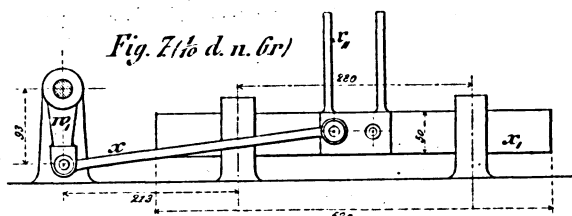


Fig. 5. ($\frac{1}{8}$ d.n. Gr.)

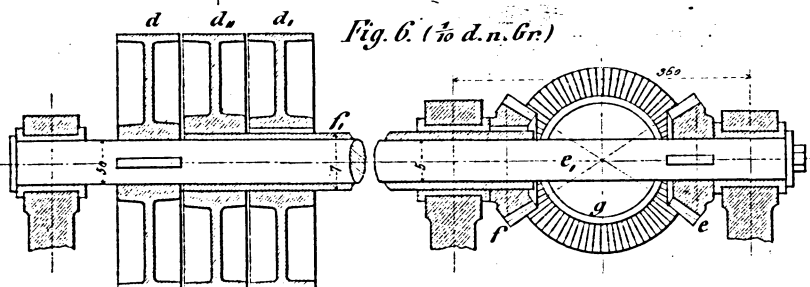


Fig. 6. ($\frac{1}{10}$ d.n. Gr.)

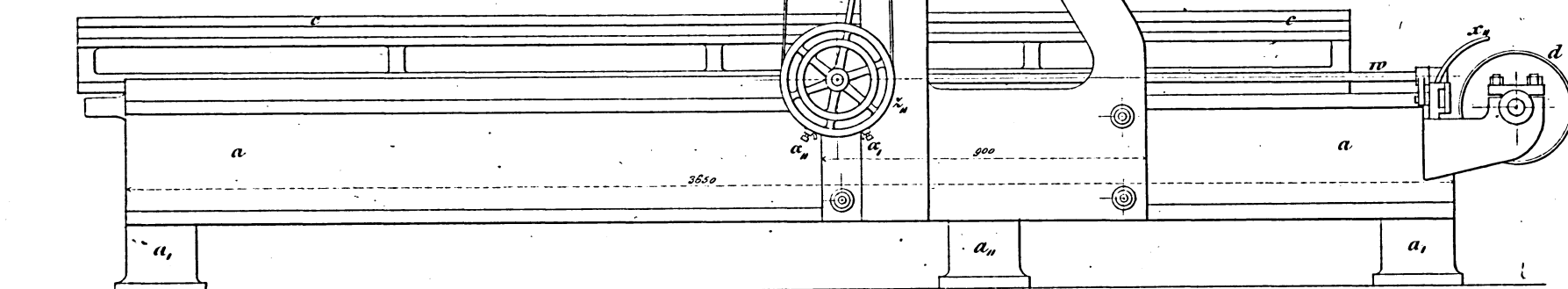


Fig. 8.

