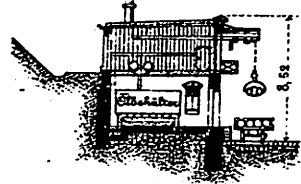


Fig. 6^b Querschnitt a-b.



Ölniederlage.

Fig. 6. Grundriss.

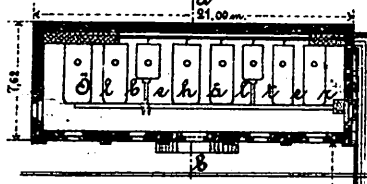
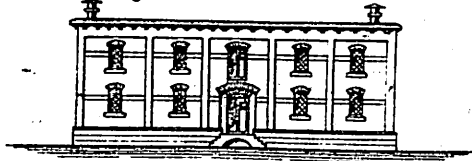


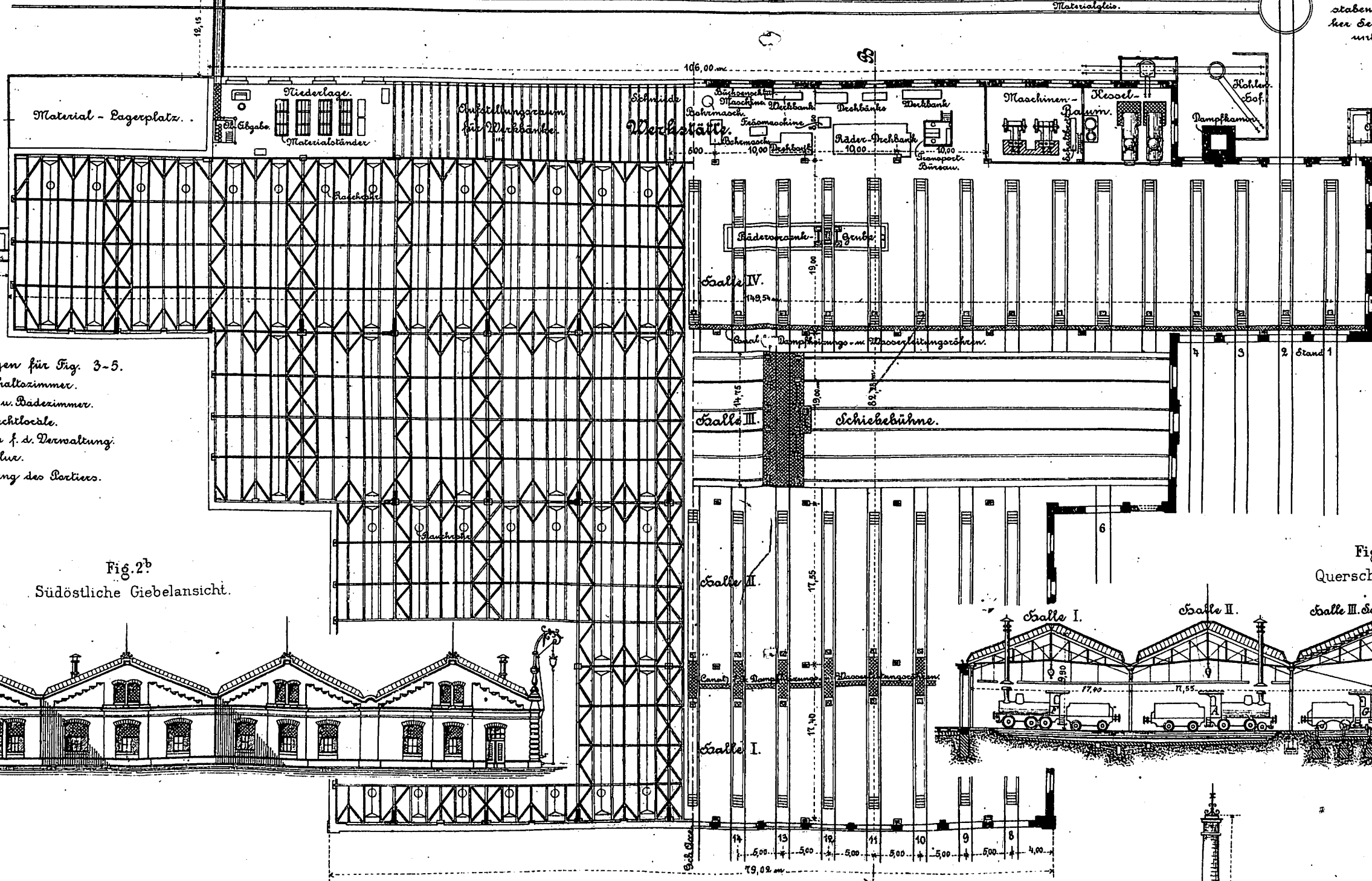
Fig. 6^a Vorder-Ansicht.



Locomotivschuppen für 59 Stände.

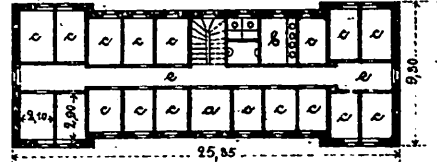
Fig. 2. Grundriss.

Locomotivschuppen-Anlage bei Stuttgart.



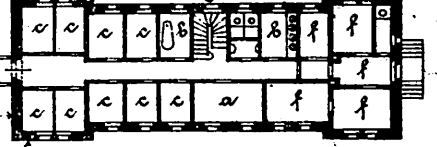
Erklärung der Buchstaben siehe auf lin. Seite der Tafel unter Fig. 3.

Fig. 4^a Grundriss. I Stock.



Dienstgebäude N^o 3.

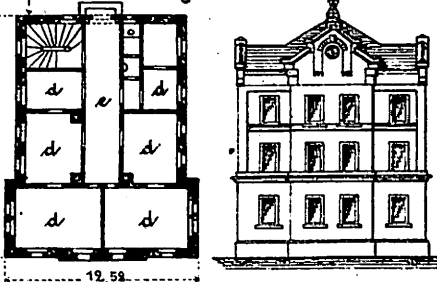
Fig. 4.



Grundriss Erdgeschoss.

Dienstgebäude N^o 2.

Fig. 5 u. 5^a.



- Erklärungen für Fig. 3-5.
- a. Aufenthaltszimmer.
 - b. Wasch- u. Badezimmer.
 - c. Übernachtungslokal.
 - d. Bureau f. d. Verwaltung.
 - e. Kaufhaus.
 - f. Wohnung des Portiers.

Fig. 2^b

Südöstliche Giebelansicht.

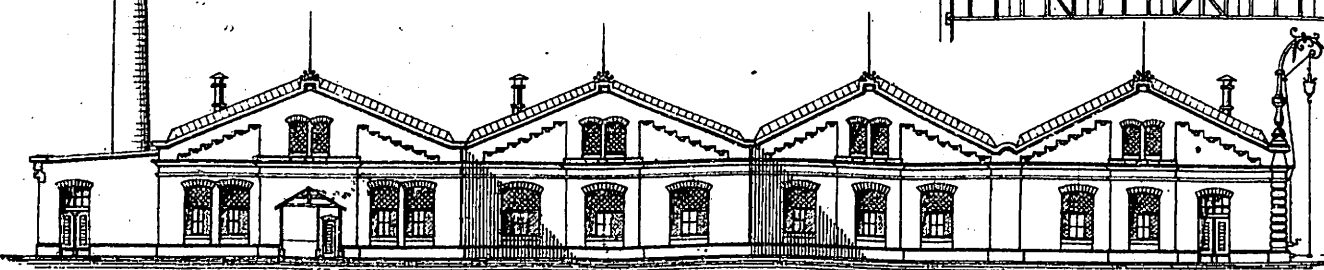


Fig. 2^c

Querschnitt A-B.

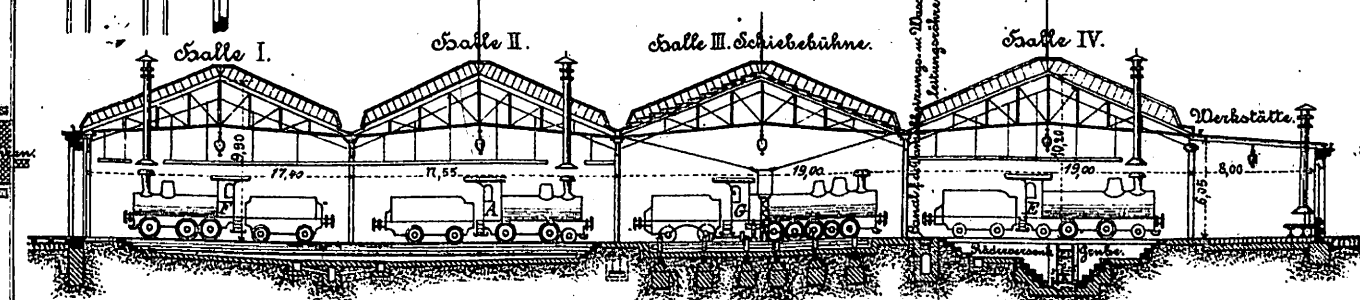


Fig. 4^b

Dienstgebäude N^o 3.

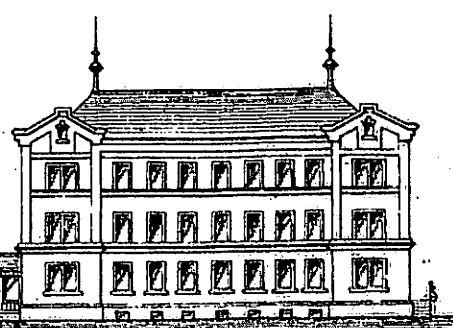
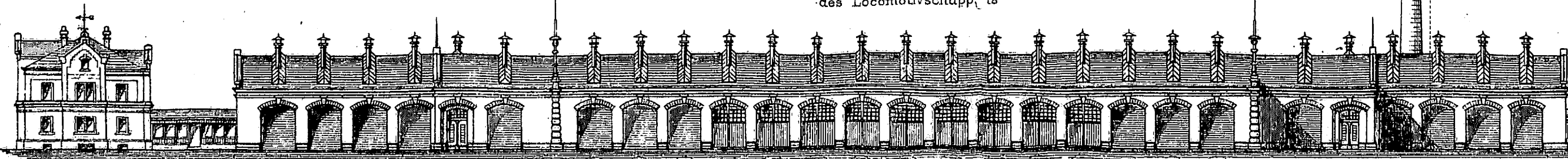
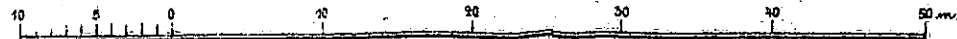


Fig. 2^a

Vorderansicht des Locomotivschuppens



Maßstab 1:500



Locomotivschuppen - Anlage bei Stuttgart.

Fig. 7.

Mittelsäule mit Dachbinder
zwischen Halle II u. III.

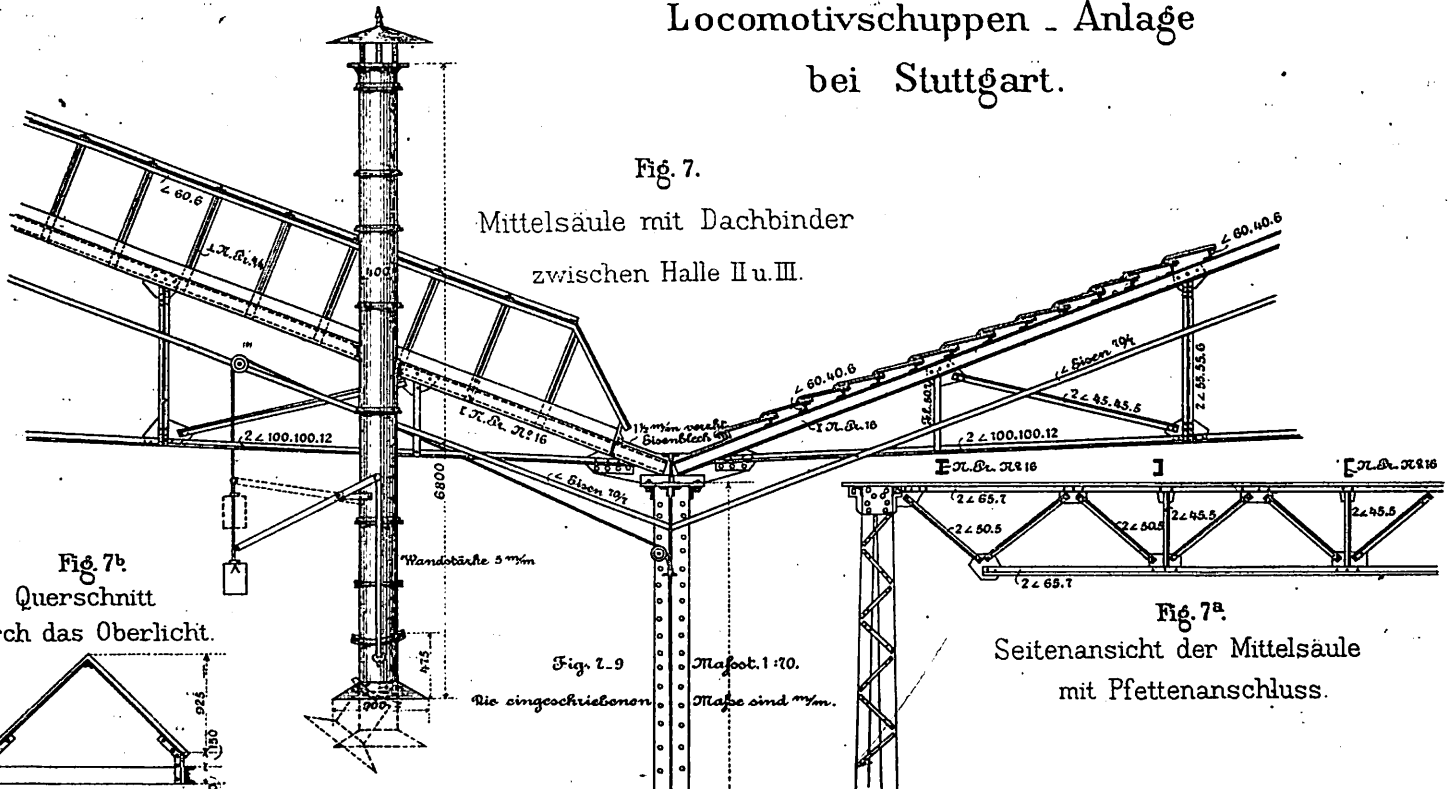


Fig. 7b
Querschnitt
durch das Oberlicht.

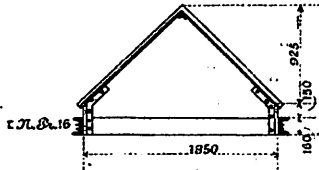


Fig. 7a.

Seitenansicht der Mittelsäule
mit Pfettenanschluss.

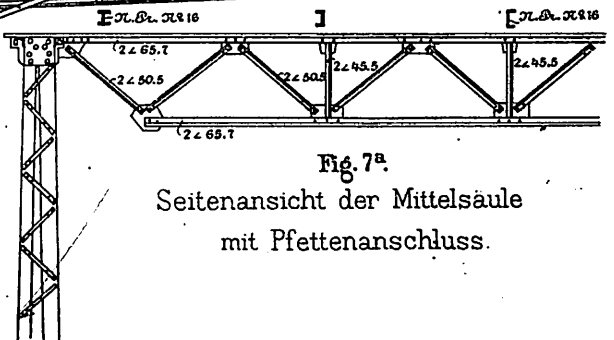


Fig. 9.

Werkstäddach mit Anschluss
an Halle IV u. d. Umfassungsmauer.

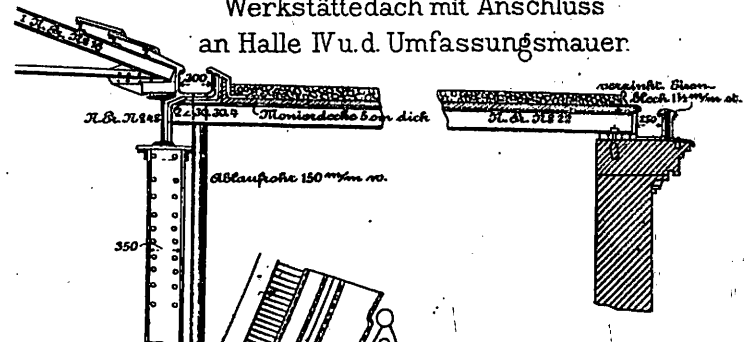


Fig. 8.

Vordere Umfassungsmauer
mit Wandsäule
und Binderauflager.

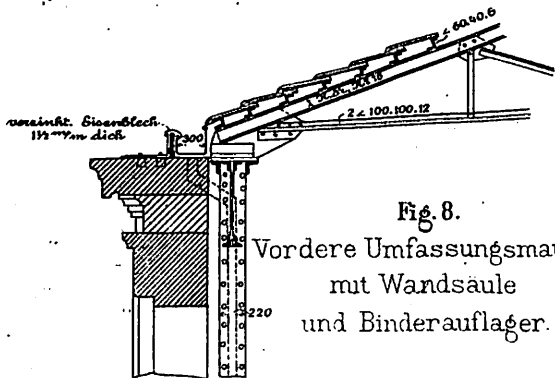
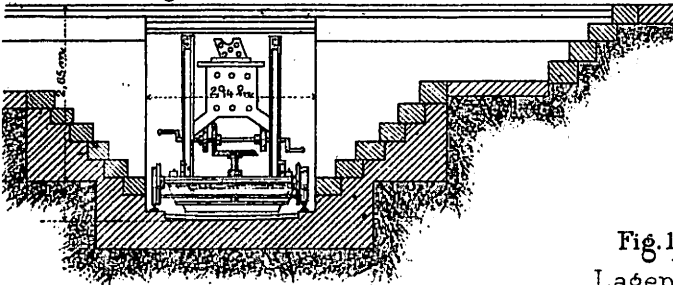


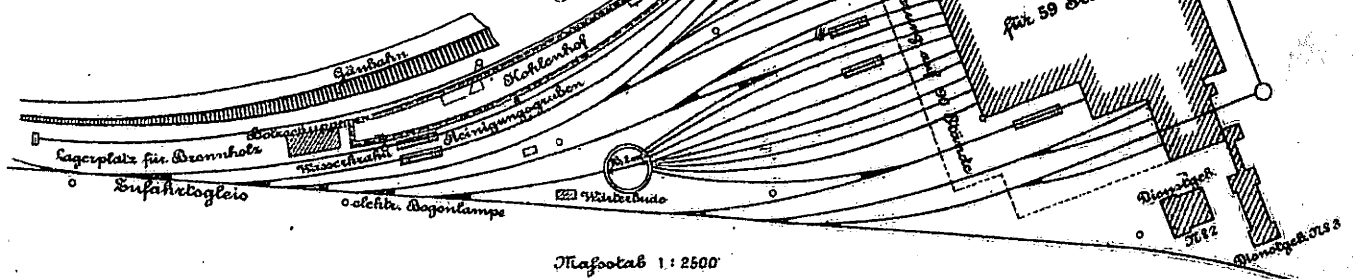
Fig. 10. Räderversenkwinde.



Maßstab 1:100.

Fig. 11.

Lageplan
der Loc. Station bei Stuttgart.



Maßstab 1:2500

Nordbahnhof

Uebersicht der in Chicago 1893 ausgestellten Güter-, Bau- und Betriebs-Wagen.
Hauptabmessungen.

