

VOIE
MATÉRIEL ROULANT

ET
EXPLOITATION TECHNIQUE

DES
CHEMINS DE FER

OUVRAGE SUIVI D'UN APPENDICE SUR LES **TRAVAUX D'ART**

PAR

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TOME PREMIER.

ATLAS

PARIS

DUNOD, ÉDITEUR,

Précédemment Carilian-Gœury et V^o Dalmont,

LIBRAIRE DES CORPS IMPÉRIAUX DES PONTS ET CHAUSSÉES ET DES MINES,

QUAI DES AUGUSTINS, N° 49.

1868

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DU

TOME PREMIER

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— 2 —

VOIE. (Suite.)

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Fig. 1. Elevation.

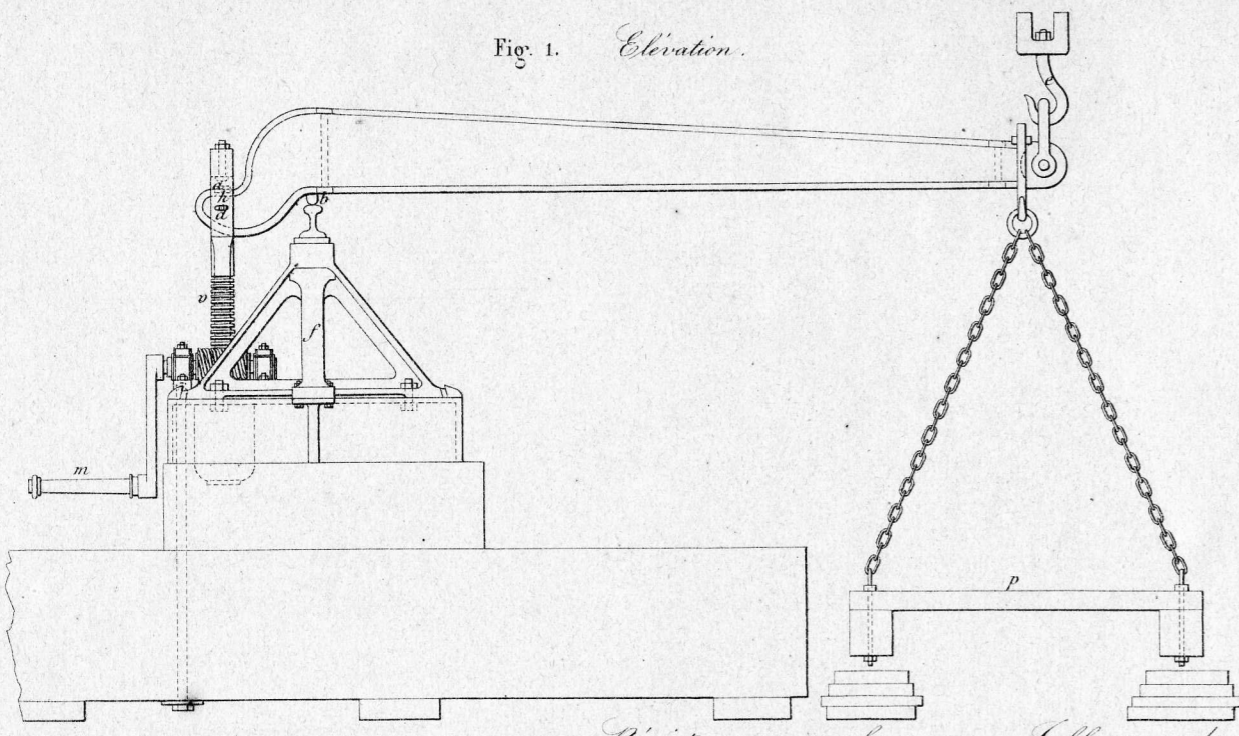
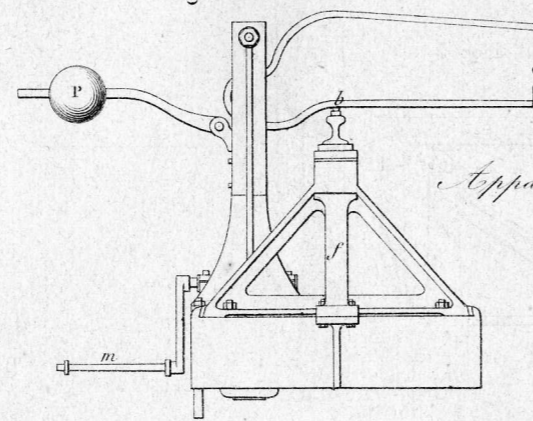


Fig. 2.



Apparil modifié.

Fig. 3.

Vue de face.

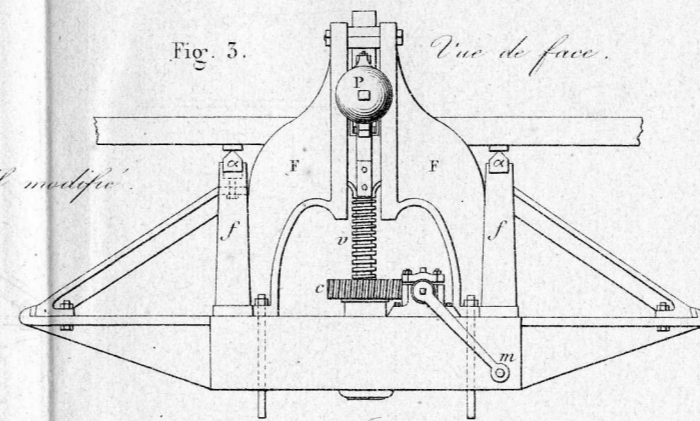
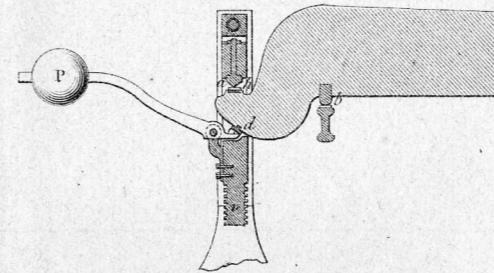


Fig. 4. Coupe



Presse à percer les rails. (Fig. 8. à 12.) Lyon à la Méditerranée.

Fig. 8.

Coupe avant le perçement.

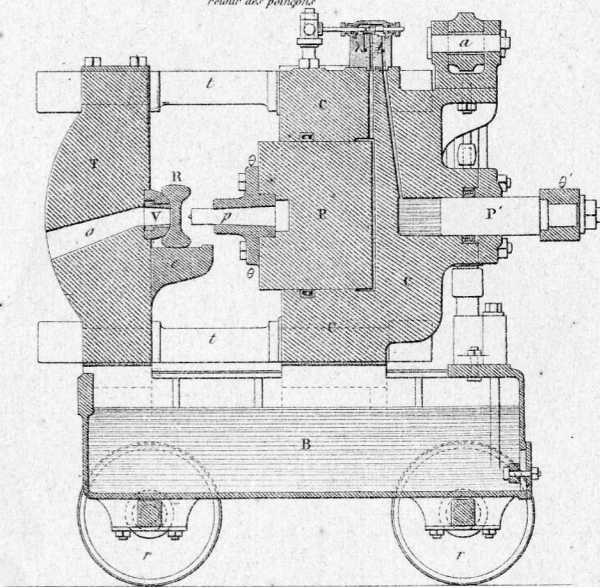
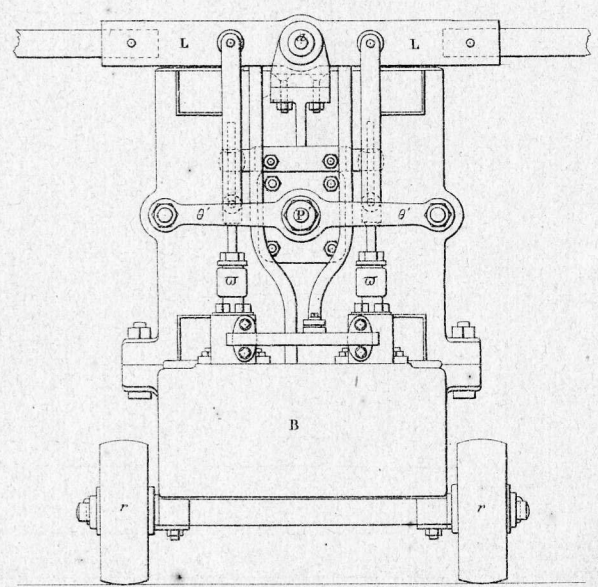


Fig. 12.

amancement des poinçons

Fig. 9.

Vue de bout.



Résistance au choc — Influence de la température.

Fig. 7. 2^e Série

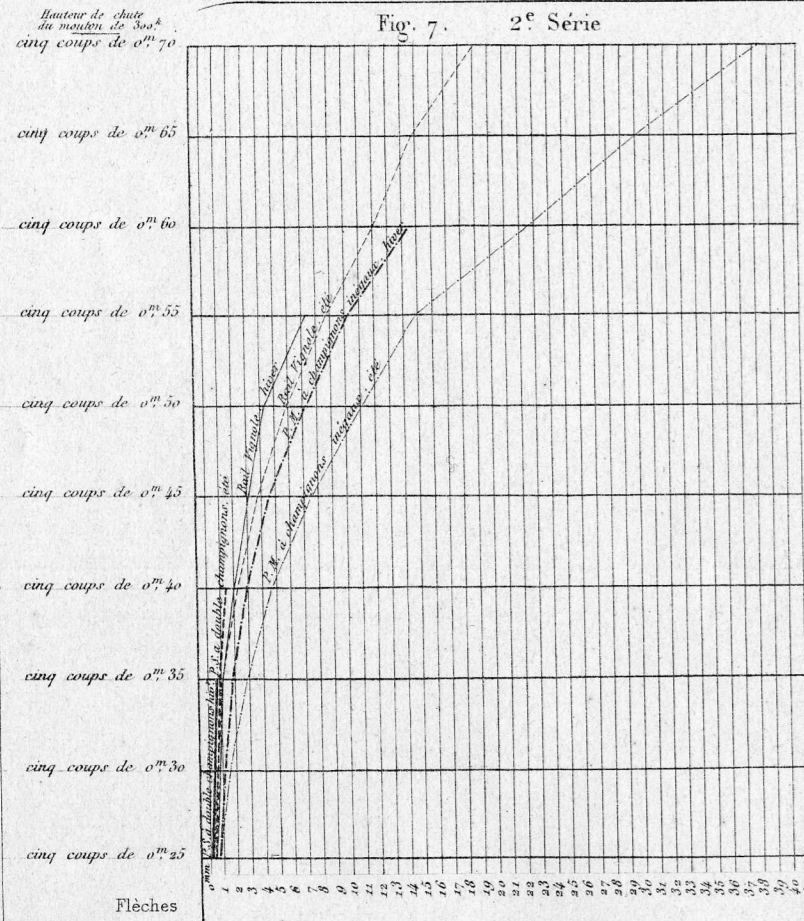


Fig. 6. 1^{ère} Série

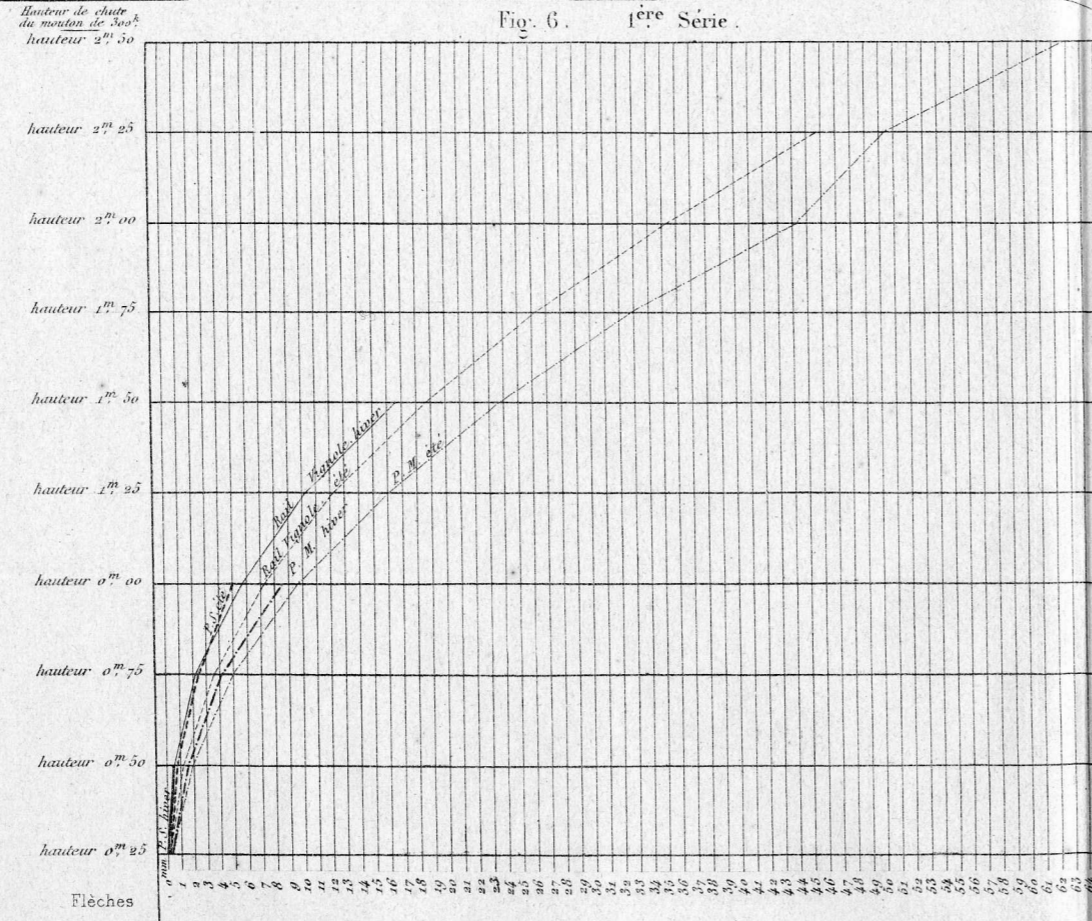
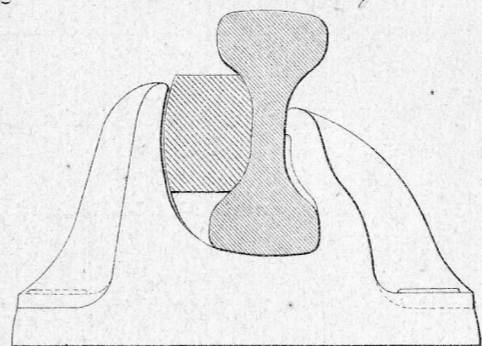


Fig. 5. Coussinet de l'Ouest français.



Presse portative pour percer les rails. (Fig. 13 et 14.) Lyon à la Méditerranée.

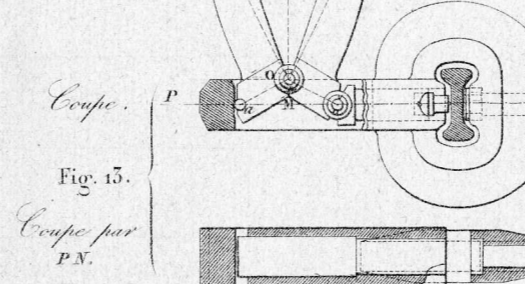


Fig. 10. Plan.

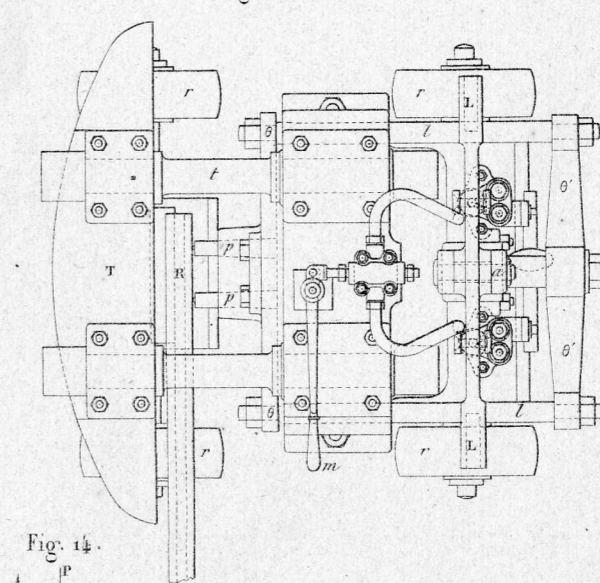


Fig. 11. Coupe après le perçement.

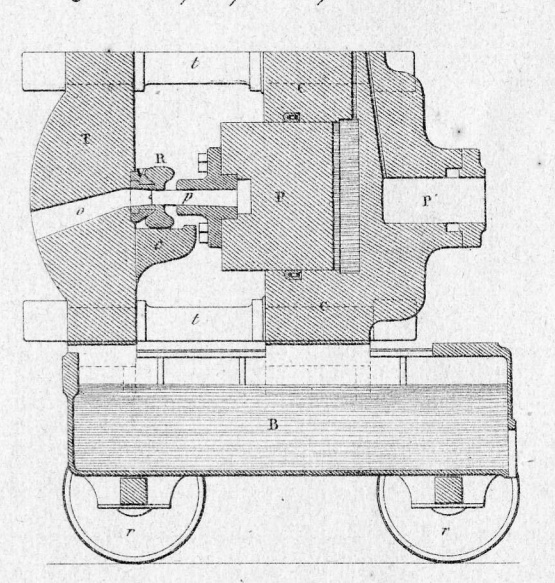
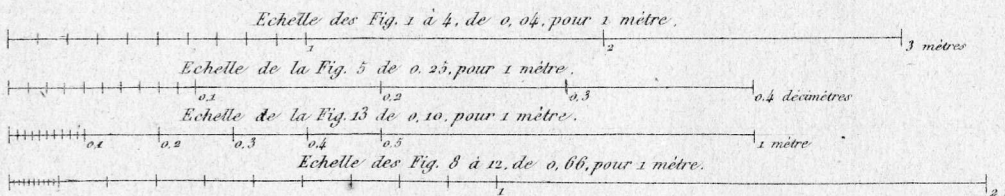
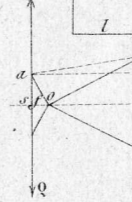


Fig. 14.



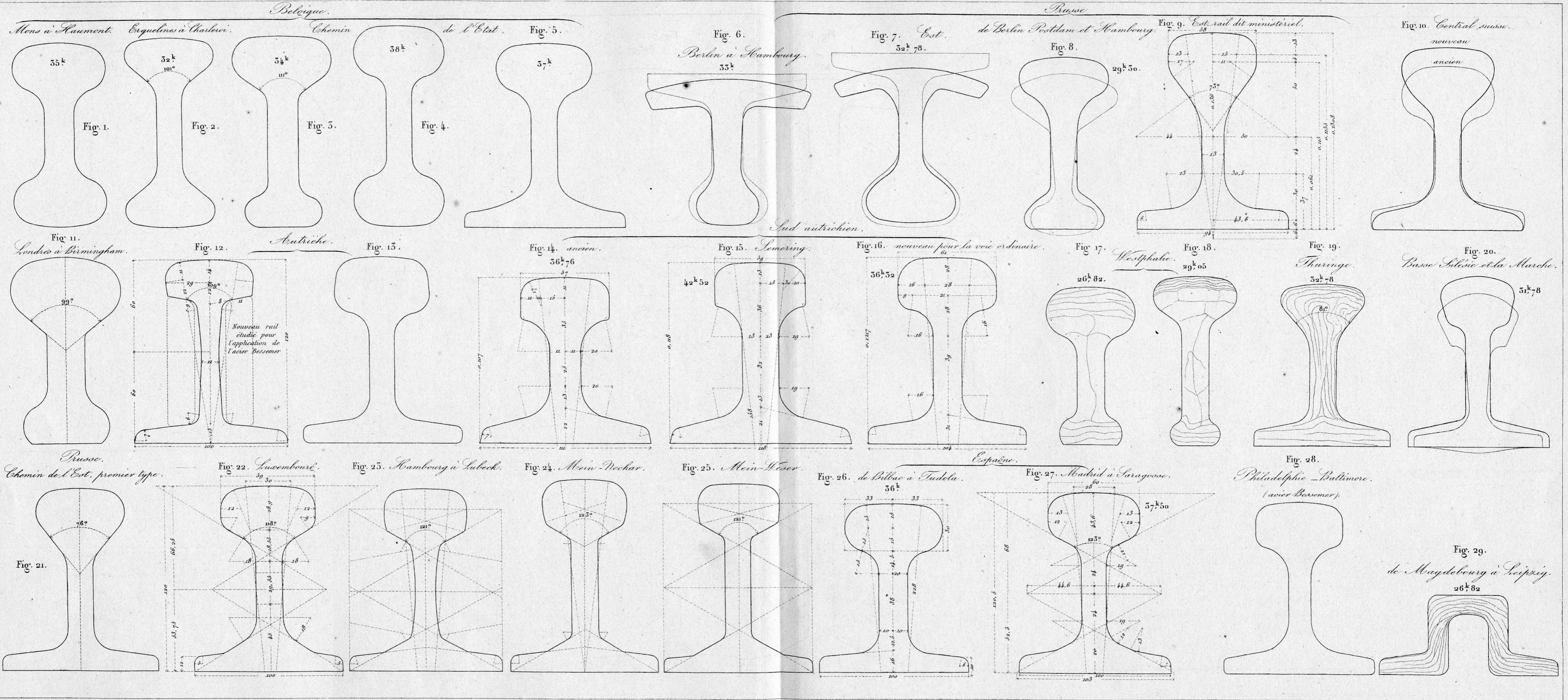
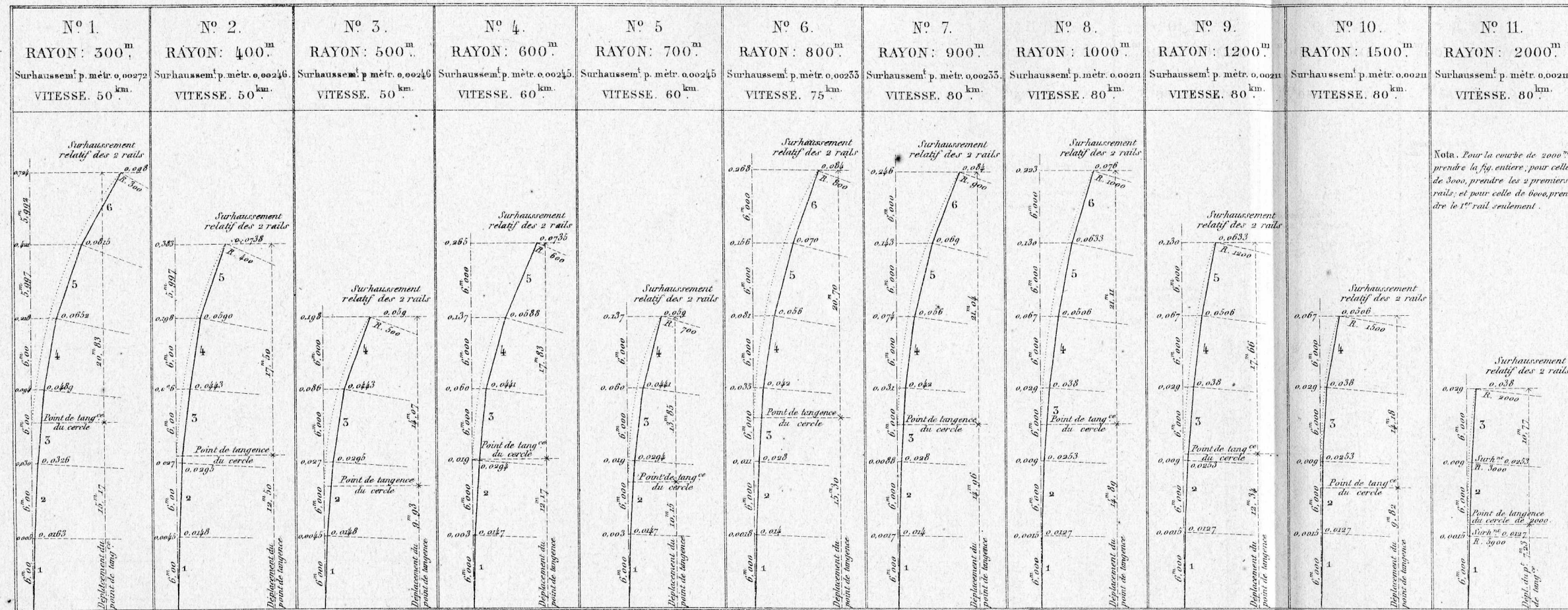
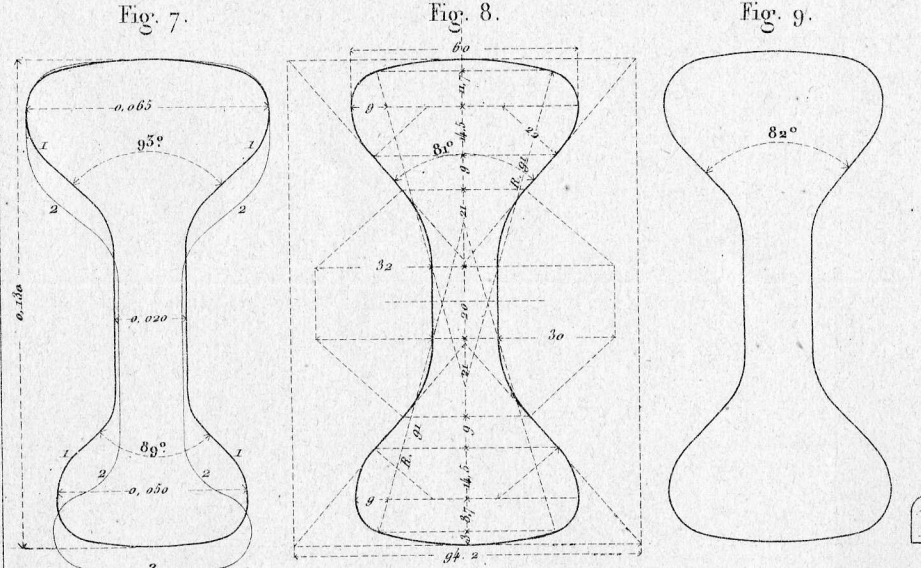


Fig. 1.

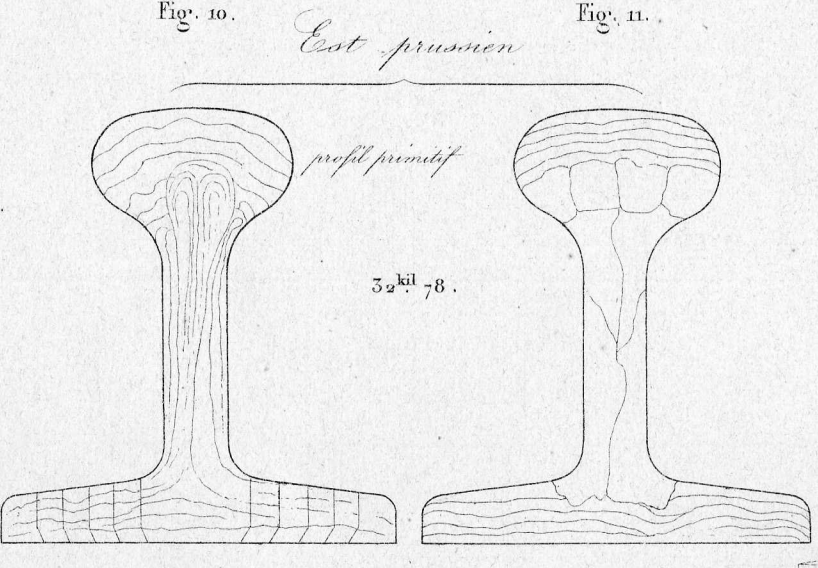


Nota. Pour la courbe de 2000^m prendre la fig. entière, pour celle de 3000, prendre les 2 premiers rails, et pour celle de 4000, prendre le 1^{er} rail seulement.

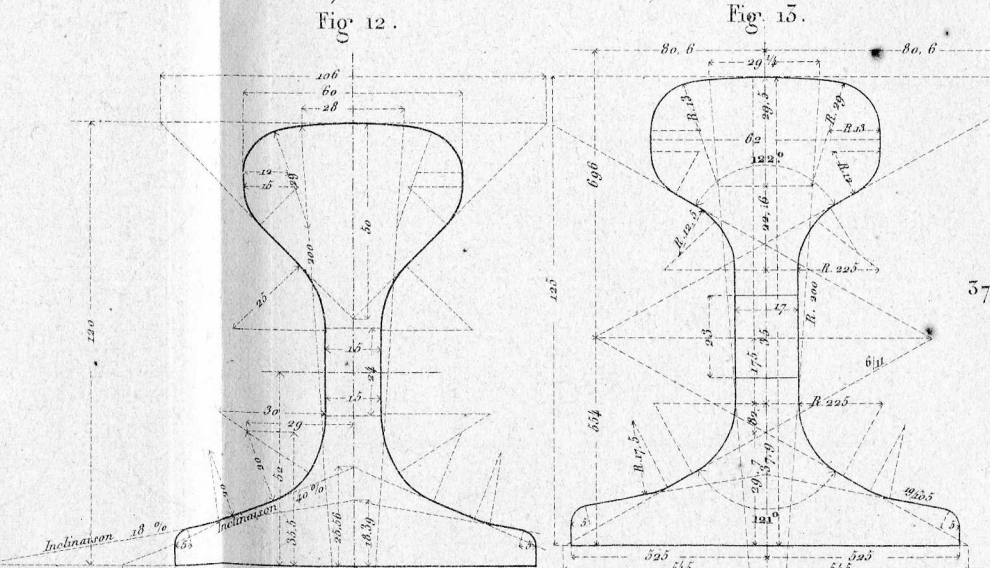
1. Paris à Mulhouse. Bourbonnais de Nevers à Roanne. prolongem^t d'Orléans.



2. Rail de la rampe de Grovi.

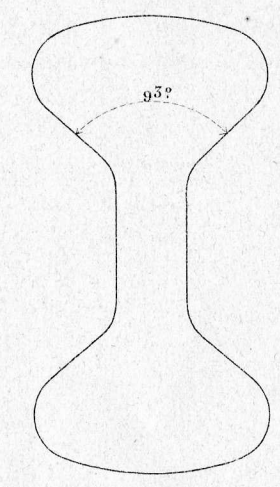


Est français.

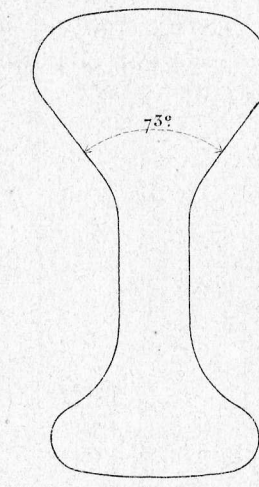


Echelle de 0^m 50 pour 1 mètr. pour les Fig. 2 à 18.

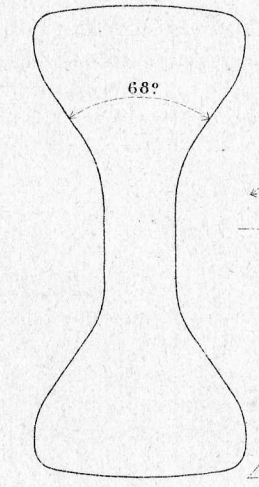
Chemin de ceinture Fig. 2.



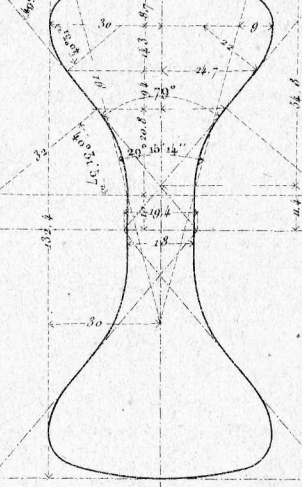
Méditerranée Rhône et Loire Fig. 3.