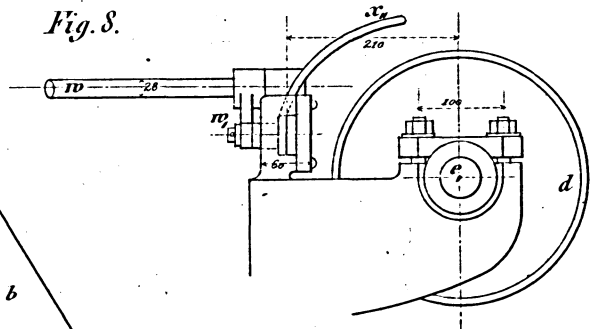
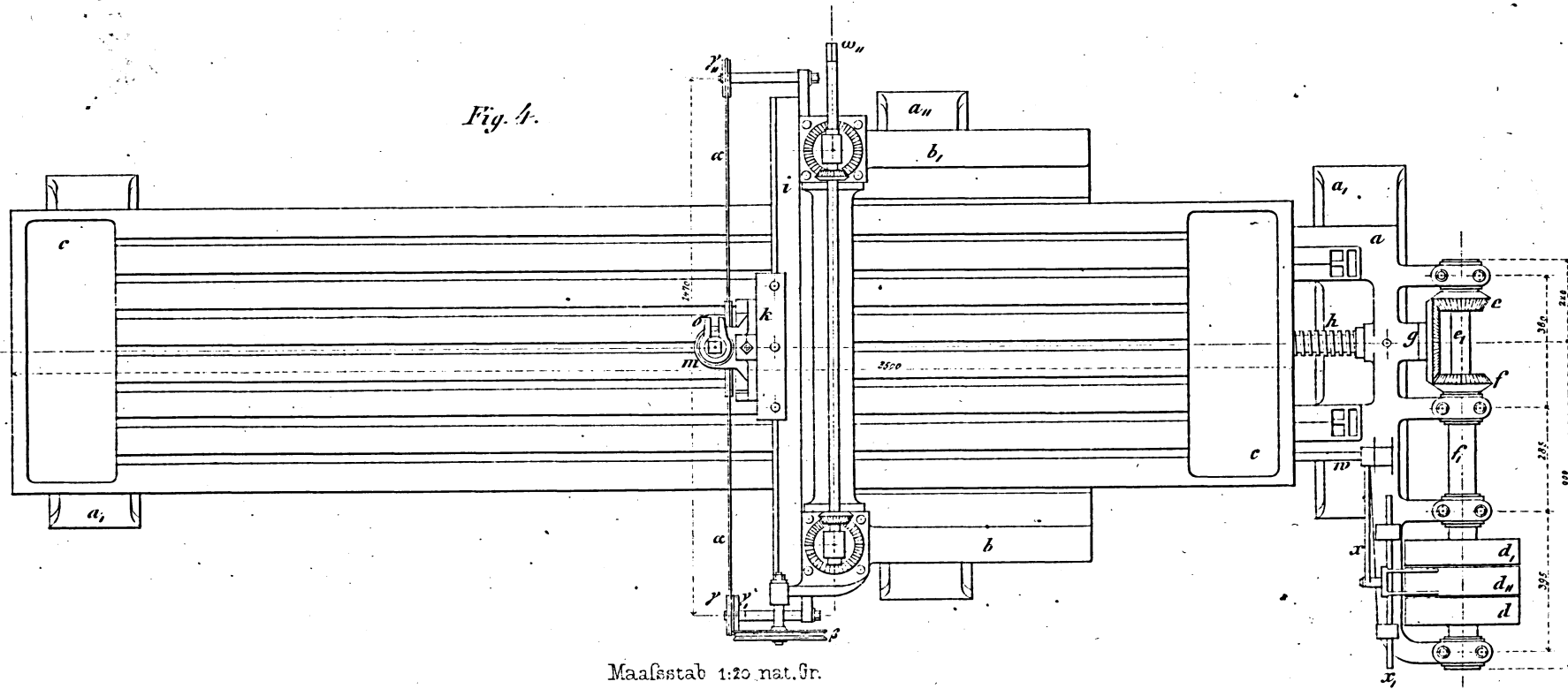


Fig. 4.