Nr. der Beschreibung	Grund-Form		Gattung	Bahnverwaltung (Betriebsgesellschaft)	Erzeuger und Erzeugungsort	Länge		Breite		größte Höhe excl. Bremsrad	Zahl der Achsen	Raddurchmesser	Radstand		Ladegewicht	Gewicht		Bemerkungen	Nr.
	Tafel	Fig.				lichte	gesamte	lichte	gesamte				d. Drehgest.	gesamter		leer	für die Tonne Ladegew.		
						Millimeter					Millimeter		Tonnen	kg					
1	IV	3	Gedeckter Güterwagen	Wisconsin Central Rd.	Bahnwerkstätte	10210	10520	2500	2690	3800	4	840	1575	8850	18.2	12.7	697		1
2	IV	8.9	"	—	Harvey Steel Car W. Harvey Ills.	10330	11020	2600	3000	3450	"	"	1525	"	27.2	13.1	479		2
5	IV	7	Kühlwagen	Pennsylvania Rd.	Bahnwerkstätte Ft. Wayne, Ind.	8630	11485	2470	2890	5890	"	"	"	9645	"	18.7	684	zur Milchbeförderung	5
6	VI	6	"	(Eastman Line)	Eastman Car Co. Boston, Mass.	10260	12240	2500	2750	4300	"	"	"	10330	"	17.3	762	zur Fleischbeförderung	6
7	IV	12	"	(Hanrahan Refrigerator Co.)	U. S. Car Co. Anniston, Ala.	10630	11880	2550	3050	3970	"	"	"	9460	"	19.3	709	"	7
8	VI	7	"	(Americ. Refrigerator Transit Co.)	Gesellschaftl. Werkst. St. Louis Mo.	9830	11480	2500	2750	4350	"	915	"	9580	22.7	17.5	771	für verschiedene Waaren	8
14	IV	15	Heizbarer Güterwagen	(Eastman Line)	Eastman Car Co. Boston, Mass.	9935	10750	2430	2830	4390	"	840	"	10670	18.2	13.7	753		14
16	VI	4.5	Pferdewagen	(Streets Stable Car Line)	Streets Car W. Chicago, Ills	10980	11130	2540	2990	3740	"	"	1420	9670	"	13.5	742		16
17	IV	4.5	"	(Arms Palace Horse Car Co.)	Barney & Smith Co. Dayton, O.	13570	15545	2760	2960	4110	"	"	2440	12730	—	?	—	für Prunkpferde	17
18	IV	1.2	"	(" " " ")	" " " " " "	14990	15530	2590	2810	3900	"	"	1525	13215	—	?	—		18
20	IV	13.14	Hornviehwagen	(Canda Cattle Car Co.)	Ensign Mfg. Co. Huntington, W. Va.	11220	12050	2540	2920	3900	"	"	1600	9535	14.6	14.9	1021		20
24	IV	10.11	Geflügelwagen	(Live Poultry Transp. Co.)	Ohio Falls Mfg. Co. Jeffersonville, Ind.	10320	10900	2500	3050	3860	"	"	1525	9050	—	?	—		24
25	IV	16	Kohlenwagen	Old Colony (N. Y. N H. & H.) Rd.	Keith Mfg. Co. Sagamore, Mass.	8030	8895	2670	2955	2545	"	"	1575	6610	14.6	11.1	401		25
26	IV	19	"	—	Harvey Steel Car W. Harvey, Ills.	9660	10320	2460	2590	2180	"	"	1525	8850	14.6	11.0	398		26
27	IV	18	"	F. C. Internacional Mexicano	Ensign Mfg. Co. Huntington, W. Va.	10240	11380	2325	2590	3120	"	"	"	9475	"	11.7	430		27
30	IV	17	"	Kgl. Preuss. Eisenb.-Dir. Köln. R.	Van der Zypen & Charlier Köln-Deutz.	5300	6600	2900	3050	2670	2	980	—	3000	15.0	7.5	500	ungebremst	30
31	VI	13	Niederbordwagen	" " " " " "	" " " " " "	10200	11500	2670	2870	3300	"	"	—	6000	"	8.0	533	ungebremst freie Lenkachsen	31
32	VI	19.20	Langholzwagen	Lumber Line West-Virginia	Ensign Mfg. Co. Huntington, W. Va.	12500	12790	2340	2590	1300	4	840	1525	10925	27.2	10.5	382		32
33	IV	6	Schienenbeförderungswagen	—	Fox Pressed Steel Co. Joliet, Ills.	10550	10850	2360	2590	1295	"	"	"	8850	45.4?	10.3	227?	Ladegewicht für Erprobung	33
34	VI	3	Wagen zur Geschützbeförderung	Pennsylvania Rd.	Bahnwerkstätte Altoona, Pa.	16110	26680	2450	2960	2990	16	950	3890	24480	129.4	79.4	6f3	für Kruppsche Geschütze	34
35	VI	14	" " "	" " "	" " "	11500	20660	2450	2960	2100	12	762	2140	19060	63.6	51.3	806	" " "	35
36	VI	15	" " Erdölbeförderung	—	Harvey Steel Car W. Harvey, Ills.	9850	10850	D =	1980	4100	4	840	1525	8850	30.4m³	8.7	—		36
37	VI	17.18	" " Kiesbeförderung	(Rodger Ballast Car Co.)	Wells French Co. Chicago, Ills.	7650	10600	2390	2700	1850	"	"	1600	9400	27.2	11.5	424		37
38	VI	16	" " Kiesvertheilung	(" " " ")	" " " " " "	—	"	2690	2690	2100	"	"	"	9820	—	10.6	—		38
41	VI	10.11	Güterzug-Dienstwagen	Pennsylvania Rd.	Bahnwerkstätte Altoona, Pa.	4490	6150	2700	3090	4595	2	"	—	2745	—	?	—	nicht ausgestellt	41
42	VI	8	Heiz- und Beleuchtungs-Wagen	Chicago, Milwaukee St. P. Rd.	" West-Milwaukee, Wis.	10230	10980	2590	2820	4320	4	"	2440	8690	—	?	—		42
43	VI	12	Gleis-Messungs-Wagen	Pennsylvania Rd.	" Altoona, Pa.	7160	9150	2490	2745	3800	2	936	—	4140	—	?	—		43
44	VI	9	Wagen zur Messung d. Zugwiderstandes	Chicago Burlington Q. Rd.	" Aurora, Ills.	9175	10400	2590	2745	4030	4	840	1980	7850	—	?	—		44
46	VI	1.2	Dienst-Aussichts-Wagen	Pennsylvania Rd.	" Altoona, Pa.	10200	11540	2490	2750	4090	"	"	1525	8850	—	?	—		46

Fig. 1, 2. Pferdewagen der Arms Palace Horse Car C°. Barney u. Smith Car C° Dayton, Ohio.

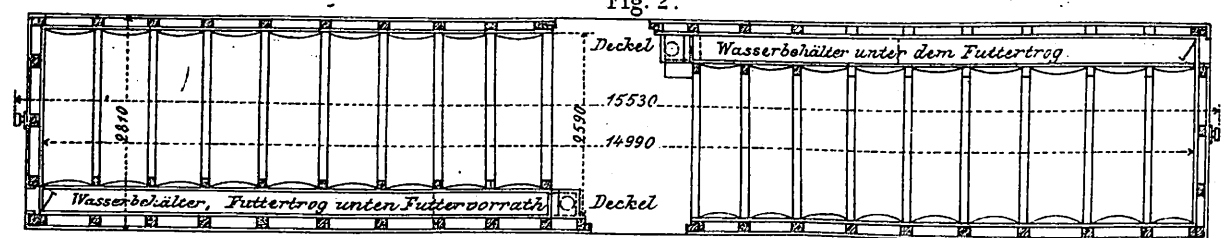
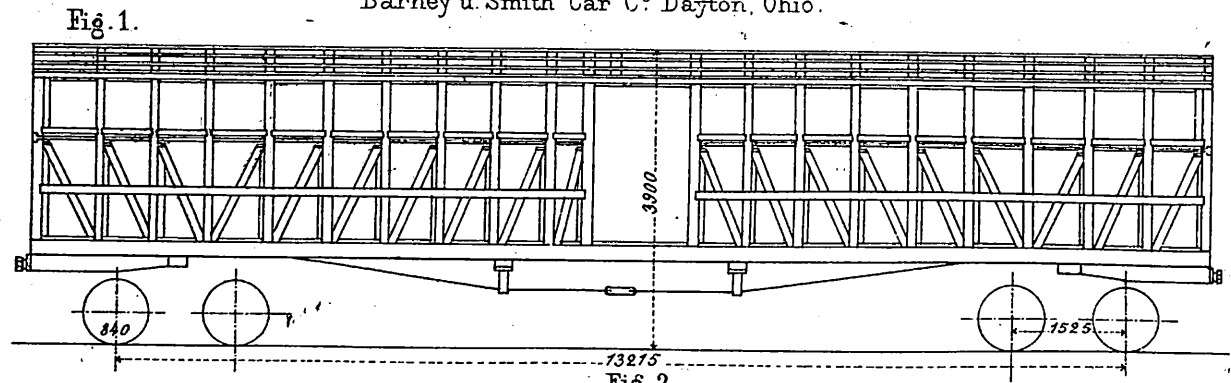


Fig. 7. Kühlwagen der Pennsylvania Rd. Union Line Bahnwerkstätte Ft. Wayne Jnd.

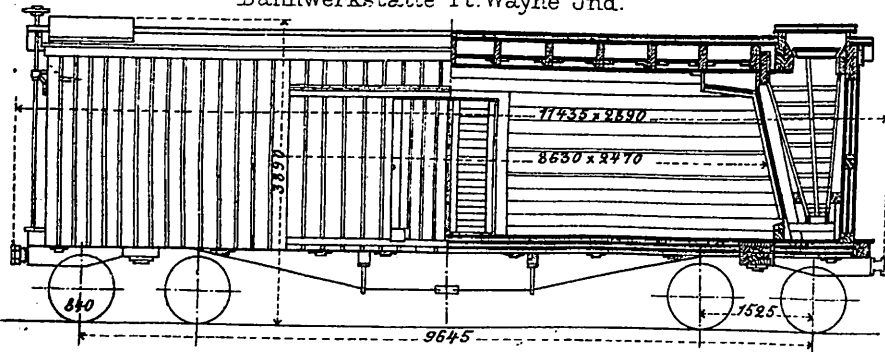


Fig. 12. Kühlwagen Bauart Hanrahan United States Car C° Anniston.

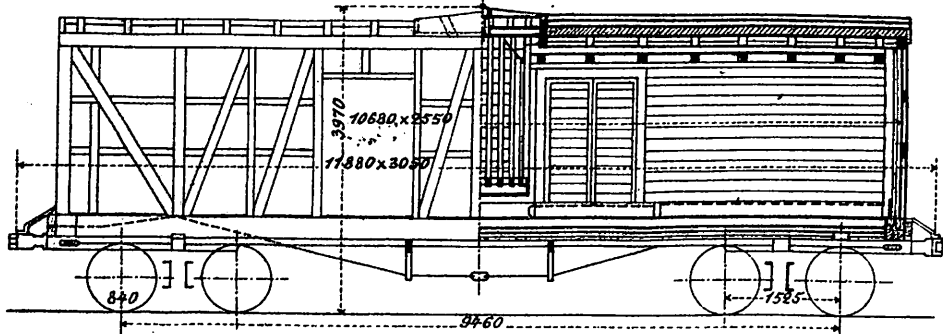


Fig. 16. Kohlenwagen der Old Colony (N.Y.N.HuH) Rd. Keith Mfg C° Sagamore, Mass.

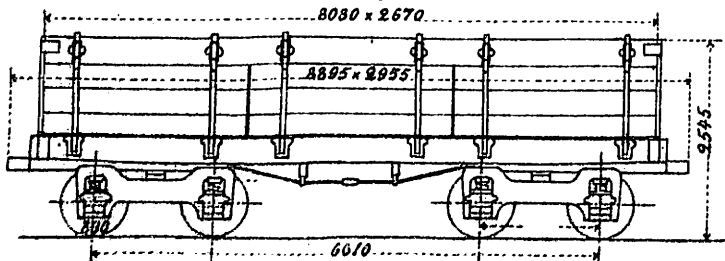


Fig. 17. Kohlenwagen d. Kgl. Preussischen Eisenbahn-Direktion Köln rechtsrh. Van der Zypen Charlier, Köln-Deutz.

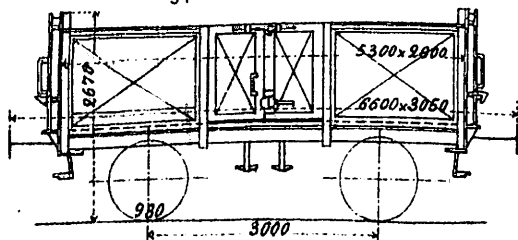


Fig. 3. Gedeckter Güterwagen der Wisconsin Central Rd. Bahnwerkstätte.

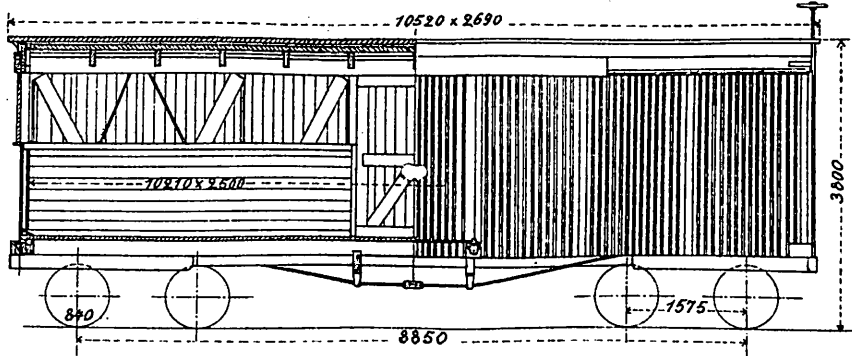


Fig. 6. Schienenbeförderungswagen Fox Solid Pressed Steel C°, Joliet Jlls.

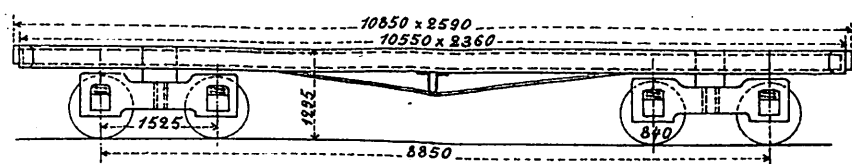


Fig. 8, 9. Gedeckter Güterwagen Harvey Steel Car Works, Harvey Jlls.

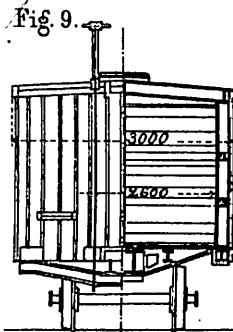
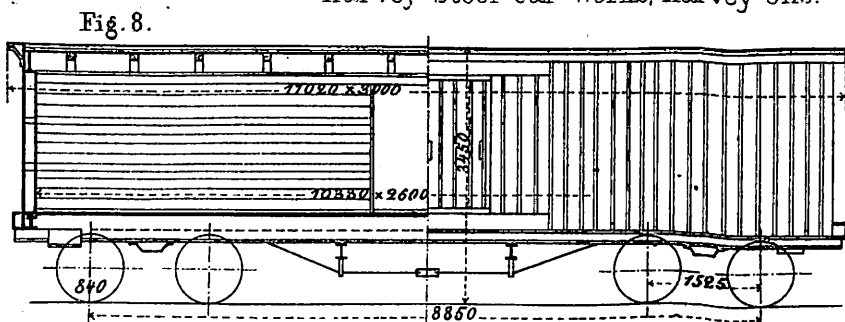


Fig. 13, 14. Hornviehwagen der Canda Cattle Car C° Ensign Mfg C° Huntington W. Va.

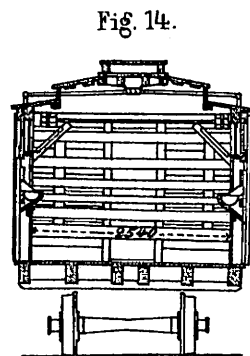
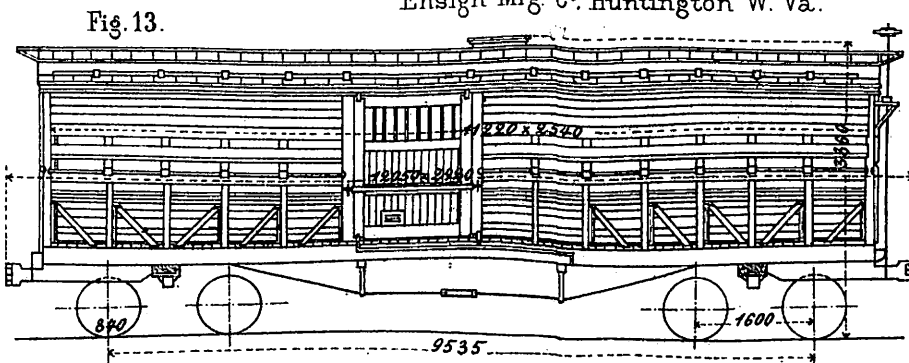


Fig. 4, 5. Luxus-Pferdewagen der Arms Palace Horse Car C°. Barney u. Smith Car C° Dayton, Ohio.

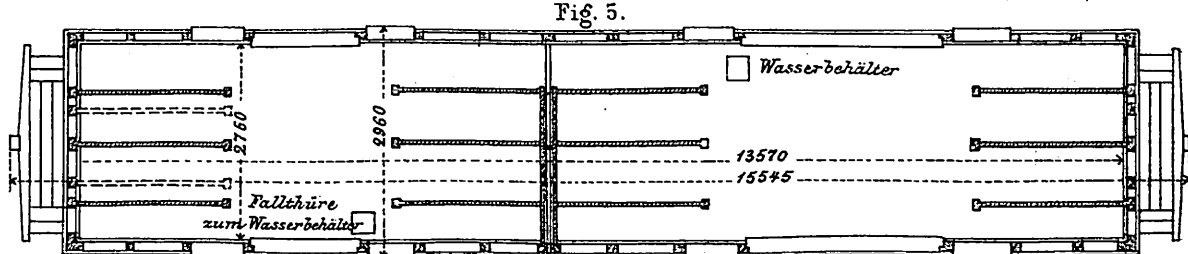
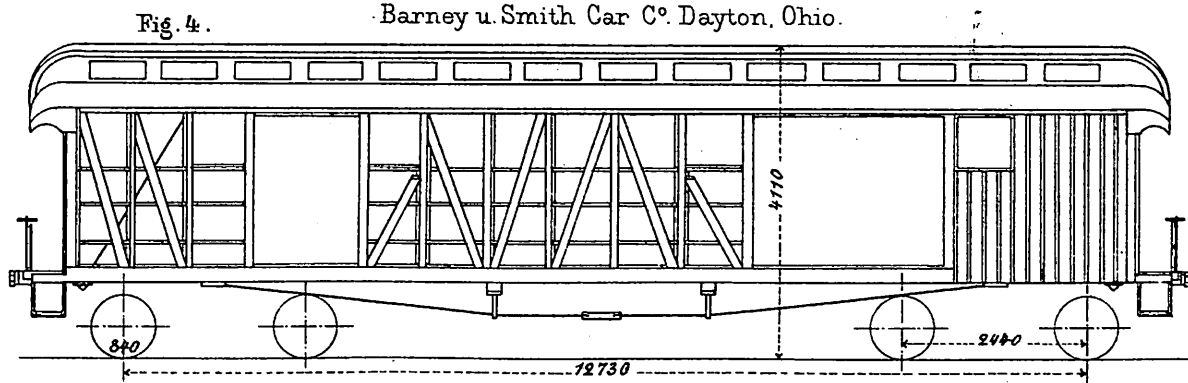


Fig. 10, 11. Geflügelbeförderungswagen der Live Poultry Transportation C° Ohio Falls Mfg C° Jeffersonville Jnd.

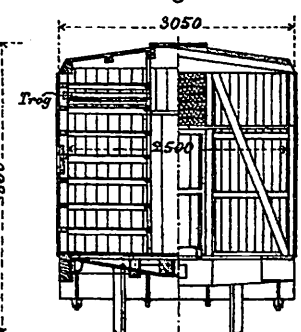
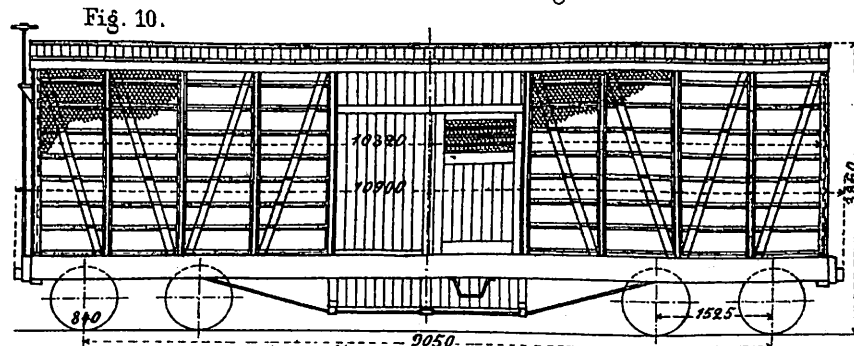


Fig. 15. Heizbarer Güterwagen der Eastman Line Eastman Car C° Boston Mass.

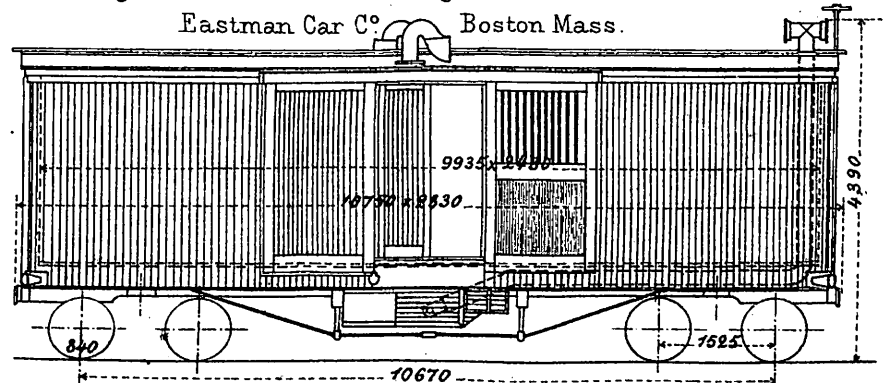


Fig. 18. Ferro Carril Internacional Mexicano Kohlenwagen. Ensign Mfg C° Huntington W. Va.