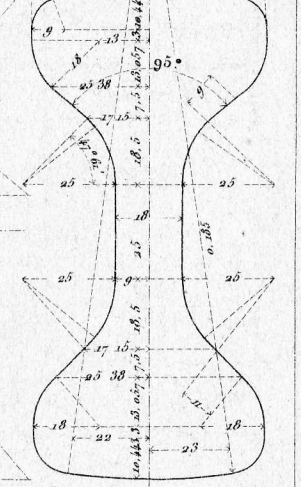
Paris à Strasbourg Fig. 4.



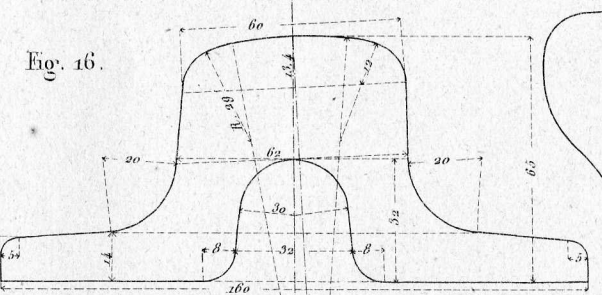
Paris à Lyon Fig. 5.



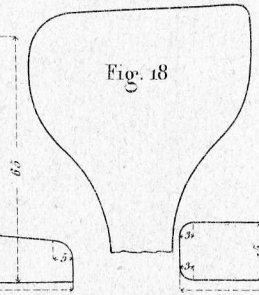
Ouest Fig. 6.



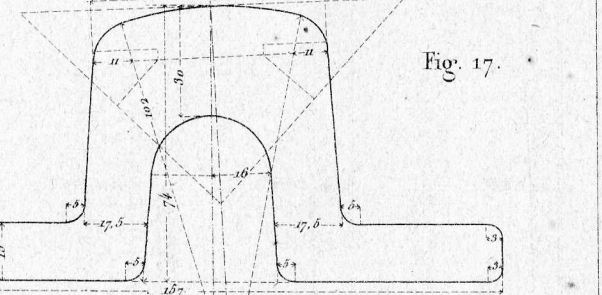
Paris à Lyon.



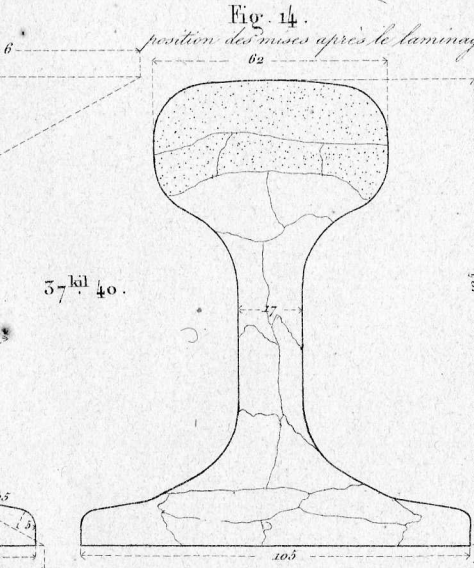
Rail proposé par M. Ducloux.



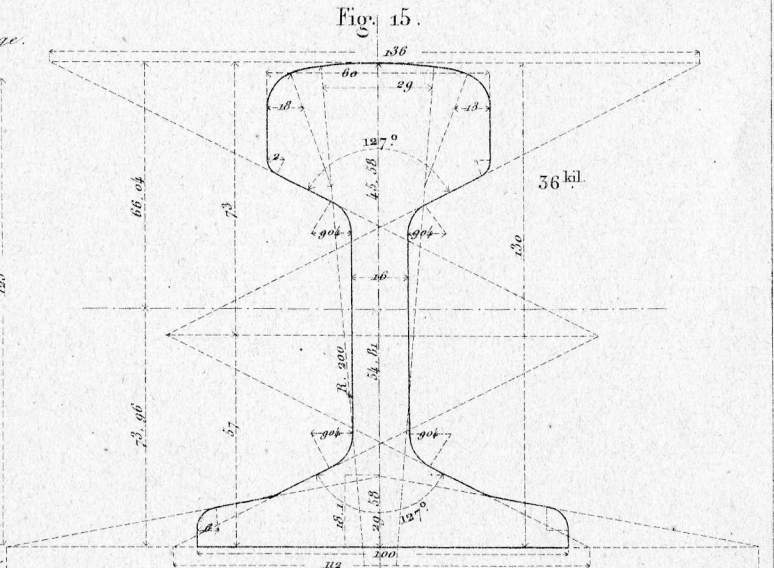
Est-Ardennes.



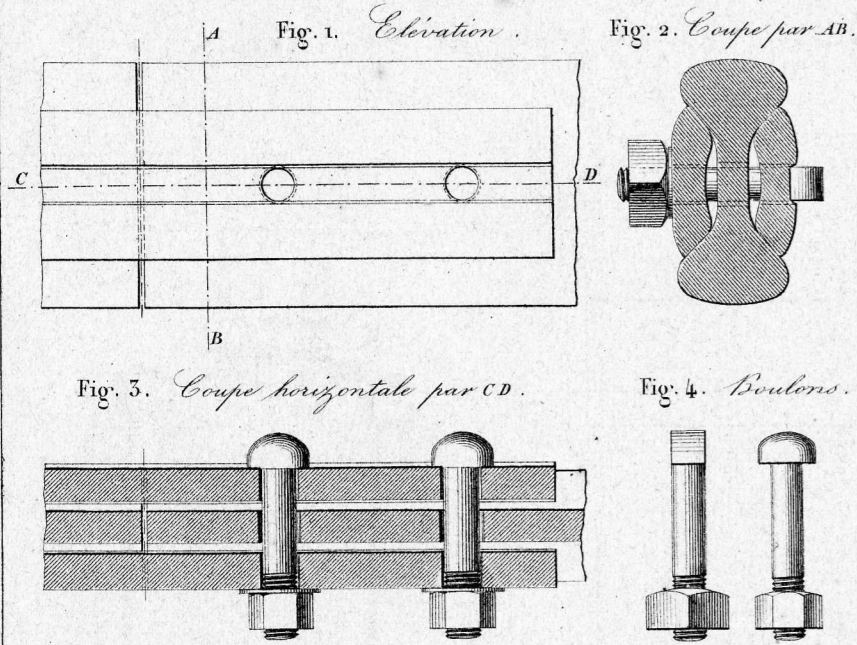
Nord



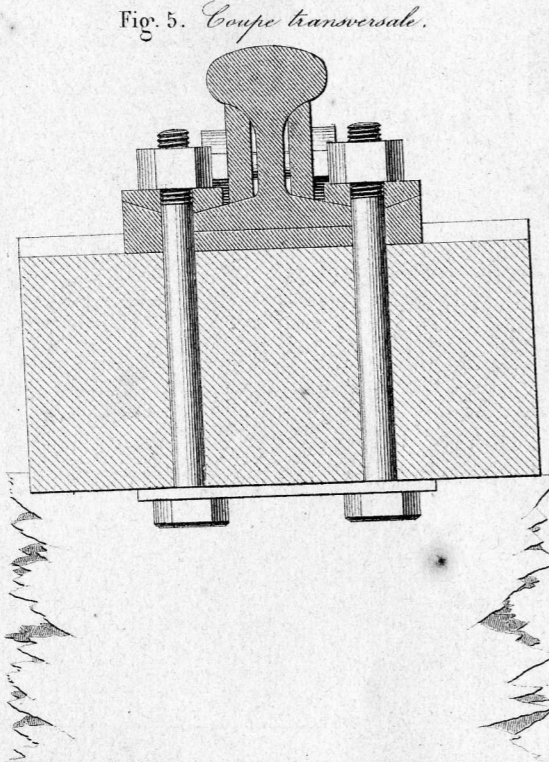
Bourbonnais de Muret à Nevers.



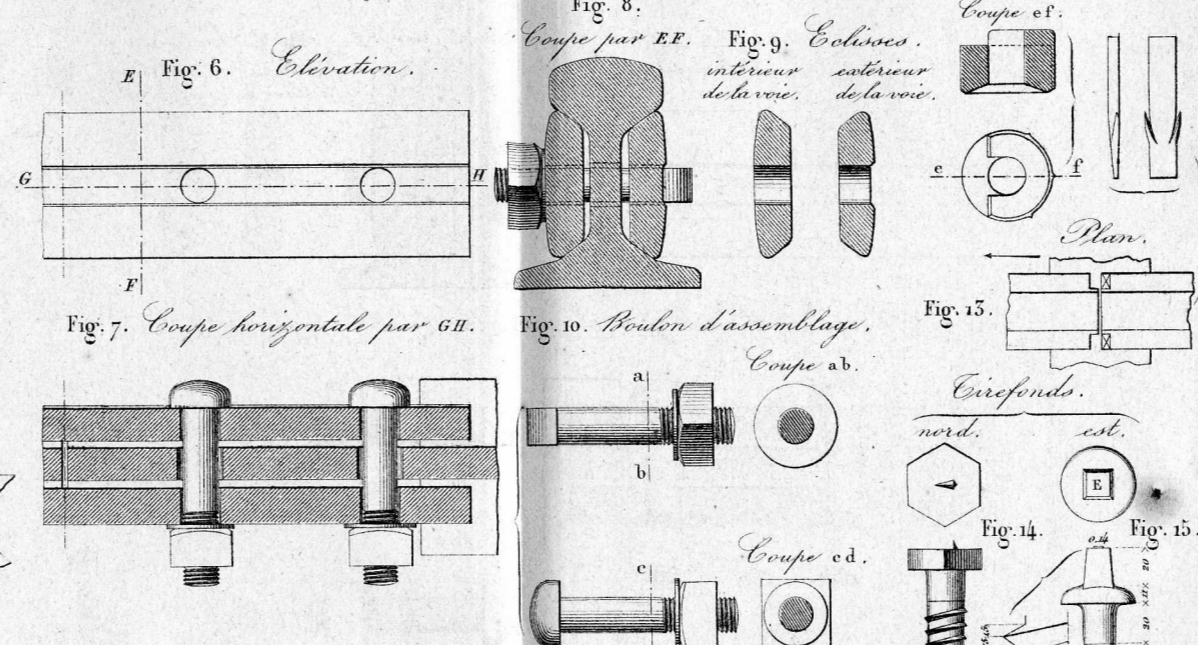
Bourbonnais, section de Nevers à Roanne. (Fig. 1 à 4).



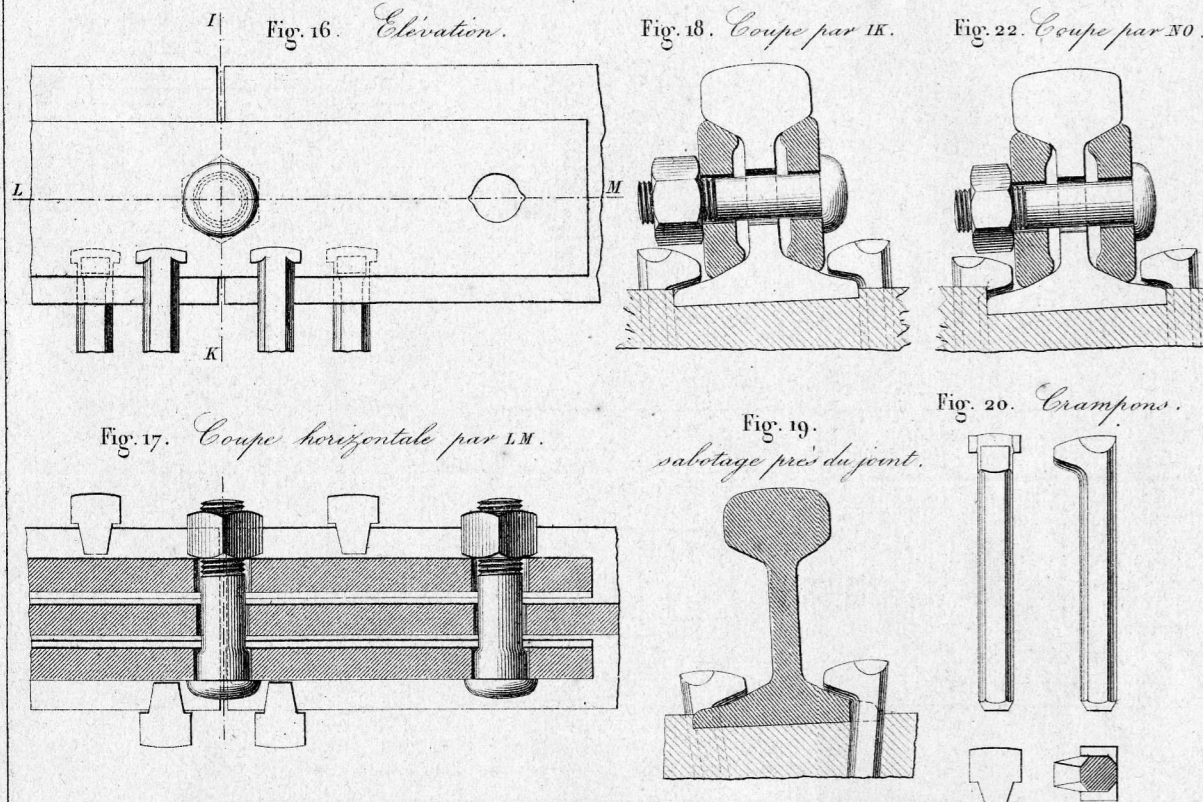
Ancienne voie sur longrines de Grenoble à St. Rambert.



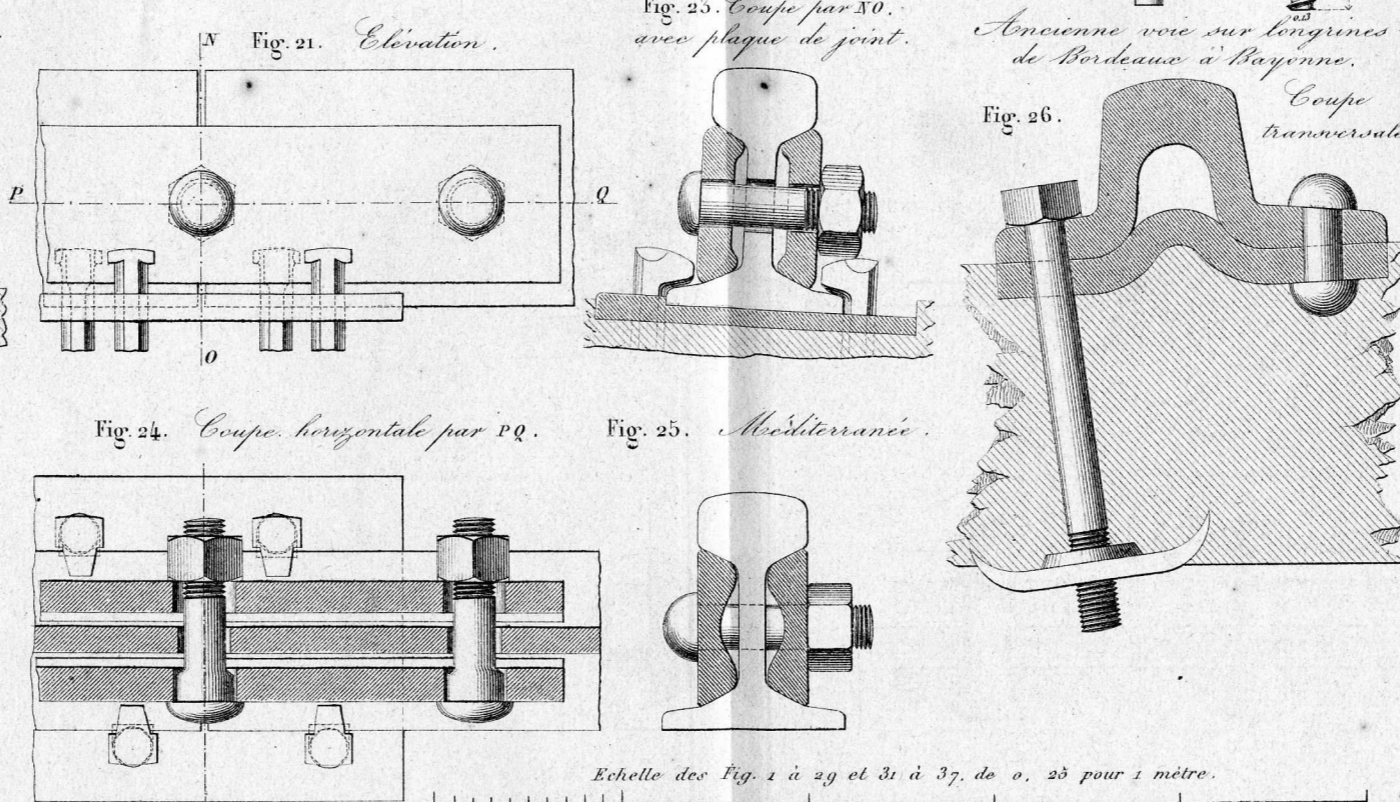
Chemin de fer du Nord. (Fig. 6 à 14)



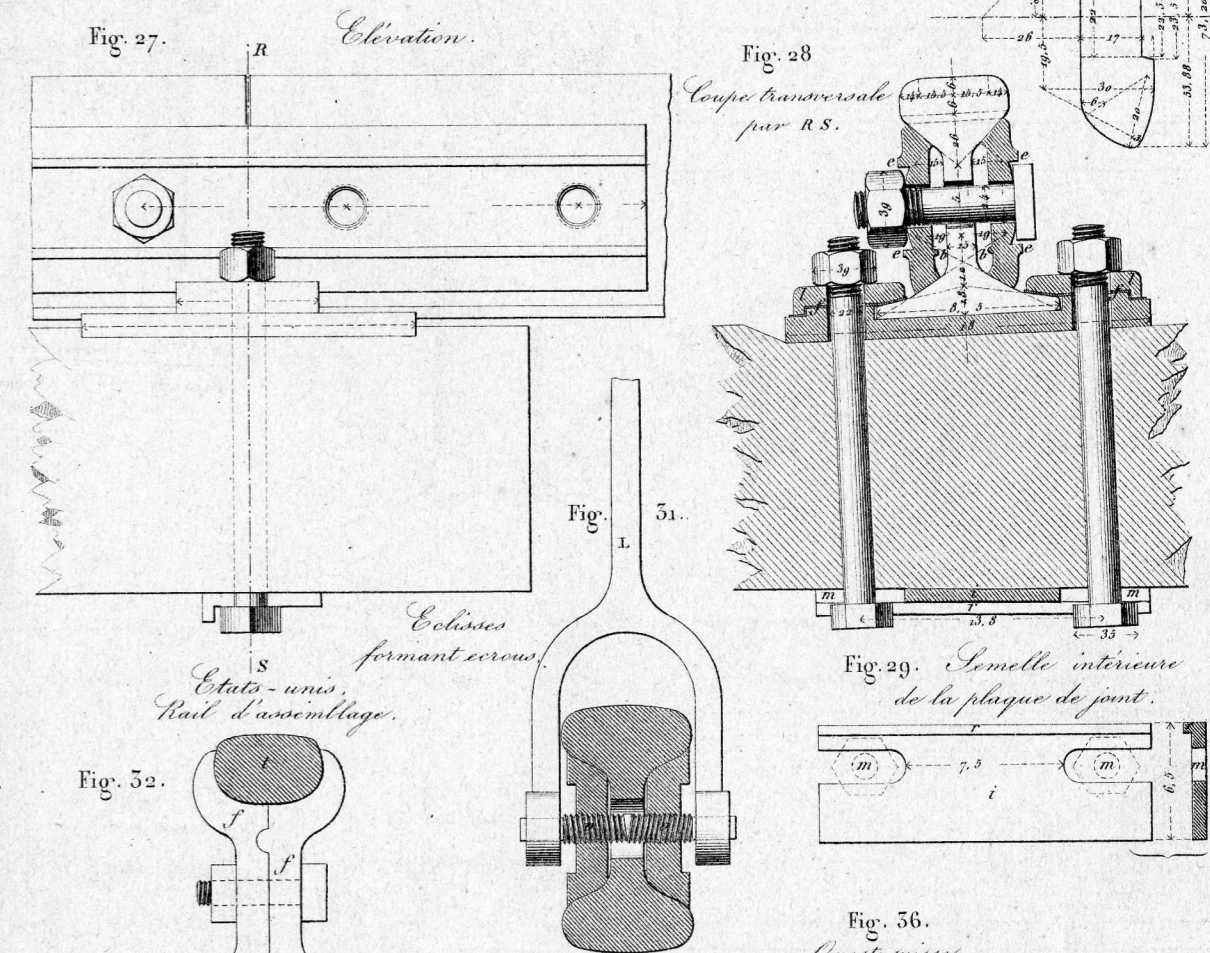
Bourbonnais, section de Moret à Nevers. (Fig. 16 à 20).
Eclissage à 3 boulons sans plaque de joint.



Chemin de fer de Paris à Lyon, et à la Méditerranée. (Fig. 21 à 25).

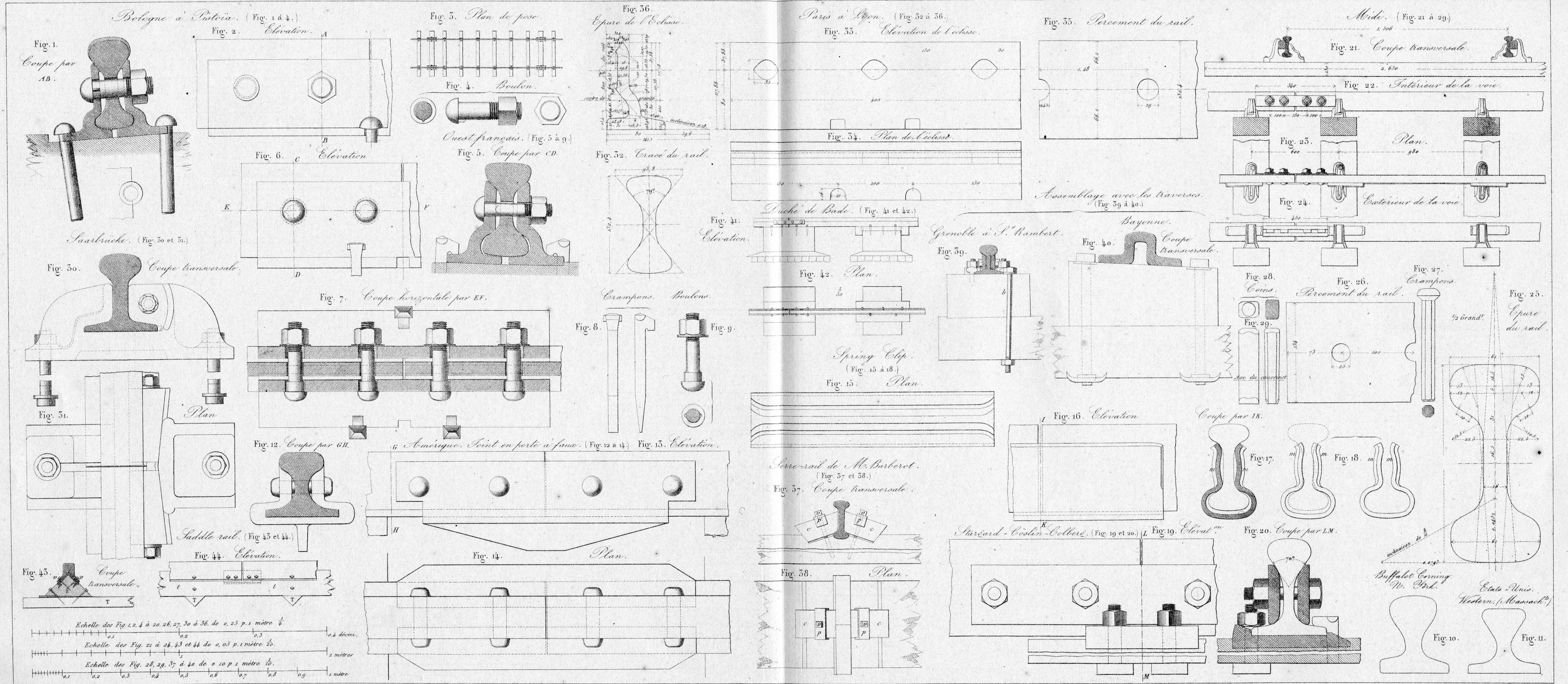


Chemin de Montagne. Gebirgs Bahn de Silesie. (Fig. 27 à 29).

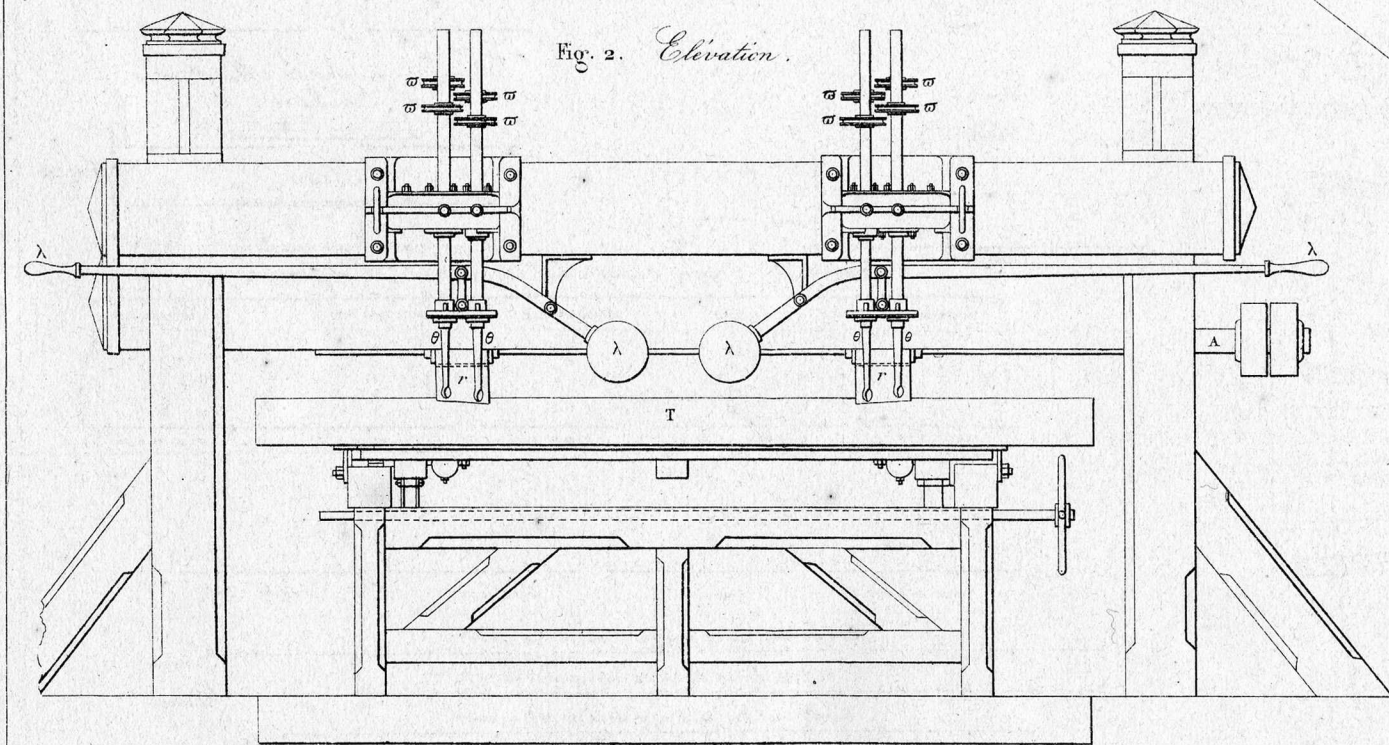
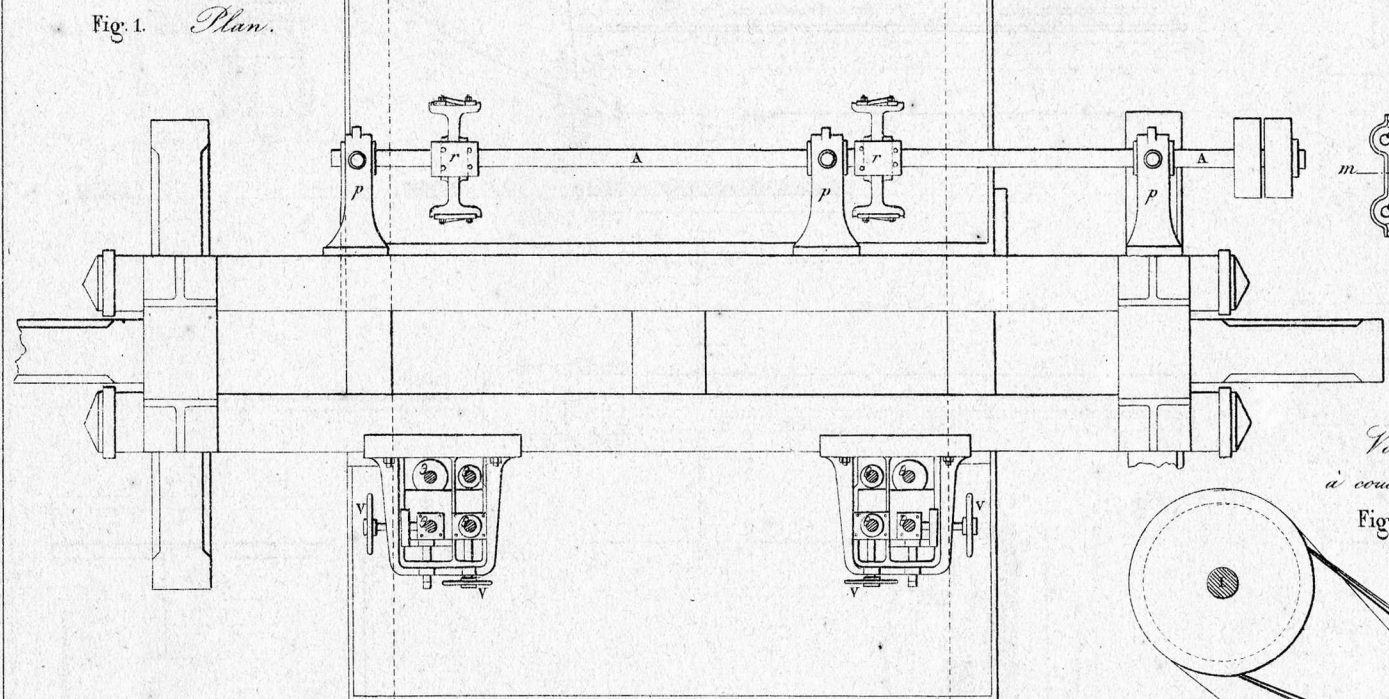


Echelle des Fig. 1 à 29 et 31 à 37, de 0, 25 pour 1 mètre.

Echelle de la Fig. 30 de 0, 50 pour 1 mètre.



Machine de M. Klaus, pour entailler et percer les traverses. (Fig. 1 à 3.)



Sabotage et pose. (Fig. 4 à 6.)
Voie à coussinets.
Voie à aiguilles.