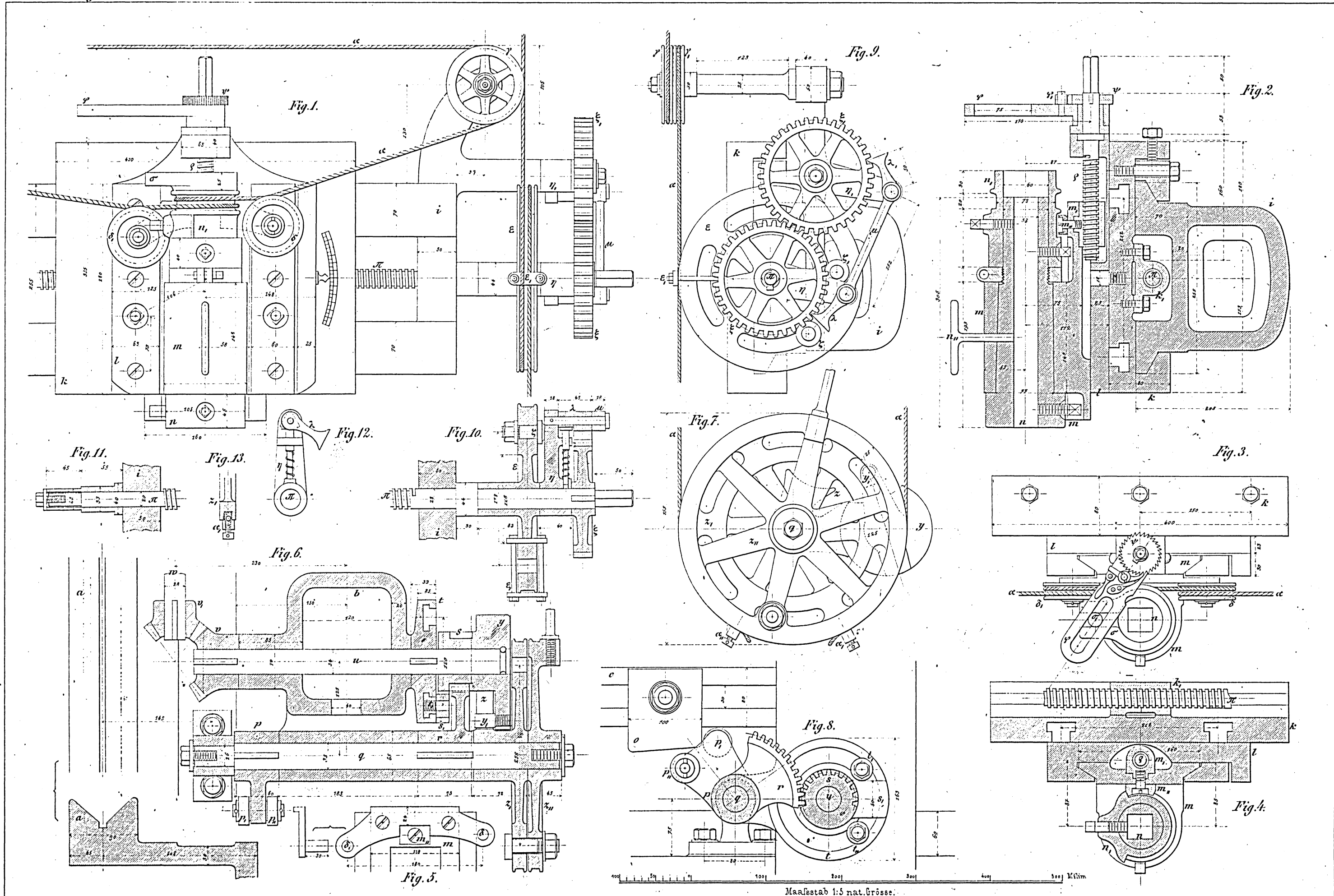


Maafsstab 1:20 nat.Gr.

Planhobelmaschine mit springendem Stahl (System Whitworth.)