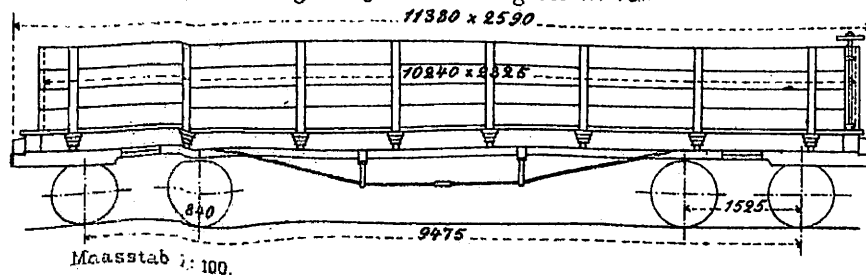
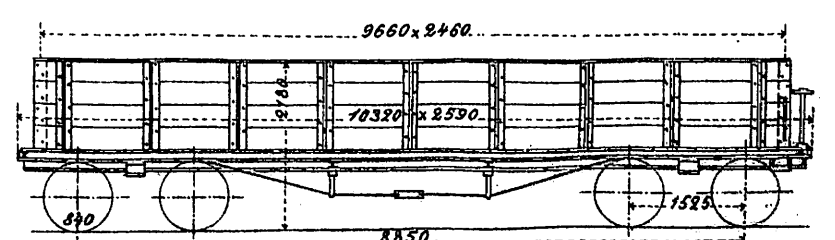


Fig. 19. Kohlenwagen Harvey Steel Car Works, Harvey Jlls.



v. Borries: Versuche mit Blasrohren und Schornsteinen der Locomotiven.

Bildliche Darstellung der Ergebnisse von Versuchen an der Vorrichtung.

Fig. 1. 5 cylindr. Schornsteine verschiedenen Durchmessers.

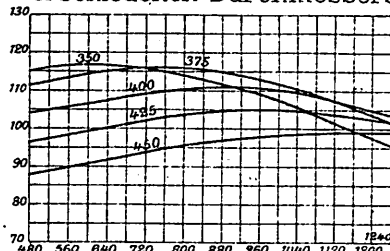


Fig. 2.

5 doppelk. Schornsteine 1:12. verschied. Dchm.

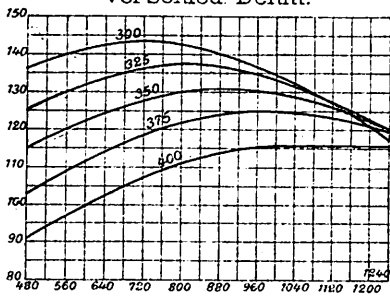


Fig. 3.

5 doppelk. Schornsteine 1:6 verschied. Dchm.

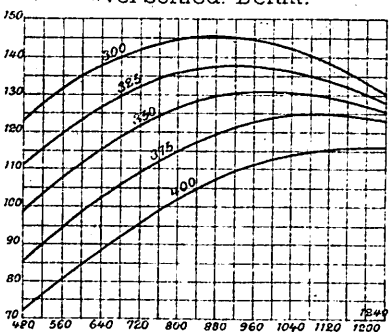


Fig. 4.

Vergleich für 3 Schornsteine mit verschied. Erweiterung von 375 mm Dchm.

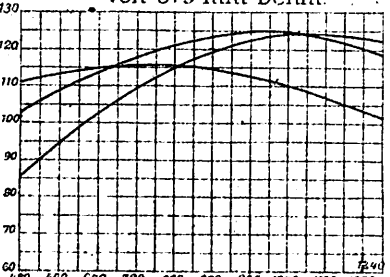


Fig. 5. Vergleich für 3 Schornst. von 472 mm oberem Dchm.

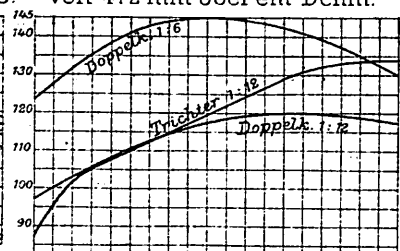


Fig. 6. Cylindr. Schornstein Dchm. 425 mm mit 3fach Verkürzung.

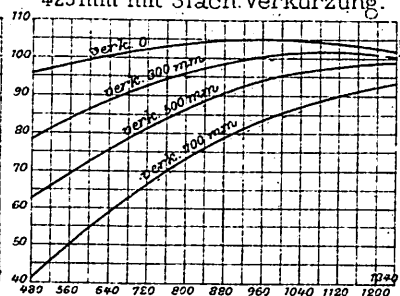


Fig. 7. Doppelk. Schornstein 1:12. Dchm. 375 mm mit 3fach. Verkürzung.

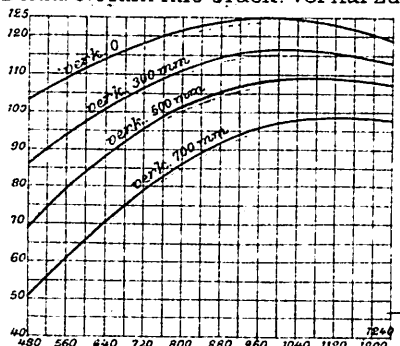


Fig. 8. Doppelk. Schornstein 1:6 Dchm. 375 mm mit 3fach. Verkürzung.

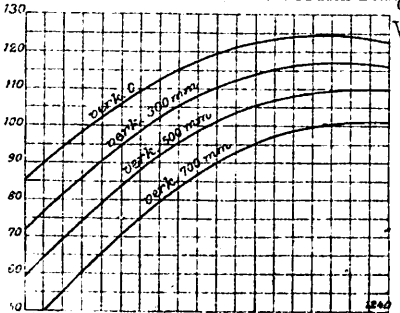


Fig. 9. Trichterst. 1:12 von 350 mm unterem Dchm. mit 3 Verkürz.

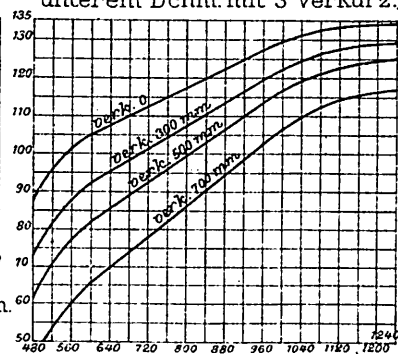


Fig. 10. Doppelk. Schornst. 1:12. Dchm. 350 mm Vergleich mit und ohne Steg.

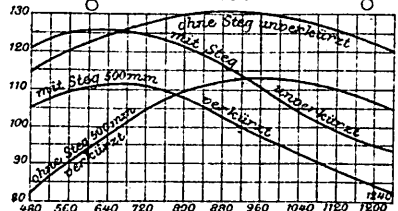


Fig. 11. Trichterschornstein 1:12. Dchm. 350 mm. Vergleich mit und ohne Steg. Schornstein unverkürzt.

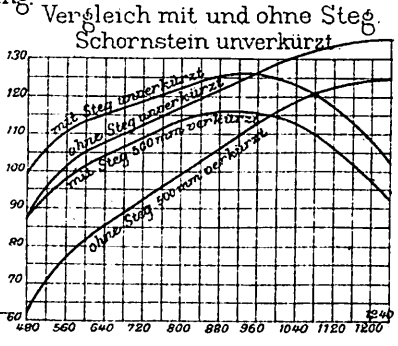
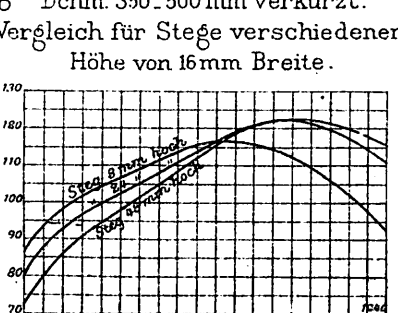
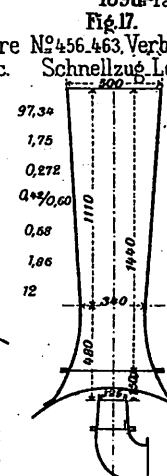
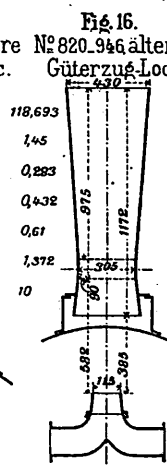
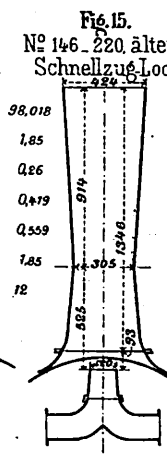
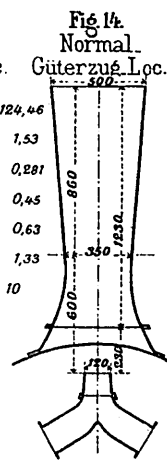
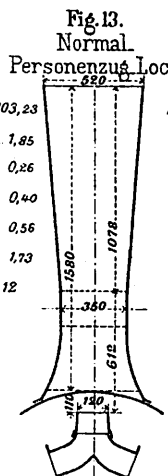


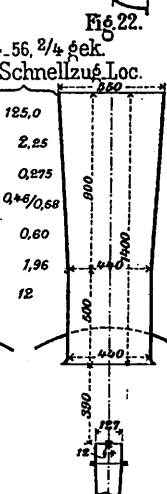
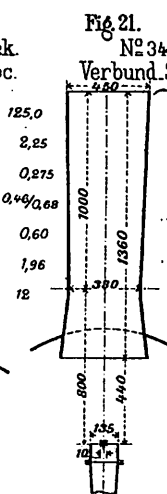
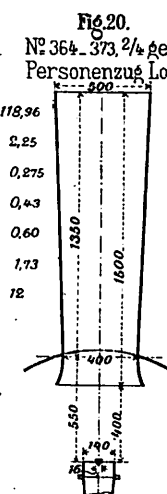
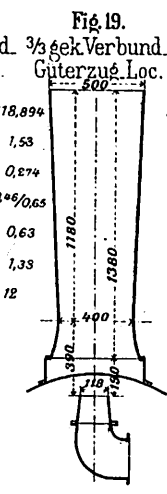
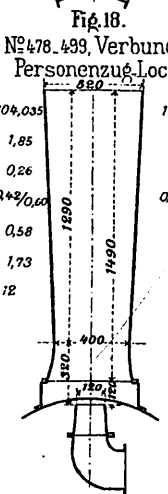
Fig. 12. Trichterschornstein 1:12 Dchm. 350-500 mm verkürzt.



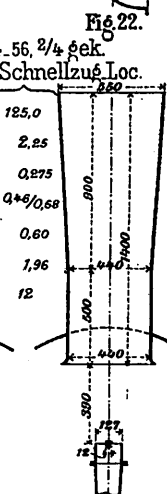
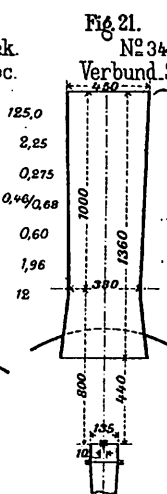
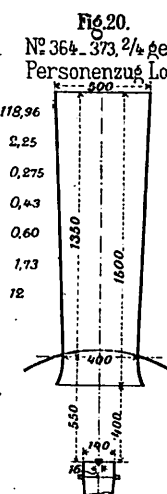
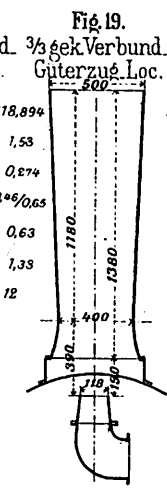
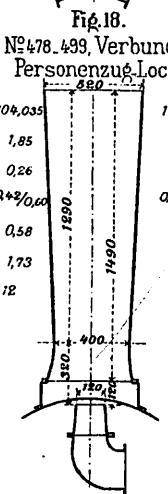
$H = \text{qm}$ 103,23
 $R =$ 1,85
 $S =$ 0,26
 $d = \text{m}$ 0,40
 $h =$ 0,56
 $D =$ 1,73
 $p = \text{at}$ 12



1896. Taf. V.



$H = \text{qm}$ 104,035
 $R =$ 1,85
 $S =$ 0,26
 $d = \text{m}$ 0,40
 $h =$ 0,58
 $D =$ 1,73
 $p = \text{at}$ 12



Heizfläche
 Rostfläche
 Querschnitt der
 Siederohre
 Cyl.-Dchm.
 Kolbenhub
 Triebbad.-Dchm.
 Dampfüberdruck

$H = \text{qm}$ 100,6
 $R =$ 1,73
 $S =$ 0,315
 $d = \text{m}$ 0,432
 $h =$ 0,61
 $D =$ 1,372
 $p = \text{at}$ 10

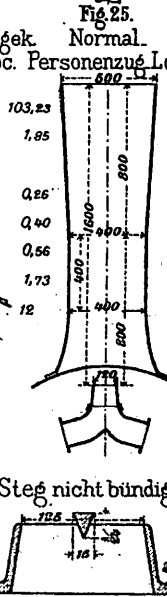
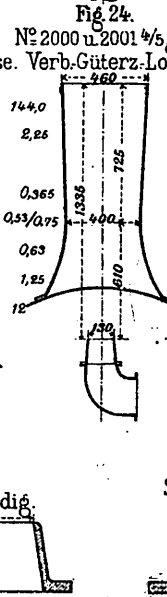
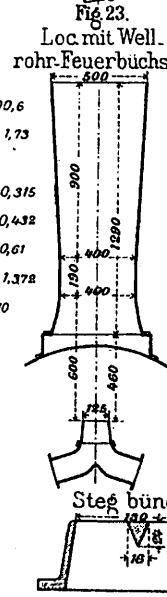
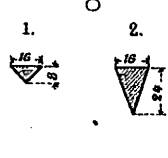
$H = \text{qm}$ 118,894
 $R =$ 1,53
 $S =$ 0,274
 $d = \text{m}$ 0,406
 $h =$ 0,63
 $D =$ 1,33
 $p = \text{at}$ 12

$H = \text{qm}$ 118,96
 $R =$ 2,25
 $S =$ 0,275
 $d = \text{m}$ 0,43
 $h =$ 0,60
 $D =$ 1,73
 $p = \text{at}$ 12

$H = \text{qm}$ 125,0
 $R =$ 2,25
 $S =$ 0,275
 $d = \text{m}$ 0,406
 $h =$ 0,60
 $D =$ 1,96
 $p = \text{at}$ 12

$H = \text{qm}$ 125,0
 $R =$ 2,25
 $S =$ 0,275
 $d = \text{m}$ 0,406
 $h =$ 0,60
 $D =$ 1,96
 $p = \text{at}$ 12

Fig. 26. Stegformen.



Steg bündig.

Steg nicht bündig.

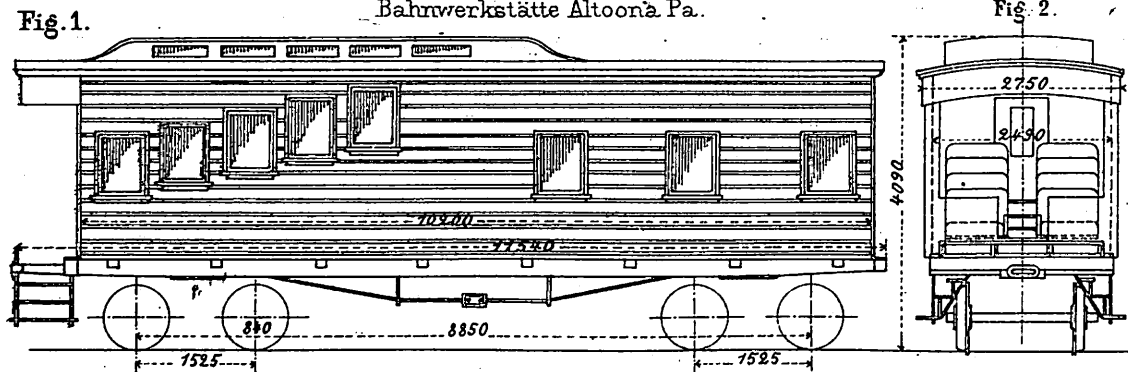
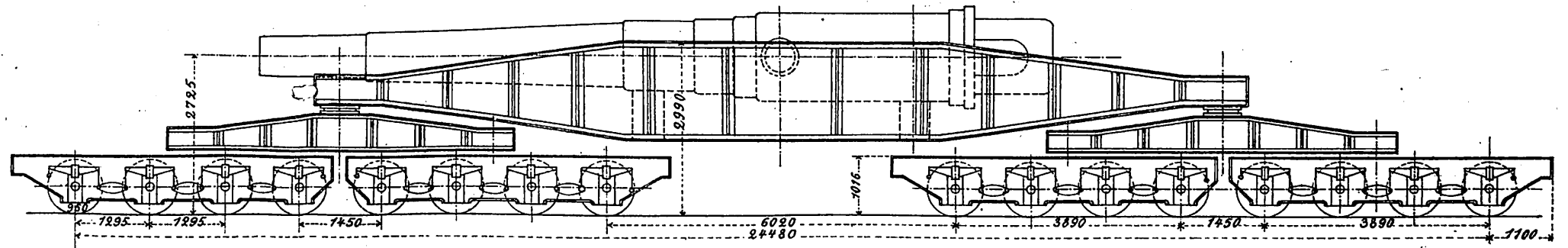
Fig. 1,2. Dienst-Aussichtswagen der Pennsylvania Rd.
Bahnwerkstätte Altoona Pa.Fig. 3. Wagen zur Beförderung des Krupp'schen 122,4 Tonnen Geschützes, Pennsylvania Rd.
Bahnwerkstätte Altoona Pa.

Fig. 4,5. Pferdewagen der Streets Stable Car Line. Eigene Werkstätte.