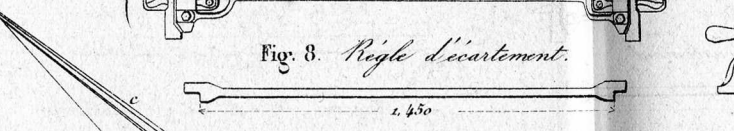
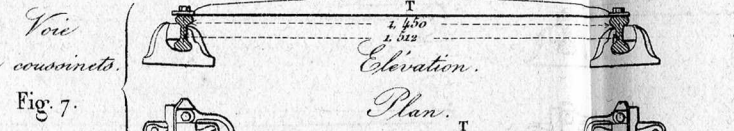
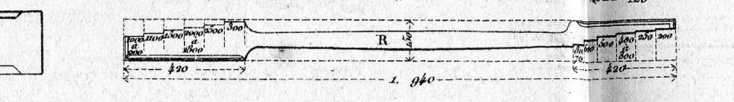
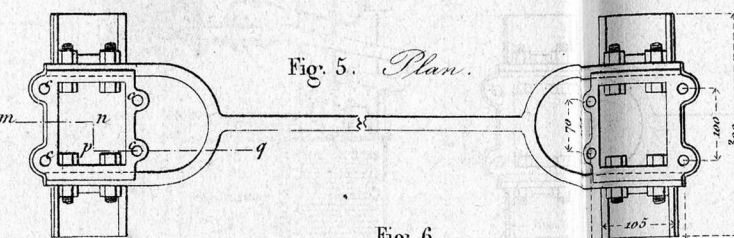
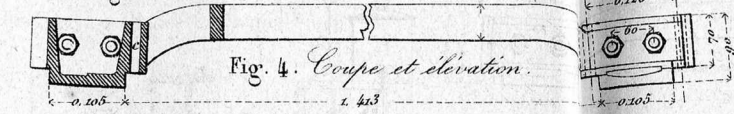
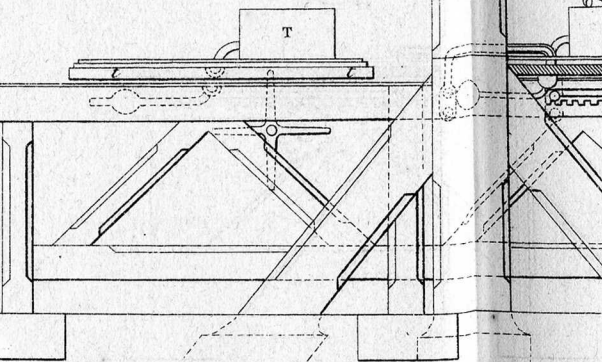


Fig. 3. Vue de bout. A side view of the machine's frame and rollers.



Appareil de M. M. de Lippert et Hugon, pour le flambage des bois.

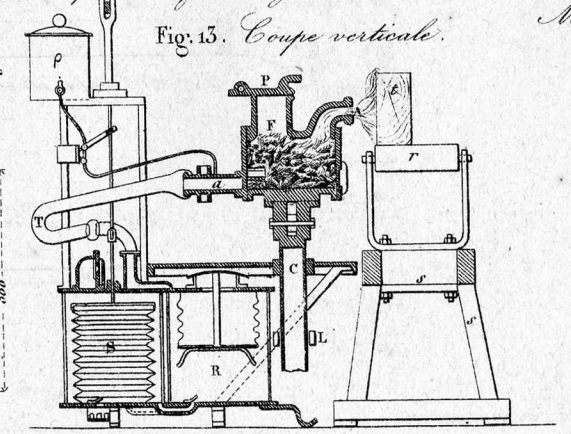


Fig. 9. Dressement de la voie. A drawing of a gauge for the straightening of the track.

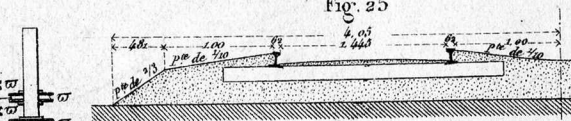
Fig. 10. Jauge de vérification du gabarit et de la voie. A drawing of a gauge for checking the track gauge and the track.

Fig. 11. Traverses intermédiaires. A drawing of an intermediate cross-tie.

Fig. 12. Traverses intermédiaires. A drawing of another intermediate cross-tie.

Fig. 25. A drawing of a cross-tie with specific dimensions and a curved top surface.

Fig. 21. Pose dans les courbes d'un rayon de 200m et au dessous. A drawing showing the placement of cross-ties in curves with a radius of 200m or less.



Machine à courber les rails, de M. Köhler. (Fig. 14 à 20.)

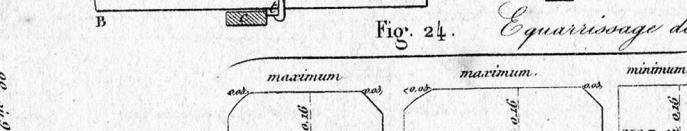
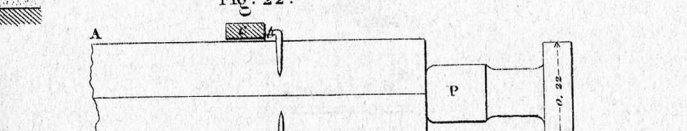
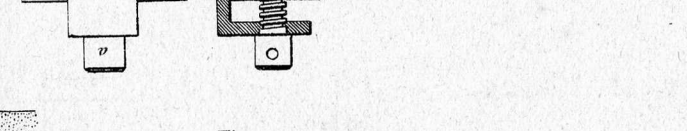
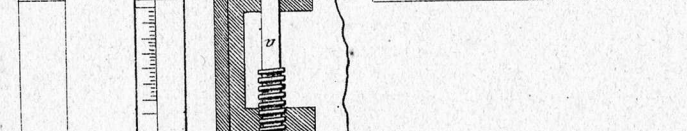
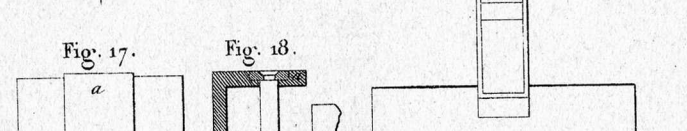
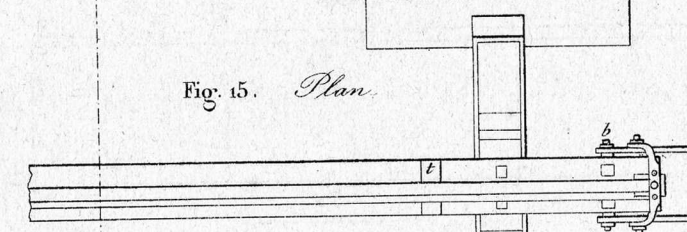
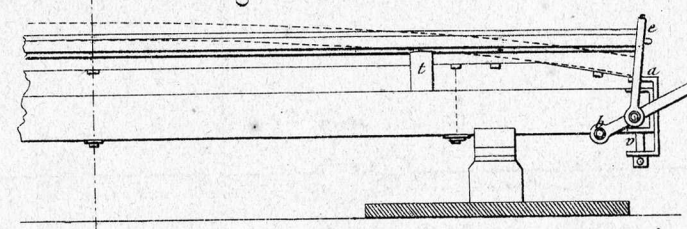
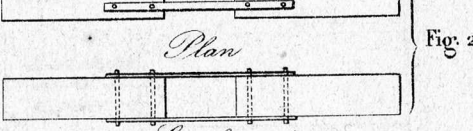
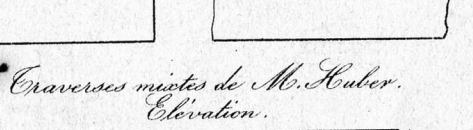
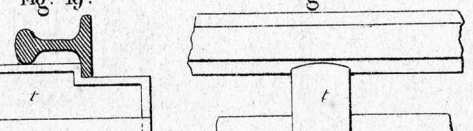
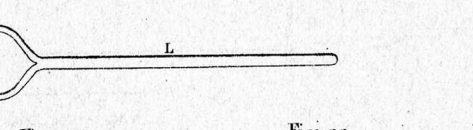
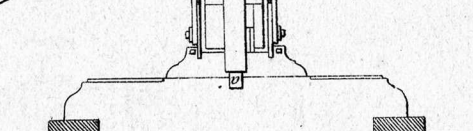
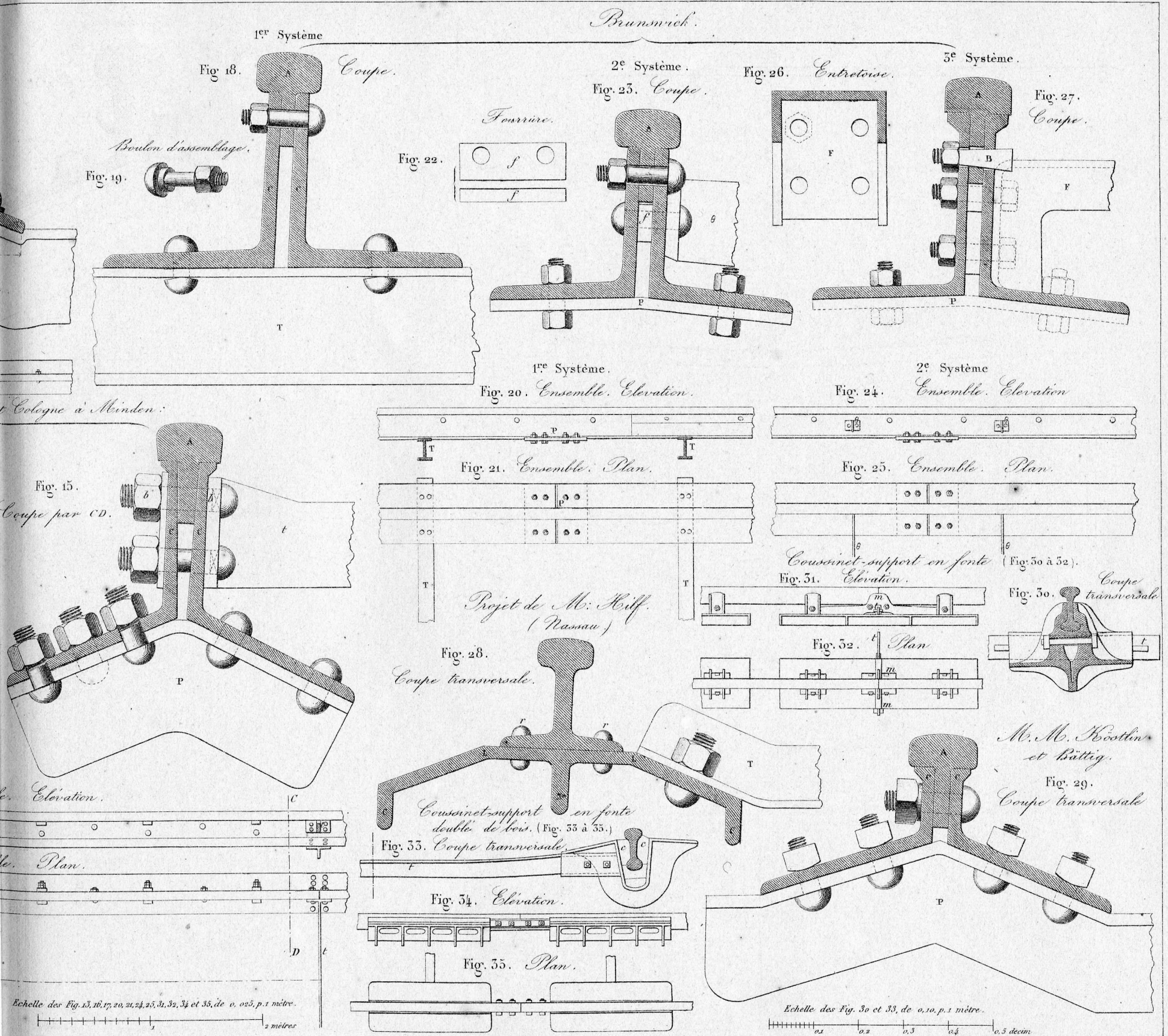
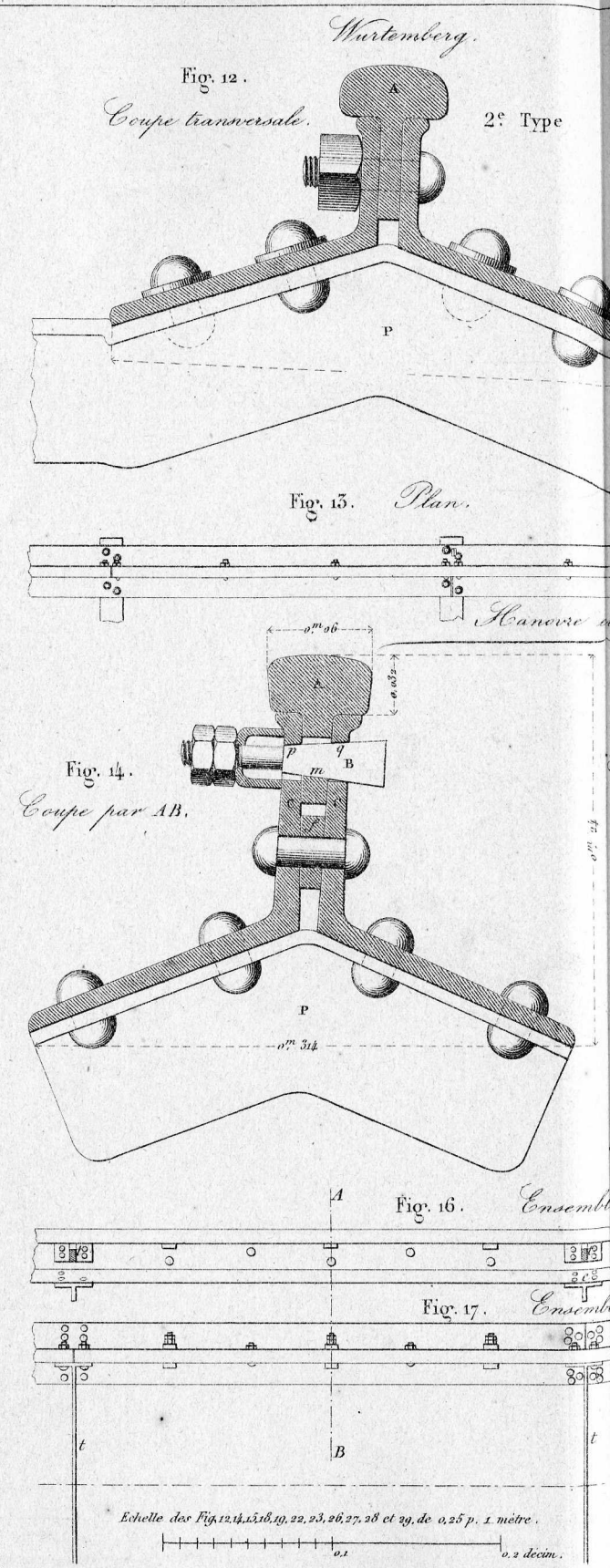
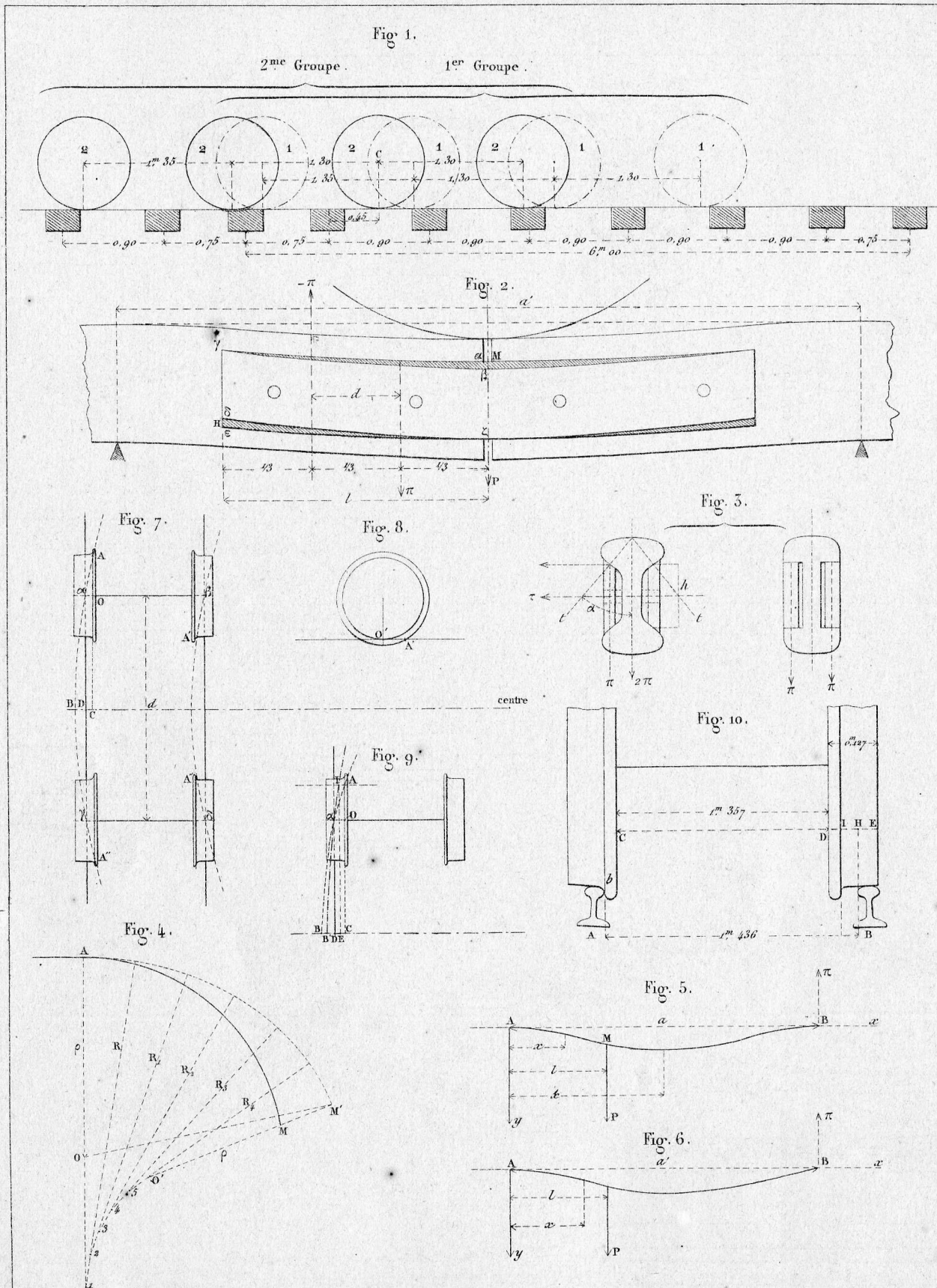


Fig. 16. Vue de bout. A side view of a component of the machine.



N° 1		N° 2		N° 3		N° 4		N° 5	
maximum	0.25 à 0.26	maximum	0.27 à 0.30	minimum 0.15	0.21 à 0.24	minimum 0.20	0.27 à 0.30	minimum 0.25	0.21 à 0.26
N° 6		N° 7		N° 8		N° 9			
0.27 à 0.30		0.26 à 0.36		0.26 à 0.36		0.26 à 0.36			

Echelle des Fig. 12 et 3, de 0,04 pour 1 mètre.
 Echelle de la Fig. 13, de 0,03 pour 1 mètre.
 Echelle des Fig. 14, 15 et 16, de 0,05 pour 1 mètre.
 Echelle des Fig. 17 à 20, de 0,10 pour 1 mètre.



Traverses en fer pour voie Vignole, Paris à Lyon et à la Méditerranée. (Fig. 1 à 26.)

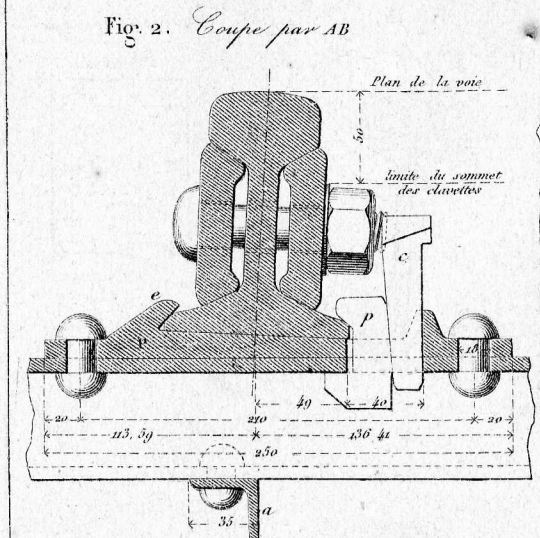


Fig. 1. Traverse de joint. Elevation.

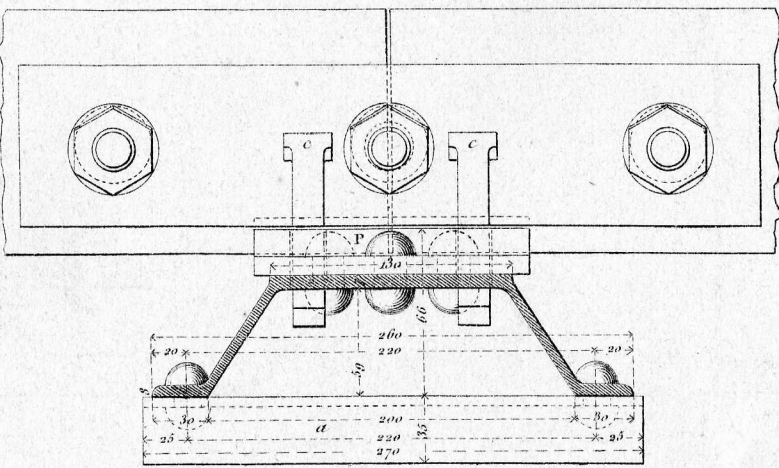


Fig. 4. Traverse contre-joint. Elevation.

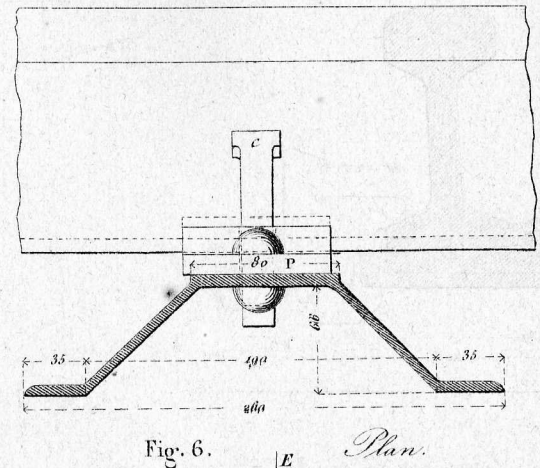


Fig. 5. Coupe par EF.

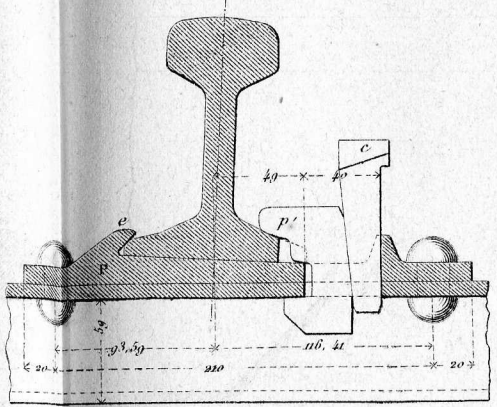


Fig. 25. Clavette (0 kil 291.)

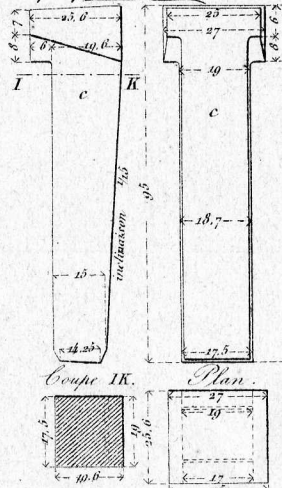


Fig. 7. Traverses intermédiaires. Elevation.

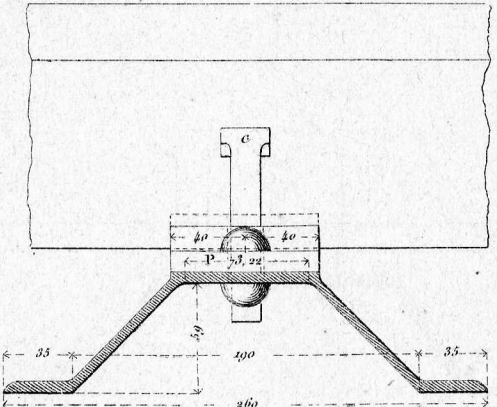
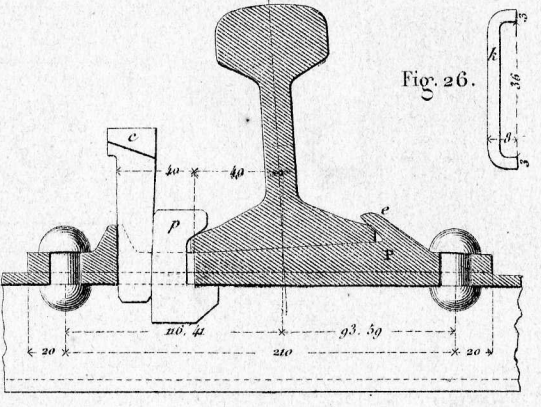


Fig. 8.

Coupe par GH.



Cali de serrage (0 kil 021.)

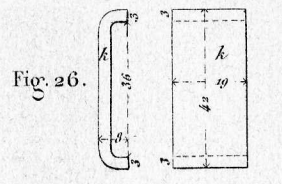


Fig. 10. Plaque de joint. Coupe par CD.

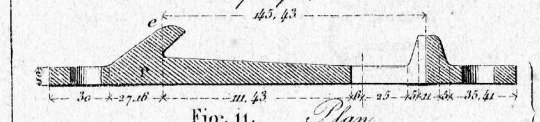


Fig. 3. A Plan.

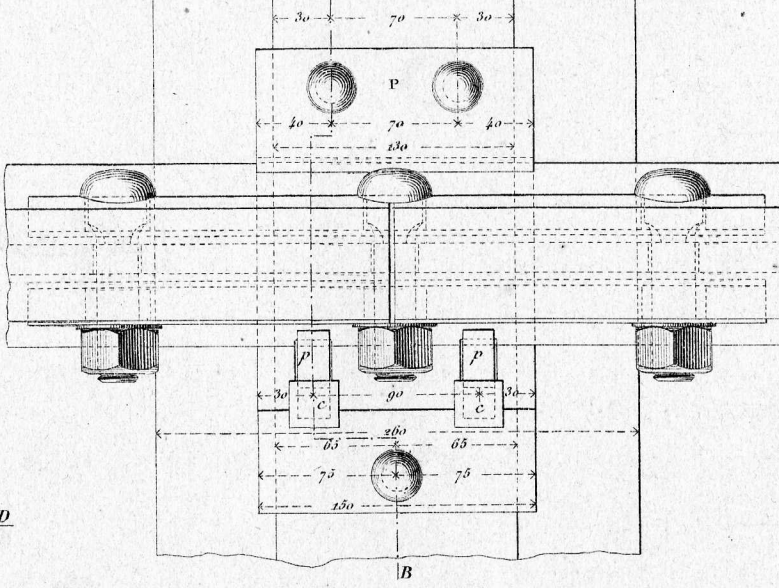


Fig. 6. E Plan.

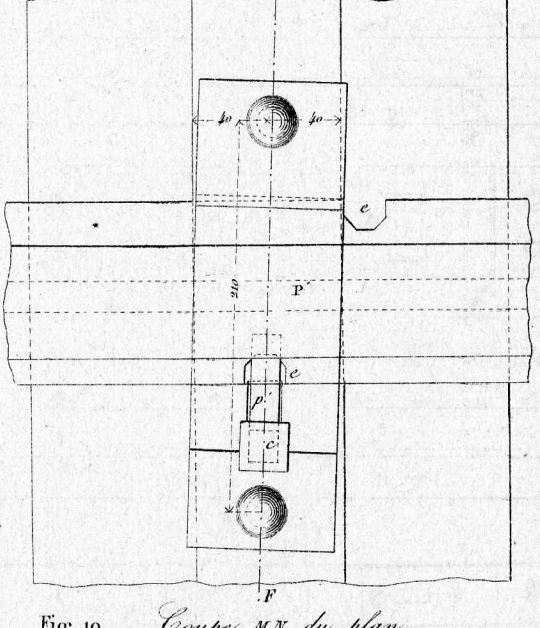


Fig. 13. Traverse de joint. (52 kil 28)

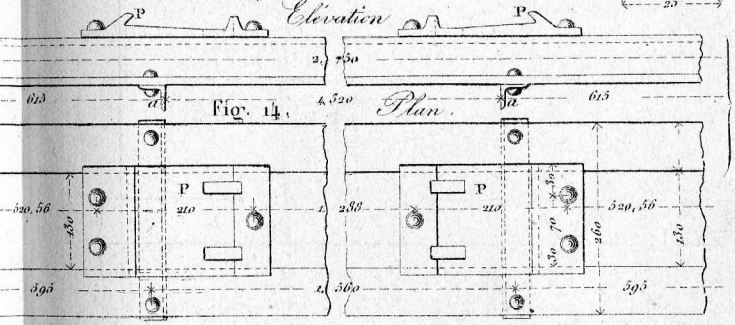


Fig. 11. Plan.

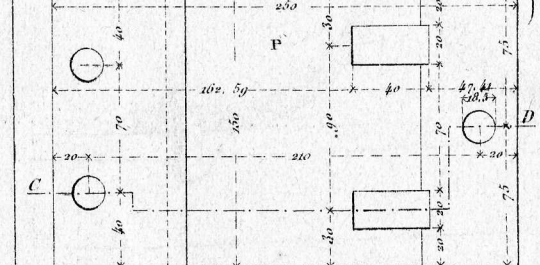


Fig. 12. Plaque intermédiaire.

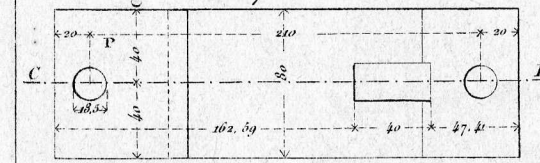


Fig. 22. Plan de pose.

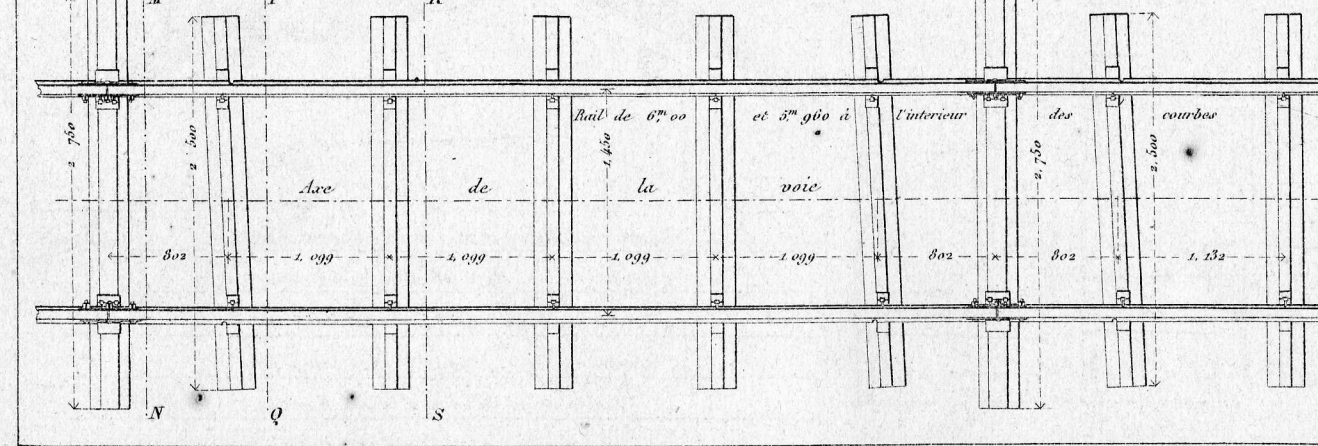


Fig. 19. Coupe MN du plan.

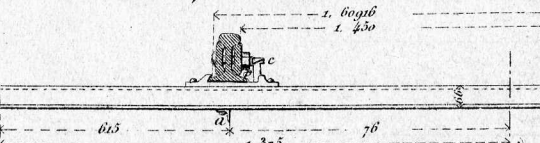


Fig. 20. Coupe PQ du plan.