Mart, Werkzeugmaschinen.

Taf. XXXVII.



Gen. v. J. G. Mayer.

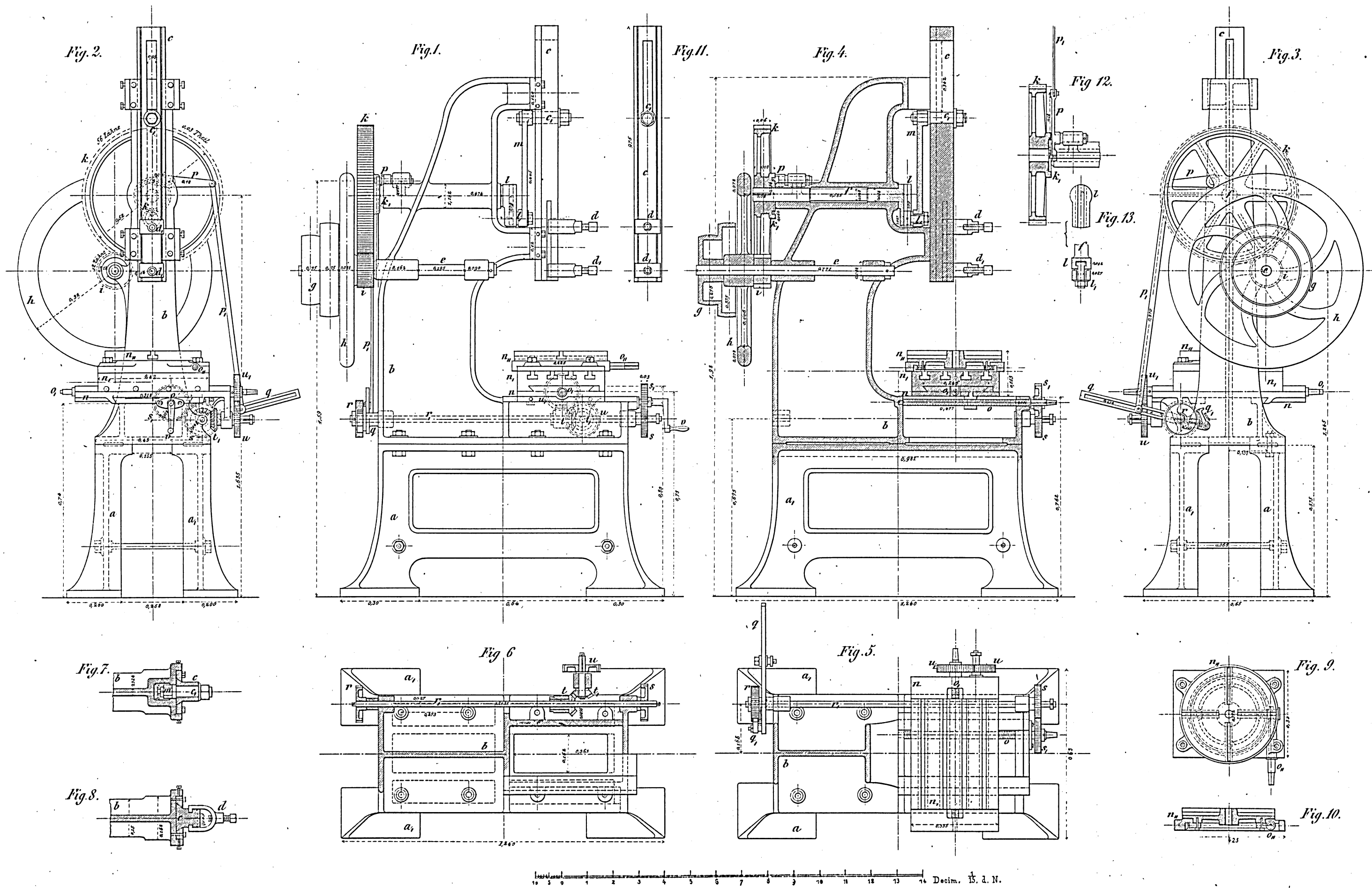
Lith. v. L. Geisendorfer, Carlsruhe.