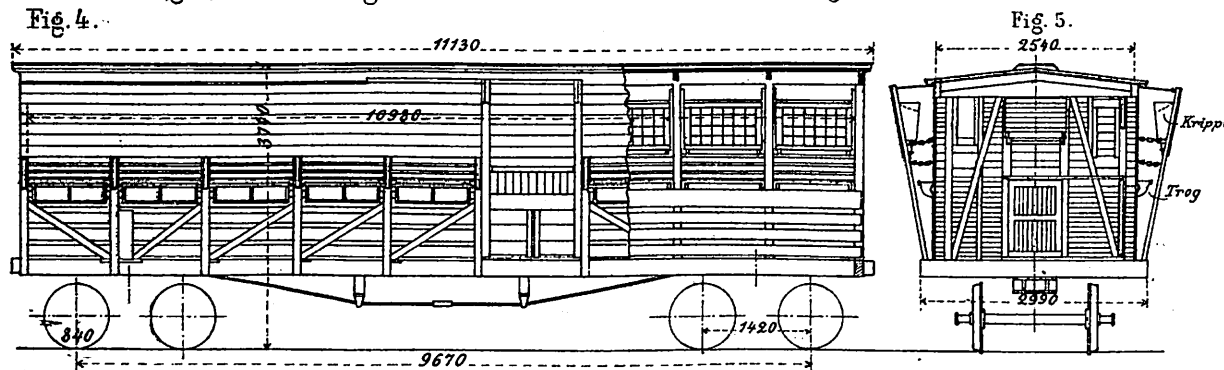
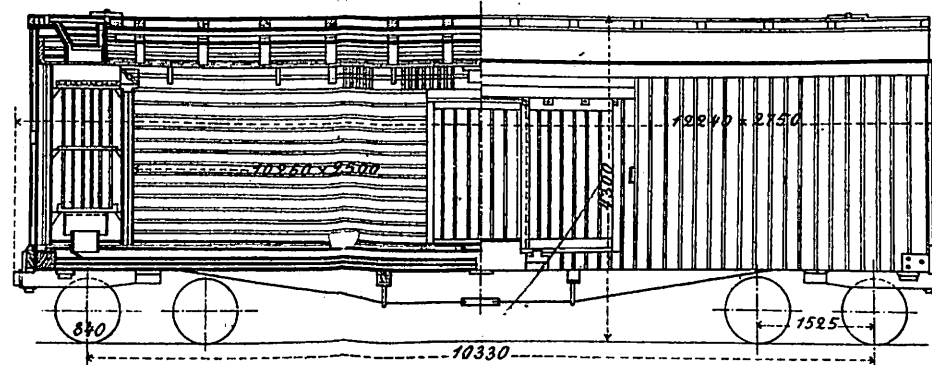
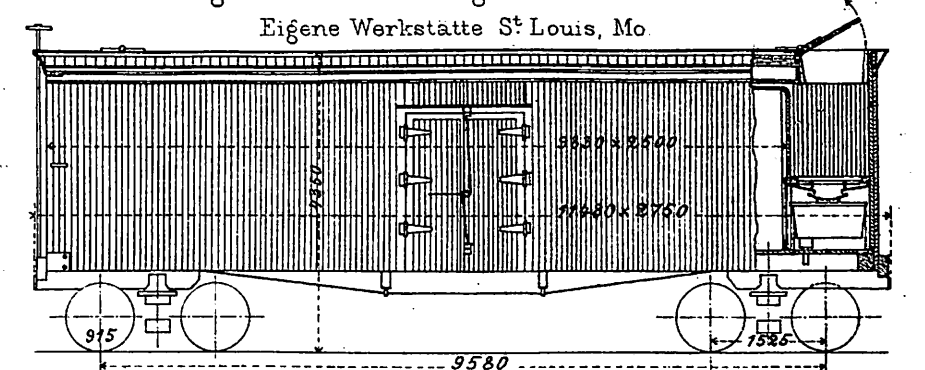
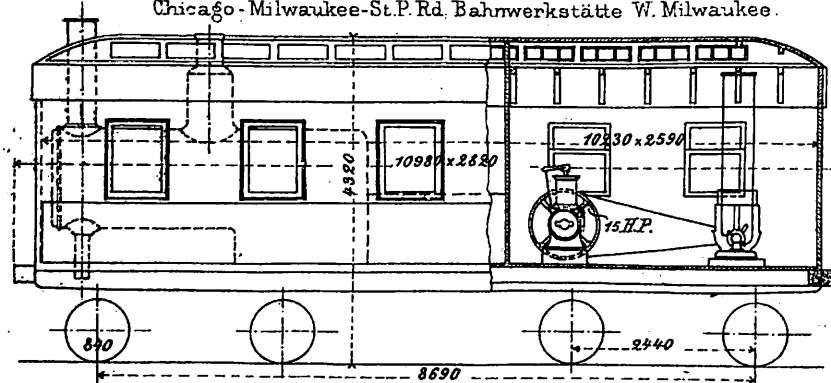
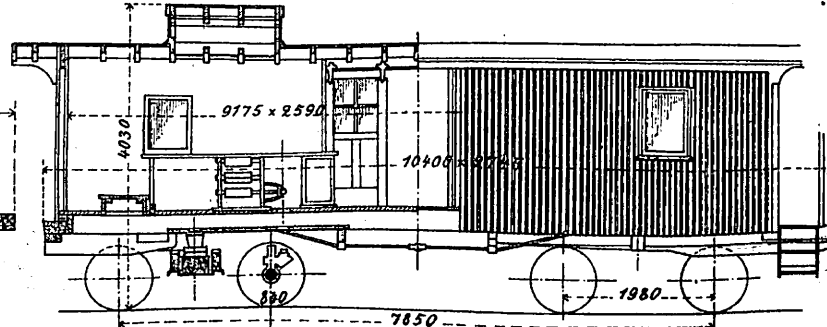
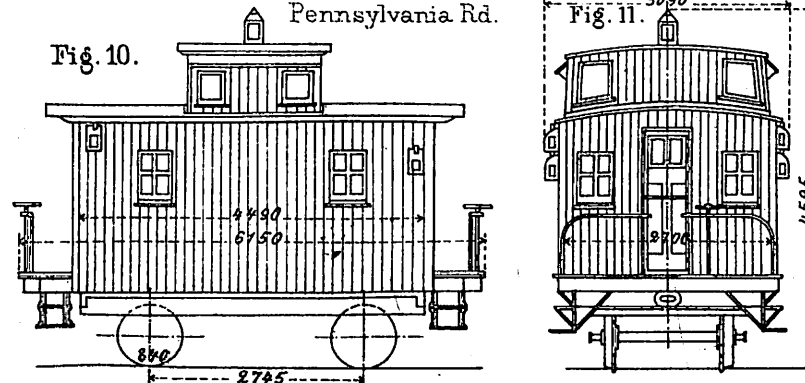
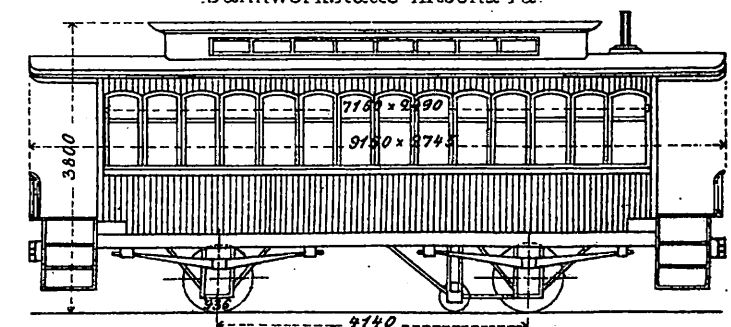
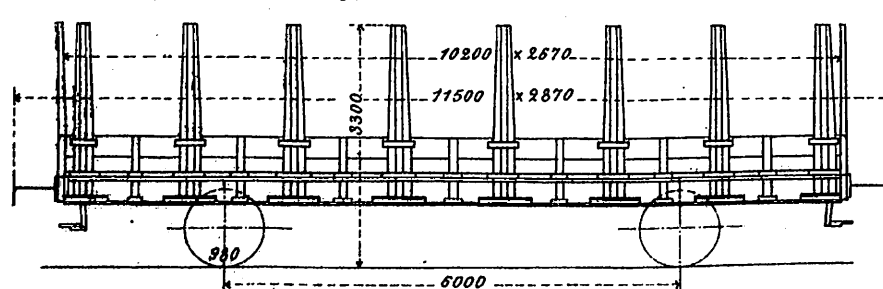
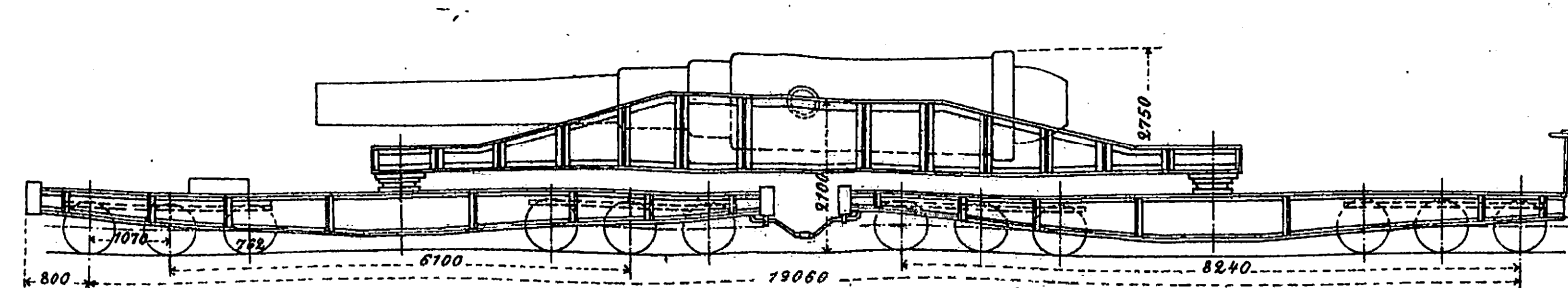
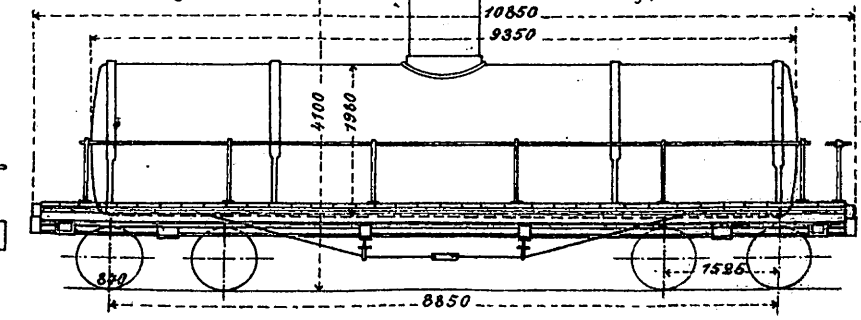


Fig. 6. Kühlwagen der Eastman Line, Eastman Car Co. Boston, Mass.

Fig. 7. American Refrigerator Transit Co.
Eigene Werkstätte St. Louis, Mo.Fig. 8. Heizungs- u. Beleuchtungswagen Bauart Geo. Gibbs
Chicago-Milwaukee-St. P. Rd. Bahnwerkstätte W. Milwaukee.Fig. 9. Wagen zur Messung der Zugkraft (Dynamometer)
Chicago-Burlington-Quincy Rd.
Bahnwerkstätte Aurora, Ills.Fig. 10,11. Güterzug-Dienstwagen (nicht ausgestellt).
Pennsylvania Rd.Fig. 12. Gleismessungs Wagen Pennsylvania Rd.
Bahnwerkstätte Altoona Pa.Fig. 13. Niederbordwagen Kgl. Preußs. Eisenbahn Direkt Köln rechtsrh
Van der Zypen u. Charlier Köln-Deutz.Fig. 14. Wagen zur Beförderung des Krupp'schen 70 Tonnen Geschützes, Pennsylvania Rd.
Bahnwerkstätte Altoona Pa.Fig. 15. Petroleumbeförderungs Wagen
Harvey Steel Car W. Harvey, Ills.

Kieszug der Rodger Ballast Car Co. erbaut von der Wells-French Co. Chicago, Illinois

Fig. 16. Kiesvertheilwagen.

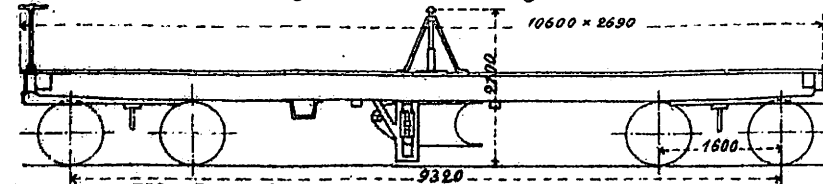


Fig. 17, 18. Kiesbeförderungswagen.

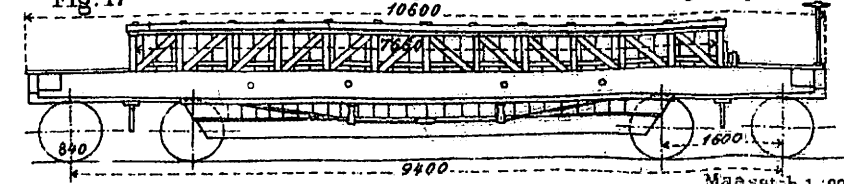


Fig. 18.

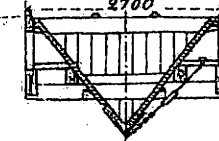
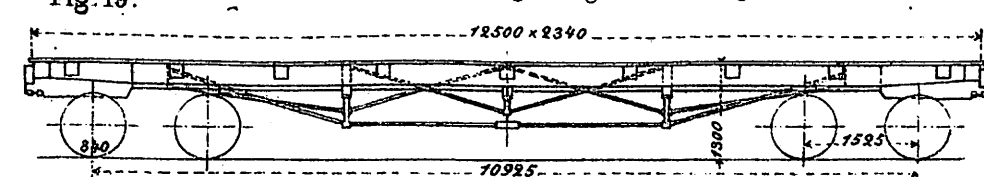
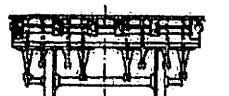
Fig. 19, 20. Langholzwagen für die eigene Waldbahn erbaut von der
Ensign Mfg. Co. Huntington W. Va.

Fig. 20.



Locomotivkessel mit gemauerter Feuerkiste.

1:25 d. n. Gr.

Fig. 1. Längenschnitt.

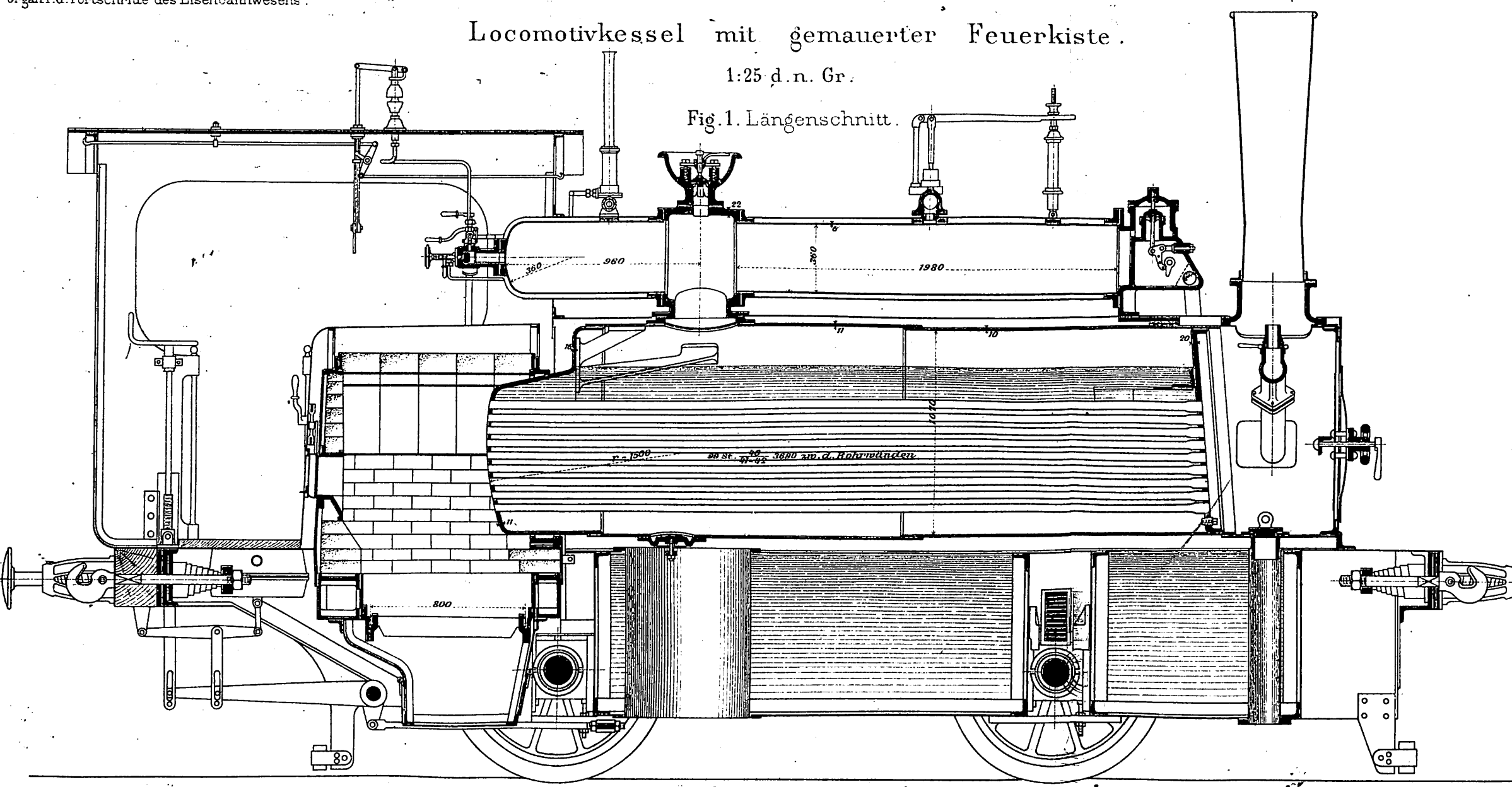
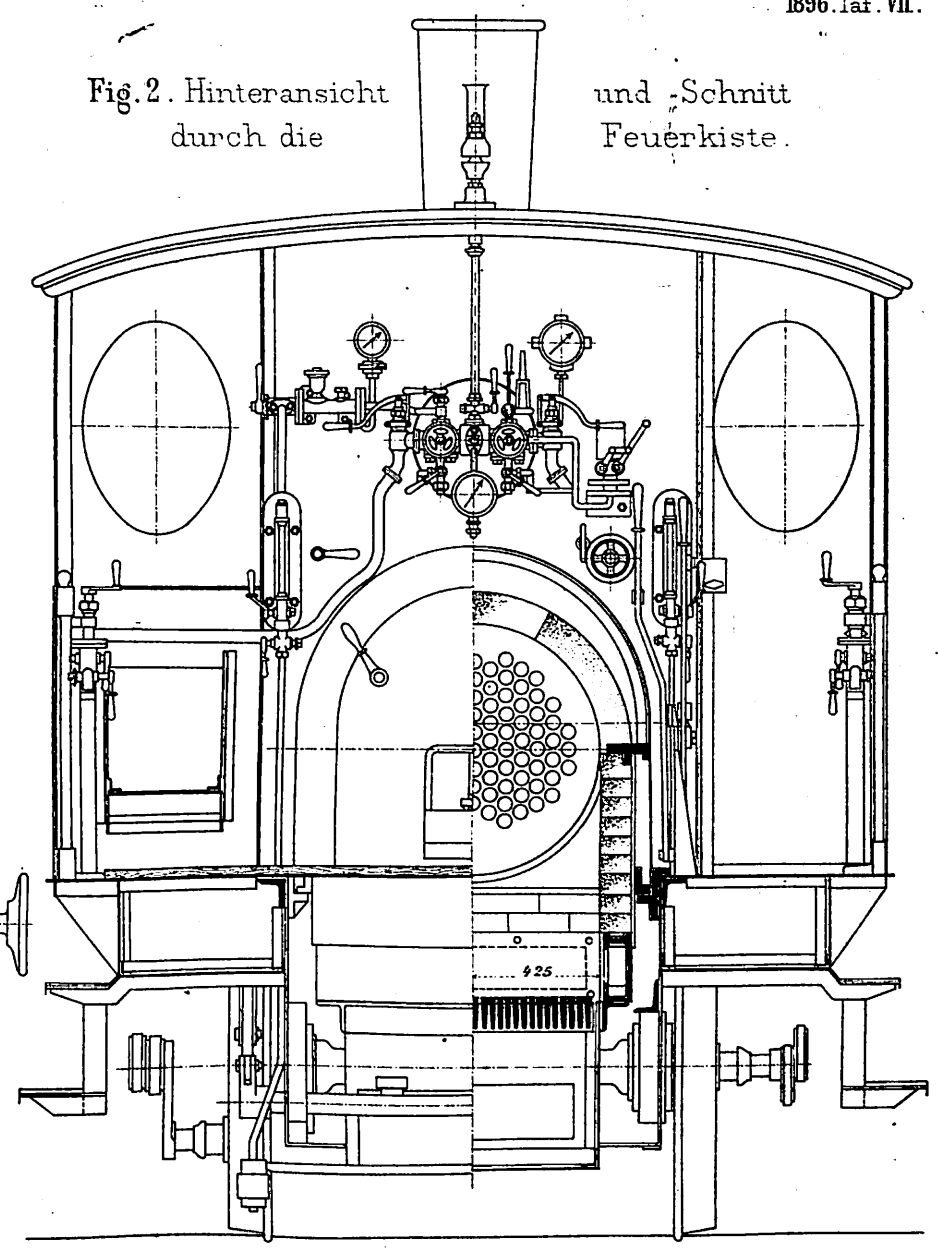


Fig. 2. Hinteransicht durch die Feuerkiste.

und Schnitt



Masstab zu Fig. 1 u. 2 = 1:25 d. n. Gr.

Fig. 3 u. 4.

Vorwärmer und Wärmeausgleicher.

Fig. 3. 5. Rushforth's Vorwärmer und Wärmeausgleicher

nebst Ablaufsventilen.

Fig. 3.

Fig. 4.