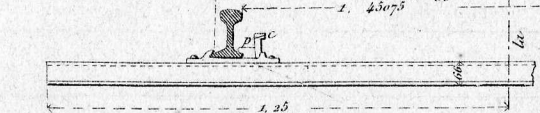


Fig. 21. Coupe RS du plan.

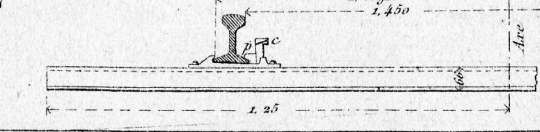


Fig. 14. Plan.

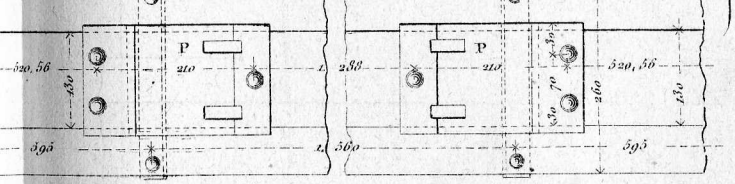


Fig. 15. Traverse contre-joint. (59 kil 41)

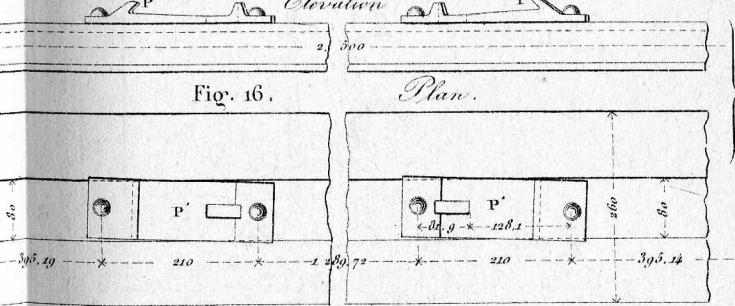


Fig. 17. Traverse intermédiaire. (59 kil 46)

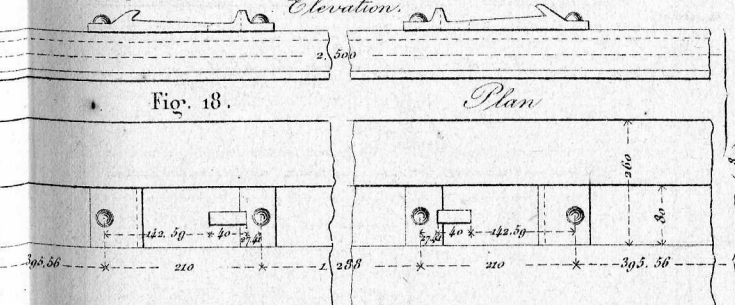


Fig. 9. G Plan.

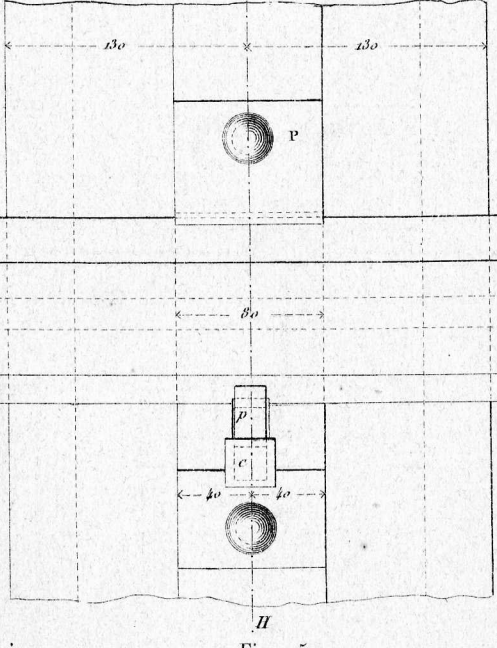


Fig. 27.

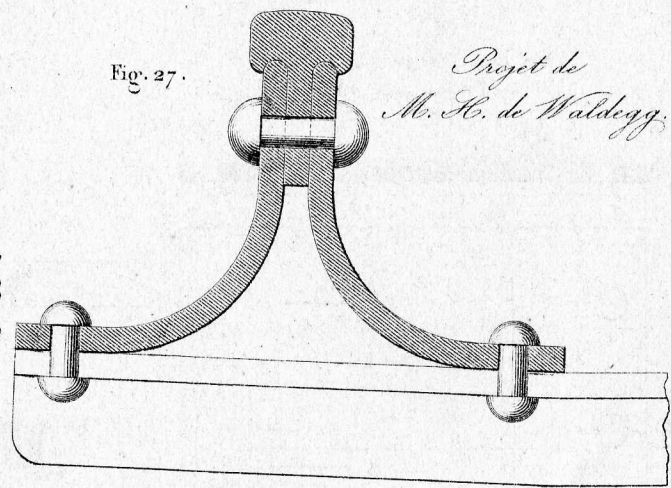


Fig. 28.

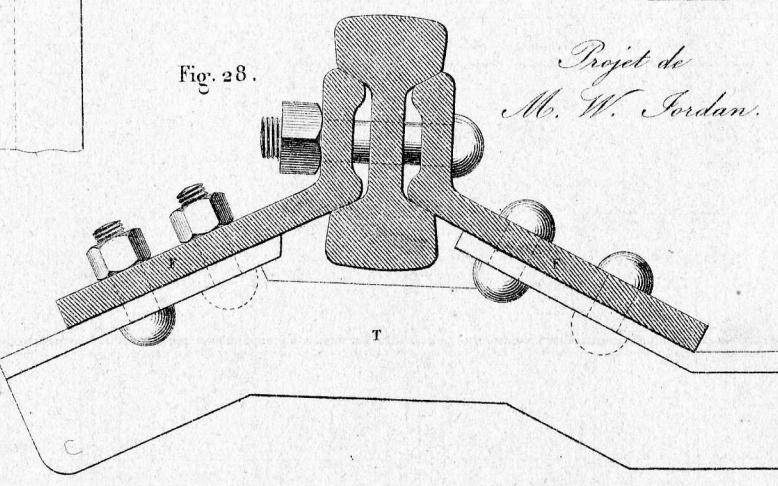


Fig. 24. Pivonniers pour traverse contre-joint.

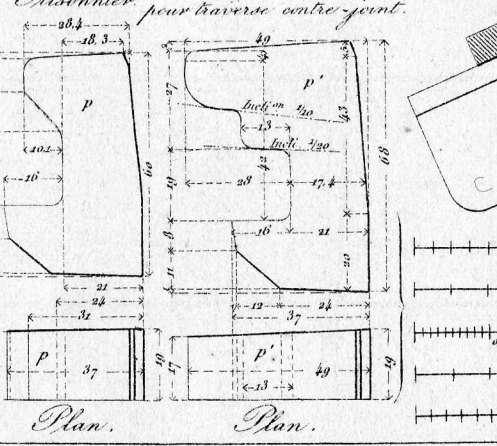
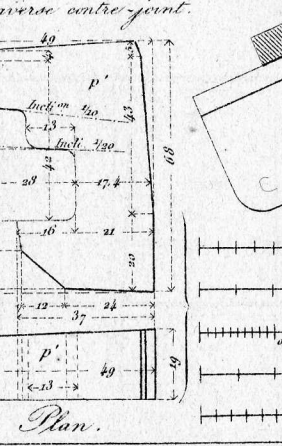
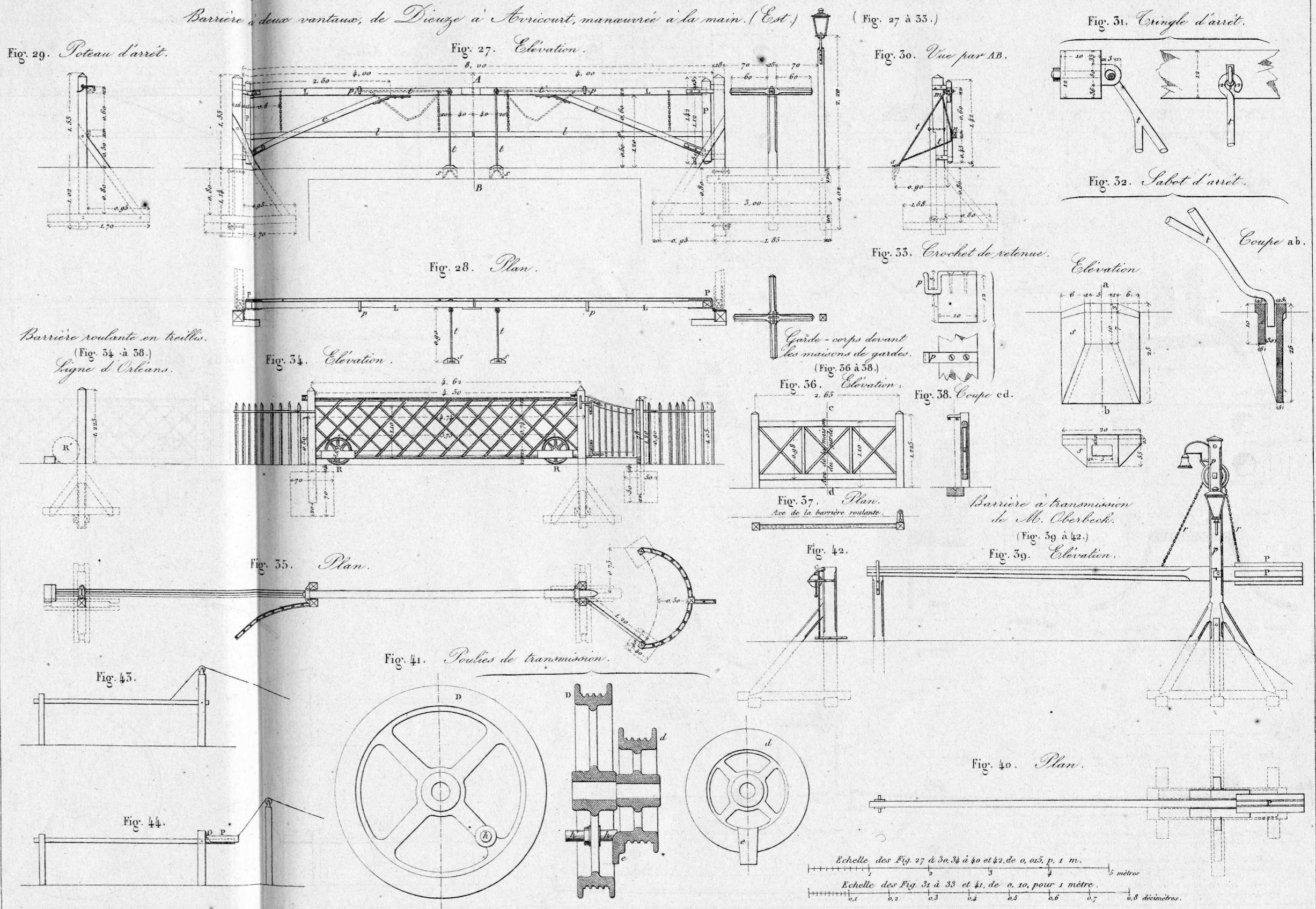
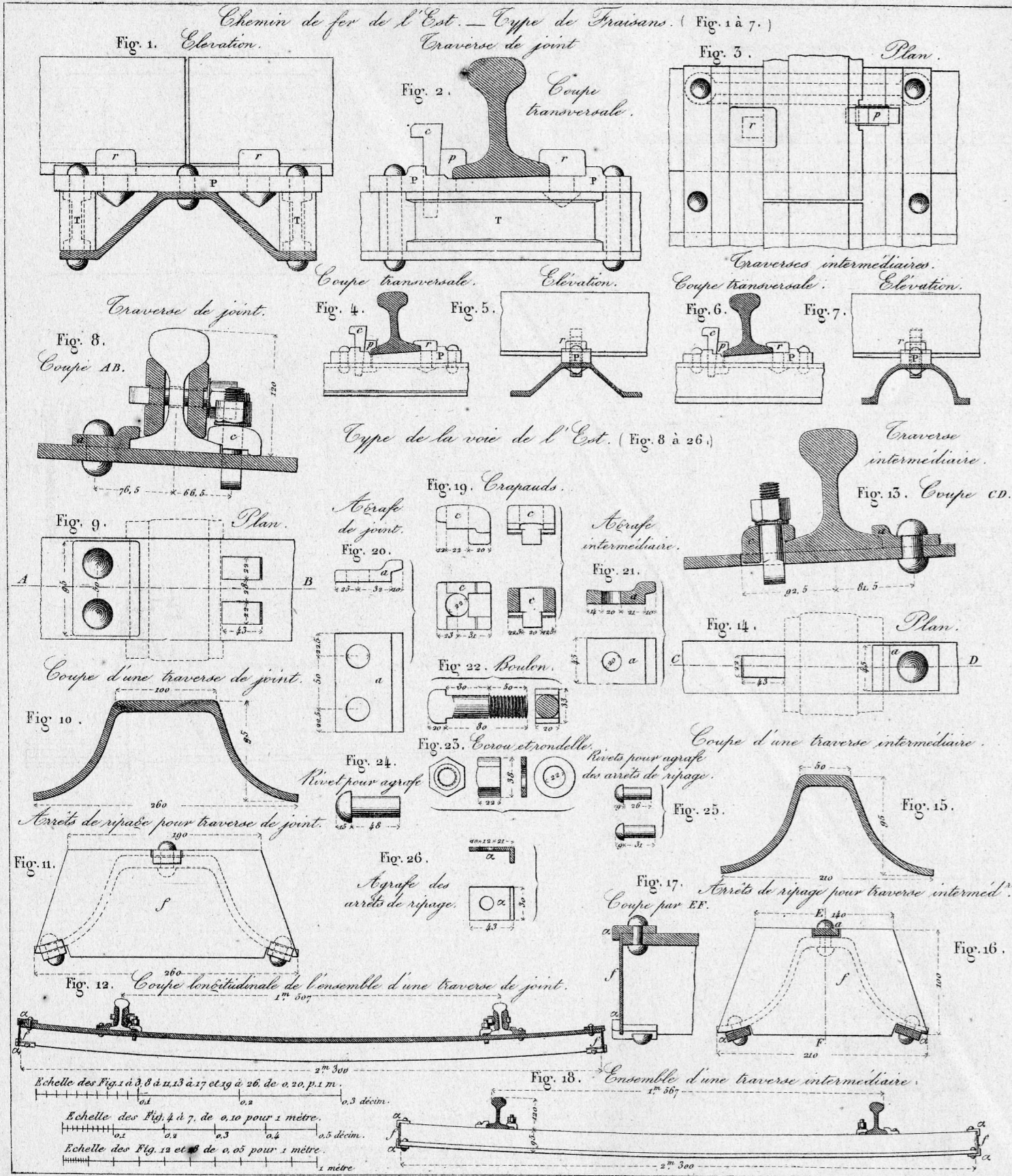


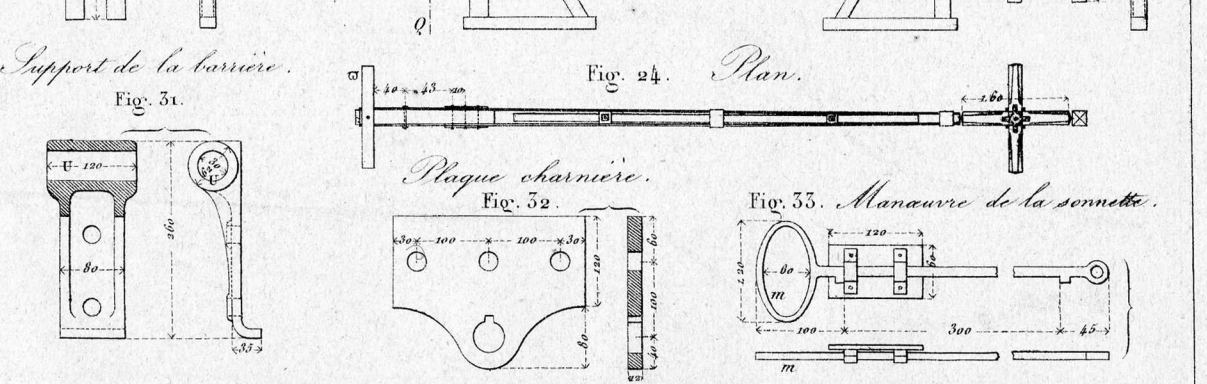
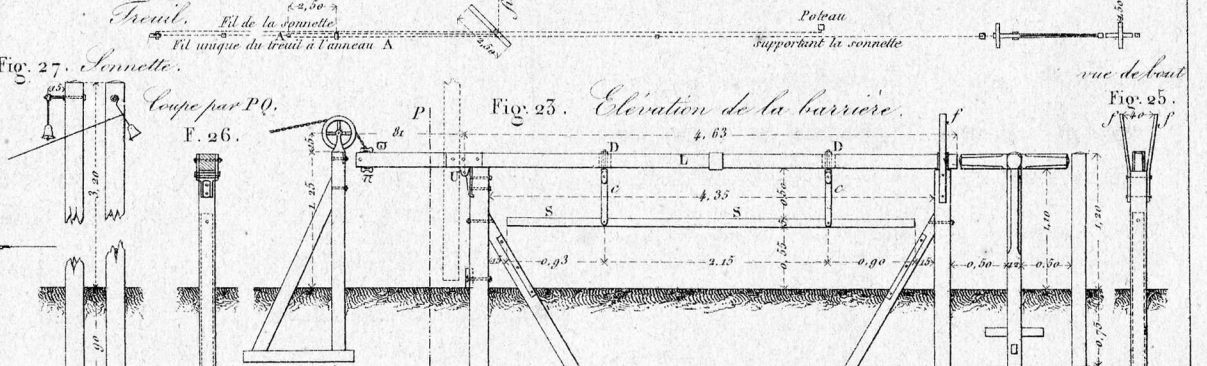
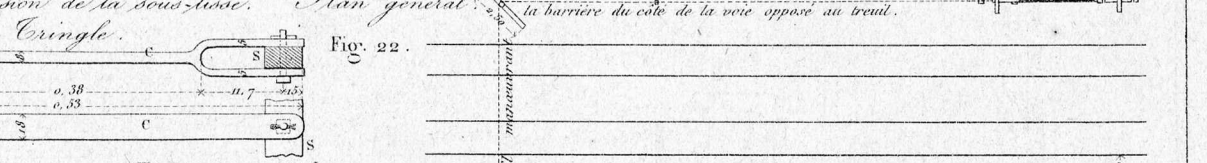
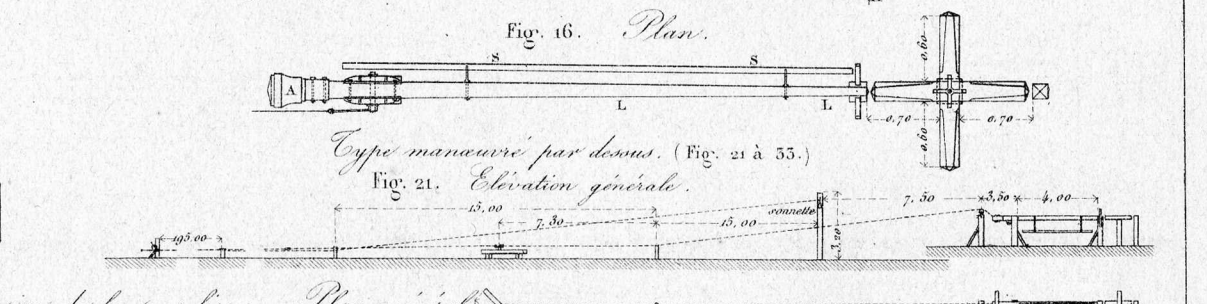
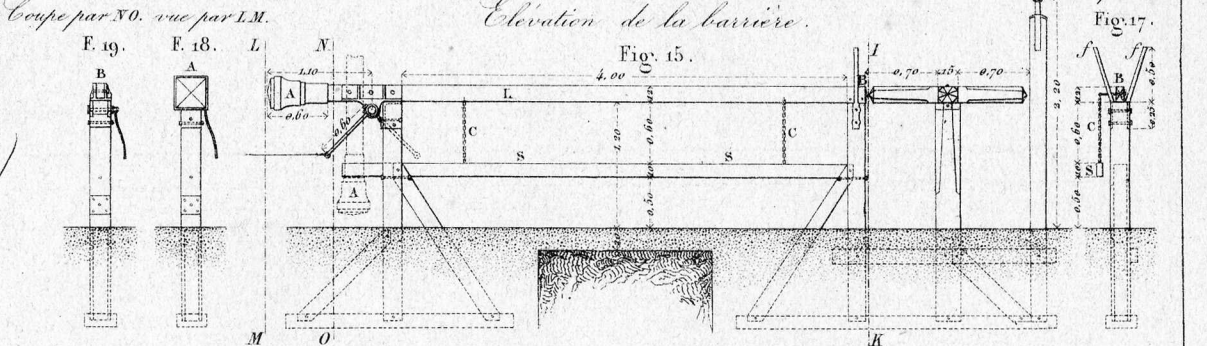
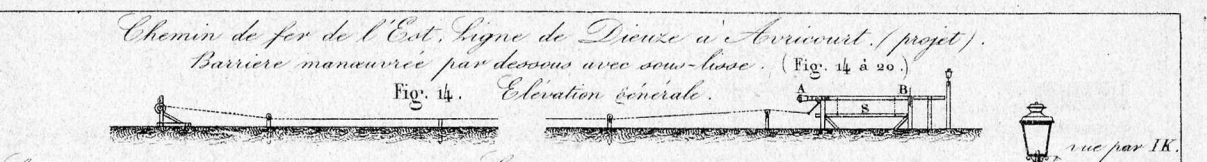
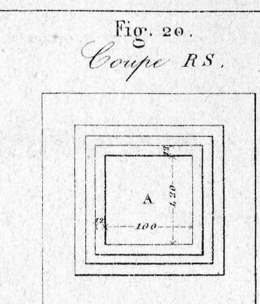
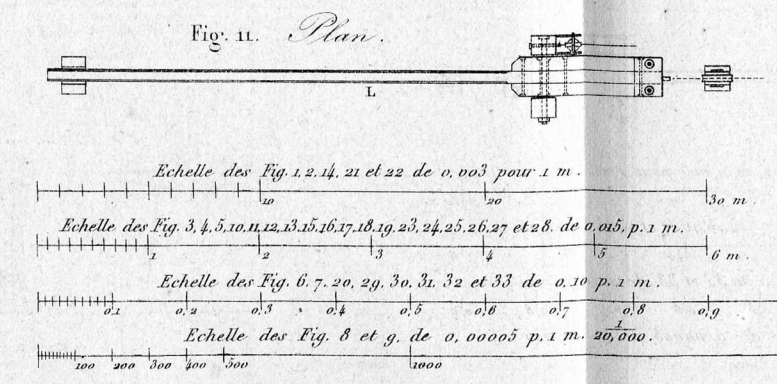
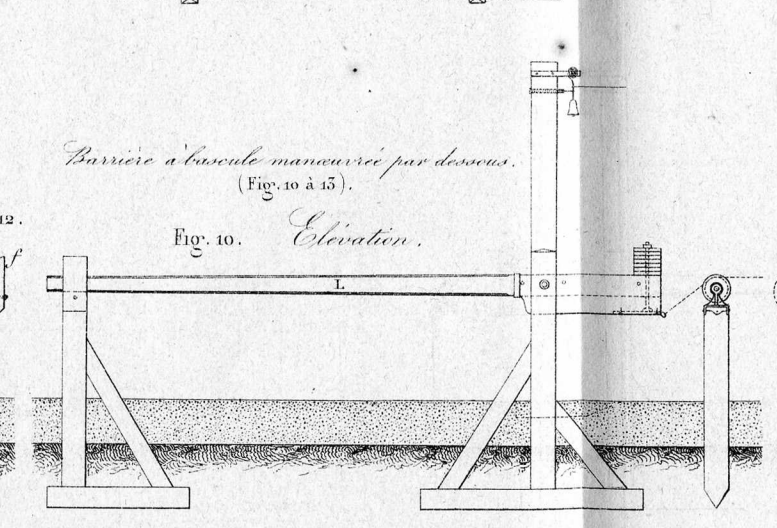
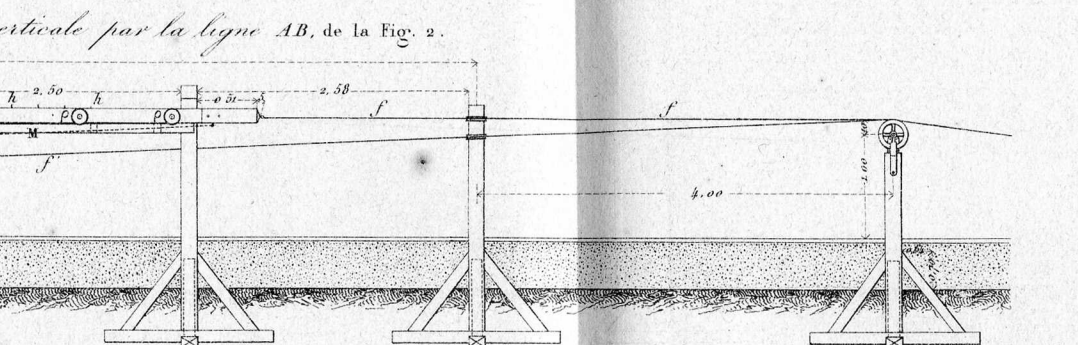
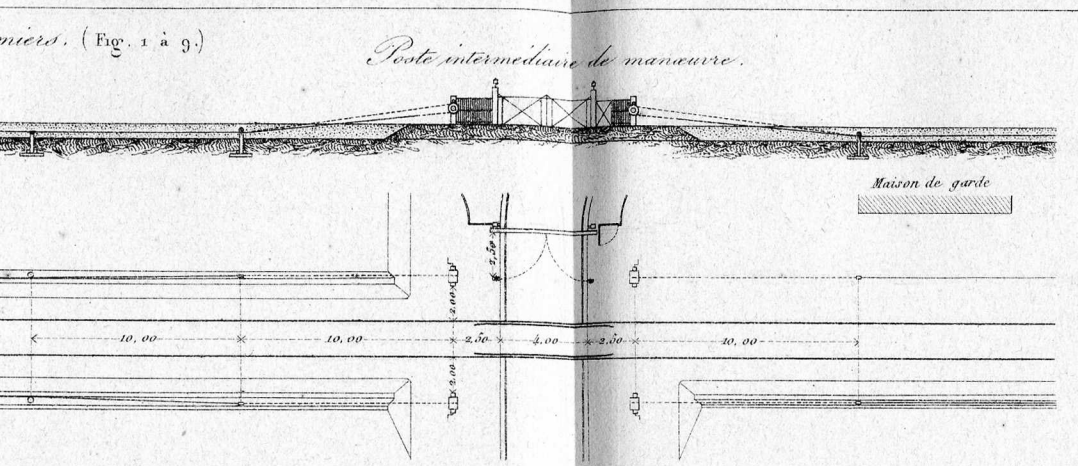
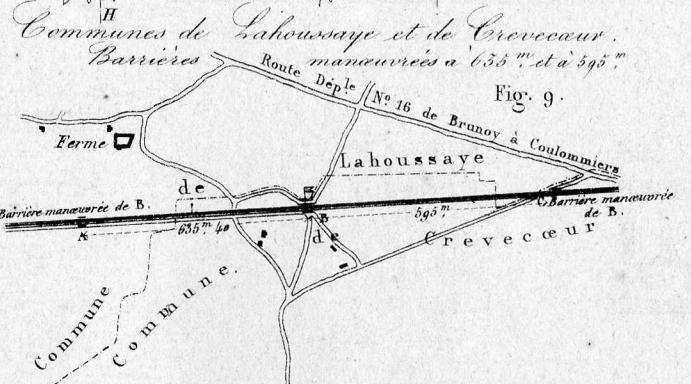
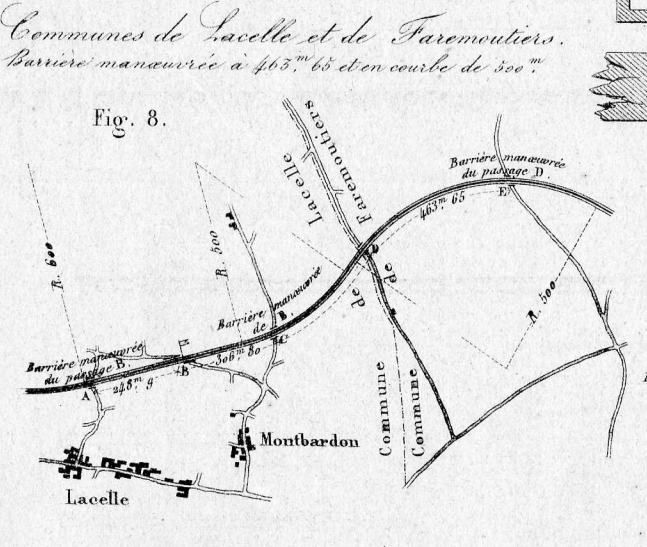
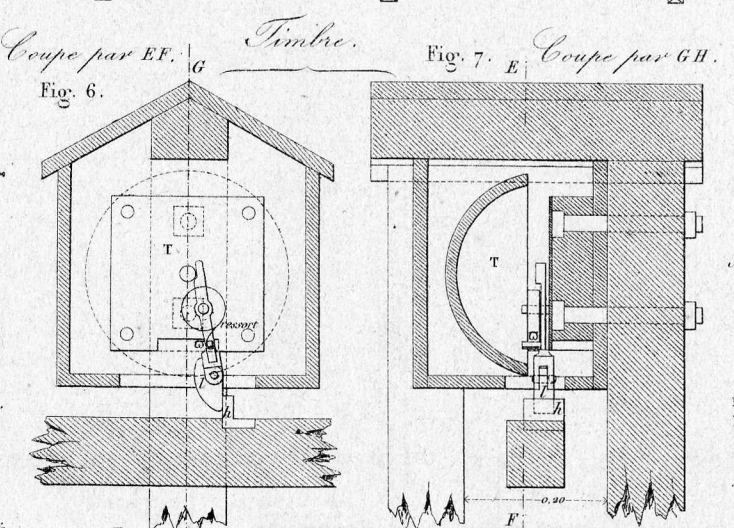
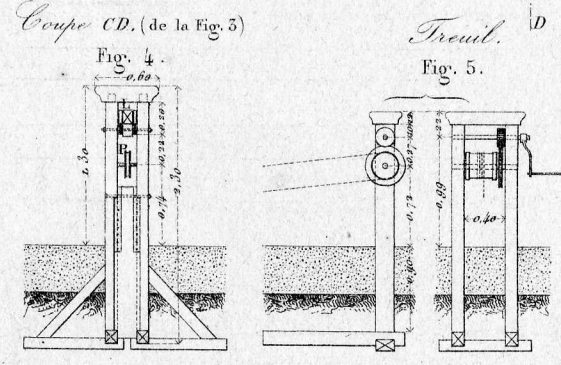
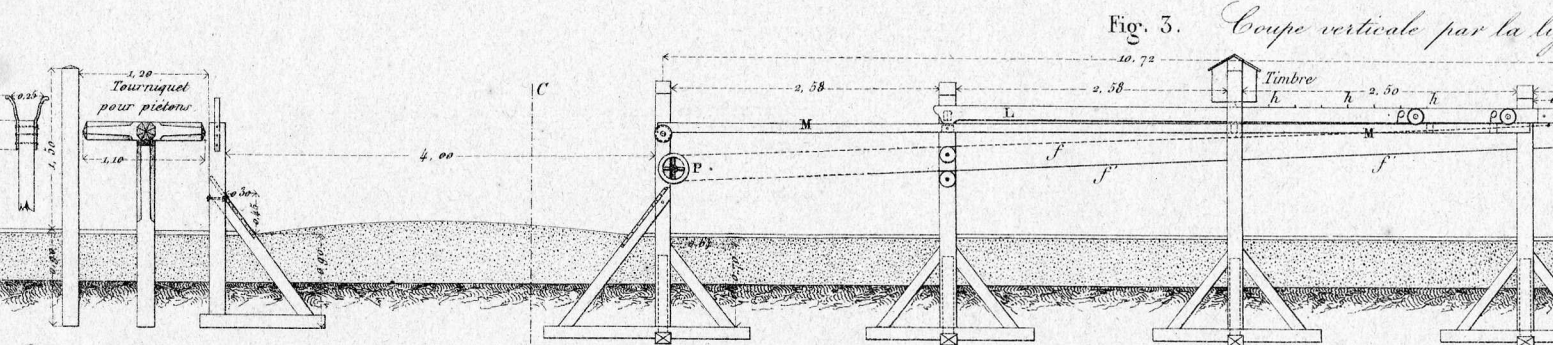
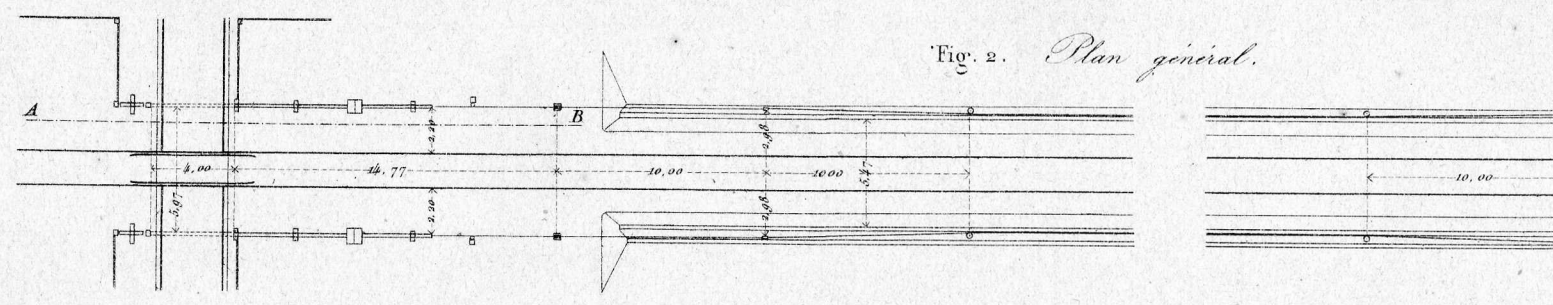
Fig. 25. Pivonniers d'arrêt pour traverse contre-joint.