Kleine Stanzmaschine

mit einfacher Kurbelbewegung..

Hart, Werkzeugmaschinen:

Taf. XXXVIII



Kleine Stanzmaschine mit schnellem Rückgang.

Hart, Werkzeugmaschinen.

Taf. XXXIX.

Fig. 9.

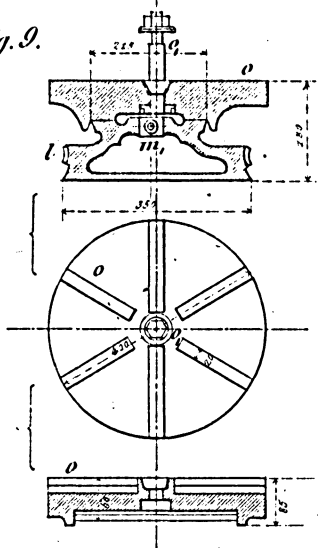


Fig. 1.

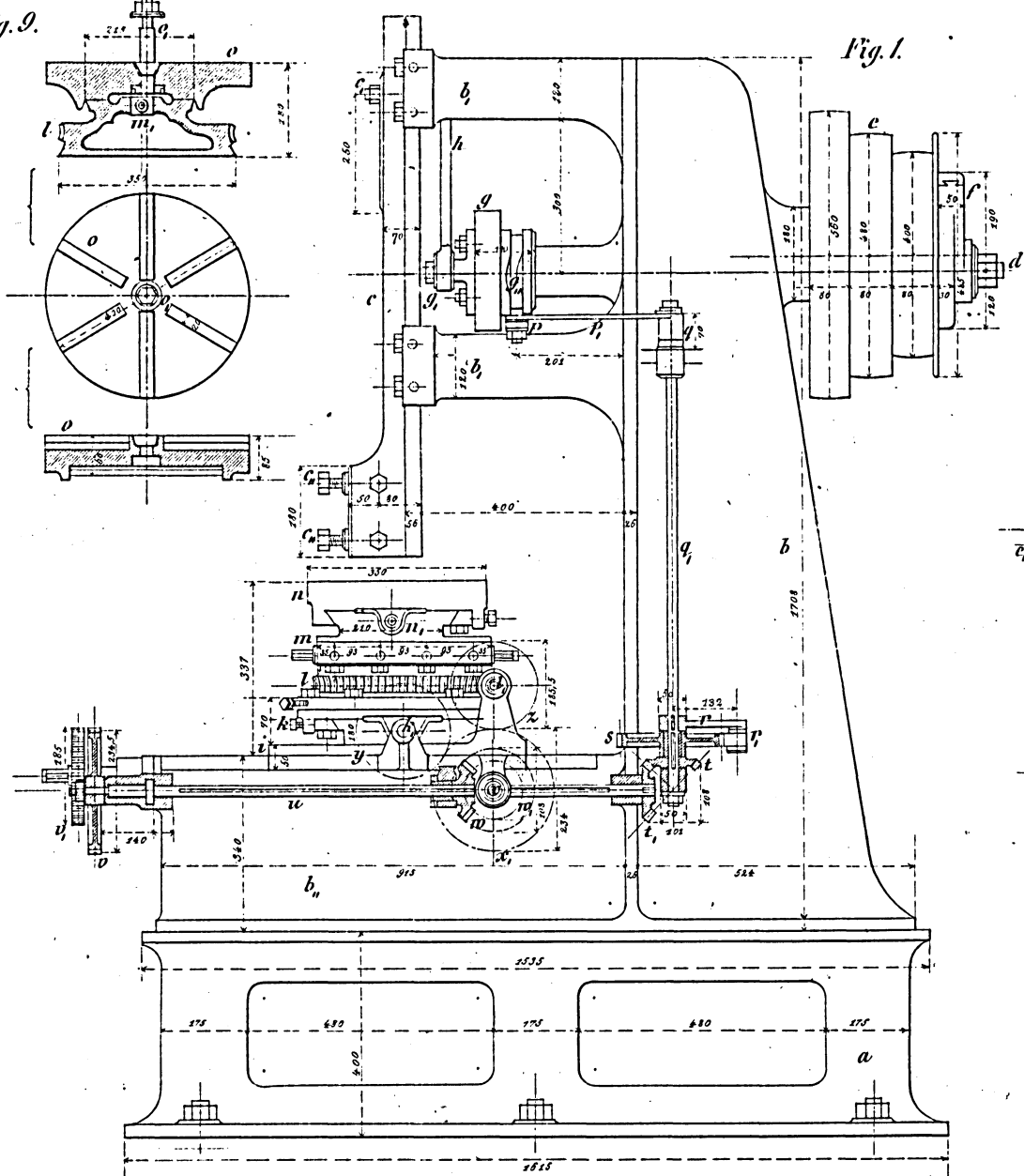


Fig. 7.

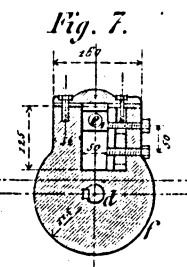


Fig. 8.

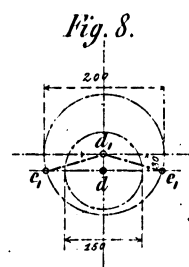


Fig. 2.