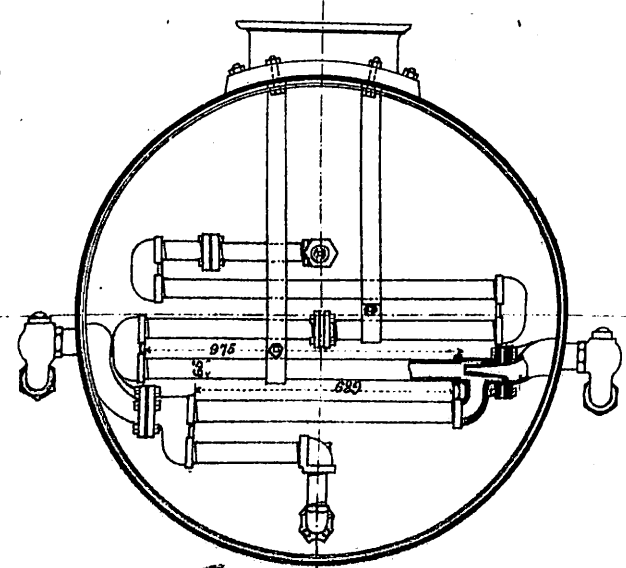
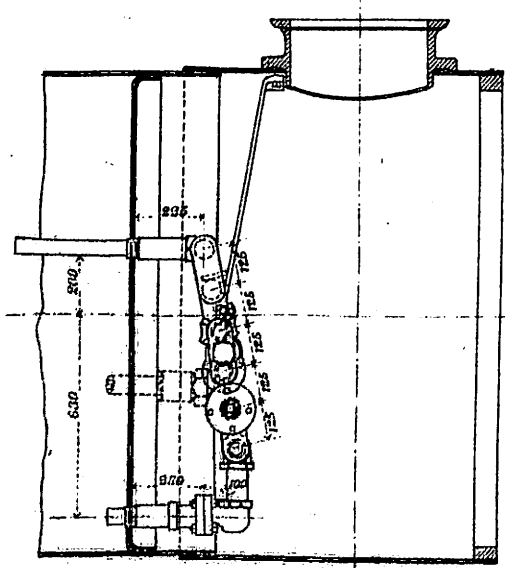


Fig. 5. Ablaufsventil.

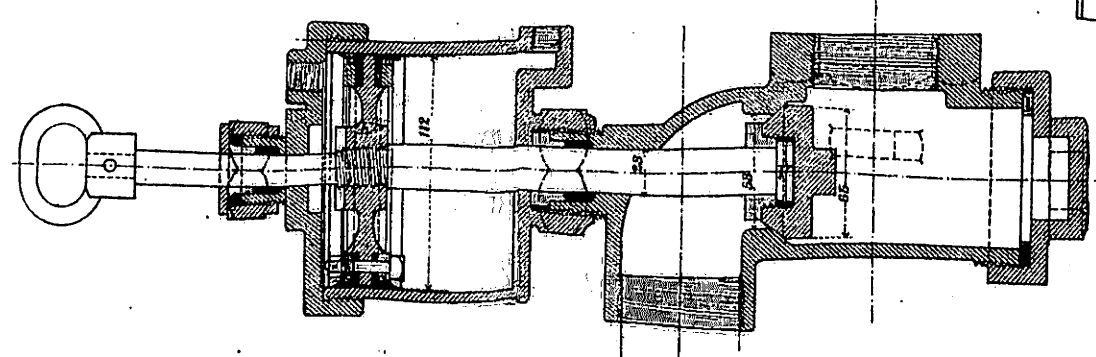


Fig. 7.

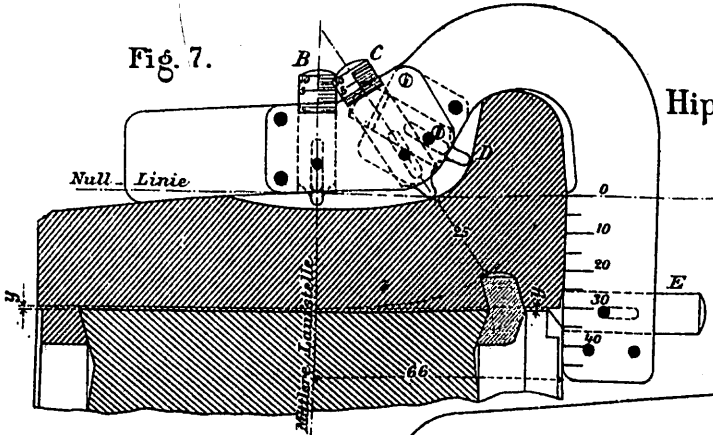
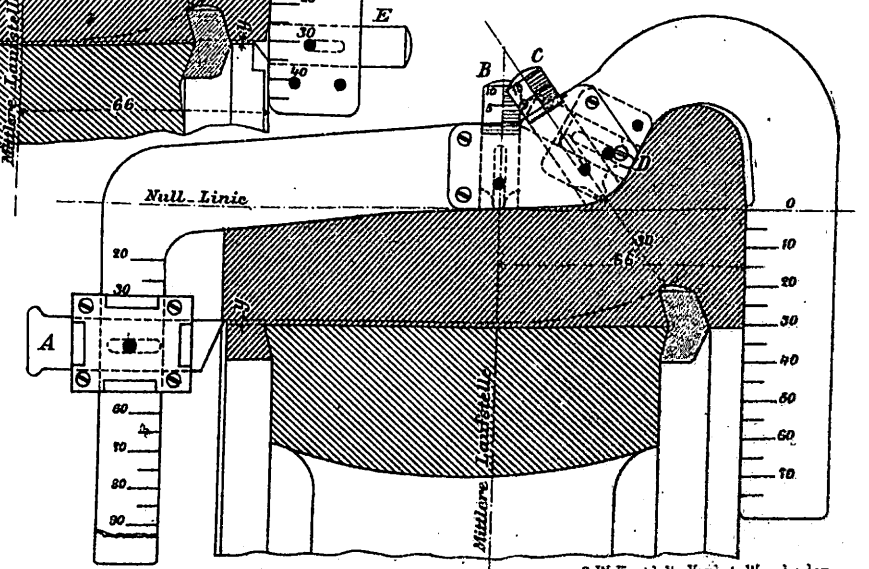


Fig. 6 u. 7.

Hippe's Werkzeug zum Messen von Radreifenstärken.

1:2 d. n. Gr.

Fig. 6.



Vierachsige zweifach gekuppelte
Schnellzuglokomotive Gattung II^c
Großherzog. Bad. Staatsb.

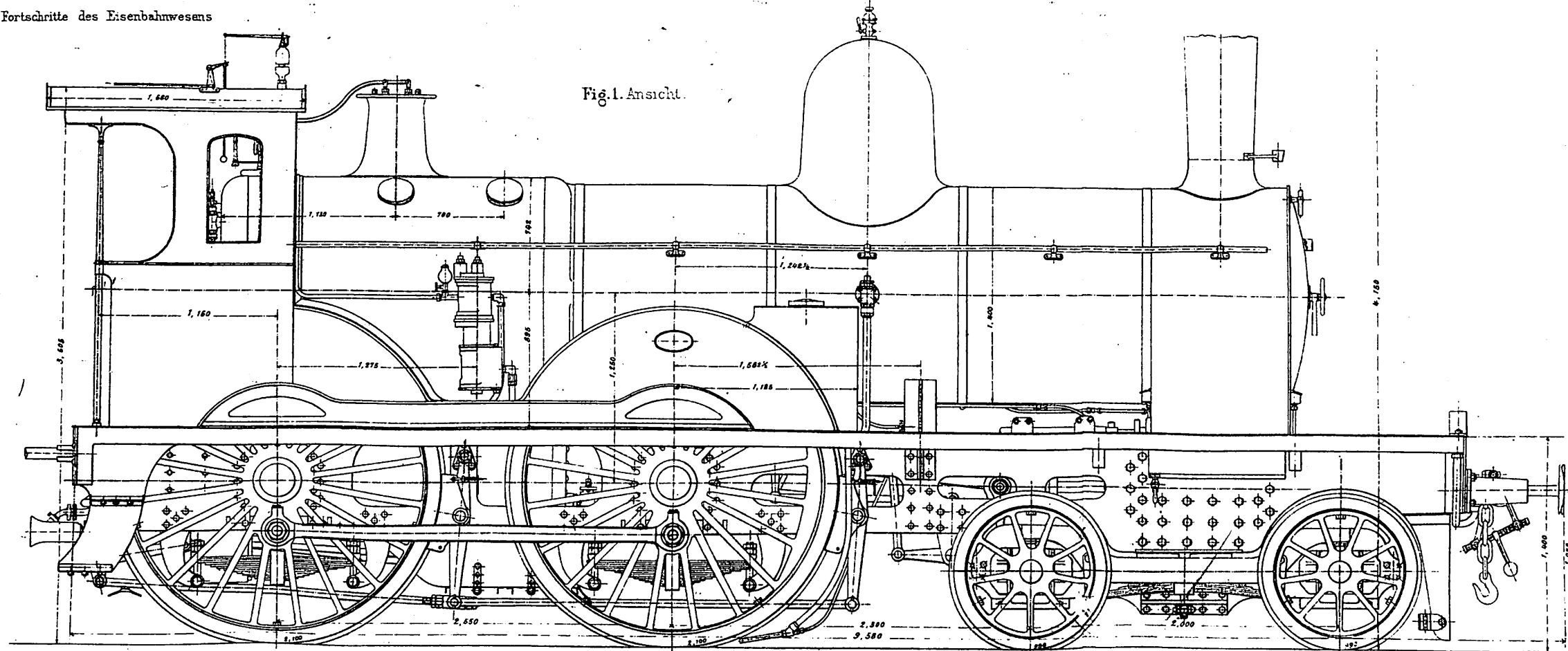


Fig. 1. Ansicht.

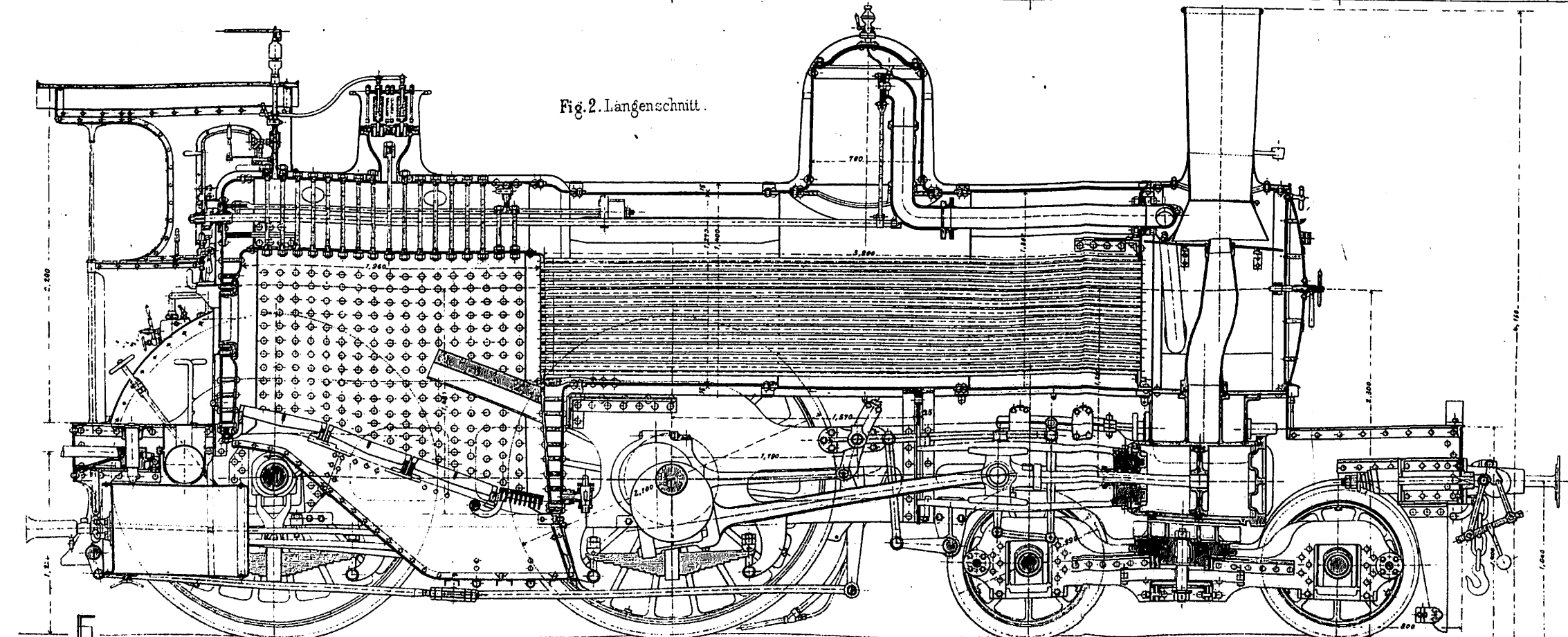


Fig. 2. Längenschnitt.

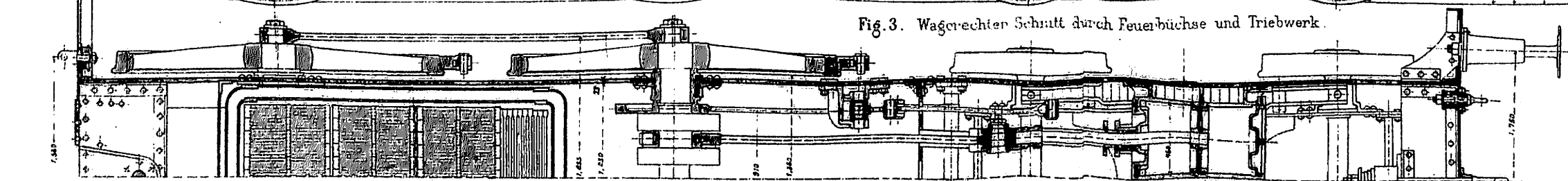
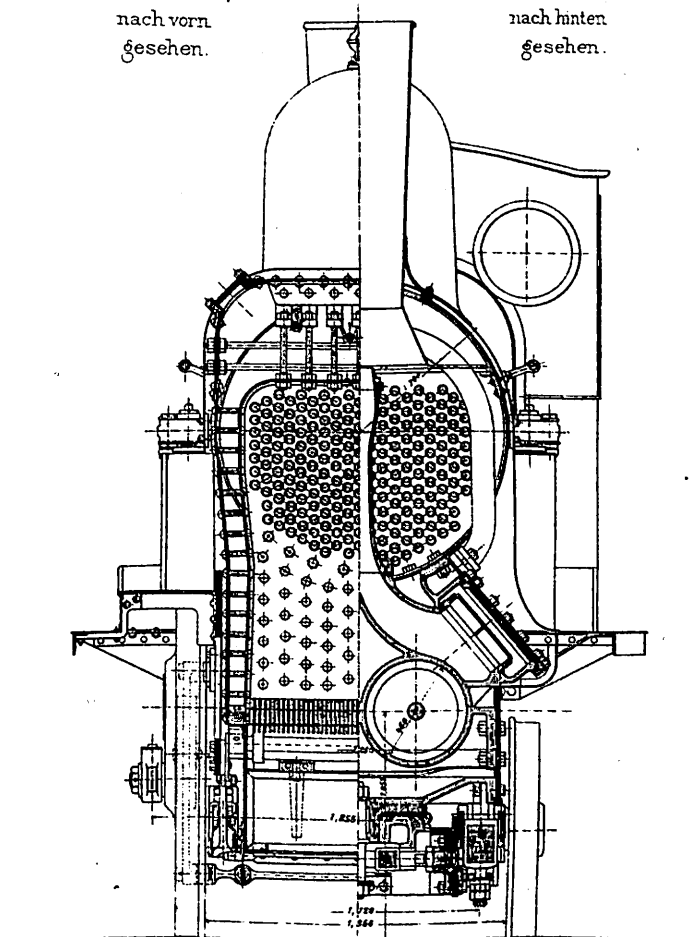


Fig. 3. Wagerechter Schnitt durch Feuerbüchse und Triebwerk.

Fig. 4.
Querschnitt
durch die
Feuerbüchse,
nach vorn
gesehen.

Fig. 5.
Querschnitt
durch die
Rauchkammer
nach hinten
gesehen.



Maßstab 1:33 1/3.



Fig. 1. Ansicht.

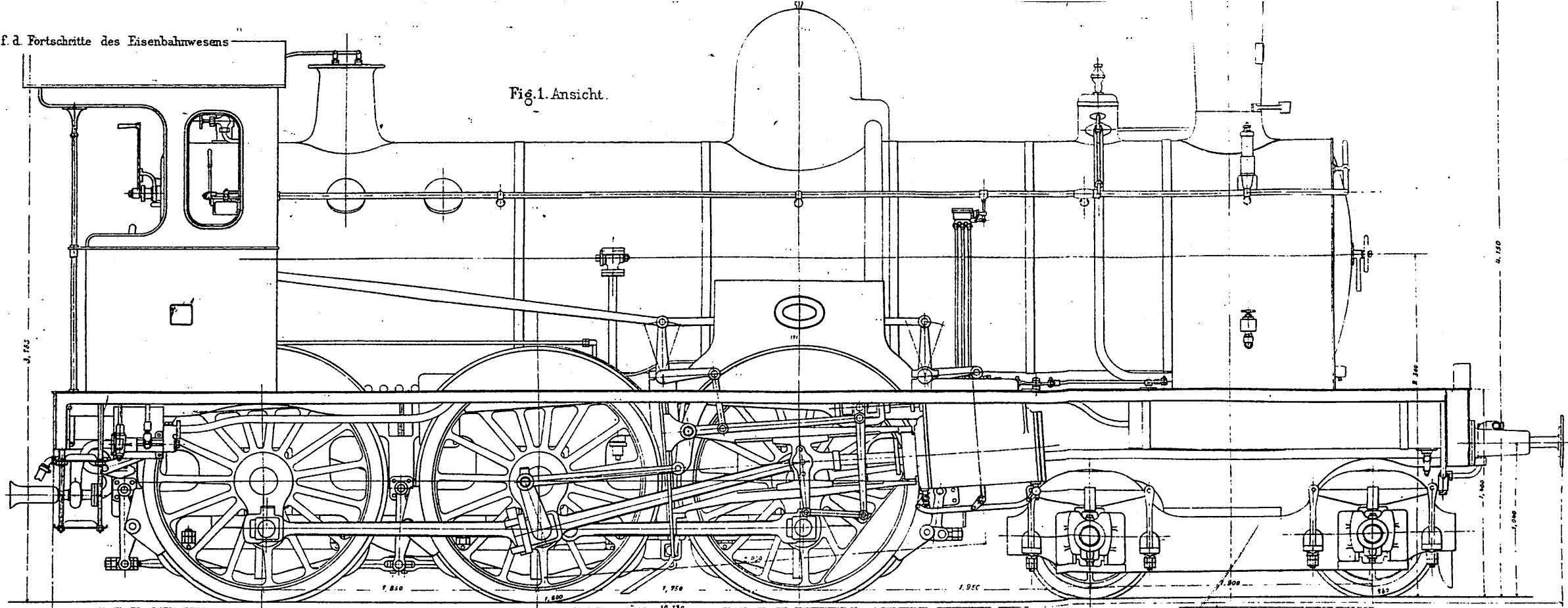


Fig. 2. Längenschnitt

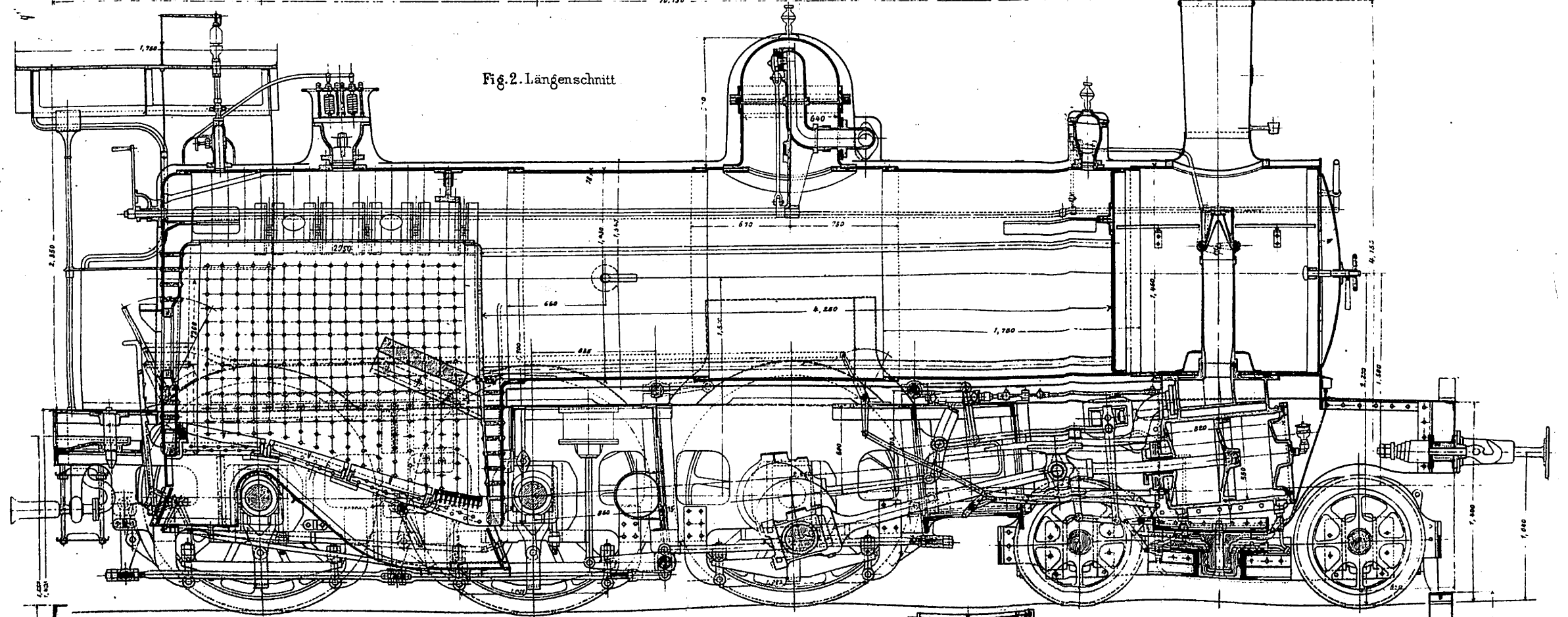


Fig. 3. Wagerechter Schnitt durch Feuerbüchse und Triebwerk.