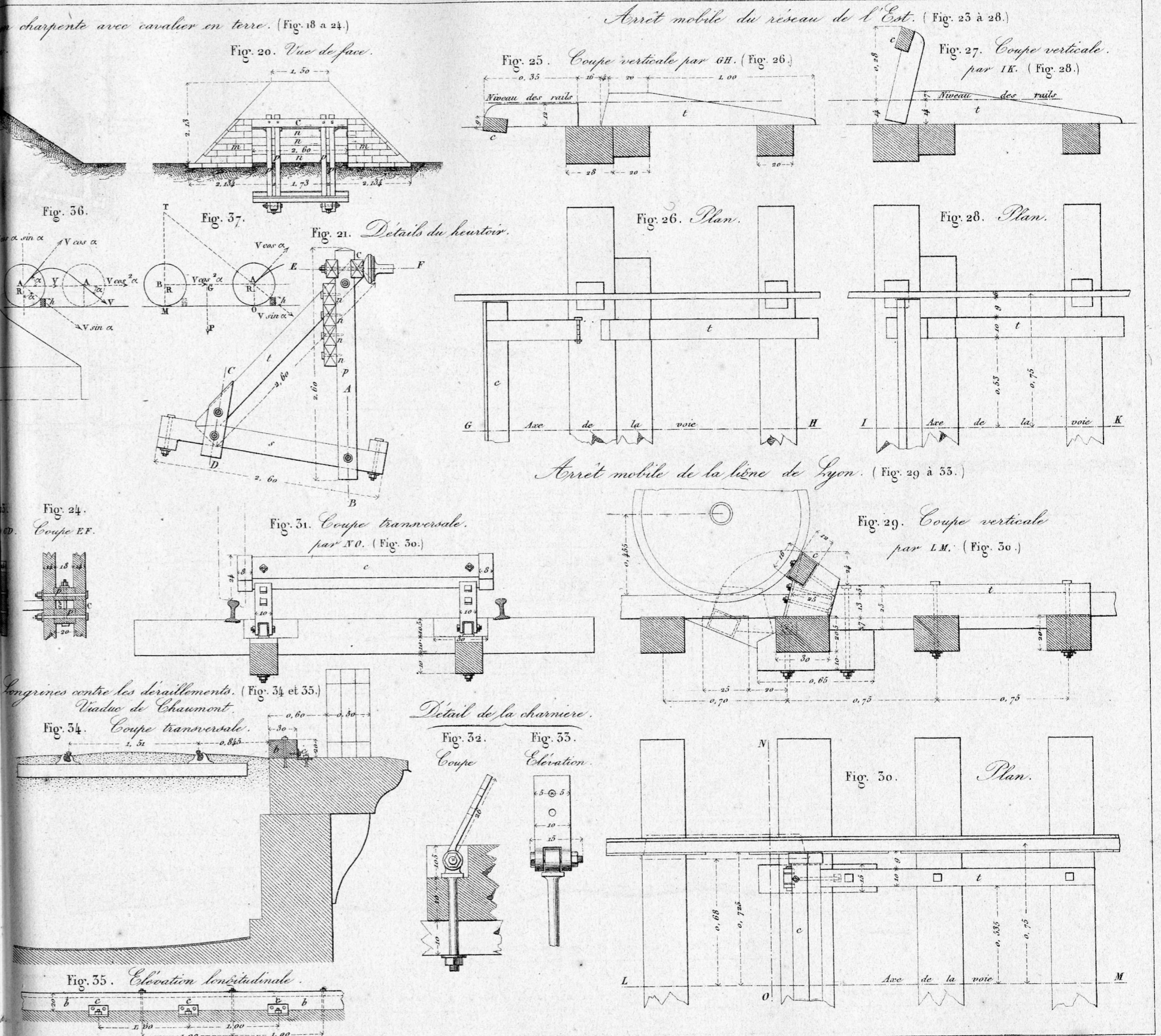
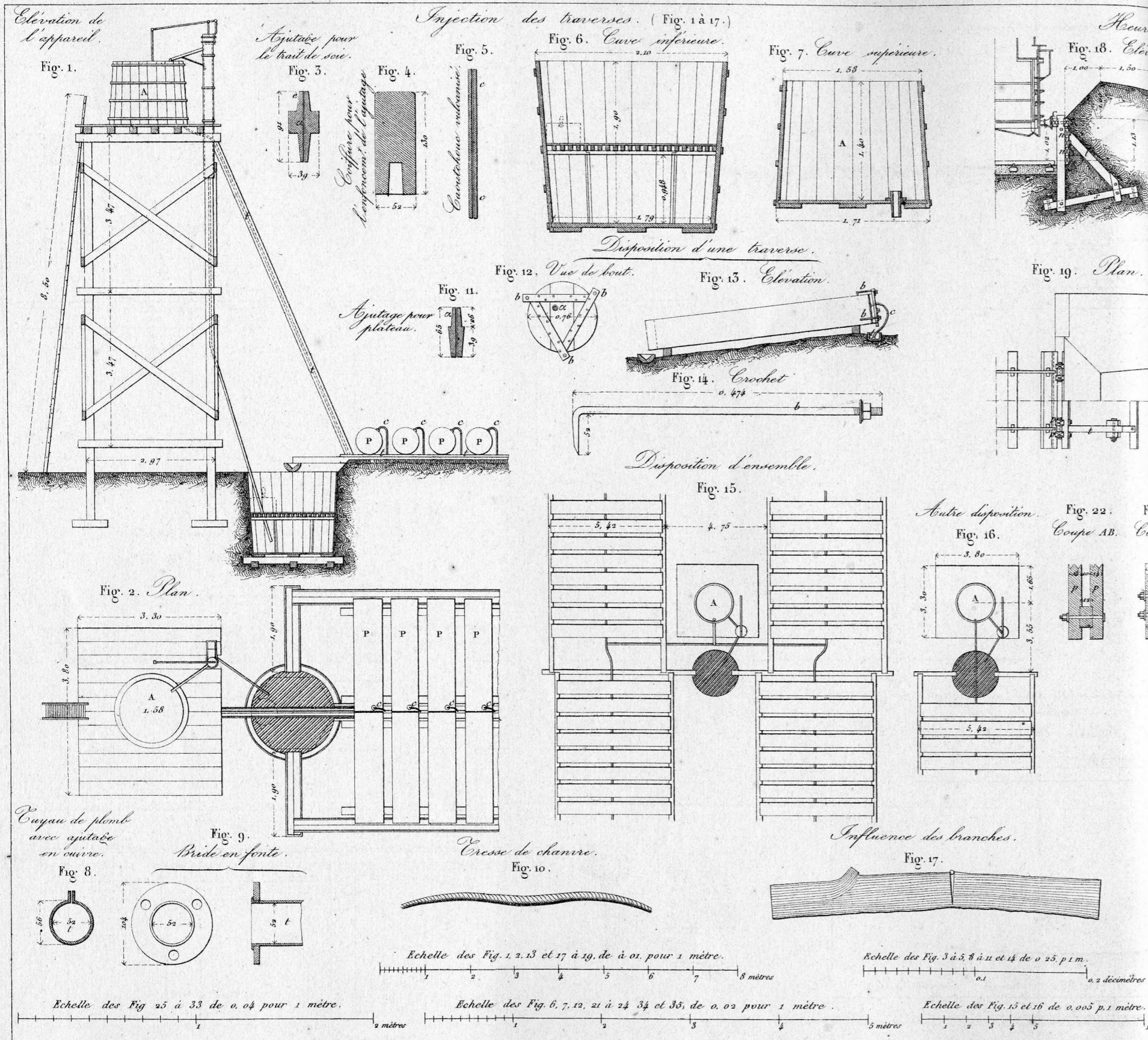


Echelle des Fig. 1 à 11, 27 et 28, de 0.25 pour 1 mètre.
Echelle des Fig. 13 à 26 de 0.50 pour 1 mètre.
Echelle des Fig. 13 à 18 de 0.10 pour 1 mètre.
Echelle des Fig. 19, 20 et 21, de 0.05 pour 1 mètre.
Echelle de la Fig. 22 de 0.02 pour 1 mètre.



C. COUCHE. Chemins de Fer.





Installations sur l'Elbe à Hochstet et Lauenburg. (Fig. 7 à 14.)

Fig. 6. Articulation du pont bois AB sur la plateforme roulante BC.

Installations sur le Forth et la Cay. (Course.) (Fig. 1 à 6.)

Projet d'installation de M. Hartwich (Chemins de fer) (Fig. 16 à 20.)

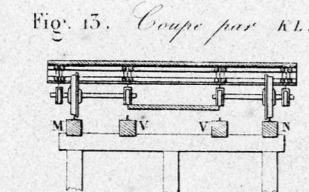
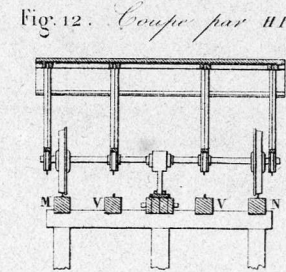
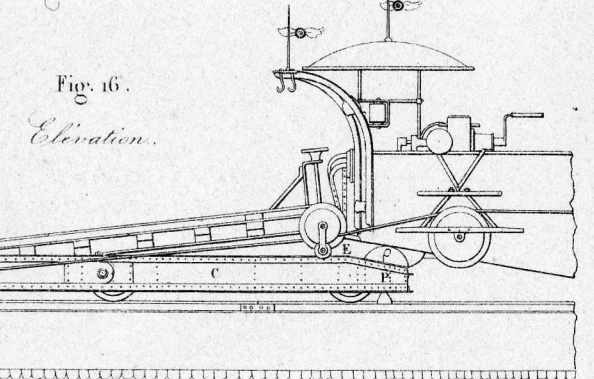
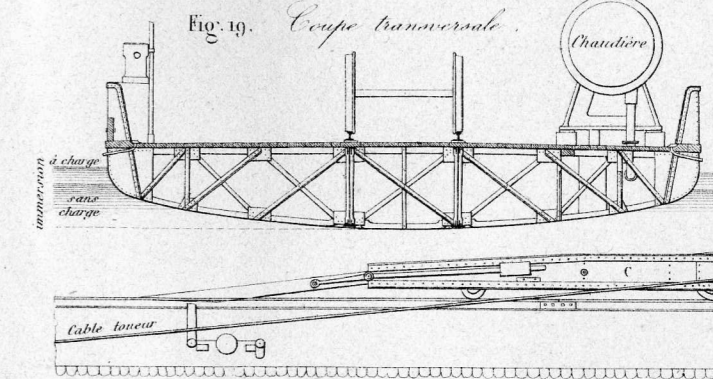
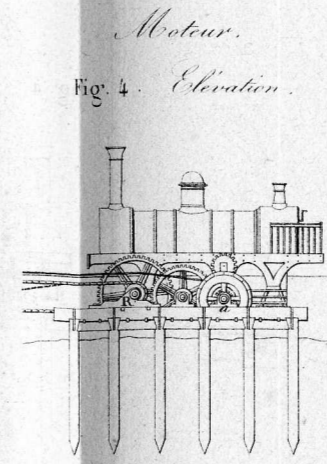
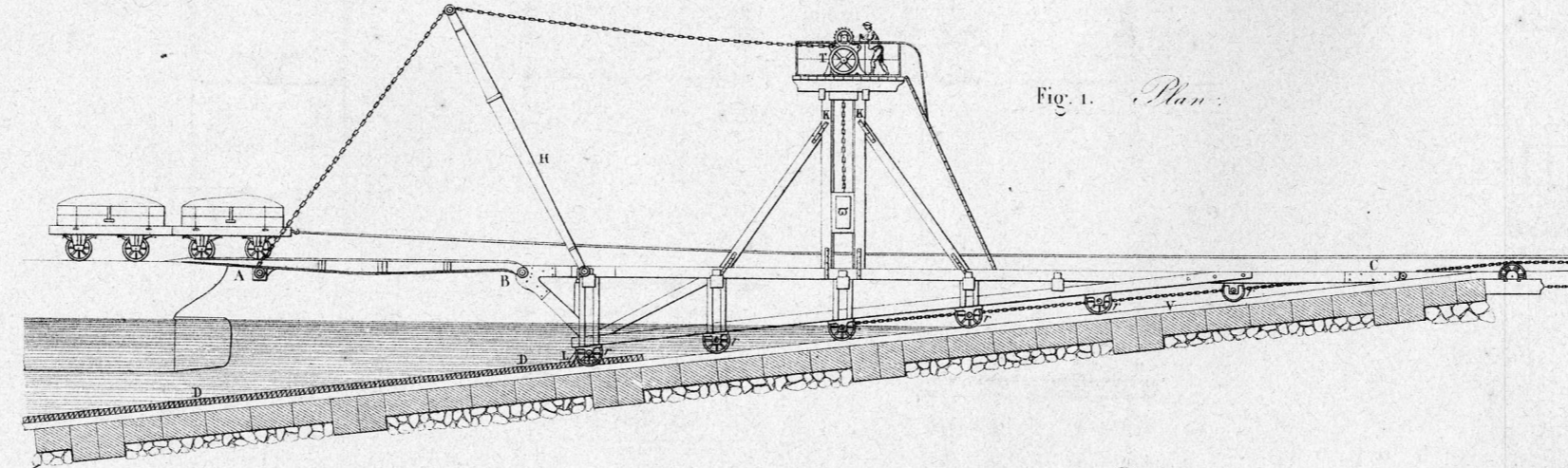
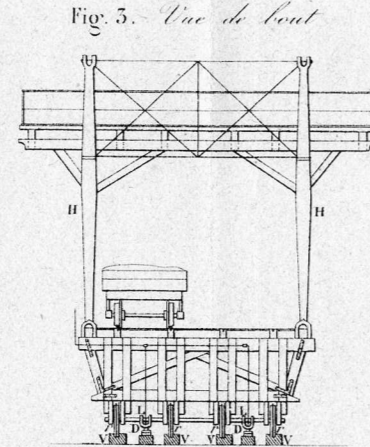
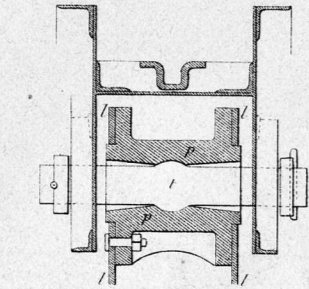
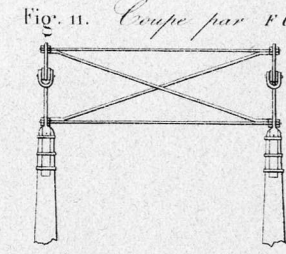
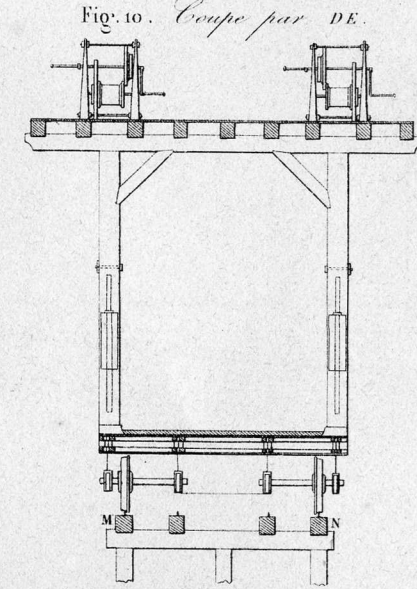


Fig. 2. Plan. A plan view of the bridge structure showing the arrangement of supports and the path of the bridge.

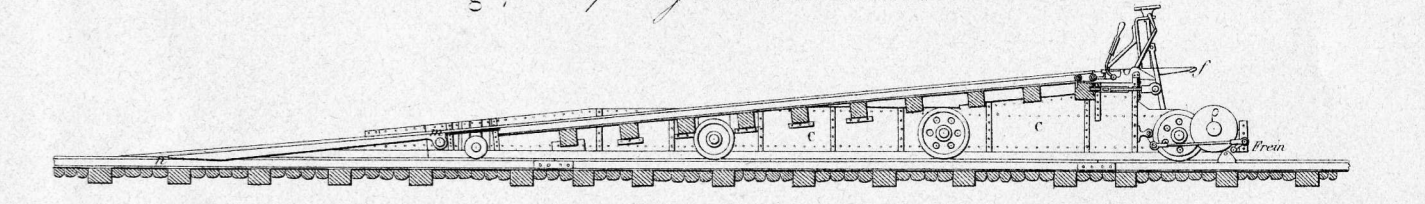
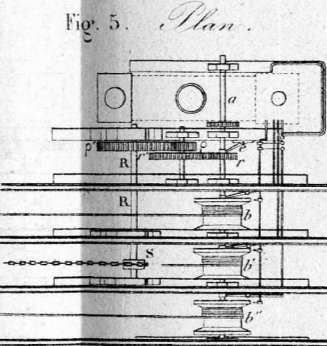


Fig. 14. Coupe par MN. A vertical cross-section of a bridge structure showing a central support and two side supports.

Fig. 8. Elevation. A side elevation of a bridge structure with a central support and a small building on top.

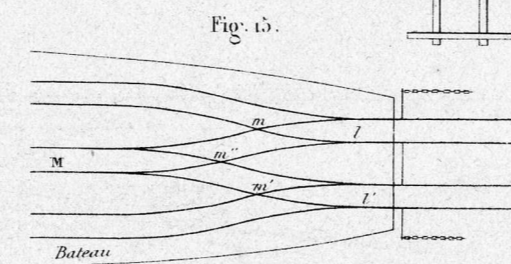
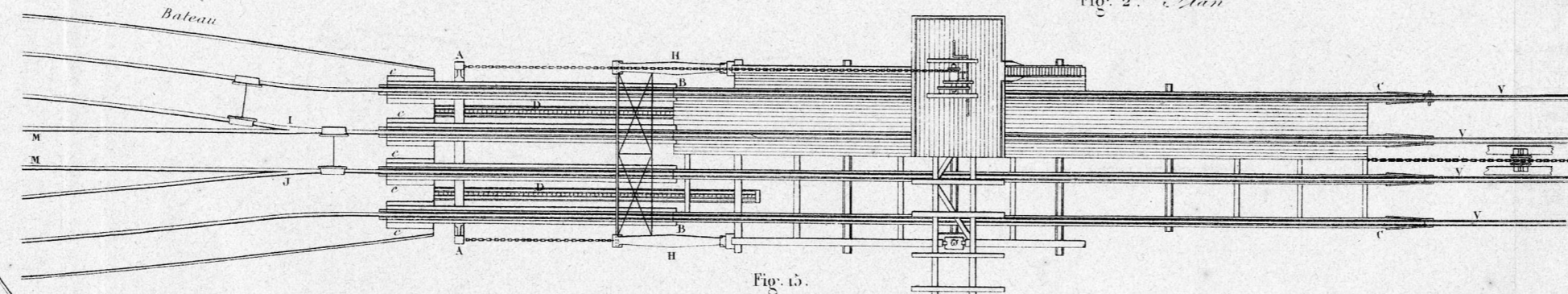
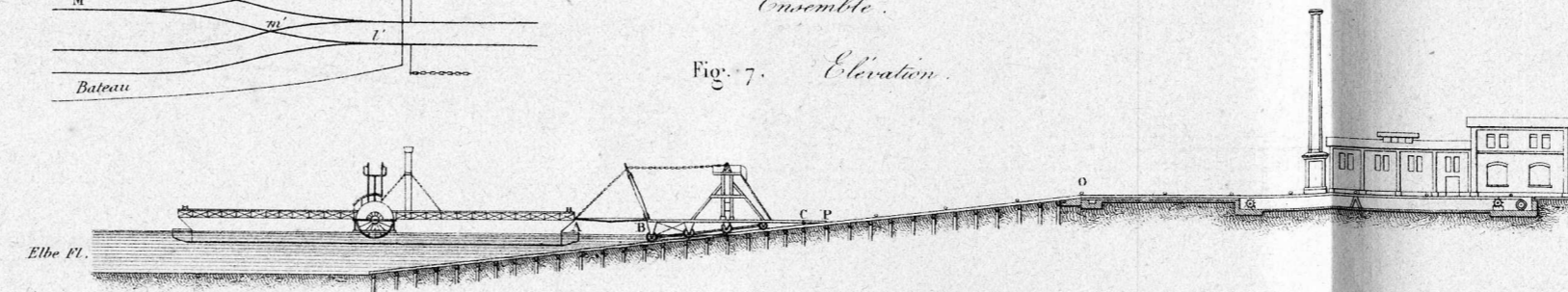
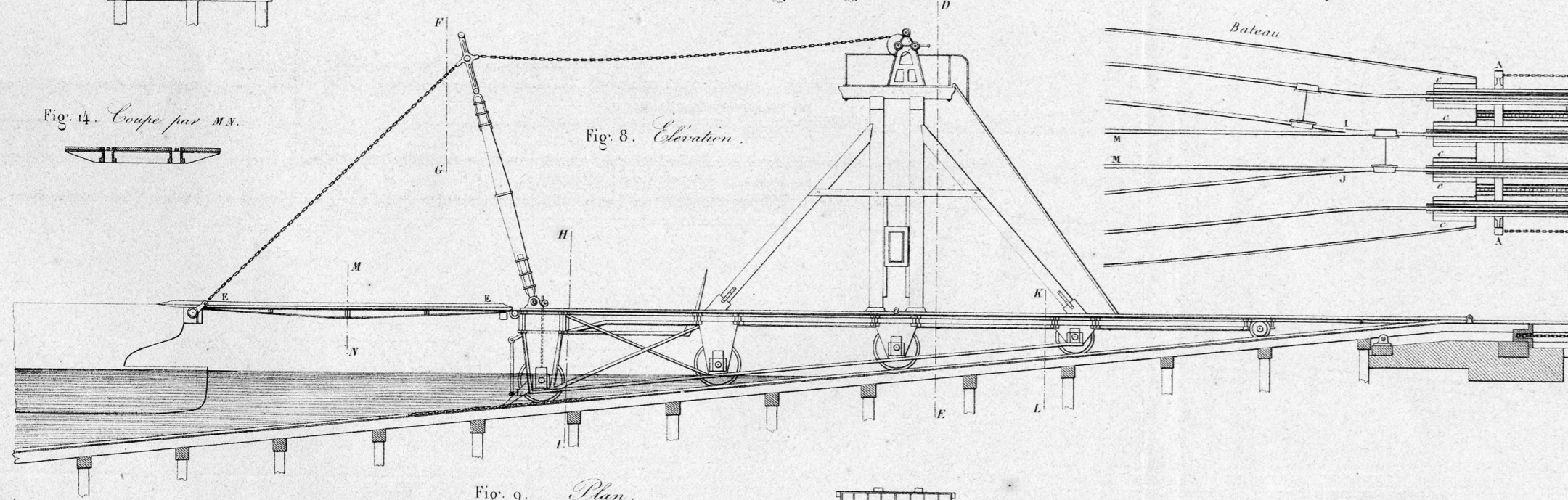
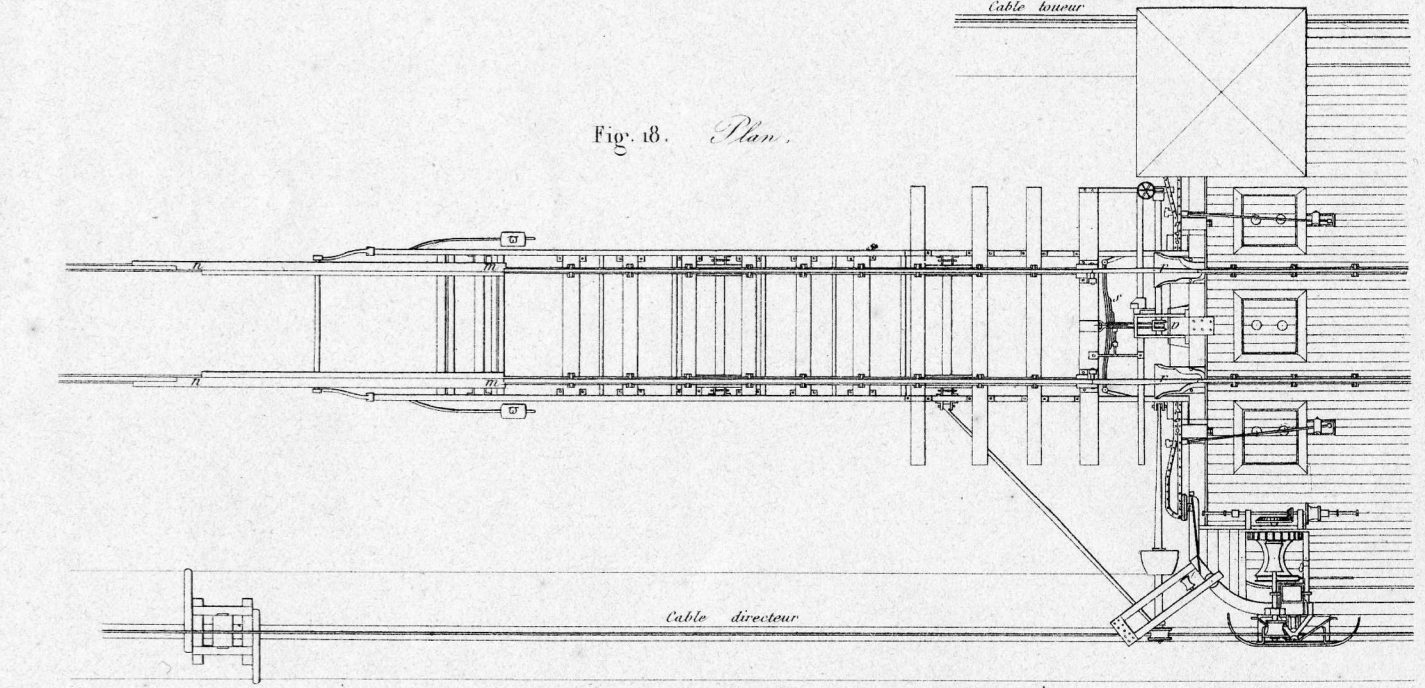


Fig. 7. Elevation. A side elevation of a bridge structure with a central support and a small building on top.

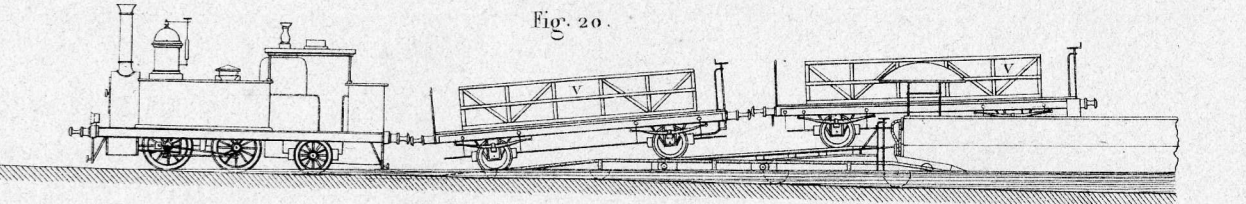
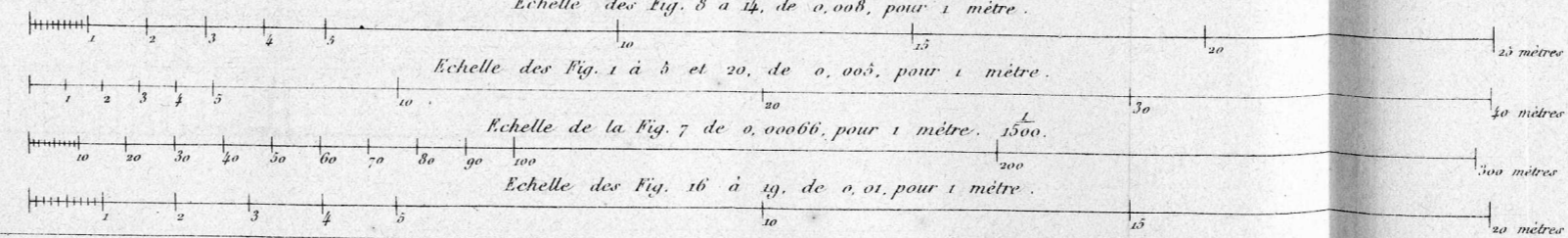


Echelle des Fig. 8 à 14, de 0,008, pour 1 mètre.

Echelle des Fig. 1 à 5 et 20, de 0,003, pour 1 mètre.

Echelle de la Fig. 7 de 0,0006, pour 1 mètre.

Echelle des Fig. 16 à 19, de 0,01, pour 1 mètre.