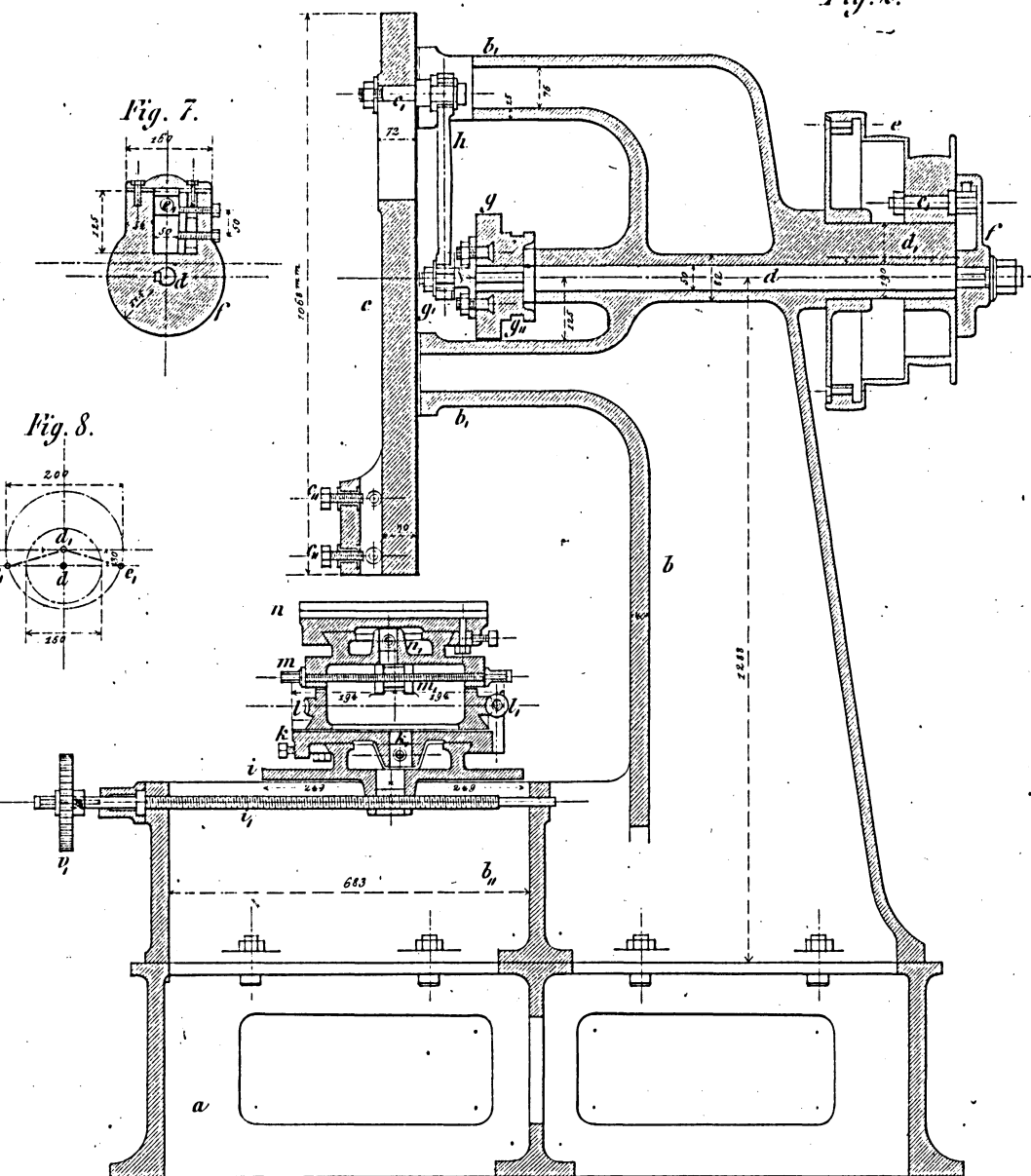


Fig. 3.

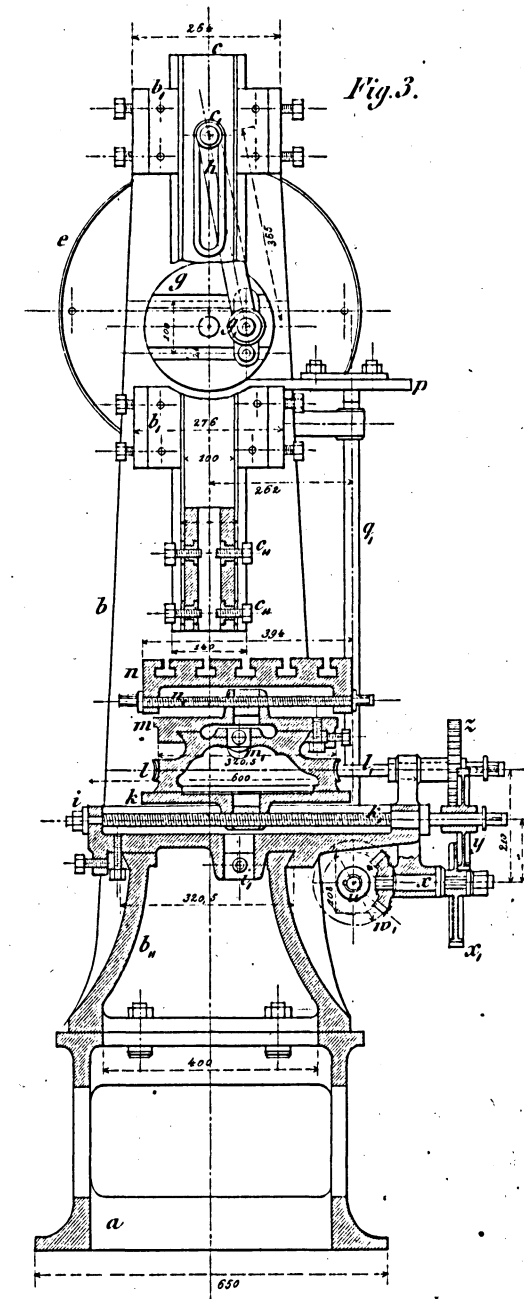


Fig. 5.