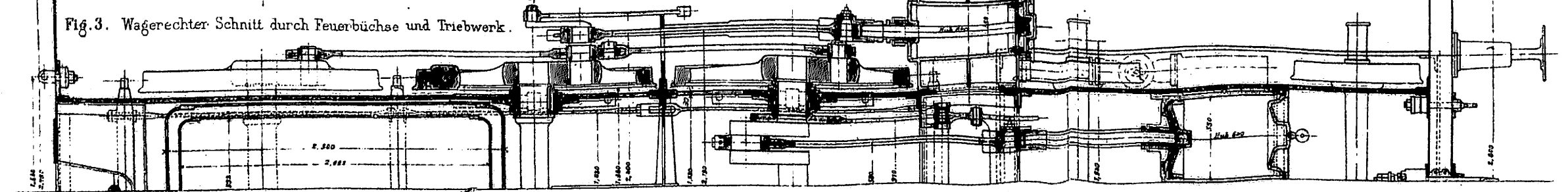


Fig. 4.
Querschnitt
durch die
Feuerbüchse,
nach vorn
gesehen.

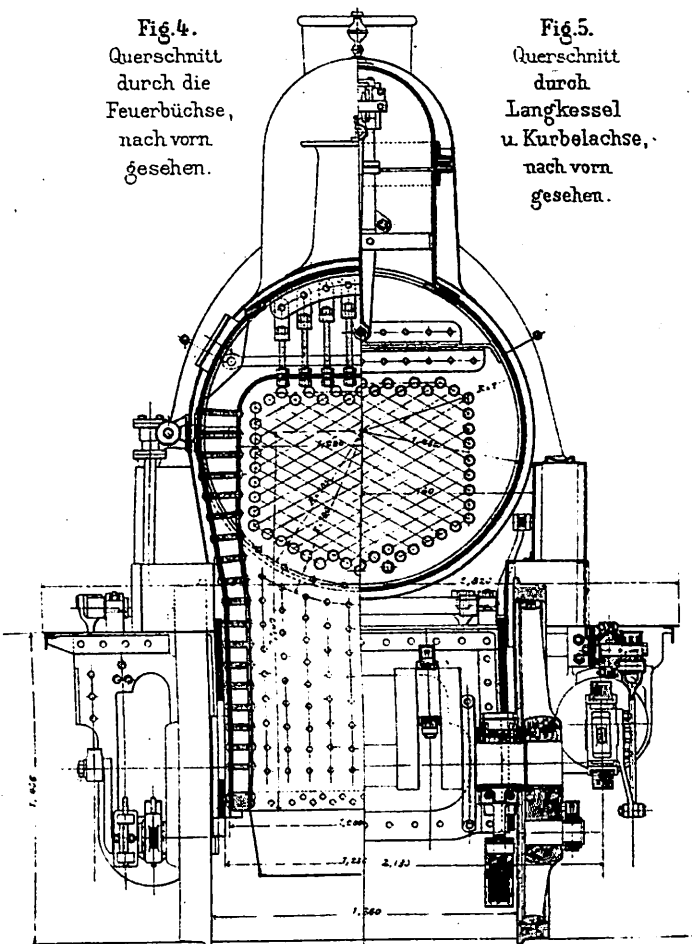


Fig. 5.
Querschnitt
durch
Langkessel
u. Kurbelachse,
nach vorn
gesehen.

Fig. 6. Querschnitt
durch Rauchkammer
Niederdruckcylinder
und Drehgestell
nach vorn gesehen.

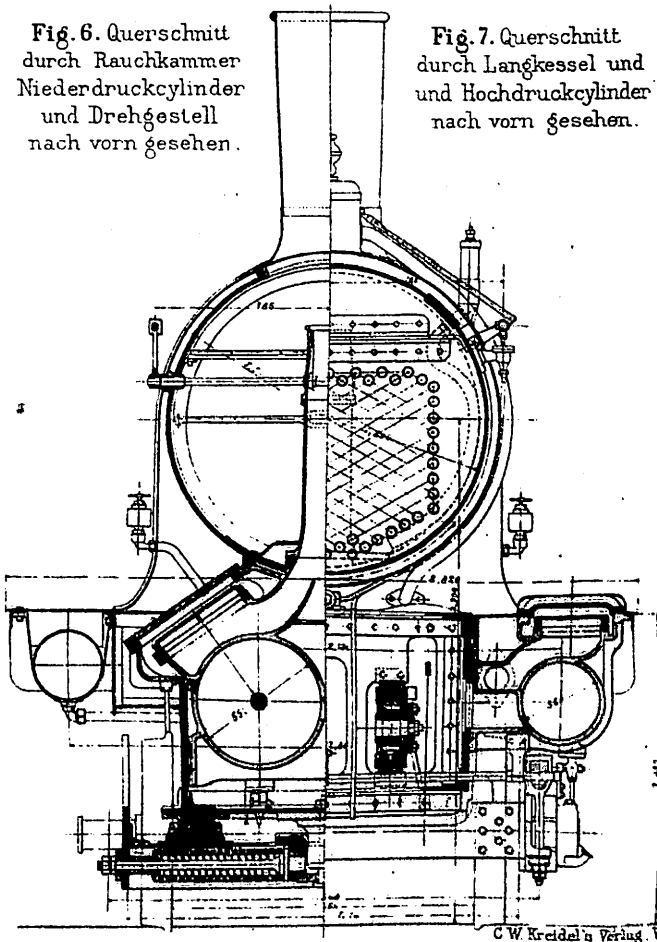


Fig. 7. Querschnitt
durch Langkessel
und Hochdruckcylinder
nach vorn gesehen.

Fig. 4. Hinteransicht
(zu Tafel IX gehörend.)

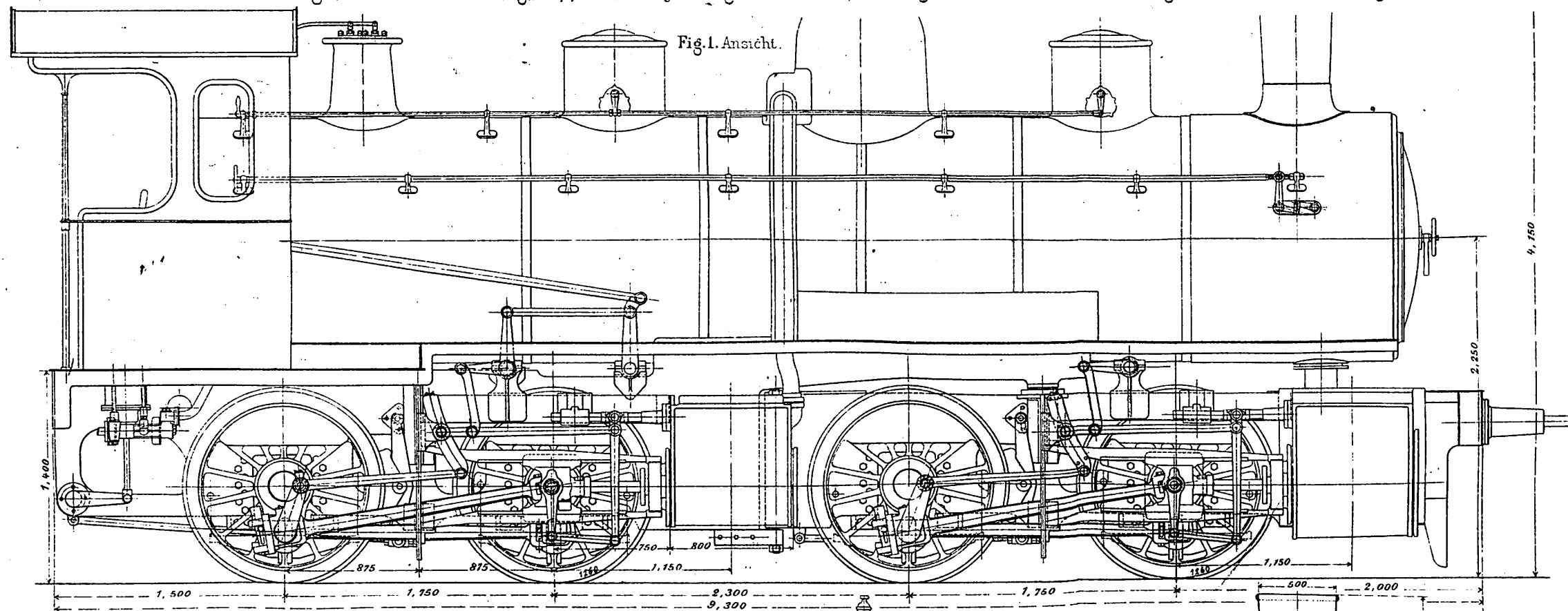


Fig. 2. Längenschnitt

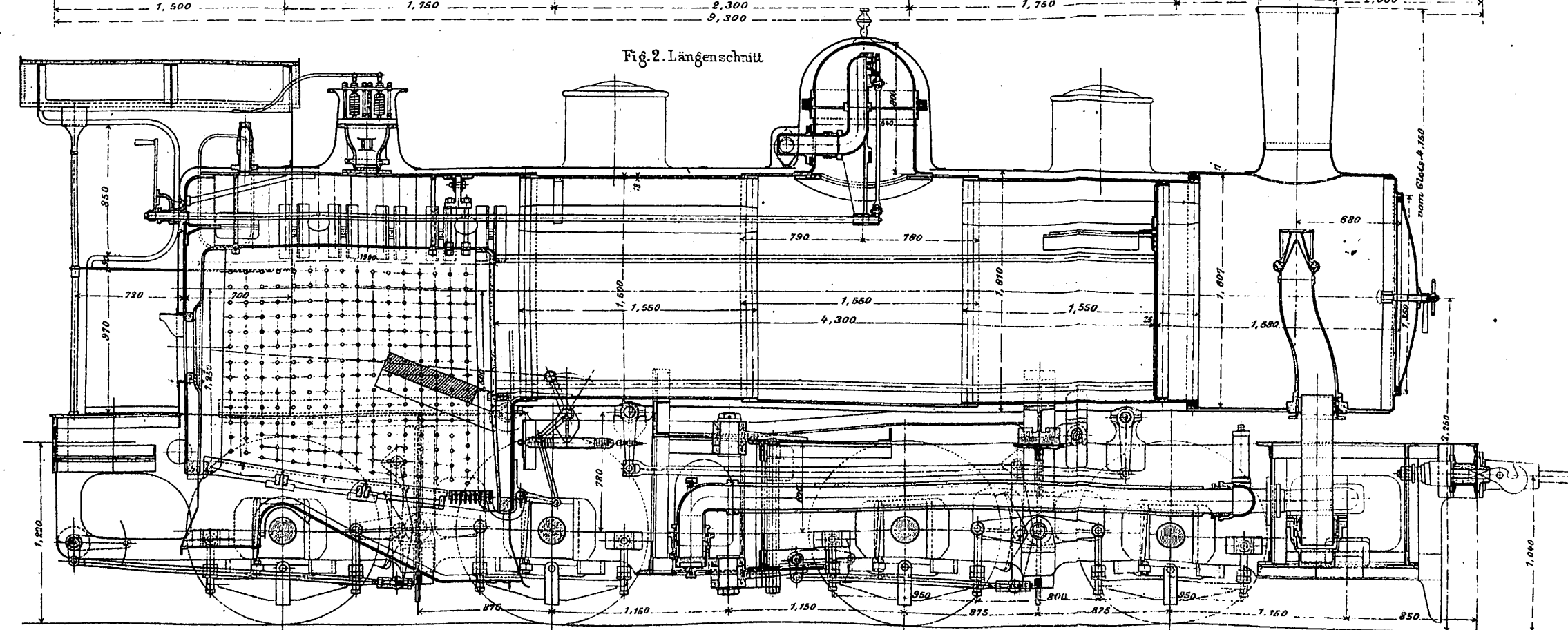
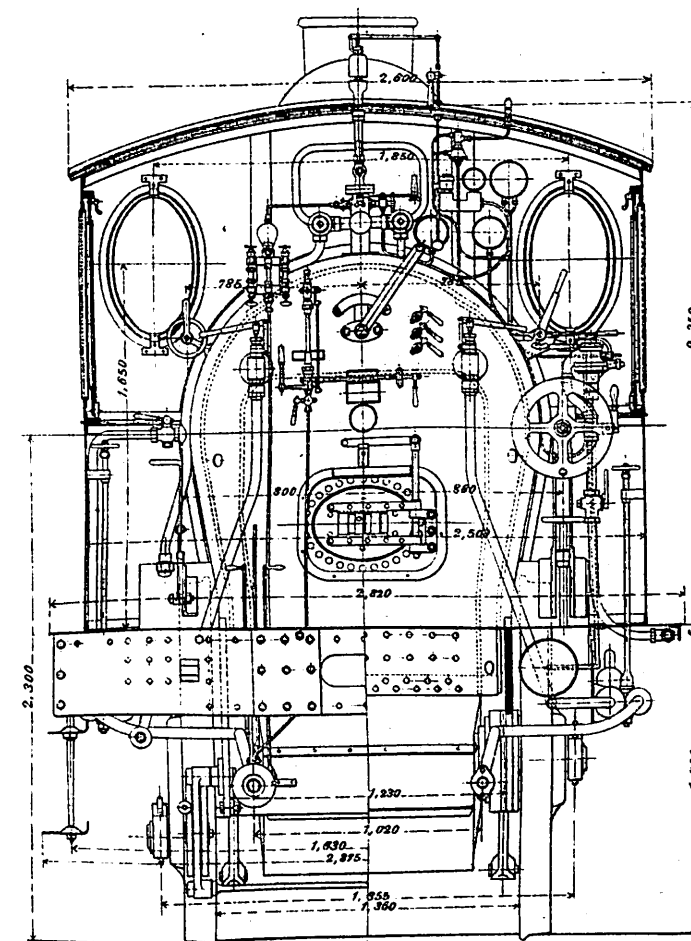
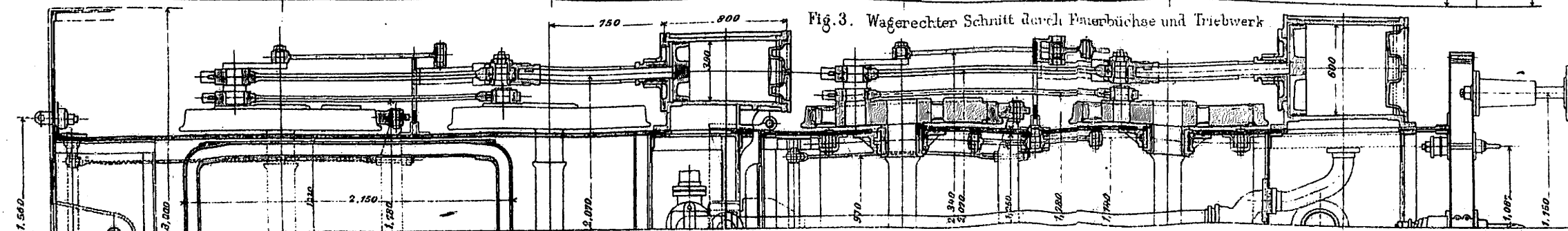


Fig.3. Wagerechter Schnitt durch Feuerbüchse und Triebwerk



Maßstab · 1 : 33 ⅓.



Fig. 2.

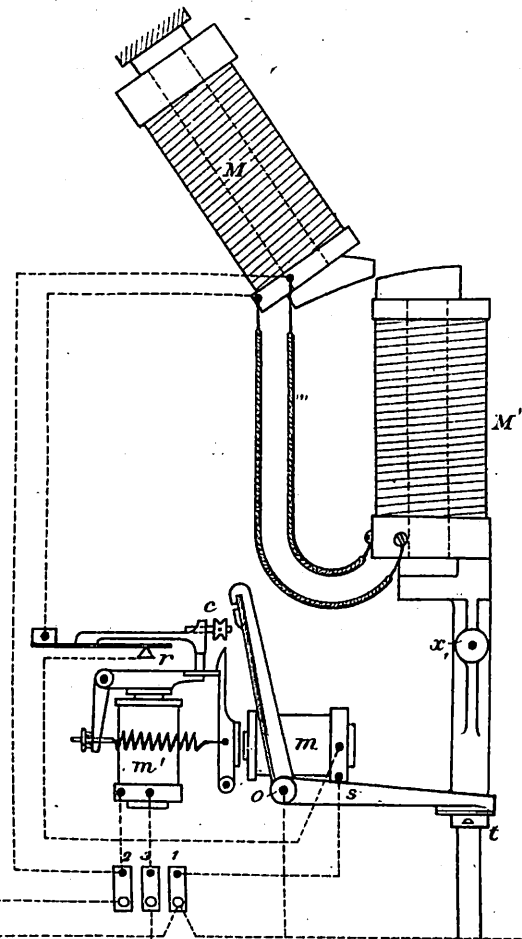
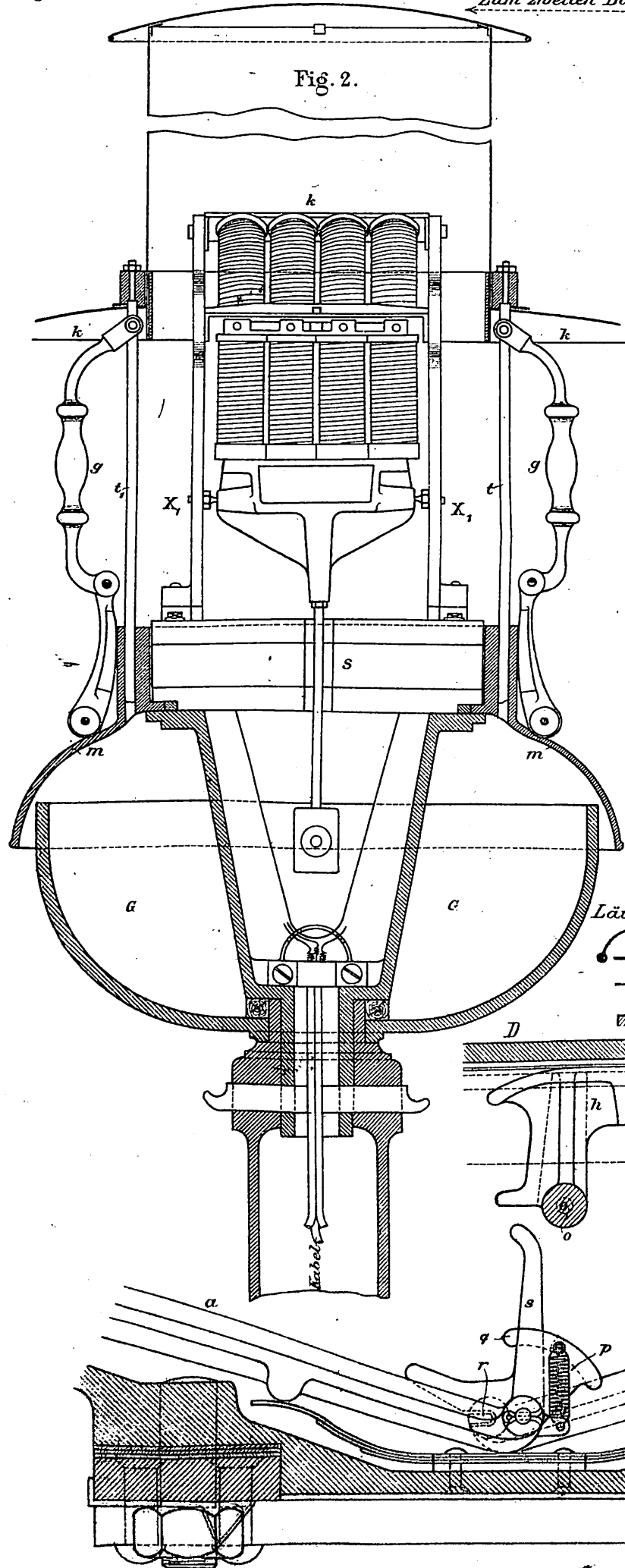


Fig. 1.
Schaltungs-
Übersicht.