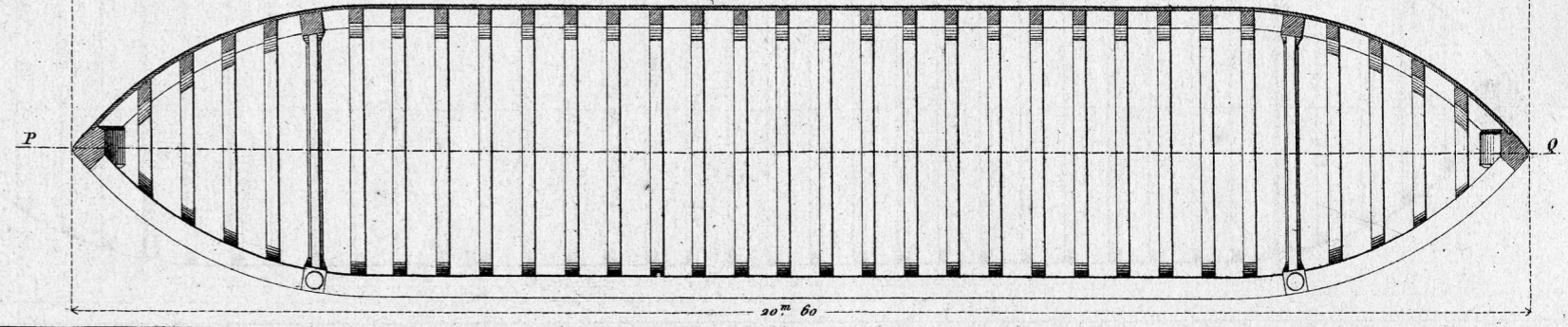
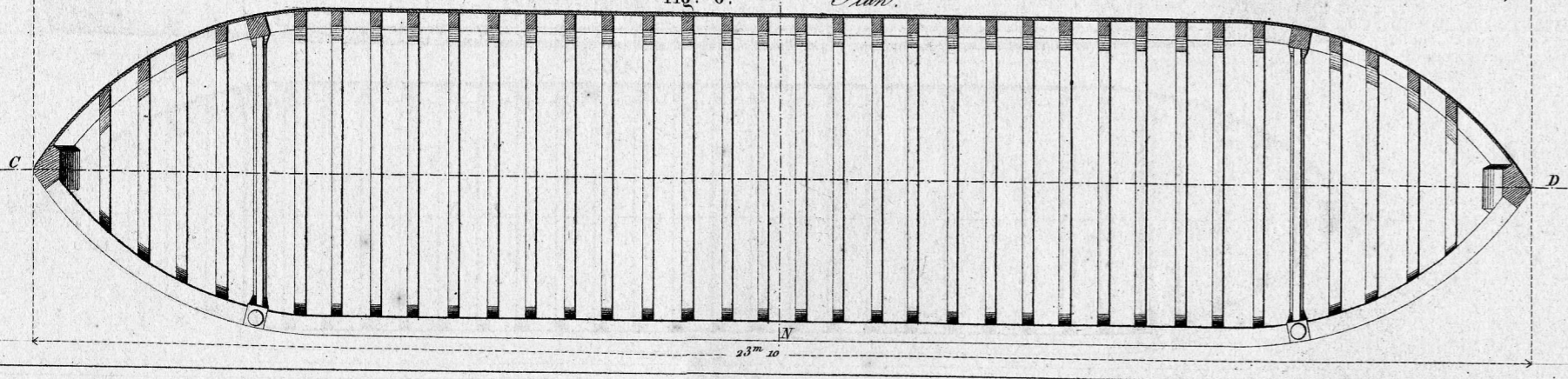
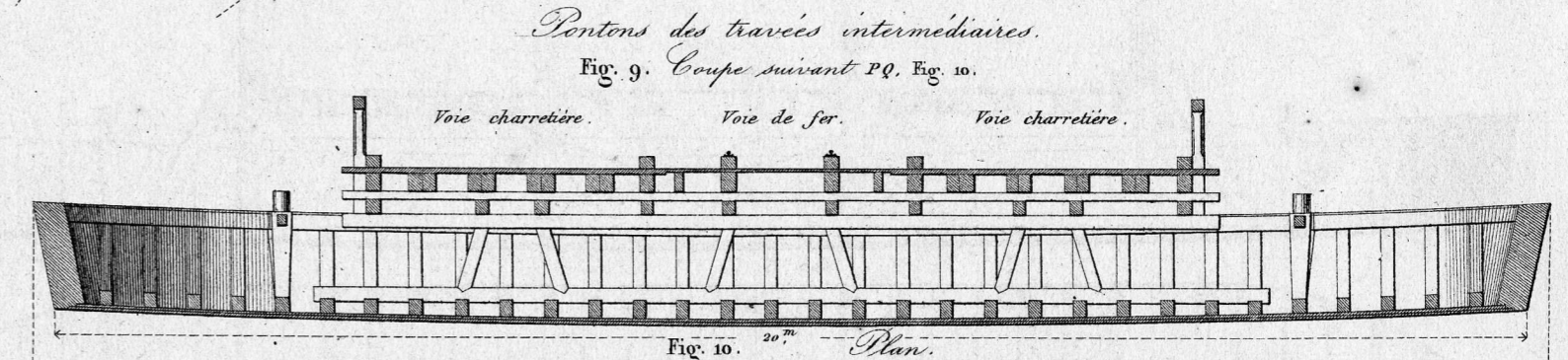
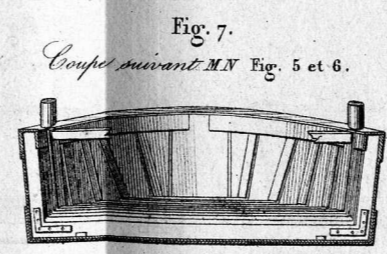
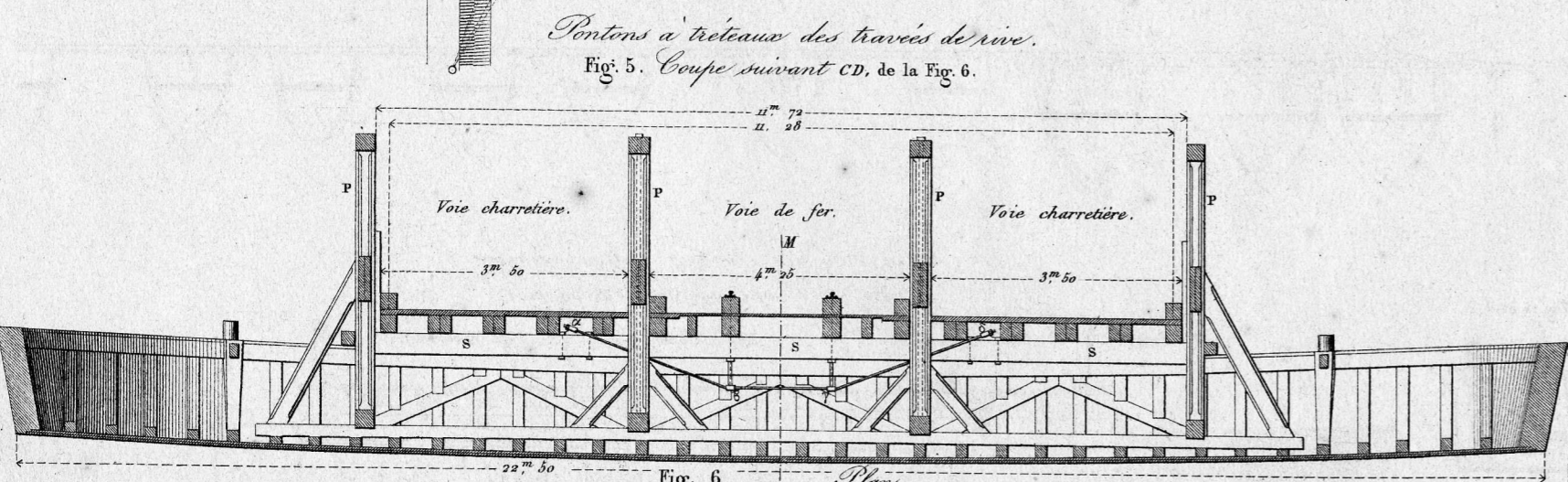
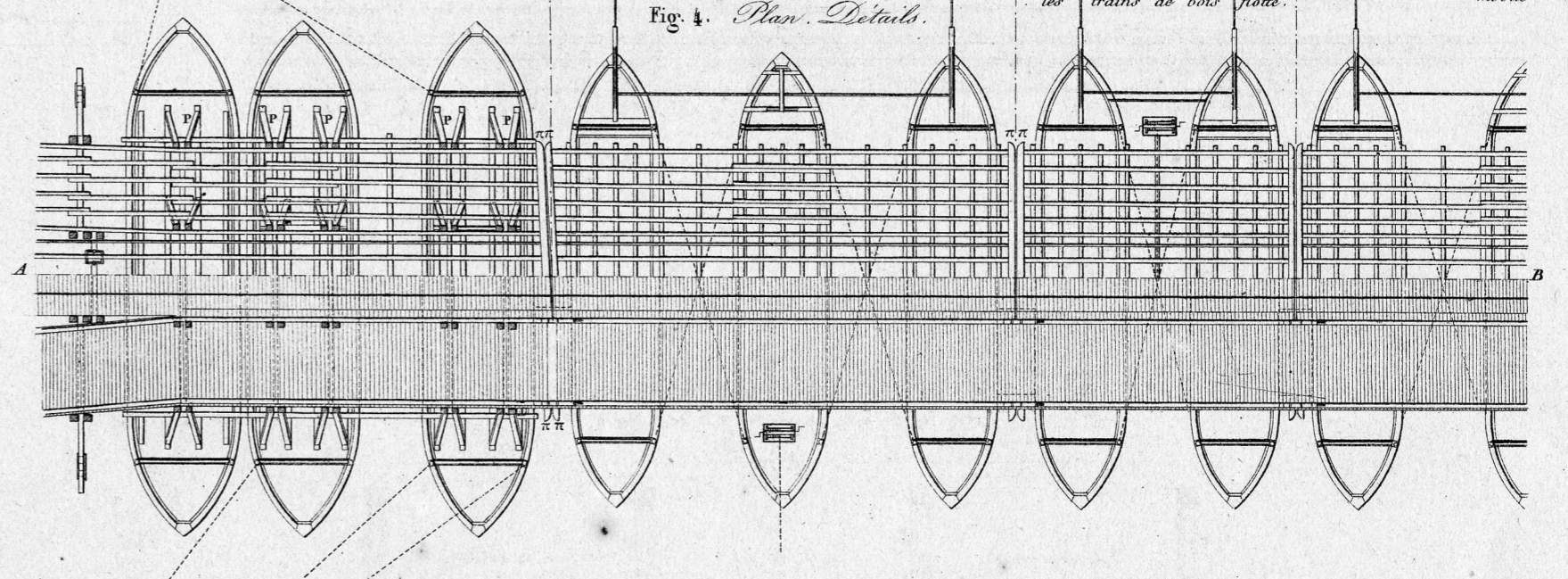
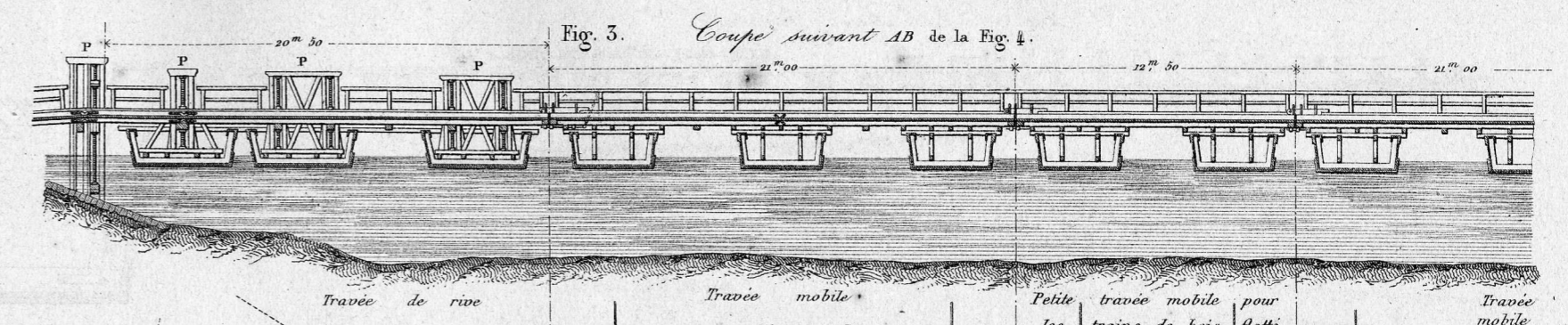
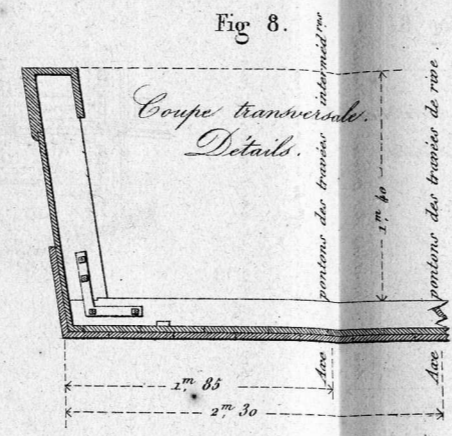
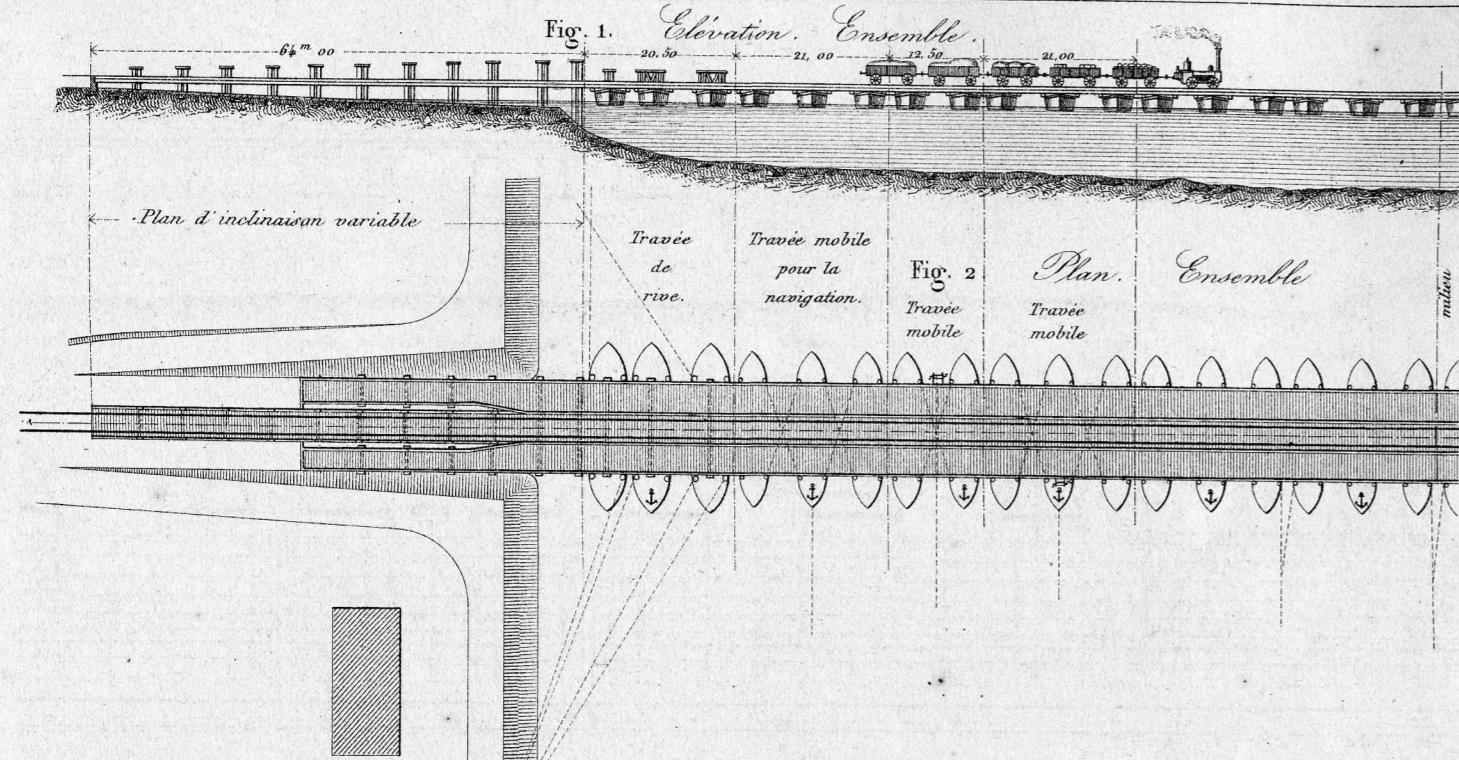
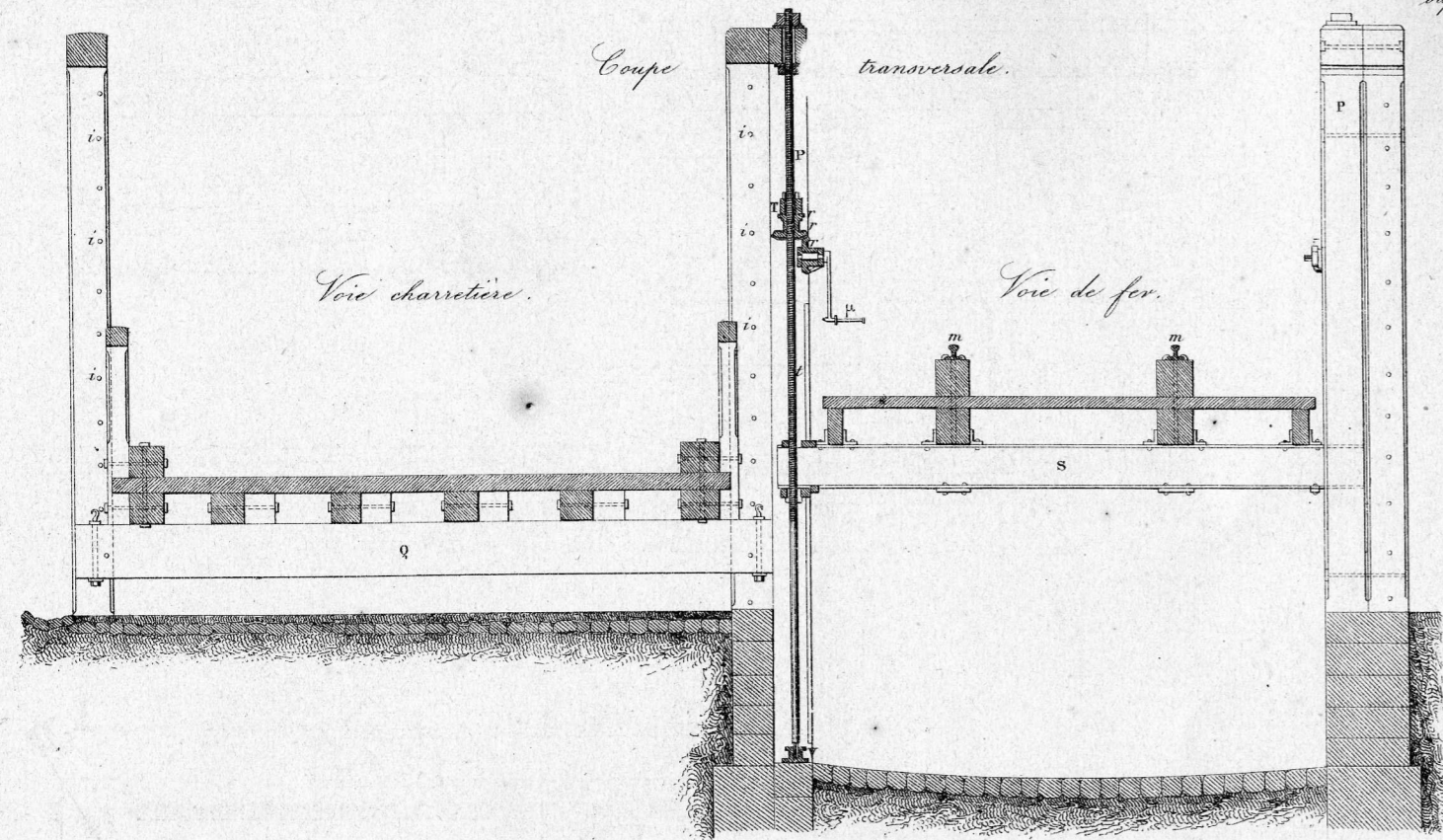


Fig. 1. Plan incliné. (Fig. 1 à 9.)



Coupe longitudinale et élévation des supports et du mécanisme de manœuvre.

Fig. 5.

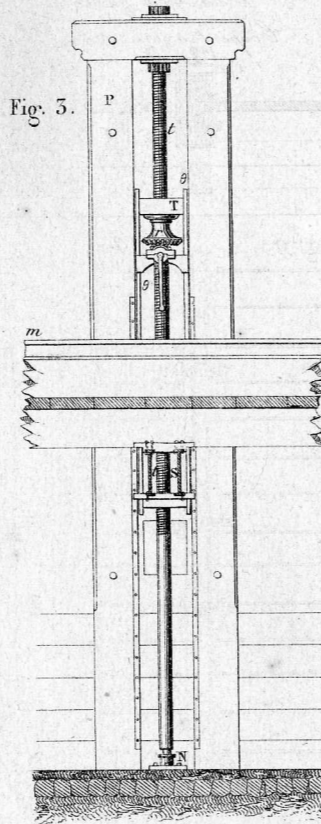


Fig. 10.

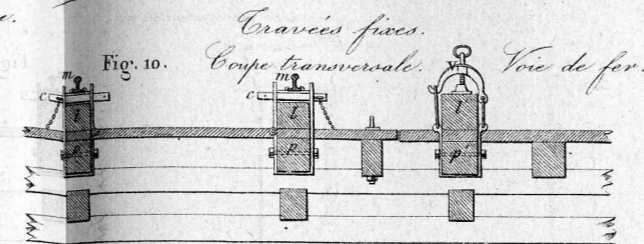
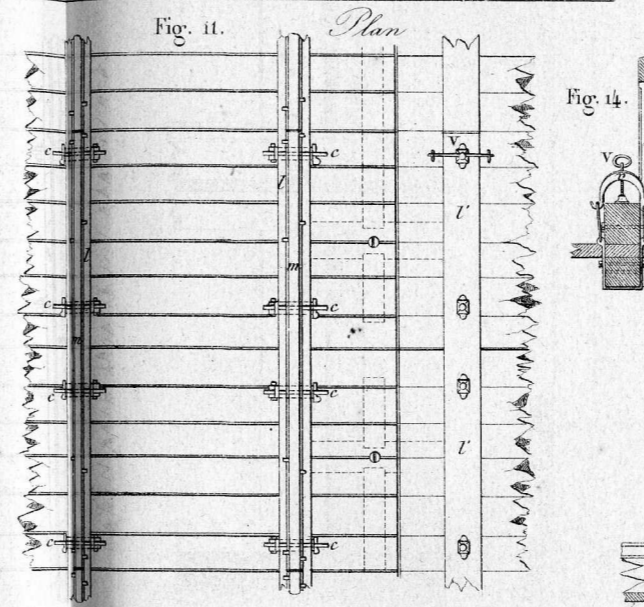


Fig. 11.



Fonction des travées. (Fig. 10 à 16.)

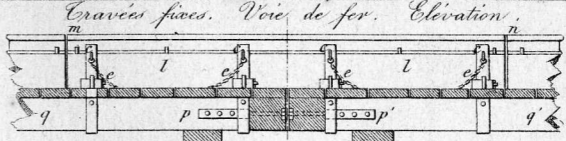


Fig. 13. Voie charretière. Elevation.



Fig. 14. Voie de fer. Elevation.



Fig. 15. Cravées mobiles. Voies charretières. Elevation.

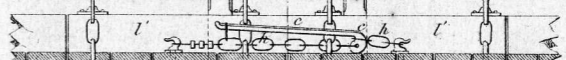


Fig. 16. Plan. Voies charretières.



Fig. 17. Cravées mobiles. Voie de fer. Elevation.



Fig. 8. Assemblages fixes des longrines de la voie de fer.



Fig. 9. Assemblages fixes des longrines de la voie de fer.

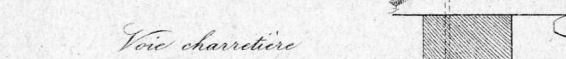


Fig. 2. Plan. Poutrelles et poteaux.

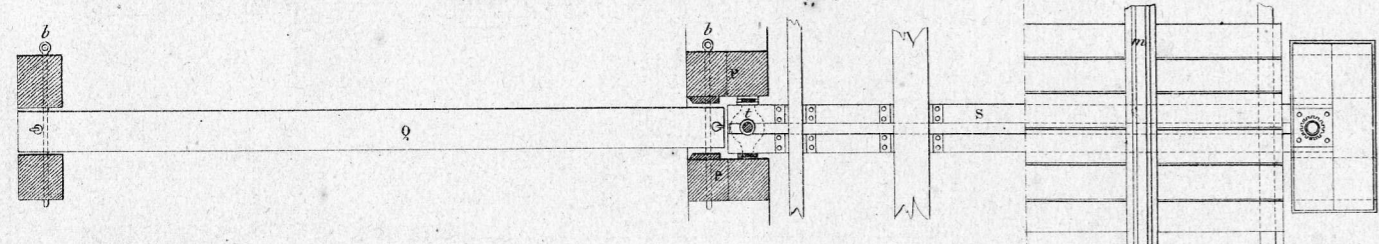


Fig. 5. Installation de la charnière des plans inclinés de la voie de fer.

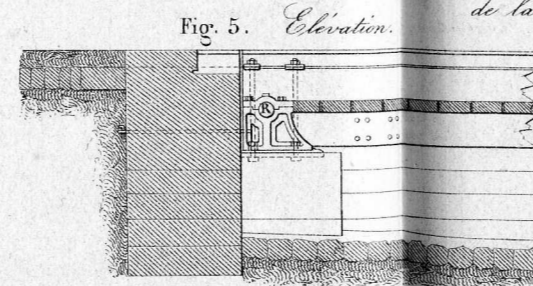
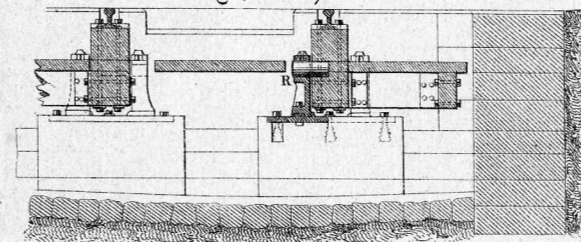


Fig. 7. Coupe transversale. Voie charretière.



Voie charretière

Fig. 18.

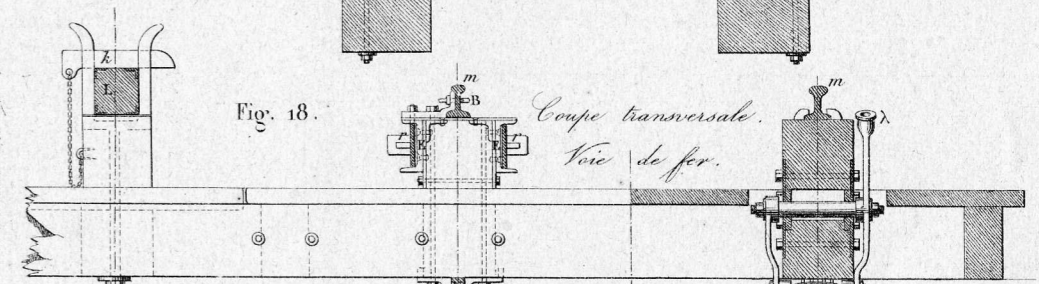
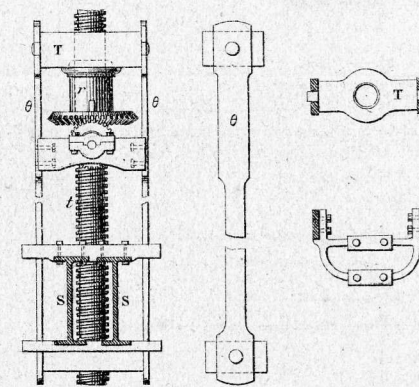
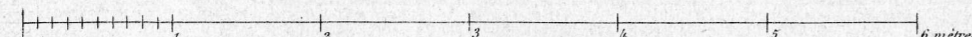


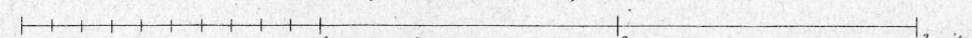
Fig. 4. Détails du mécanisme de la manœuvre du plan incliné.



Echelle des Fig. 1 à 3, 5 à 14 et 20 à 22 de 0,02 pour 1 mètre.



Echelle des Fig. 4 et 15 à 19 de 0,04 pour 1 mètre.



Echelle des Fig. 23 et 24 de 0,05 pour 1 mètre.

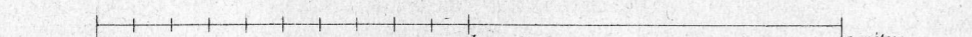
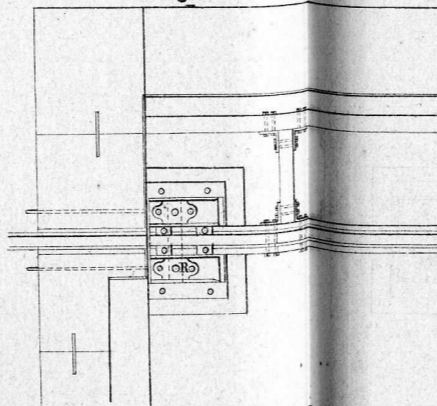


Fig. 6. Plan.



Articulation à la jonction sur le premier ponton et sur le dernier support fixe. (Fig. 20 à 22.)

Fig. 20. Plan.

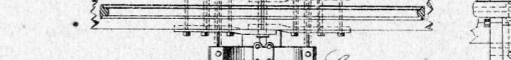


Fig. 21. Elevation.

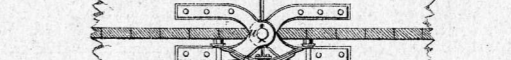


Fig. 22. Coupe.



Fig. 19. Plan.

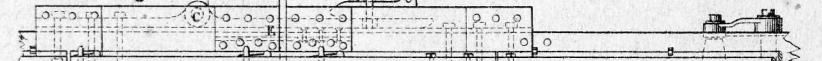


Fig. 23. Coupe.



Assemblages fixes des longrines des voies charnières.

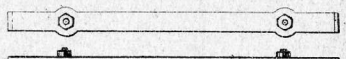
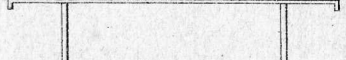
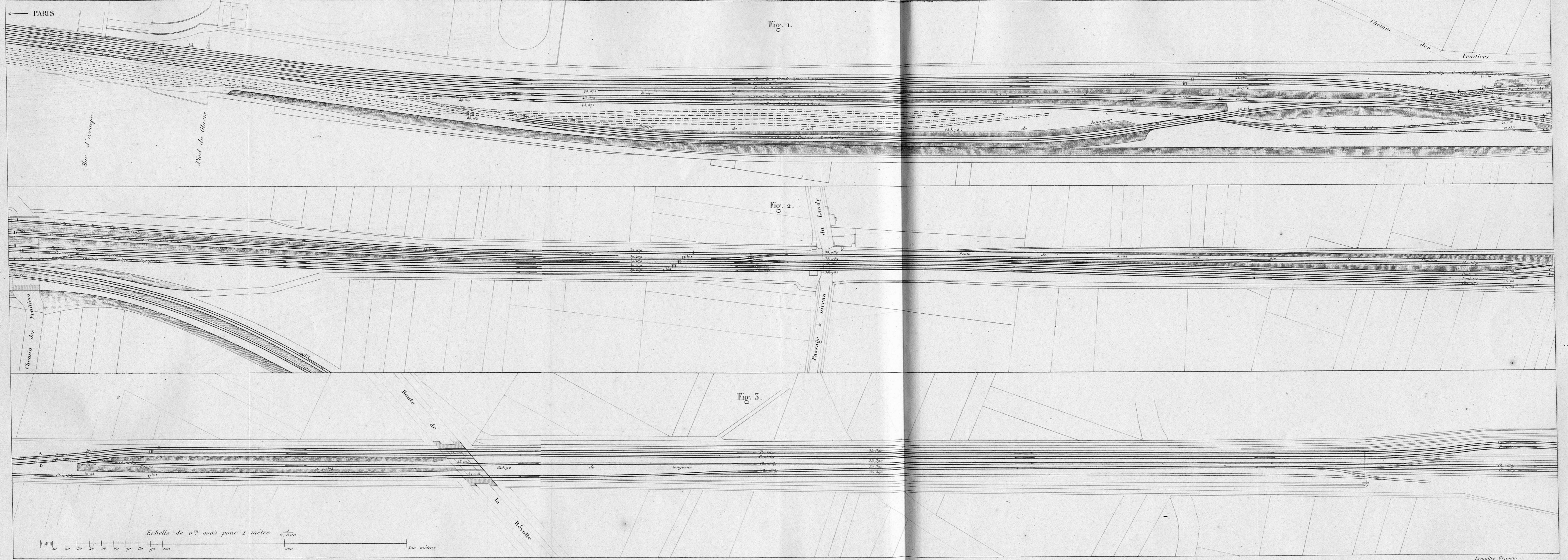


Fig. 25.