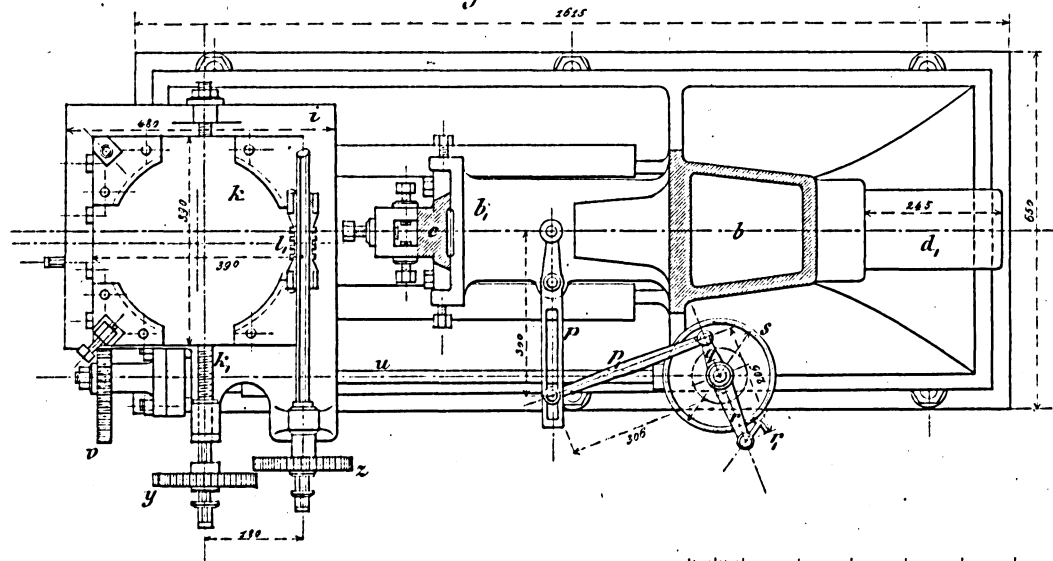


Fig. 4.

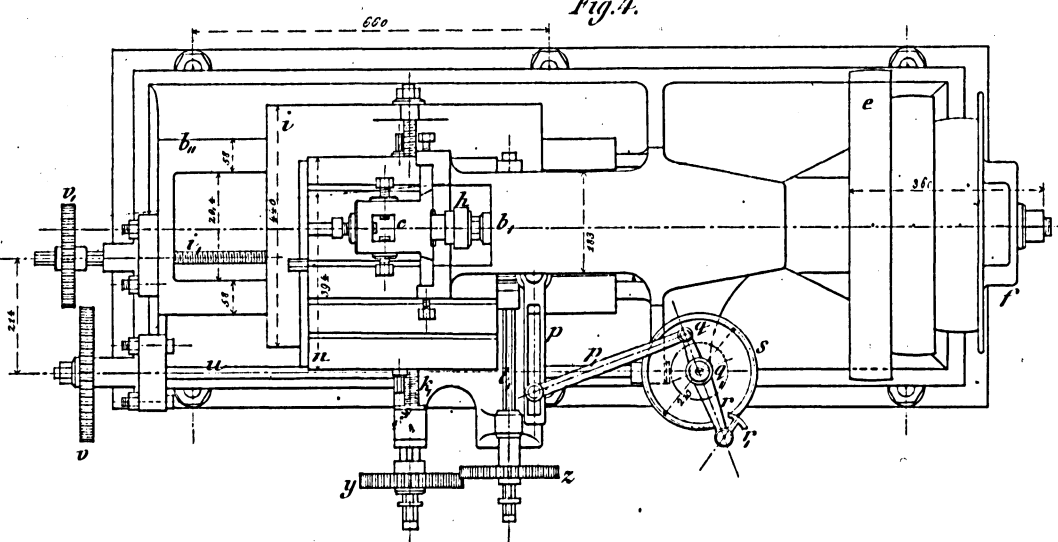
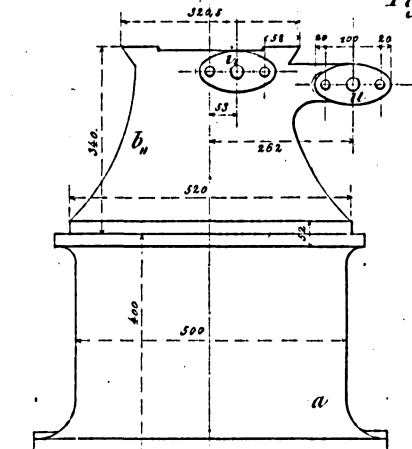


Fig. 6.