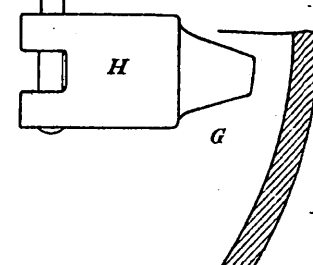
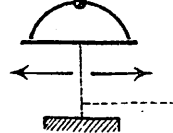


Fig. 4.

Ruhe-Schluss



Läute-Schluss

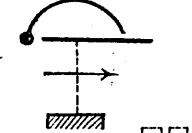
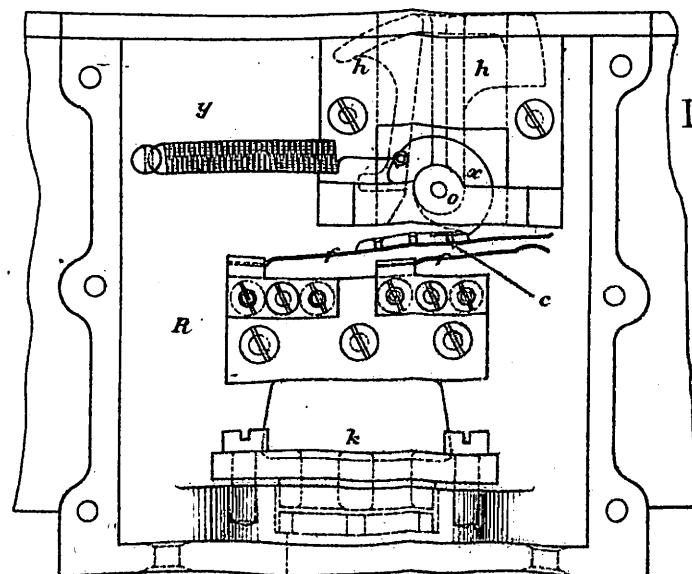


Fig. 3.



Ansicht der Stromschluß-Vorrichtung.

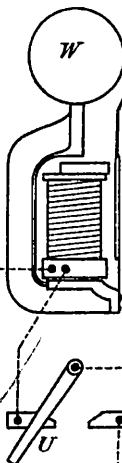


Fig. 11.

Fig. 12.

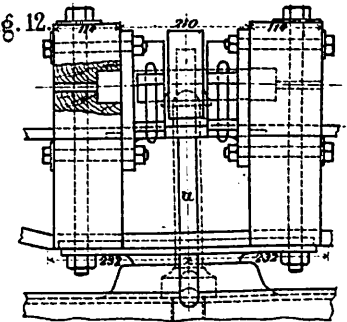


Fig. 9-12.
Wolhaupter's
Bremsdruck-
regler.

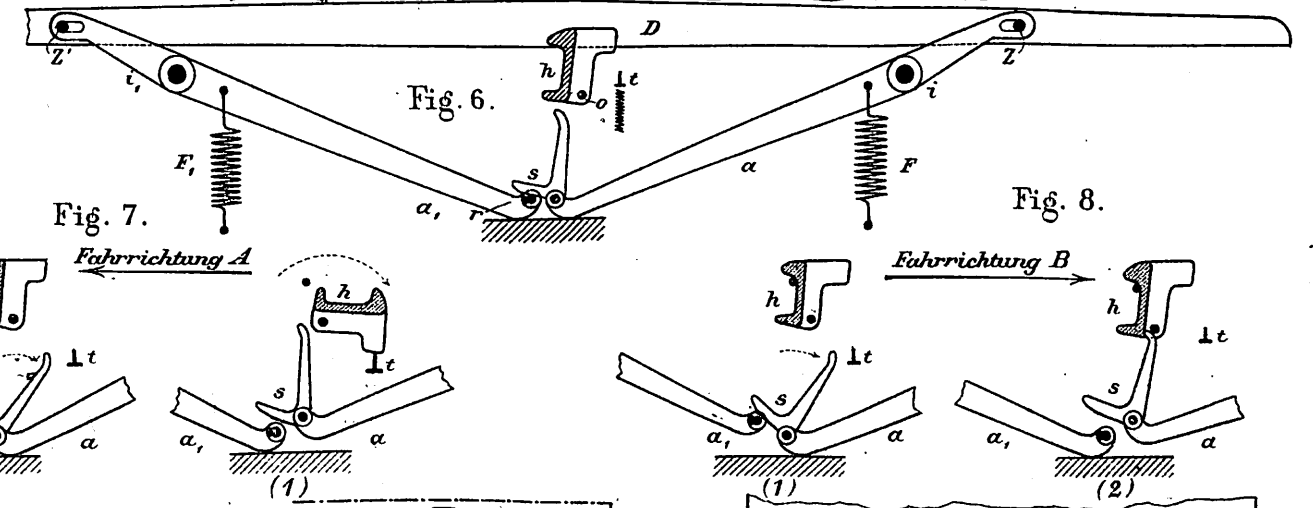
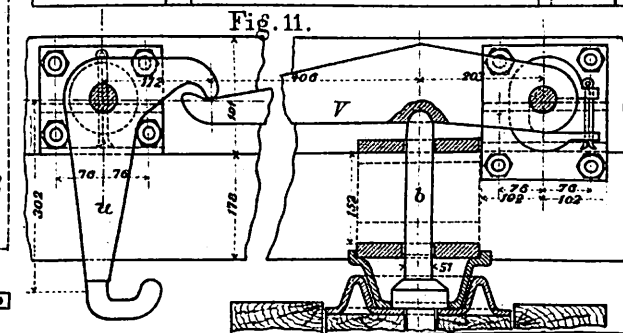
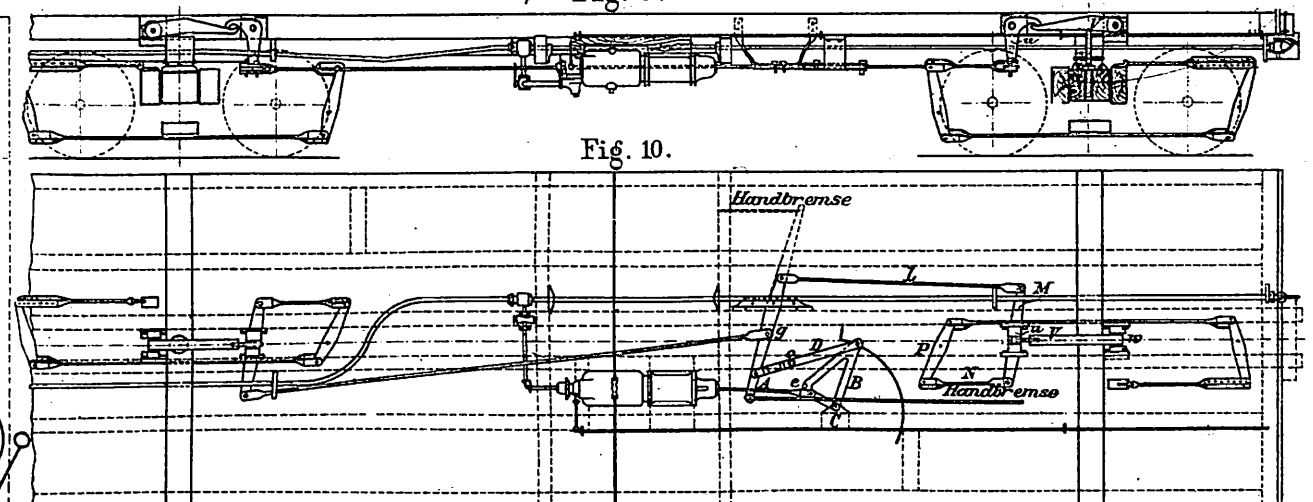
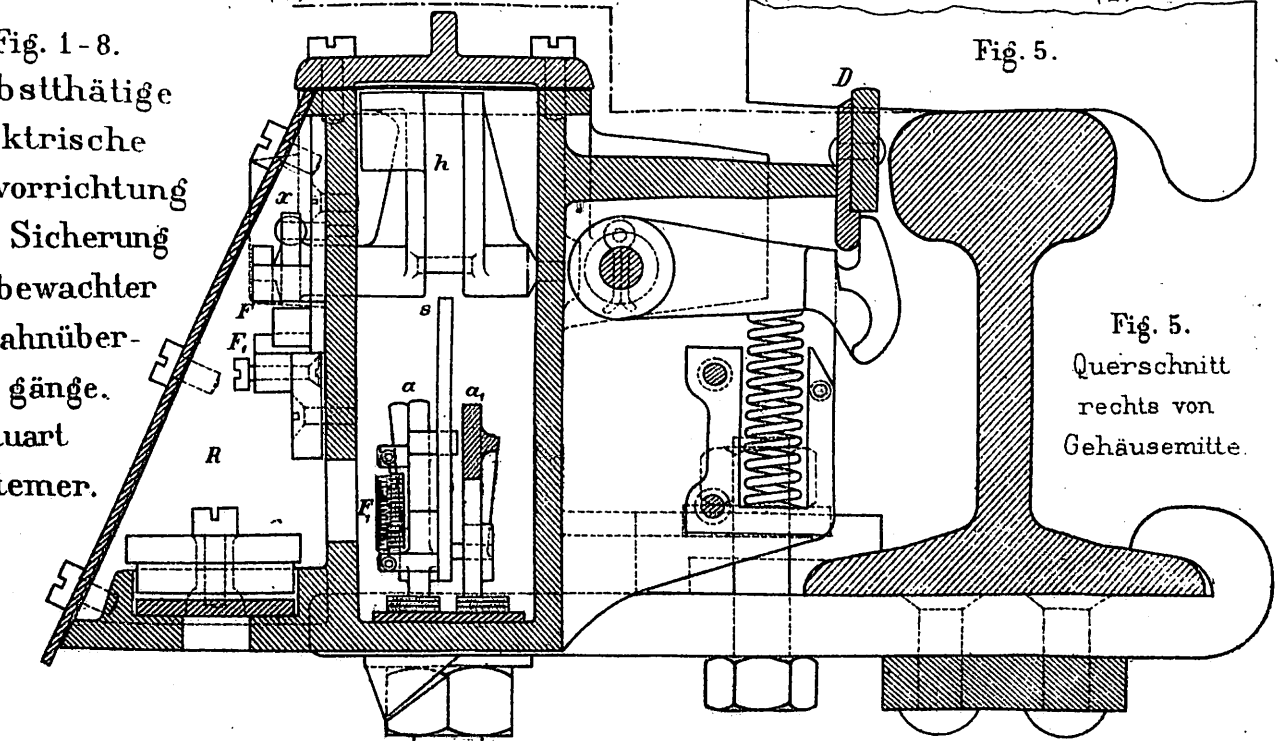
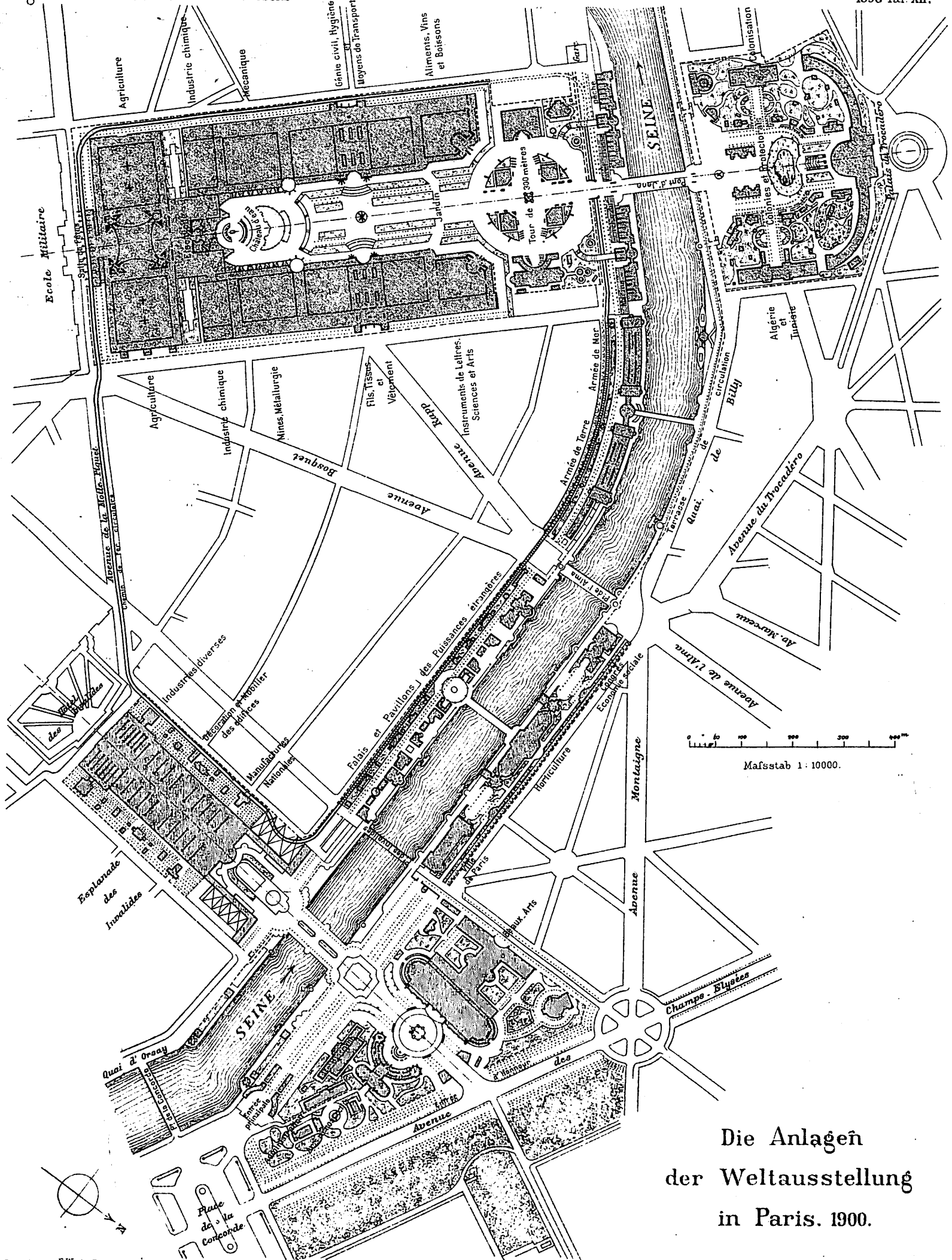


Fig. 1-8.
Selbstthätige
elektrische
Läutevorrichtung
zur Sicherung
unbewachter
Bahnüber-
gänge.
Bauart
Hattermer.

Fig. 5.

Fig. 5.
Querschnitt
rechts von
Gehäusemitte.





Die Anlagen
der Weltausstellung
in Paris. 1900.

Hochdruckcylinder

rechts

Federnabstand: 1 kg. 5 mm.

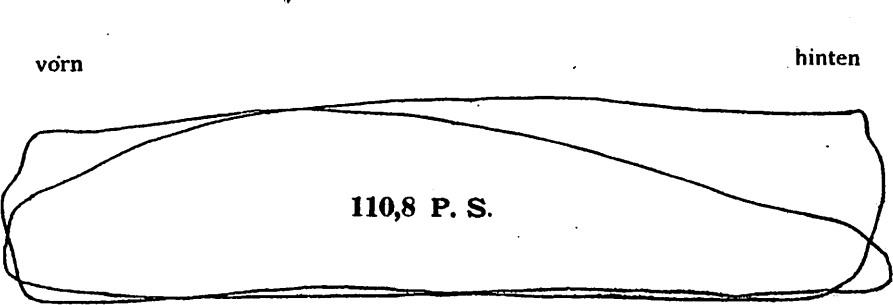
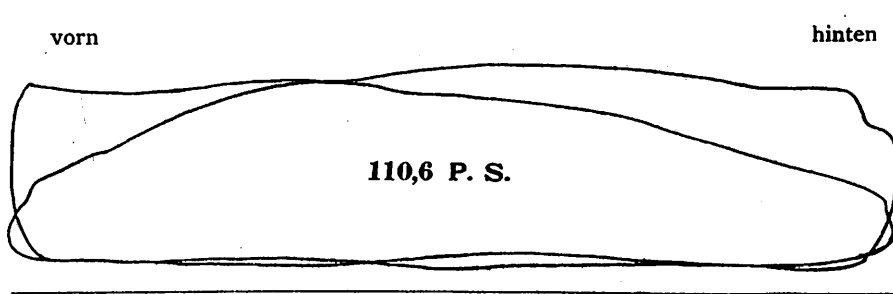
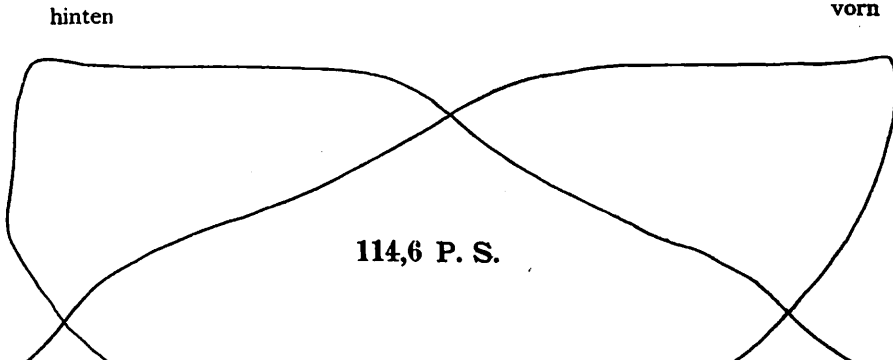
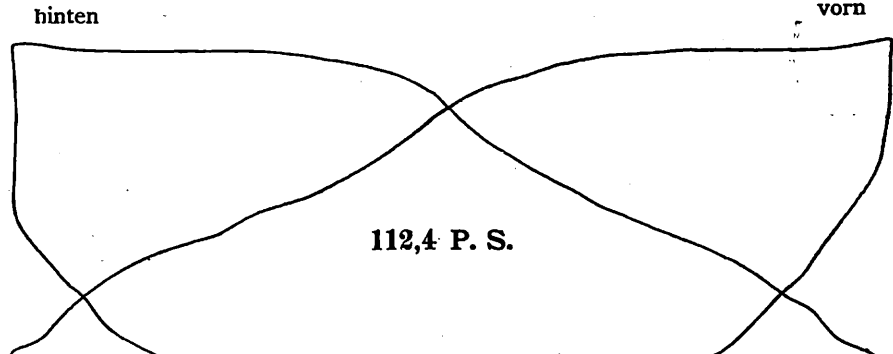
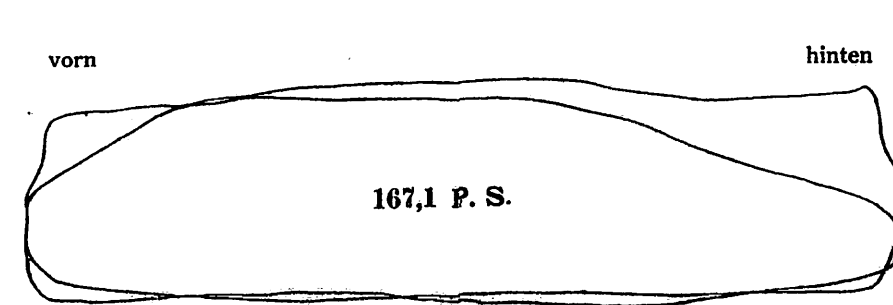
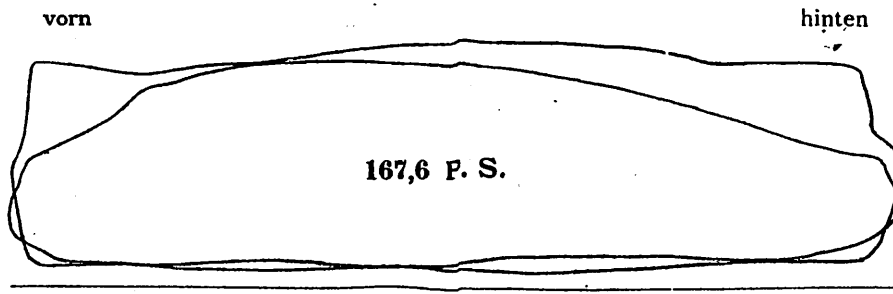
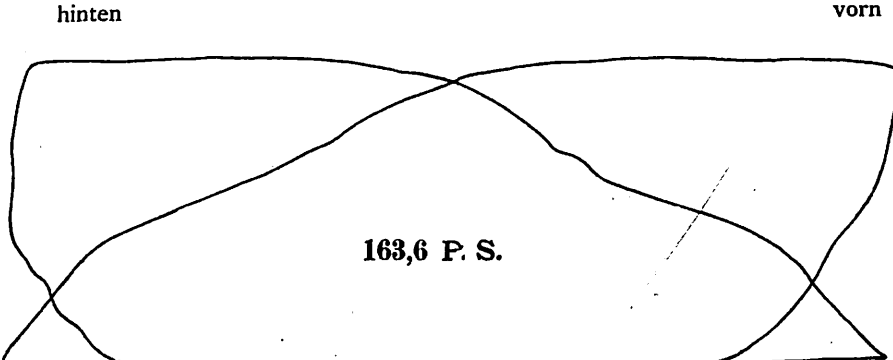
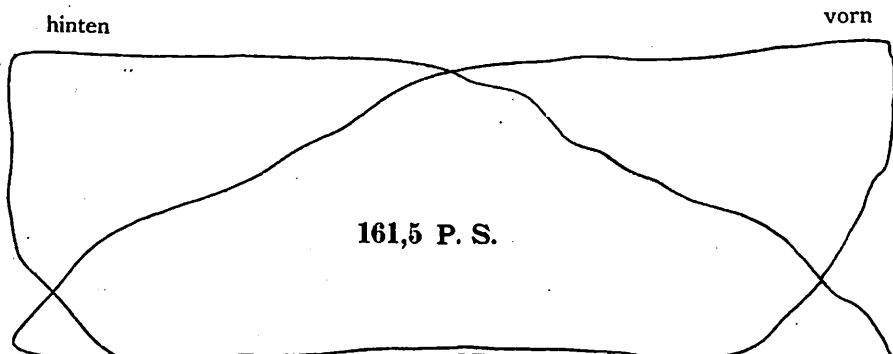
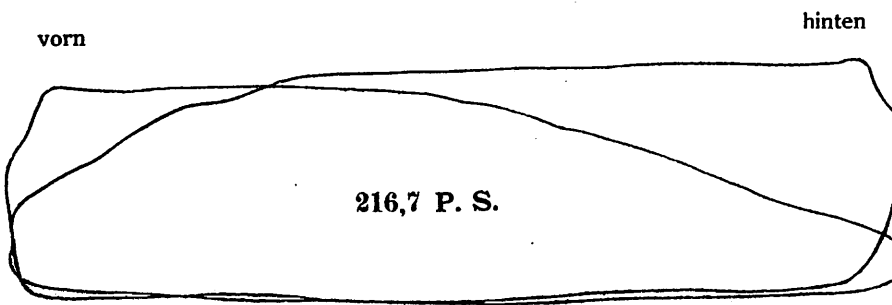
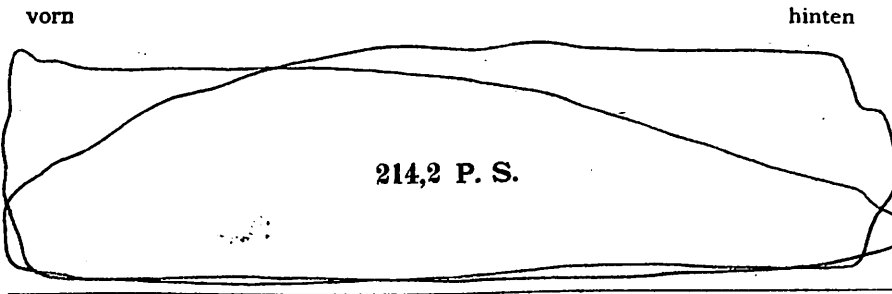
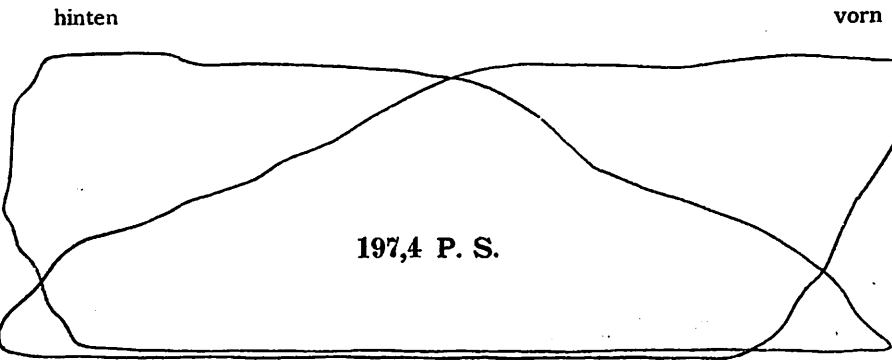
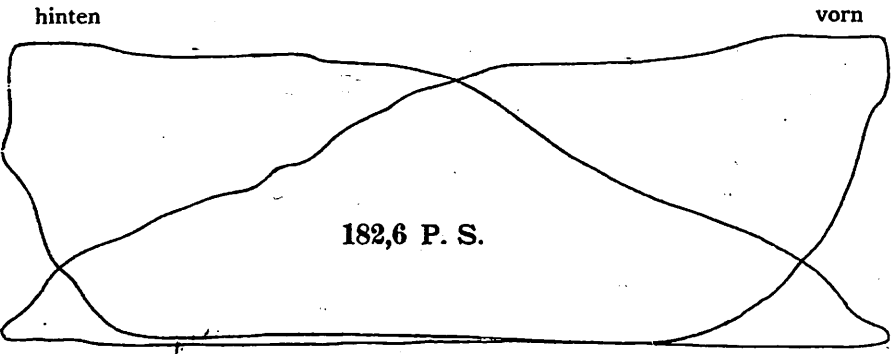
links