C. COUCHE, Chemins de Fer.



Raccordement des forges de Liverdun avec la ligne de Paris à Strasbourg.

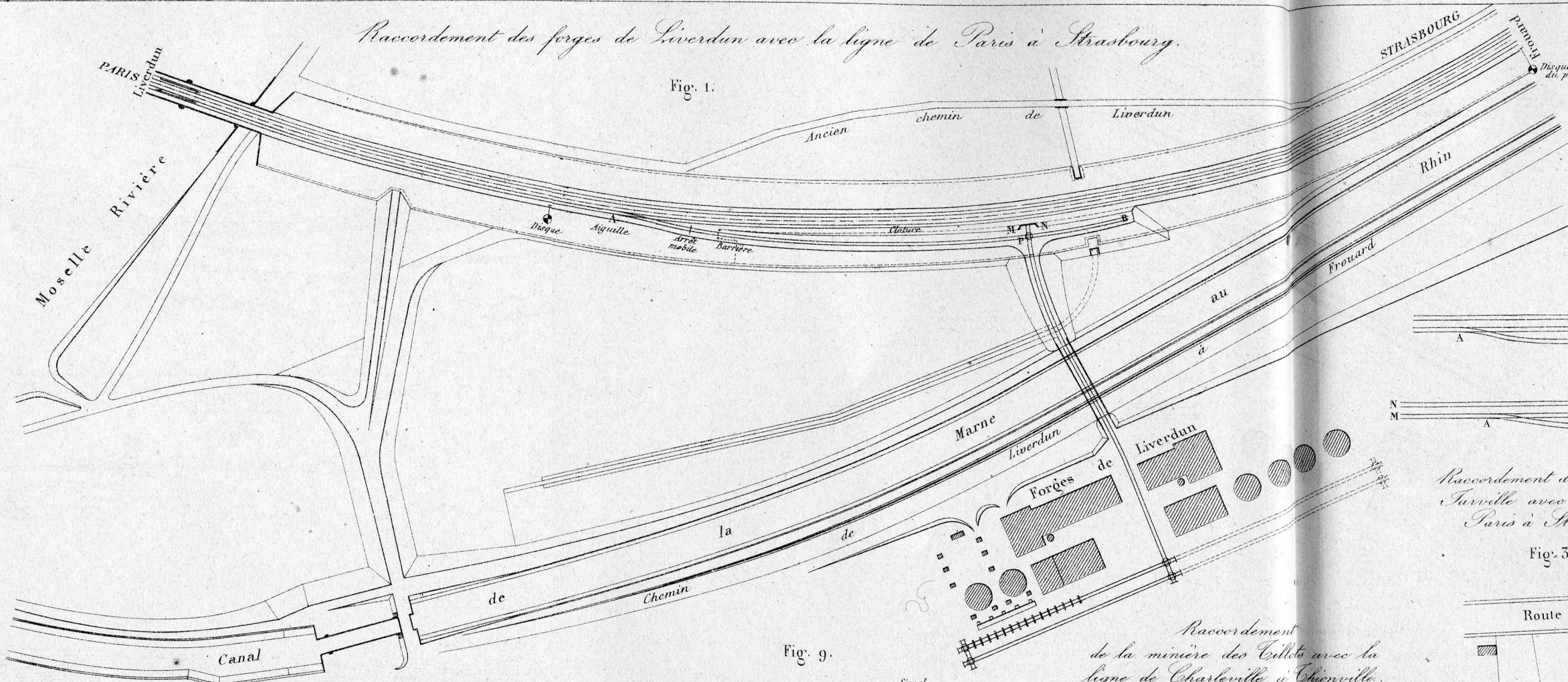


Fig. 1.

Raccordement de l'usine de Mairupt avec la ligne de Charleville à Givet.

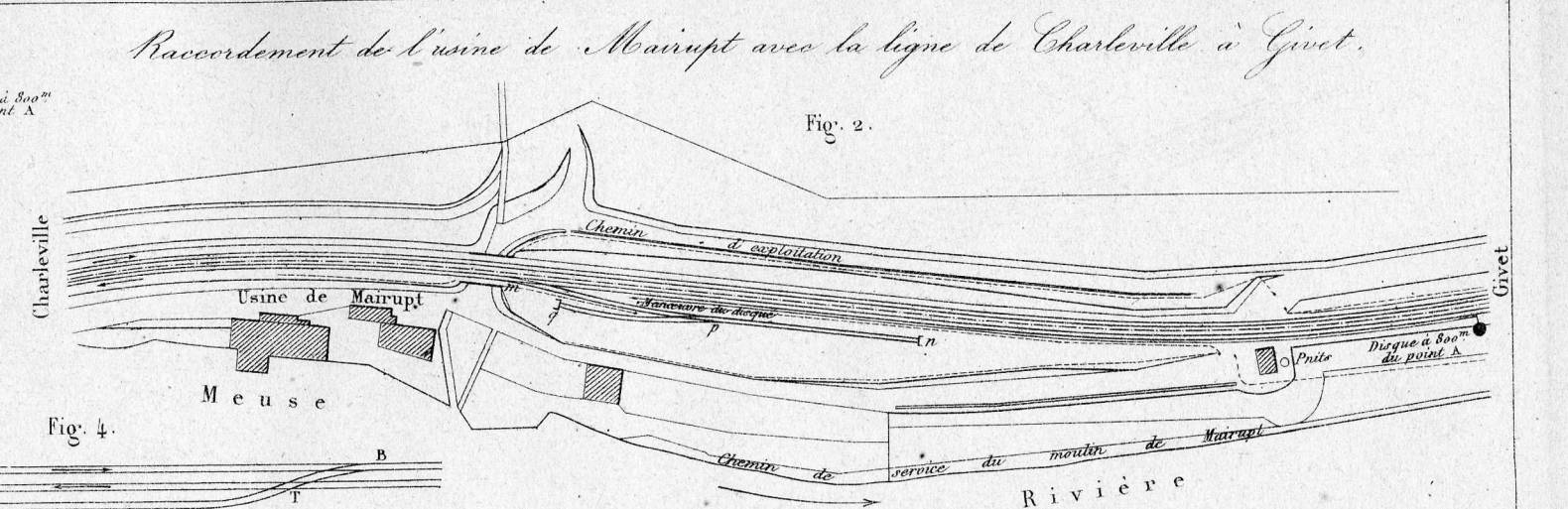


Fig. 2.

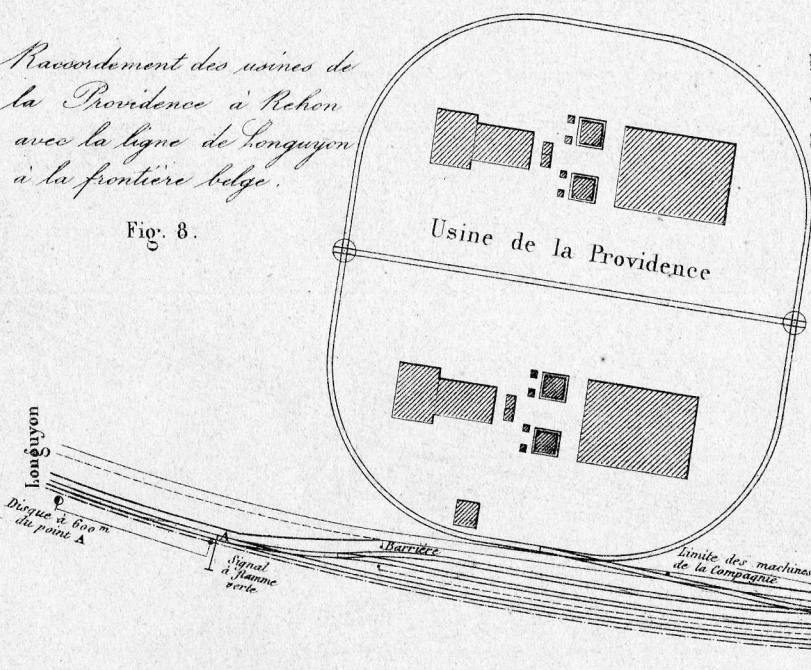


Fig. 8.

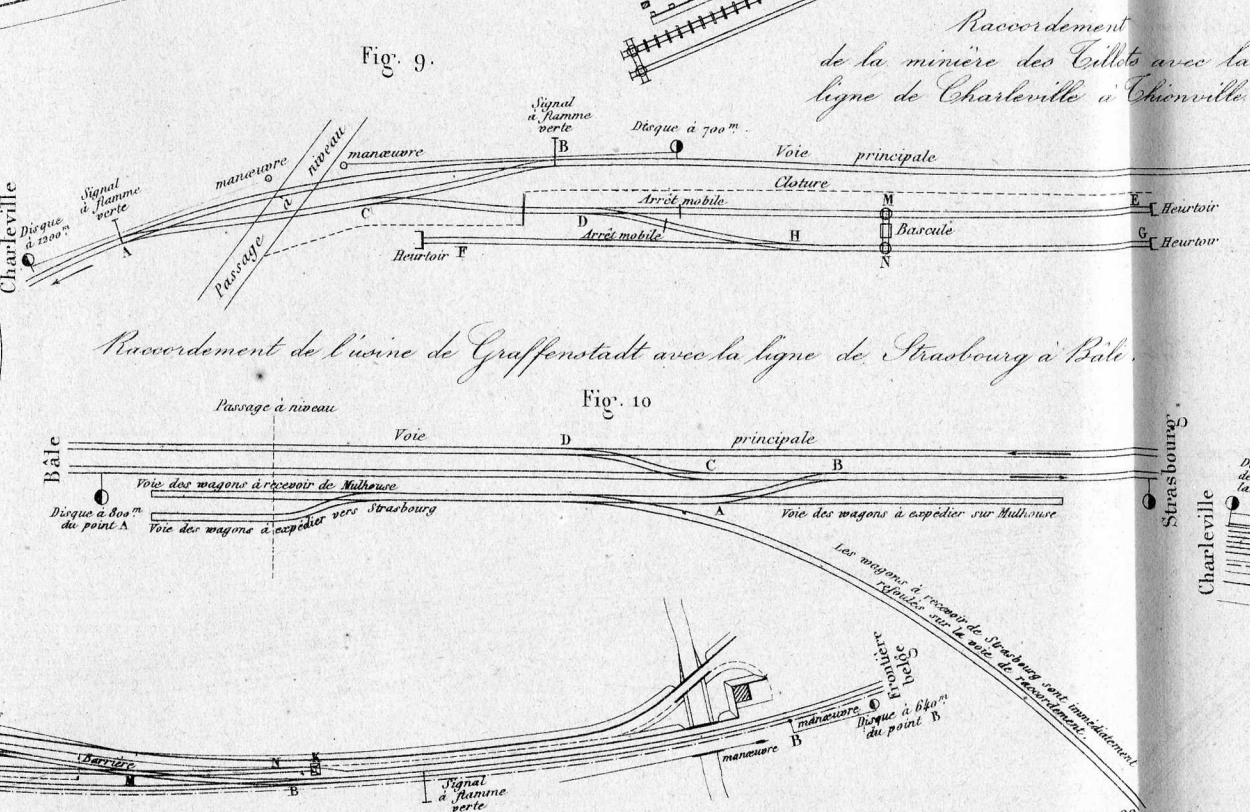


Fig. 9.

Fig. 10.

Raccordement de l'usine de Jarville avec la ligne de Paris à Strasbourg.

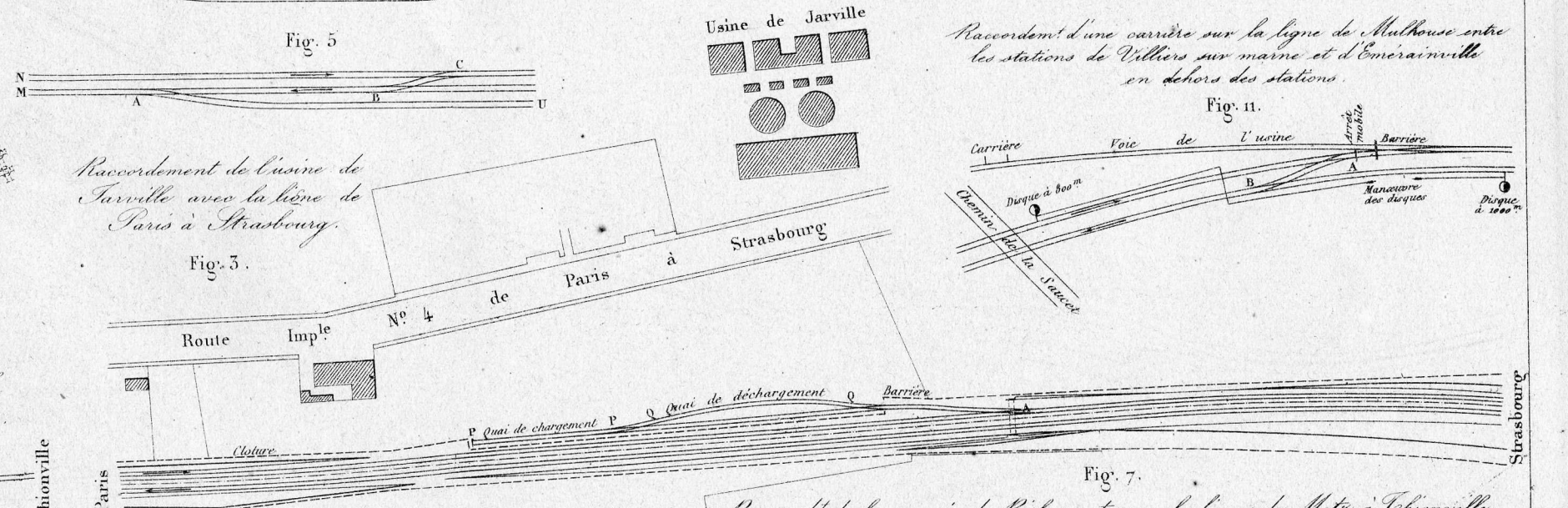


Fig. 3.

Fig. 4.

Fig. 5.

Fig. 11.

Port-sec de Remilly - Pont Mauvais, ligne de Charleville à Thionville.

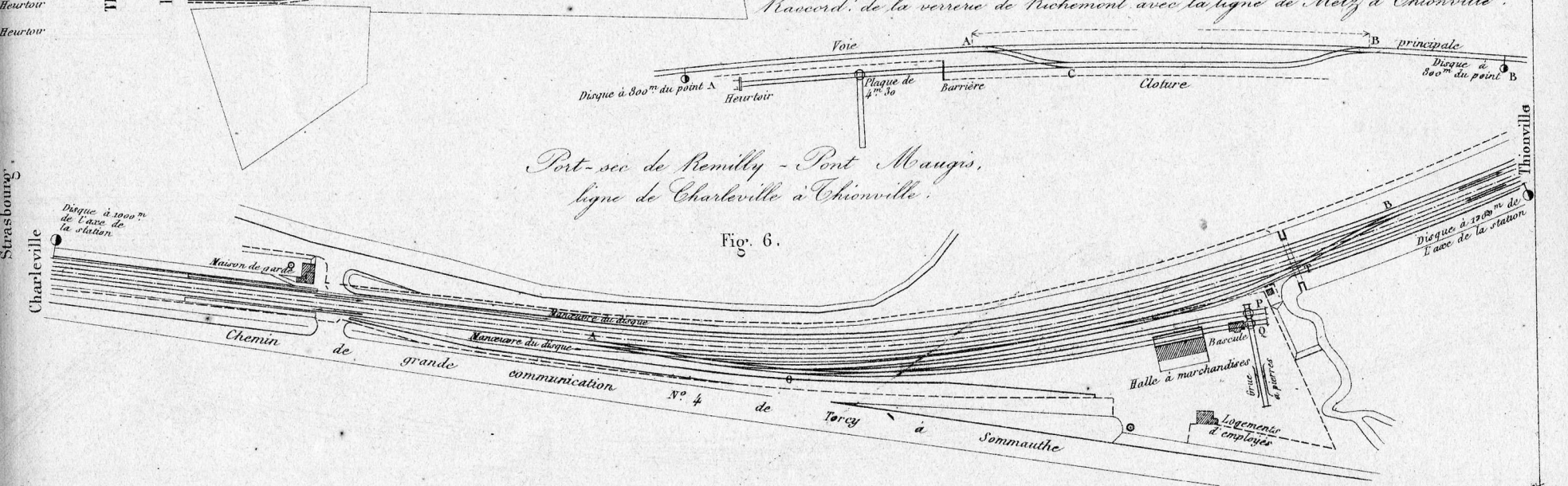


Fig. 6.

Fig. 1. Traversée à aiguilles mobiles avec angles obliques.

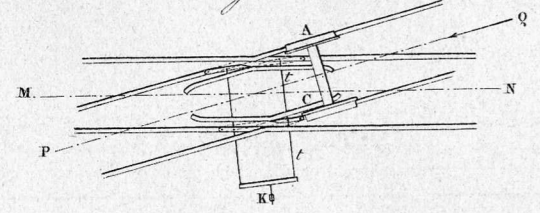


Fig. 2.

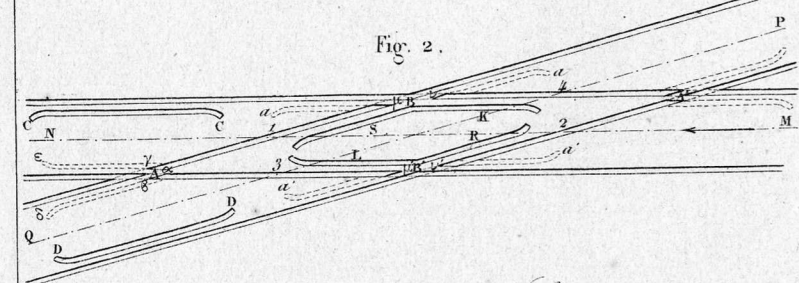


Fig. 4. Coupe par la ligne AB.

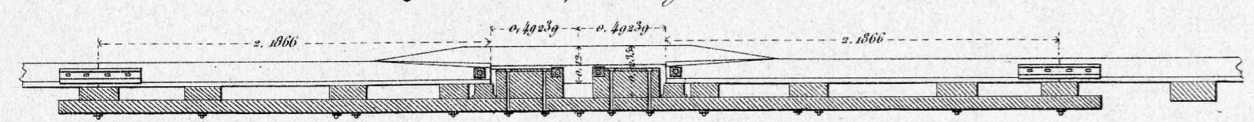


Fig. 5. Plan

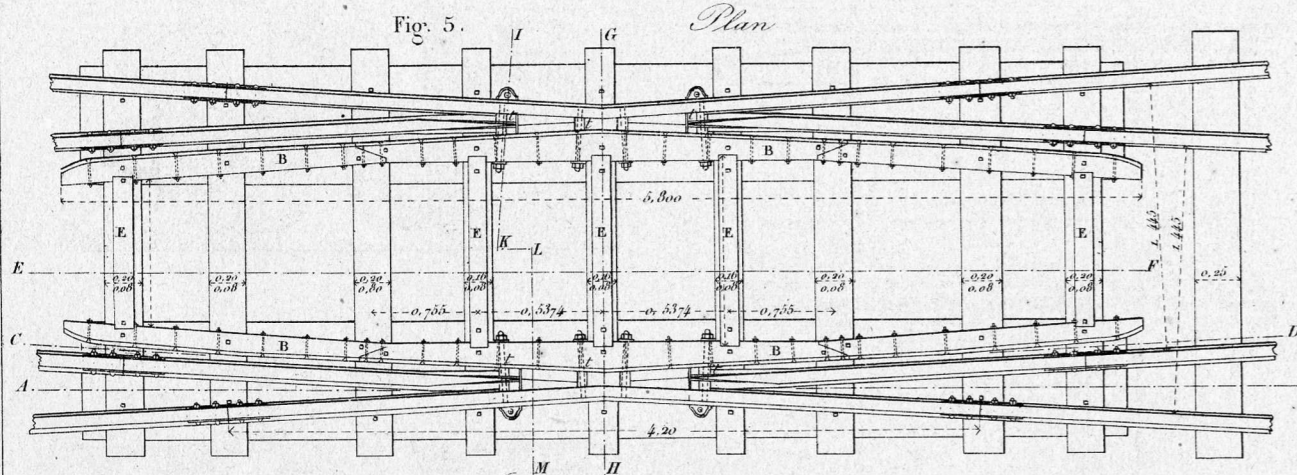


Fig. 6. Coupe par la ligne CD.

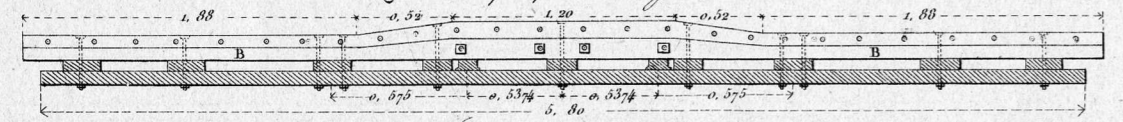


Fig. 7. Coupe par la ligne EF.



Fig. 8. Coupe par la ligne GH.

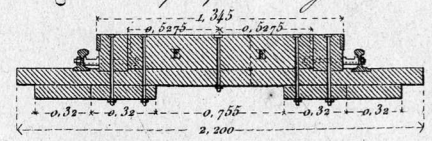
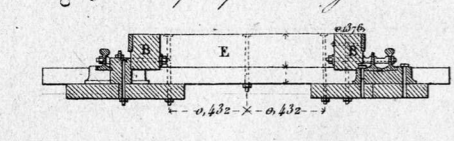
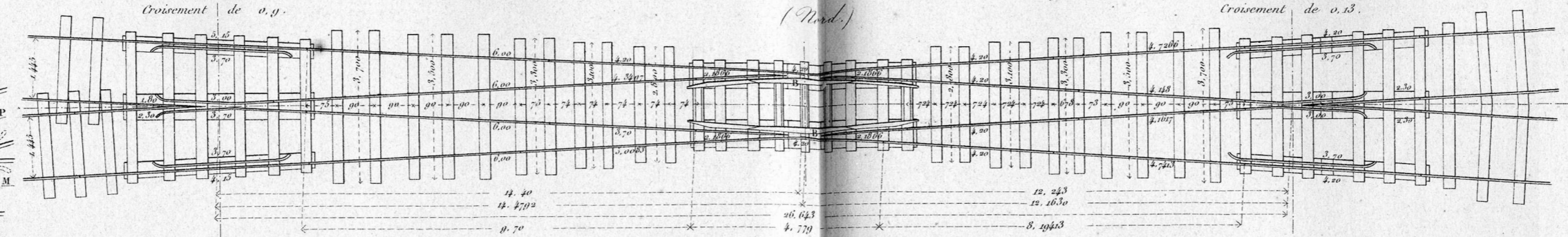


Fig. 9. Coupe par la ligne IKLM.



Traversée de 0. 11. (Fig. 3 à 9.)

Fig. 5. Plan d'ensemble de la traversée avec croisements extrêmes d'angles différents. (Nord.)



Traversée de 7° 30' (Fig. 10 à 13.)

Fig. 10. (Est) Plan

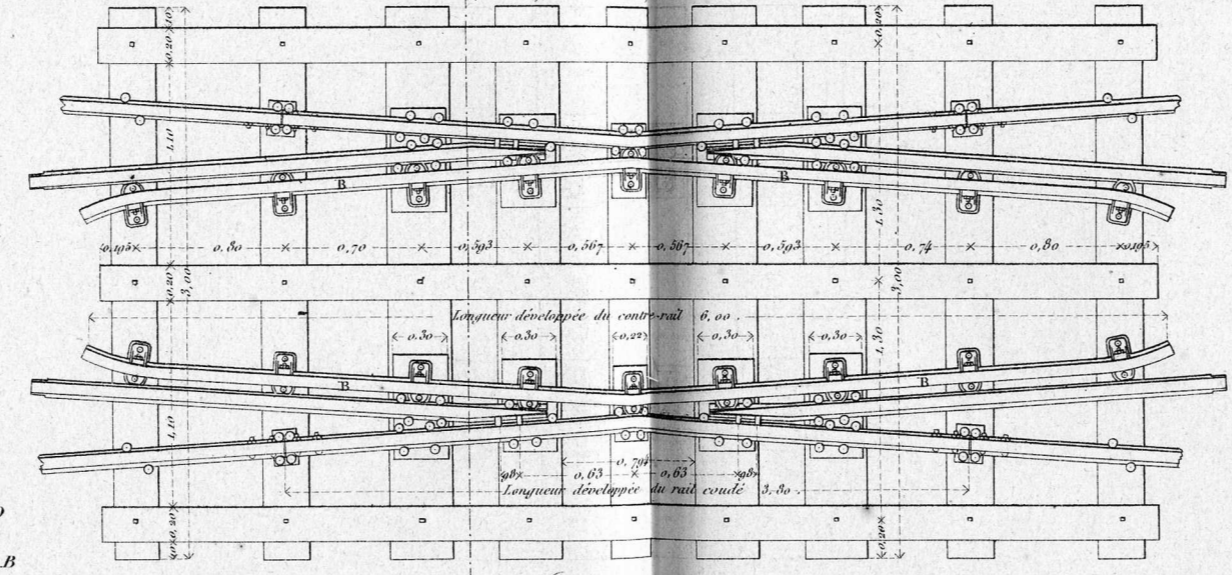


Fig. 11. Coupe par la ligne NO.

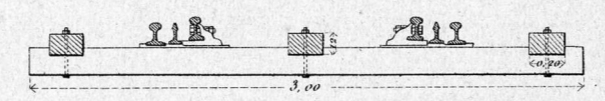


Fig. 12. Coupe de l'extrémité de la pointe

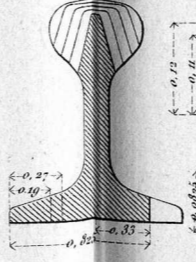
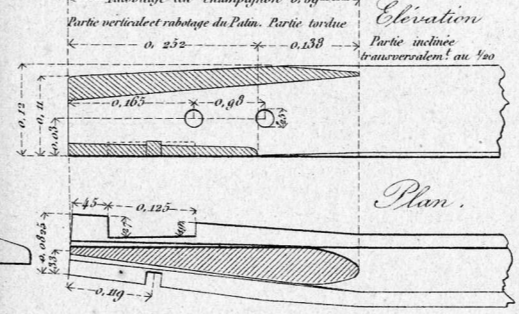
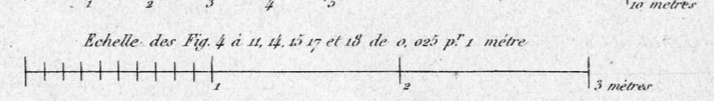


Fig. 13. Détails de la pointe



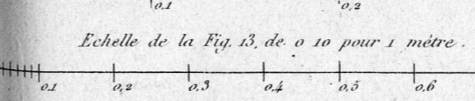
Echelle de la Fig. 3. de 0. 008. pour 1 mètre.



Echelle des Fig. 4 à 11, 14, 15 et 18 de 0. 025 p. 1 mètre



Echelle des Fig. 12, 16 et 19 de 0. 25 p. 1 mètre.



Echelle de la Fig. 13. de 0. 10 pour 1 mètre.



Traversée à angle droit. (Fig. 17 à 19.)

Fig. 17. Plan.

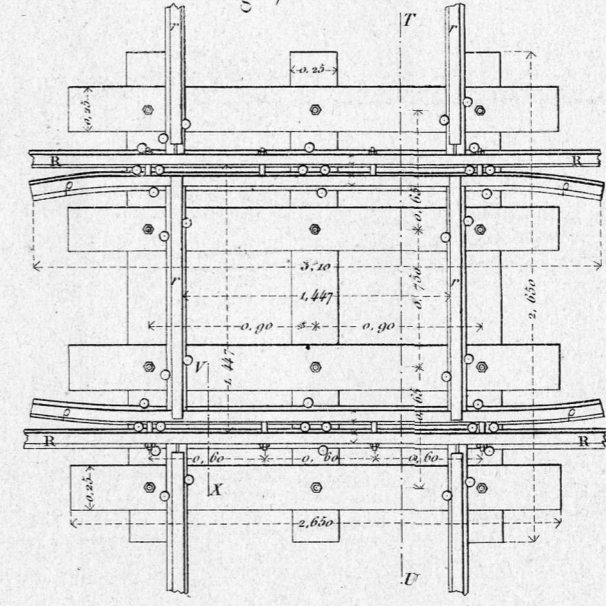
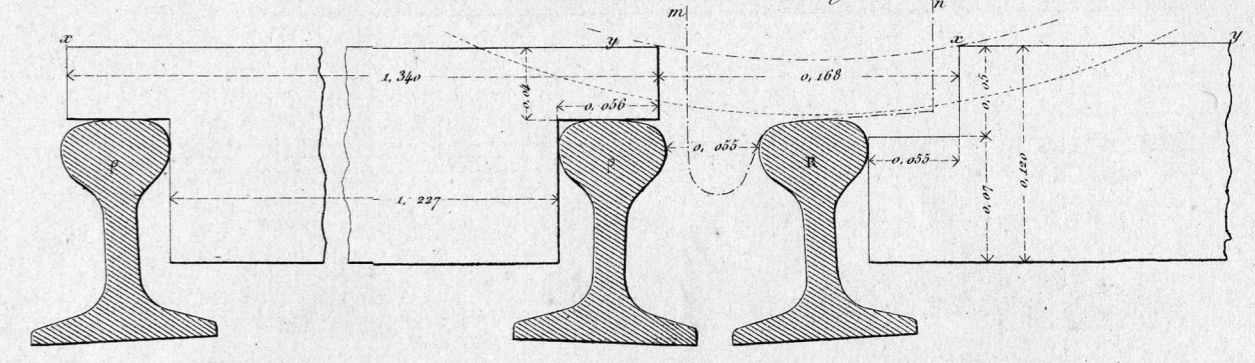


Fig. 19. Coupe des rails suivant la ligne vx.



Stat's Bahn d'Autriche. (Fig. 14 à 16.)

Fig. 14. Coupe par la ligne PQ.

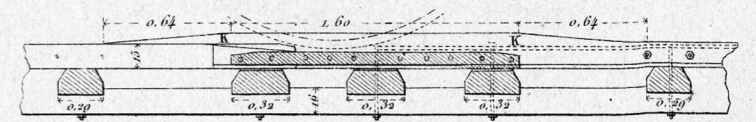


Fig. 15. Plan

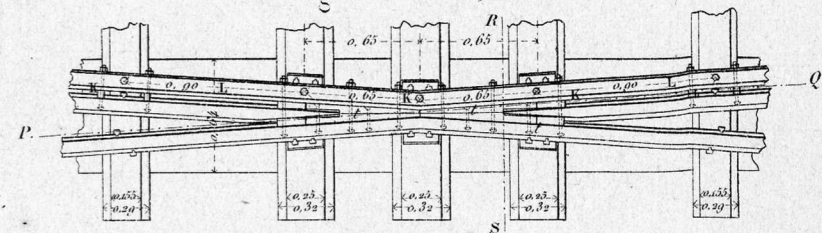


Fig. 16. Coupe par la ligne RS.