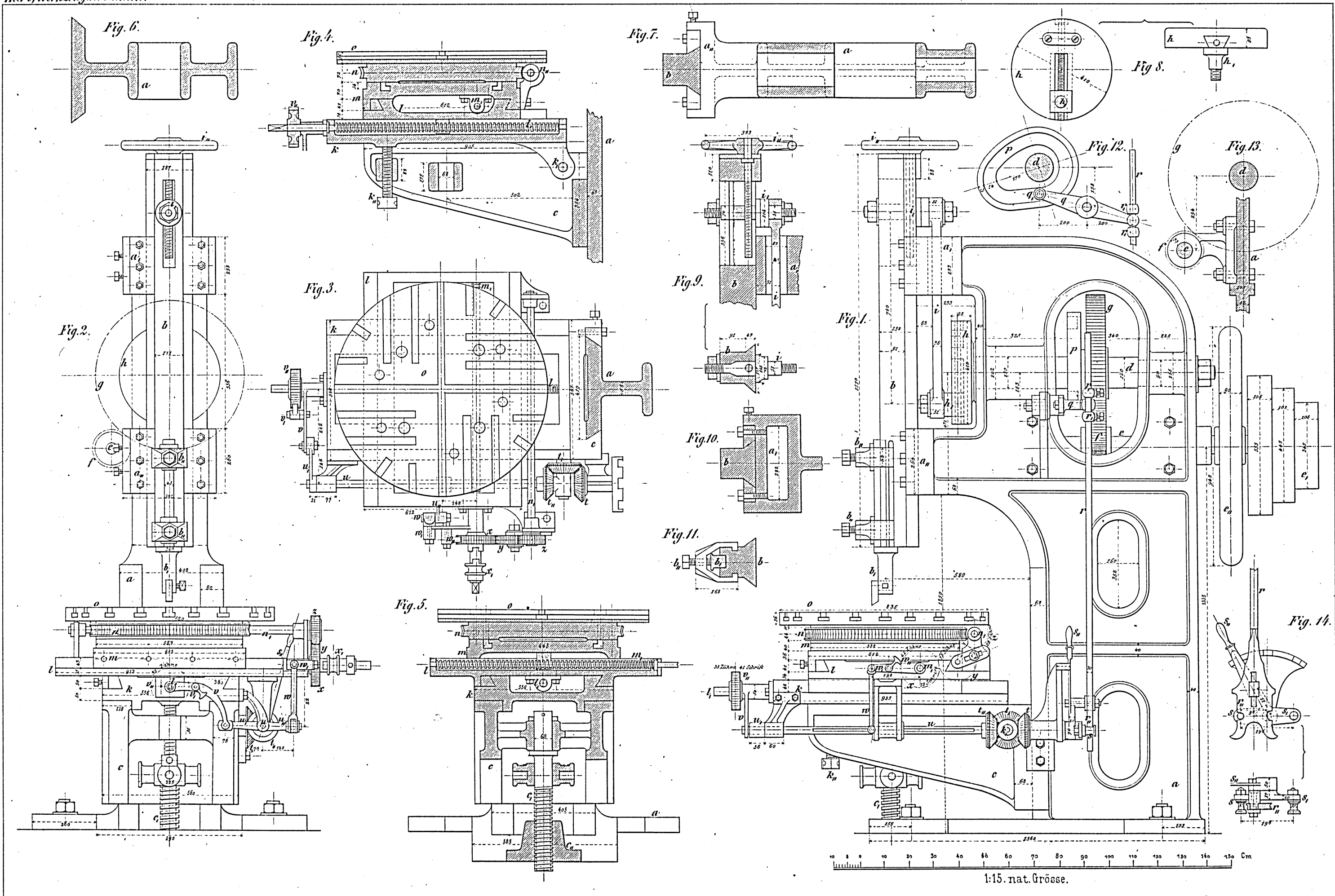


10 9 8 7 6 5 4 3 2 1 0 D.M. 13 d.nat. Ur.

Große Stanzmaschine mit verstellbarem Tisch

Hart, Werkzeugmaschinen.

Taf. XL.



Gez. W. Grossmann

Lith. v. L. Geissendorfer, Carlsruhe