Niederdruckcylinder

rechts

Federnabstand: 1 kg. = 10 mm.

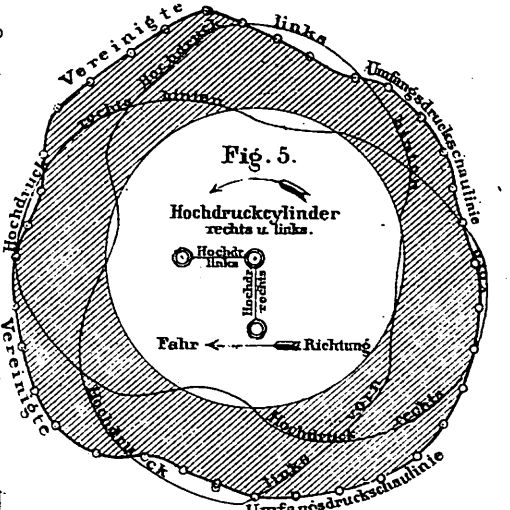
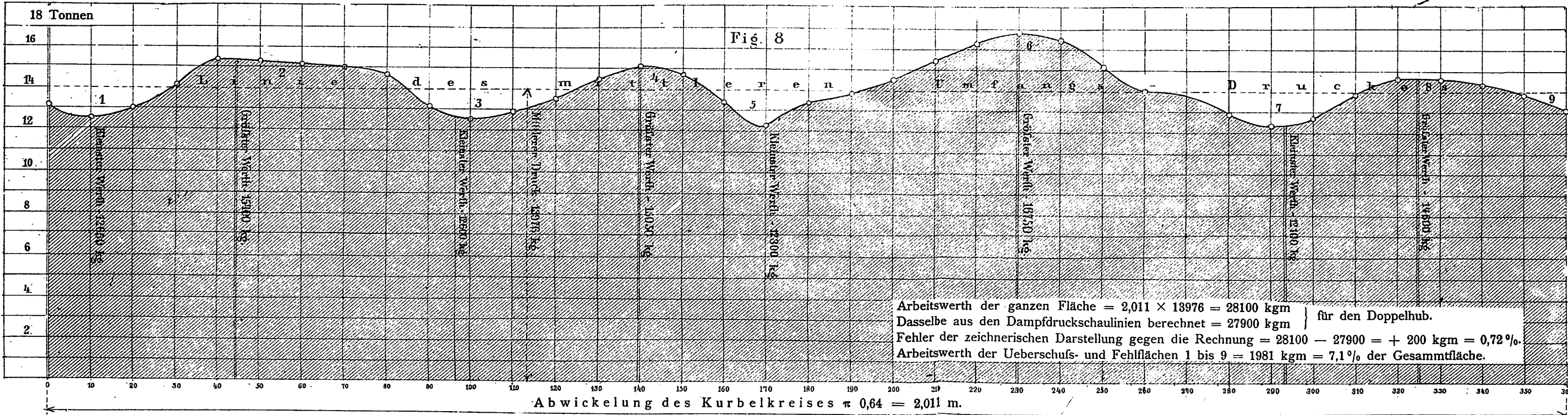
links



Füllungsgrad H/N in %	58/63
Umdrehungen in der Min.	132,2
Geschwindigkeit in Km. in der St.	40
Verhältnis der Arbeiten $\frac{\text{Hochdruck}}{\text{Niederdruck}}$	0,88

60/70
103,5
31,8
0,97

55/65
73,7
23,8
1,03



Für Fig. 5 bis 7 Maassstab 1 mm = 600 kg.

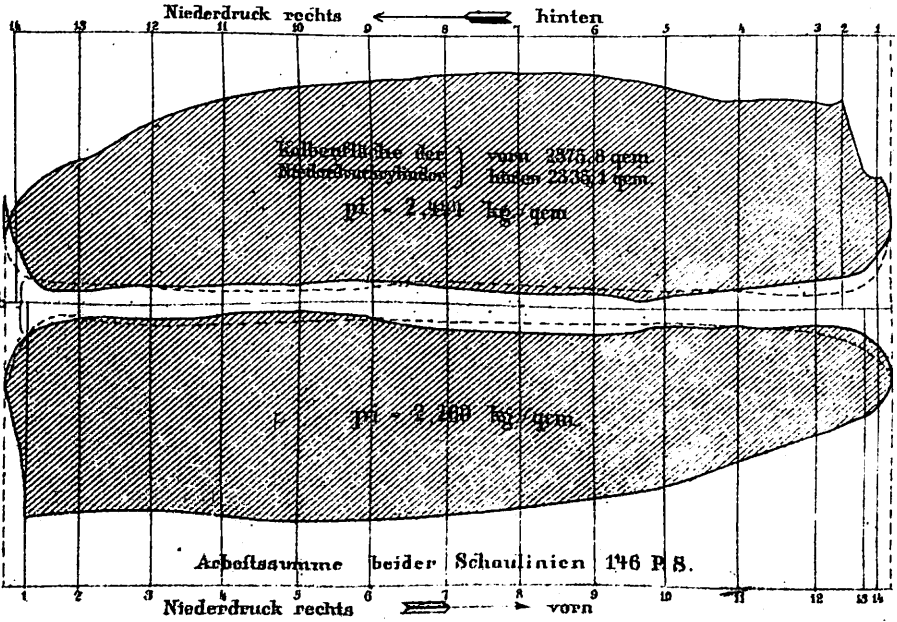
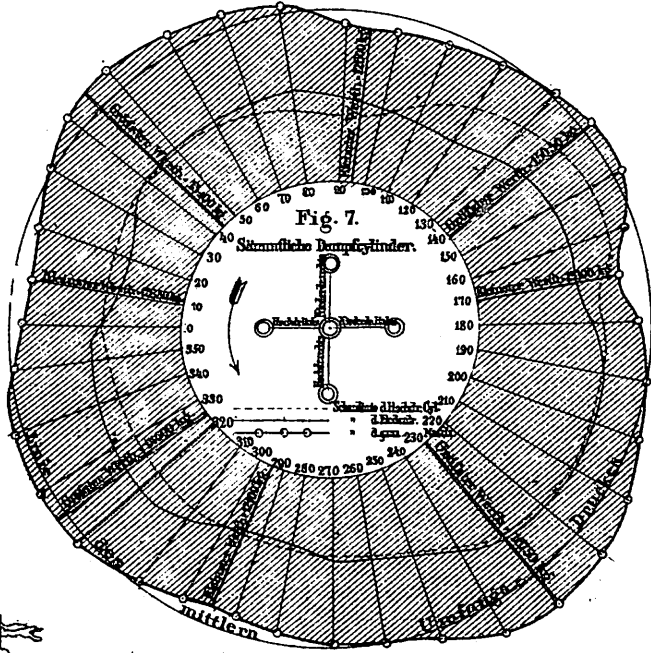
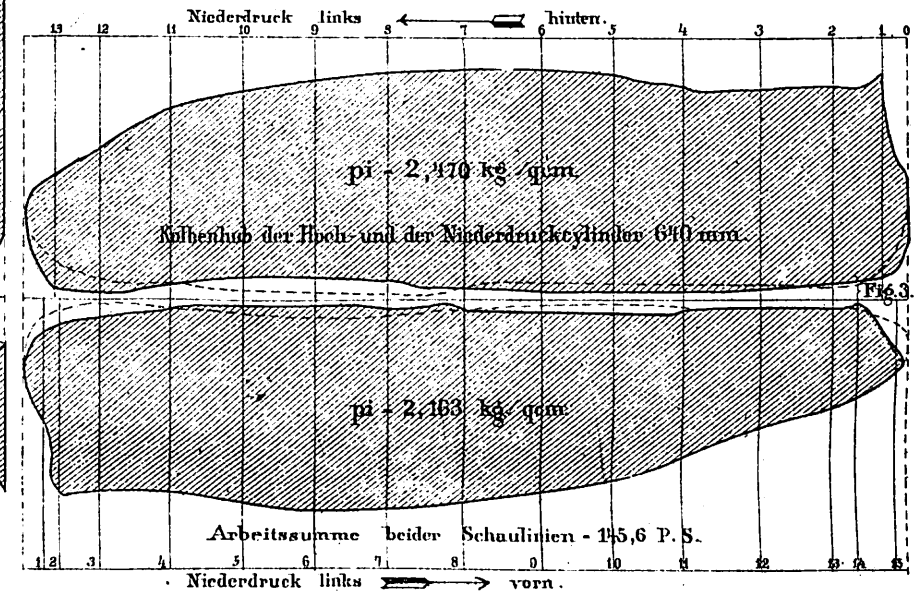
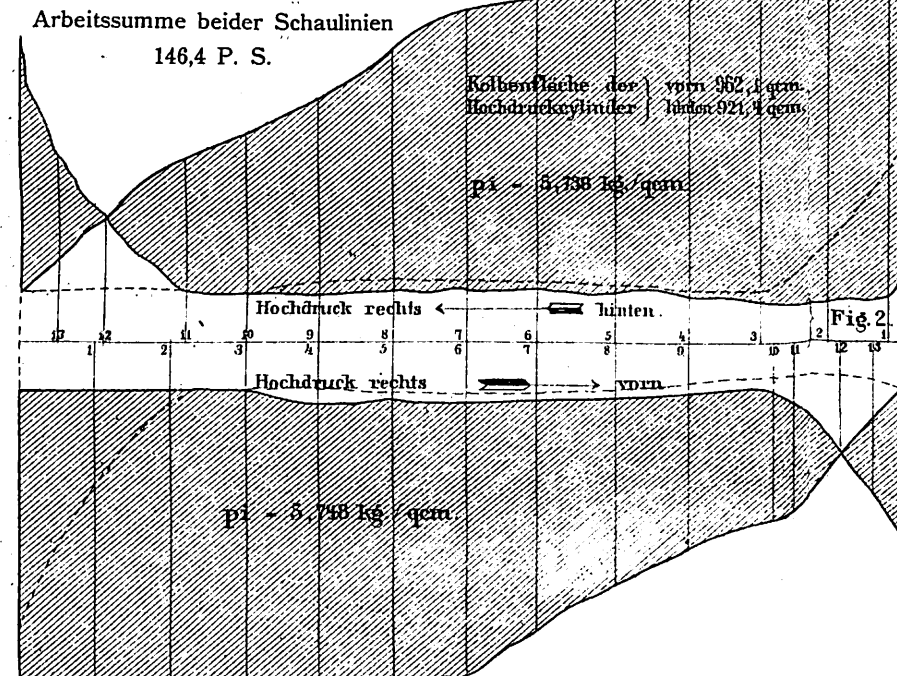
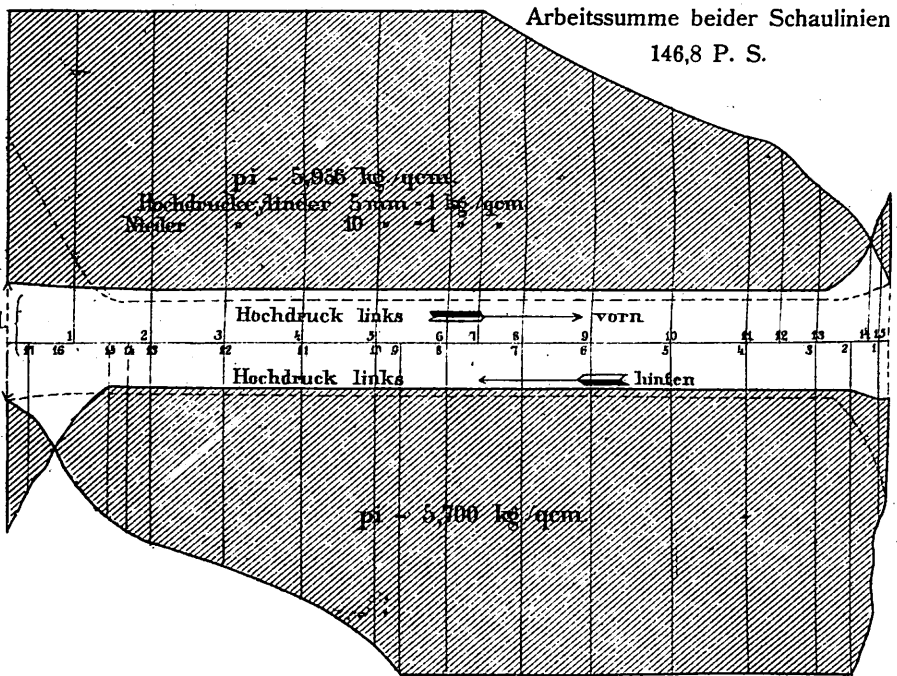
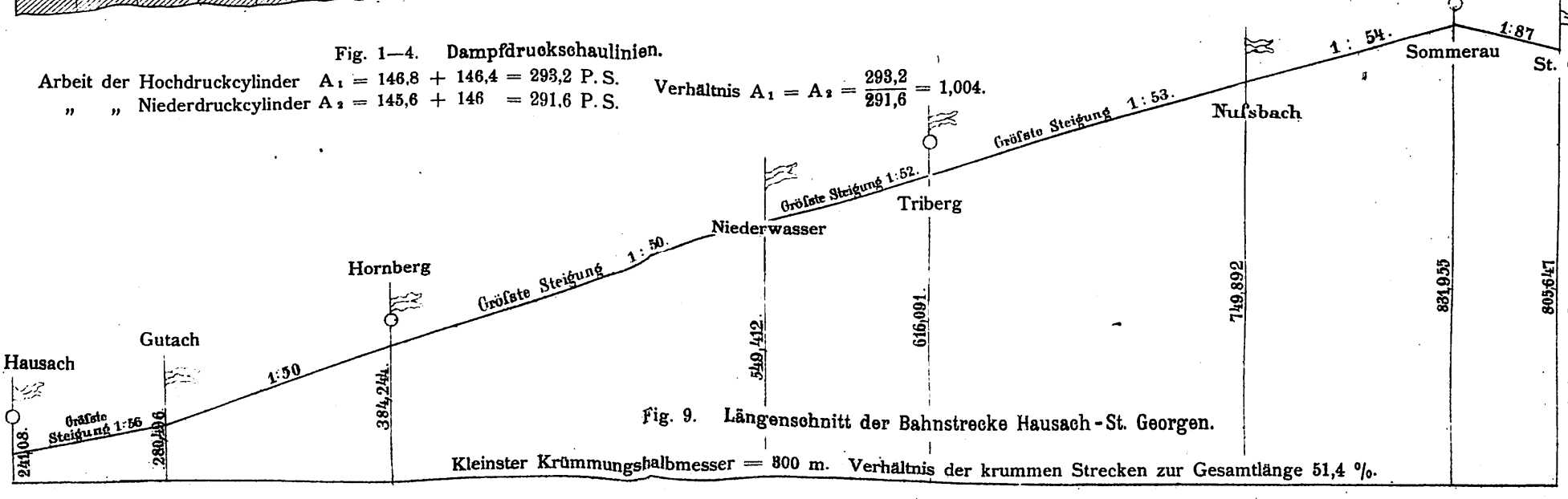


Fig. 1—4. Dampfdruckschaulinien.
Arbeit der Hochdruckcylinder $A_1 = 146,8 + 146,4 = 293,2 \text{ P. S.}$
" " Niederdruckcylinder $A_2 = 145,6 + 146 = 291,6 \text{ P. S.}$

Verhältnis $A_1 = A_2 = \frac{293,2}{291,6} = 1,004.$



Kleinsten Krümmungshalbmesser = 800 m. Verhältnis der krummen Strecken zur Gesamtlänge 51,4 %.