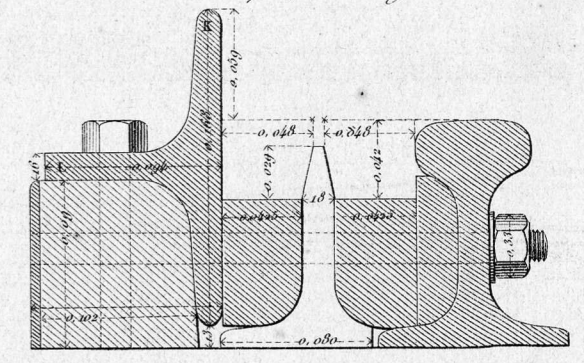
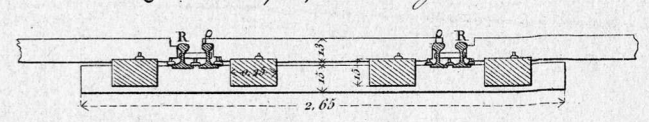
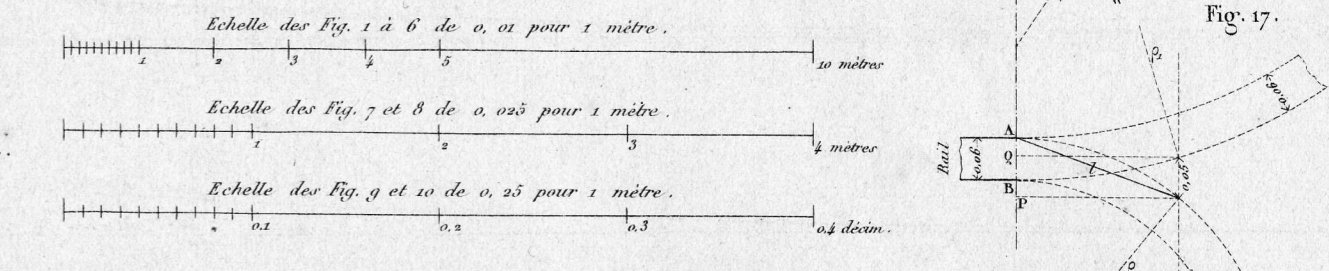
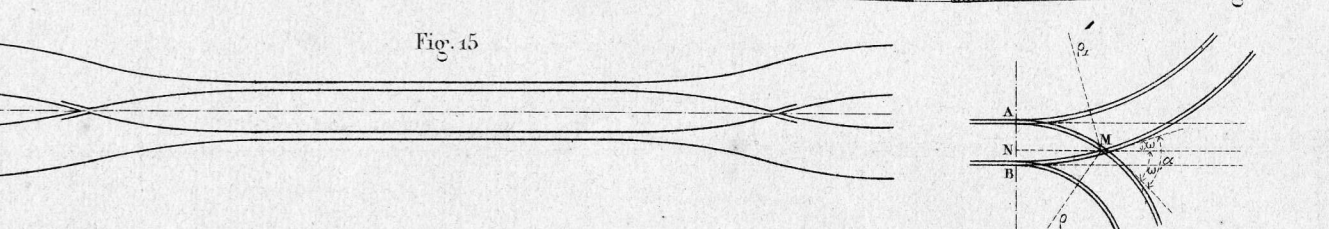
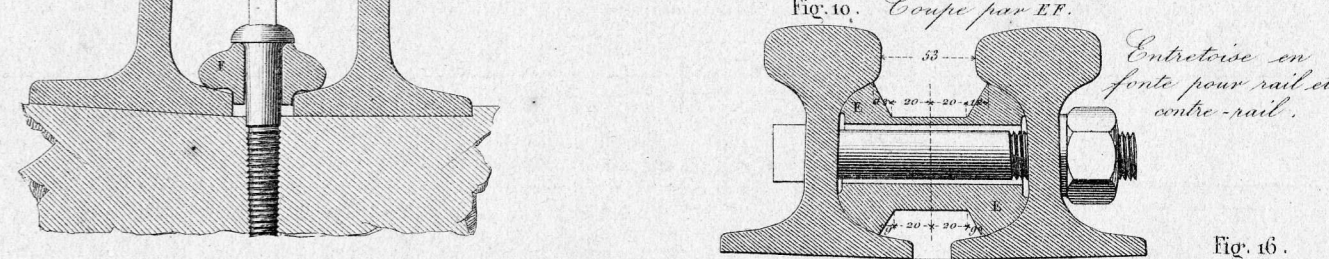
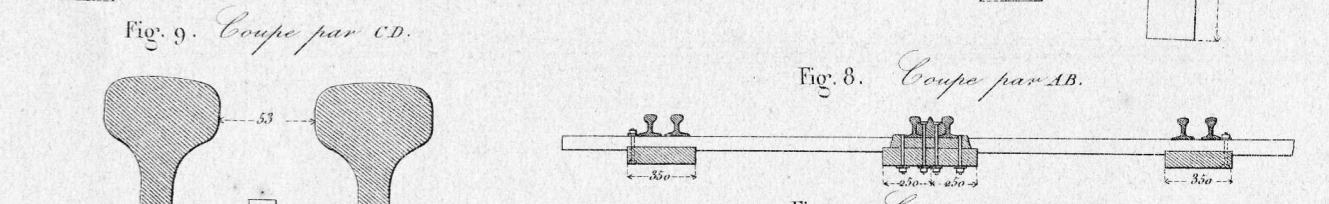
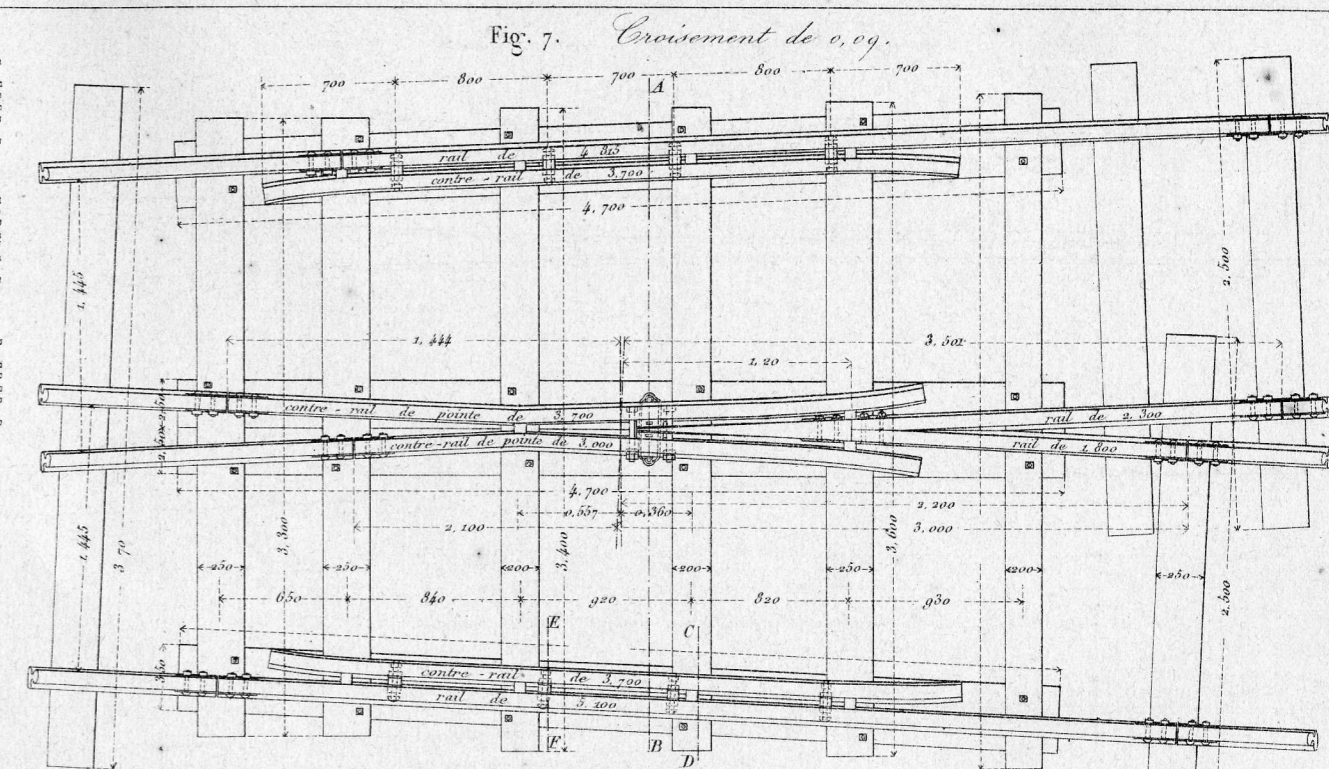
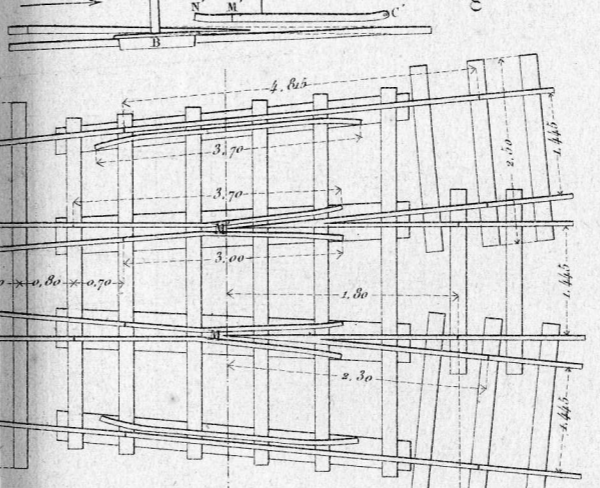
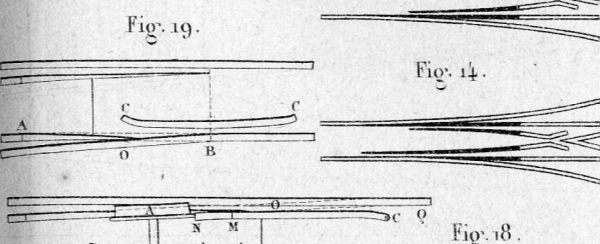
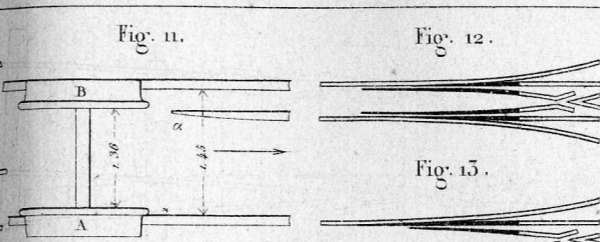
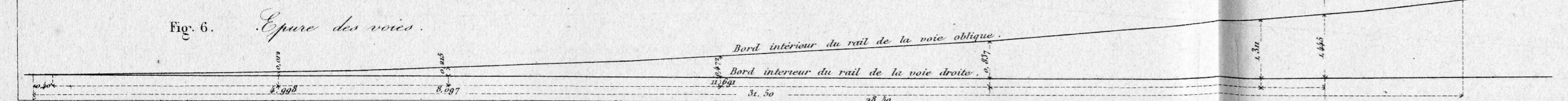
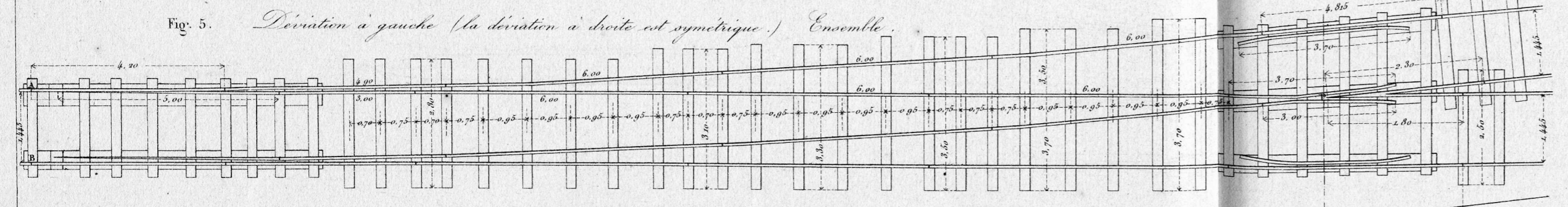
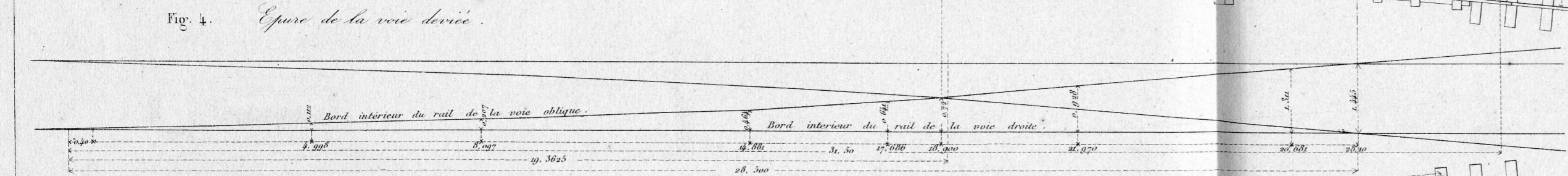
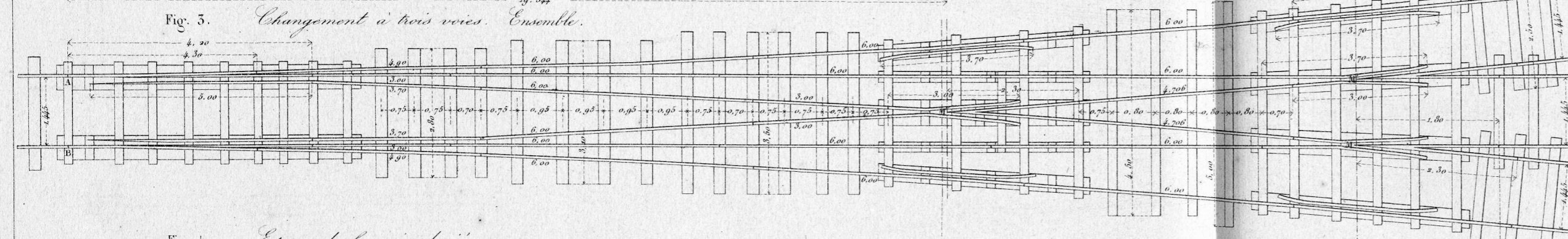
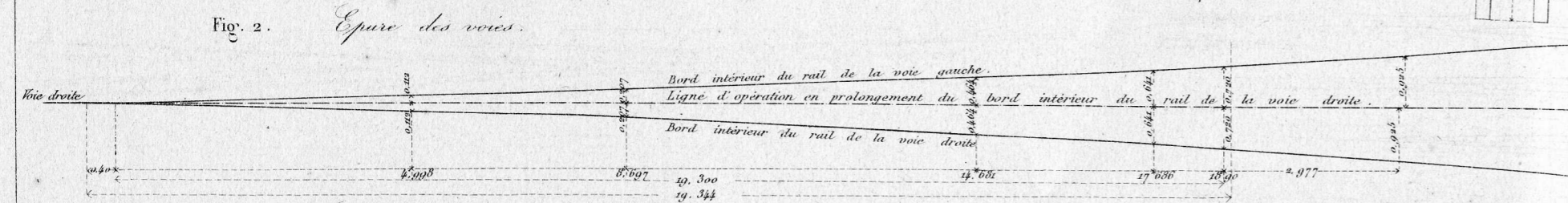
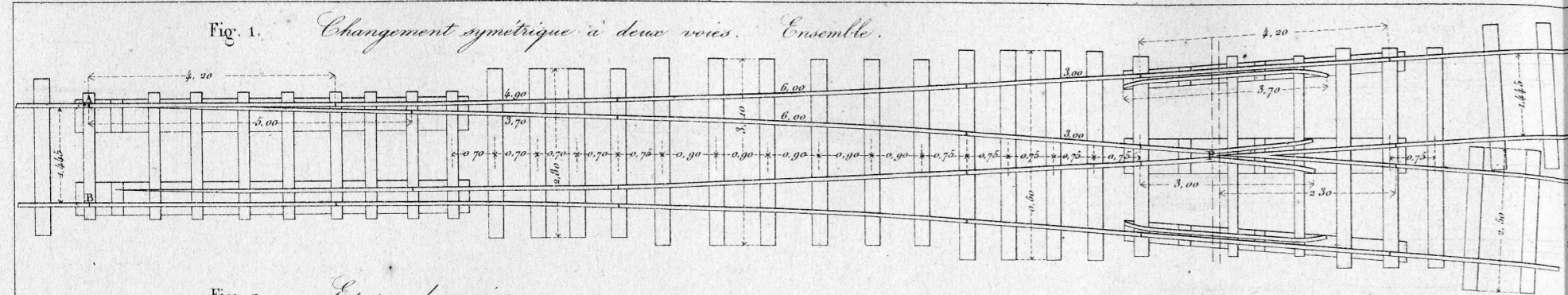
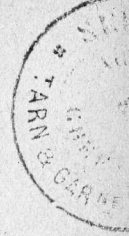


Fig. 18. Coupe par la ligne TU.





Est. Changements à deux voies (Fig. 1 à 8.) Détails

Fig. 7. Coupe de l'aiguille de gauche côté intérieur de la voie. (l'aiguille de droite est symétrique.)

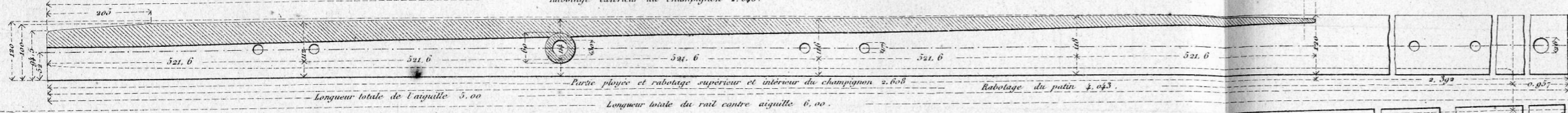


Fig. 8. Coupe horizontale de l'aiguille et du rail contre-aiguille.

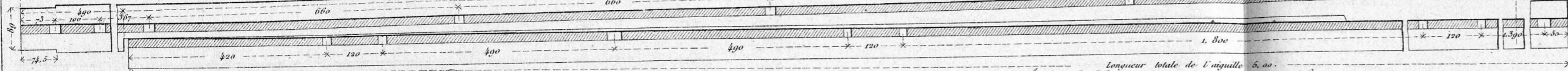


Fig. 1. Plan

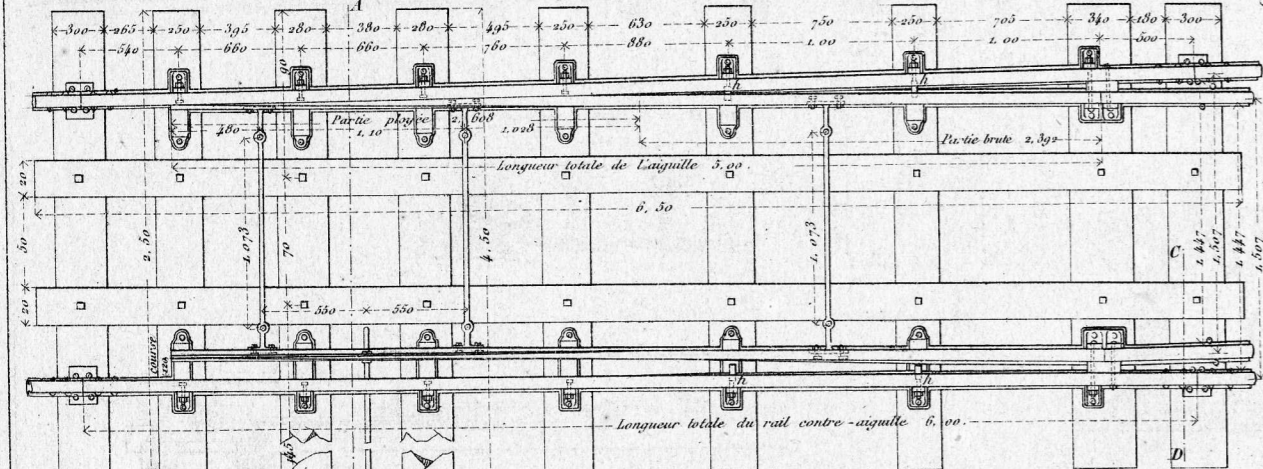


Fig. 5. Coupe par la ligne CD. Autriche. Levier de manœuvre et signal. (Fig. 17 à 19.)

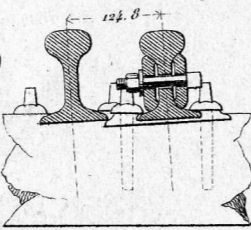


Fig. 17. Vue de face.

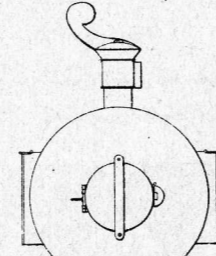


Fig. 18. Vue de profil.

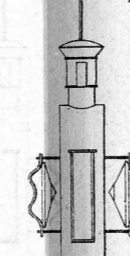


Fig. 12.

Coupe de la pointe de la petite aiguille.

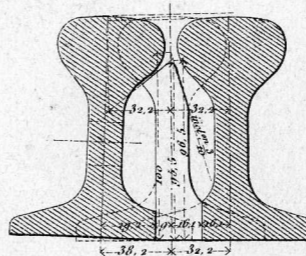
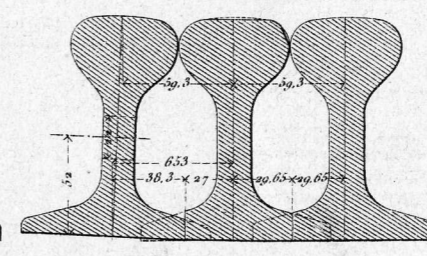


Fig. 15.

Coupe au contact des aiguilles.



Est. Changement triple. (Fig. 9 à 16.) Détails.

Fig. 9.

Plan

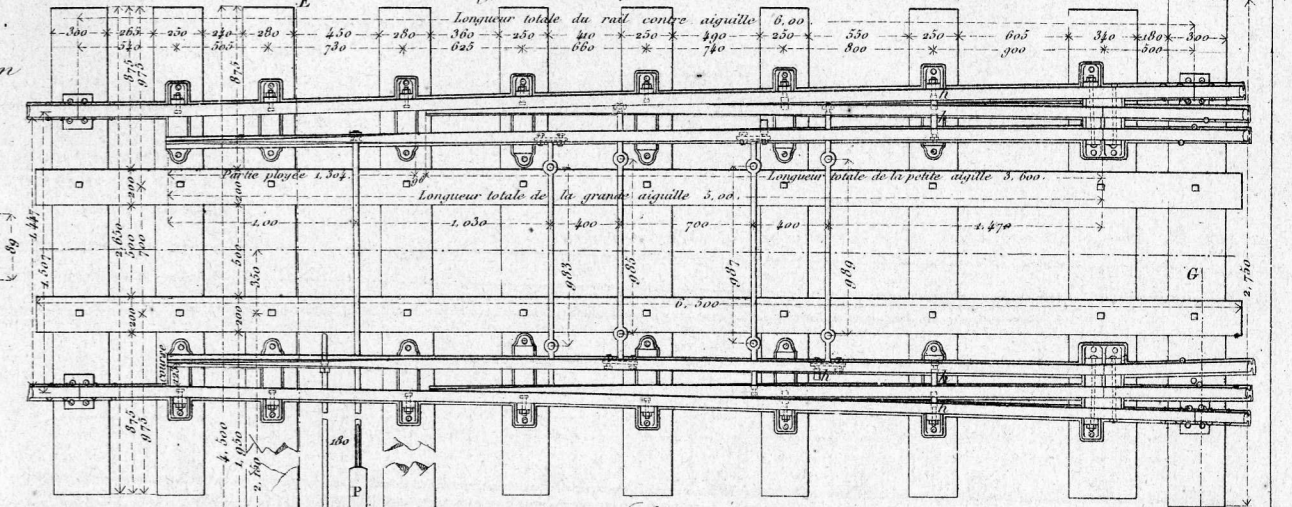
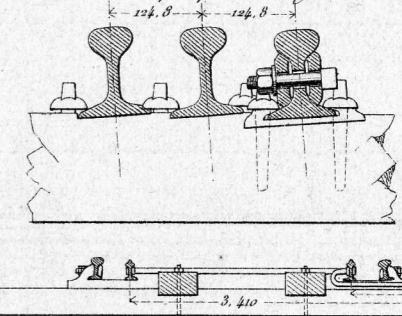
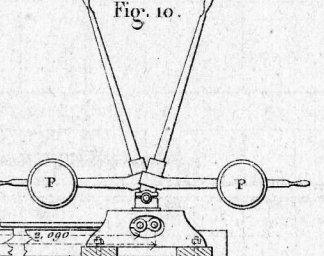


Fig. 11. Coupe par la ligne GH.



Coupe par la ligne EF.



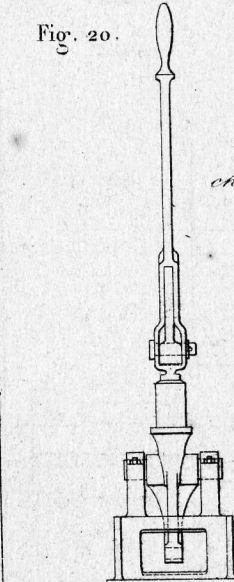
Echelle des Fig. 1, 2, 9 et 10, de 0.025 pour 1 mètre.

Echelle des Fig. 3, 7, 8, 11, 14, 15 et 16 de 0.10 pour 1 mètre.

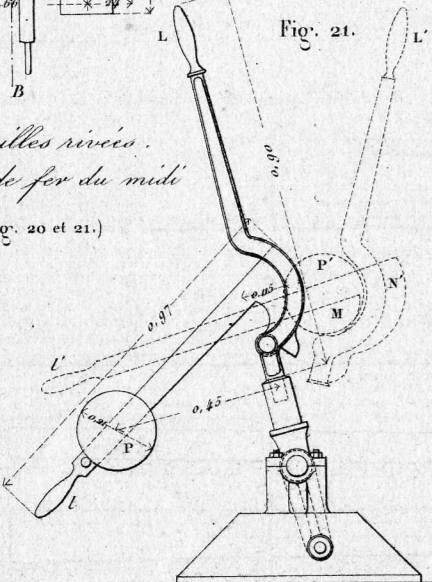
Echelle des Fig. 4, 5, 6, 12 et 13 de 0.25 pour 1 mètre.

Echelle des Fig. 17, à 21 de 0.05 pour 1 mètre.

Vue de profil.



Vue de face



Aiguilles rivées. chemin de fer du midi

(Fig. 20 et 21.)

Fig. 2. Coupe par la ligne AB.

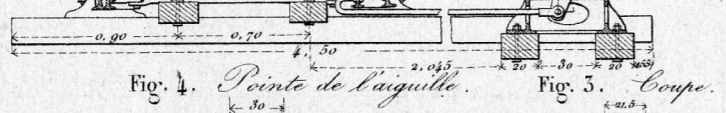


Fig. 4. Pointe de l'aiguille.

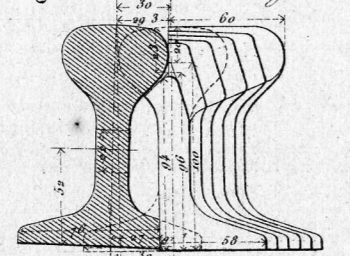


Fig. 3. Coupe.

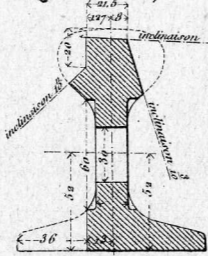
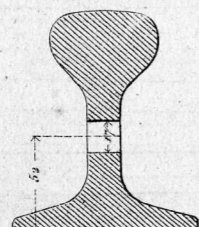


Fig. 6. Coupe par un trou.



Elevation de la grande aiguille de droite côté extérieur de la voie.



Coupe horizontale indiquant le percage des rails contre-aiguille et des aiguilles de gauche.

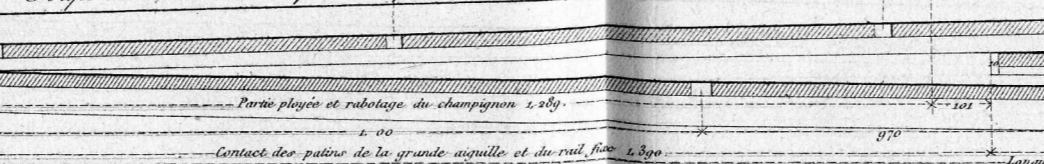
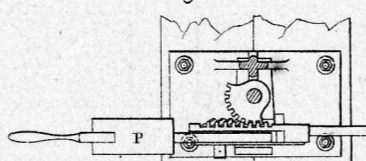


Fig. 19. Plan



Elevation de la petite aiguille de droite côté extérieur de la voie (la petite aiguille de gauche est symétrique.)

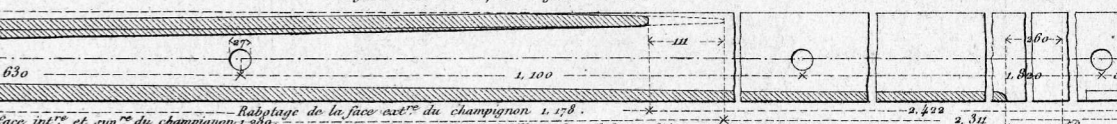


Fig. 14.

Fig. 15.

Fig. 16.

Traversée en acier fondu de 7.30' (M. M. Petit et Gaudet.) se raccordant avec rails à double champignon; (Fig. 1 à 7.)

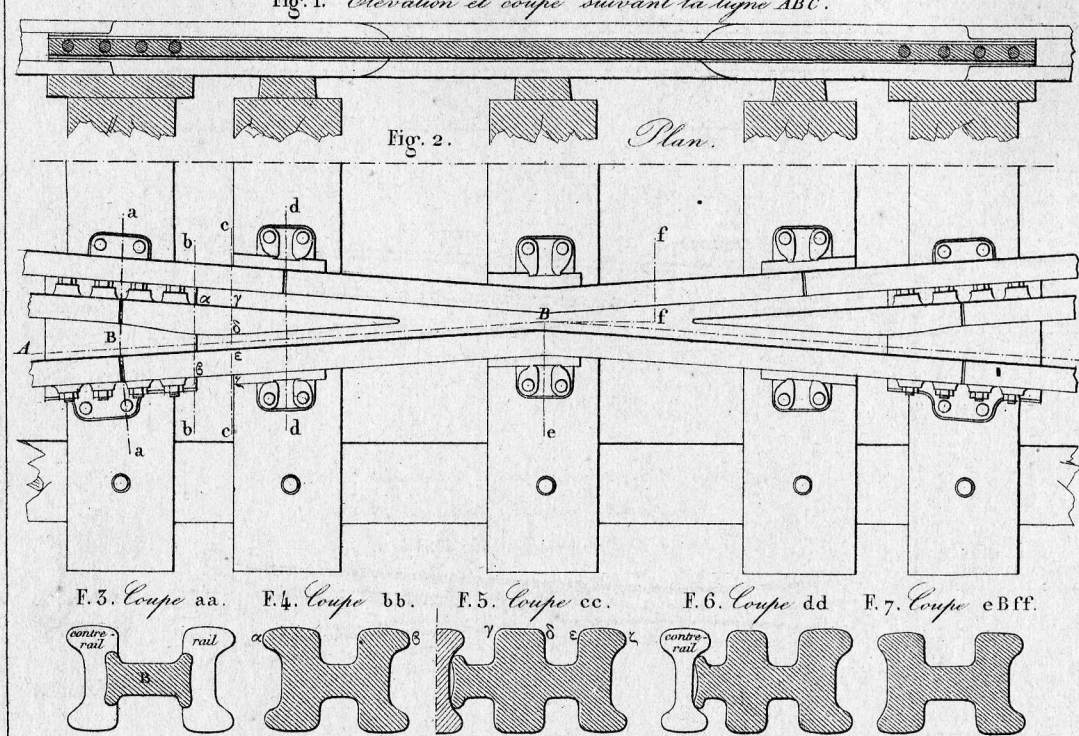


Fig. 30. Traversée normale. Plan de pose.

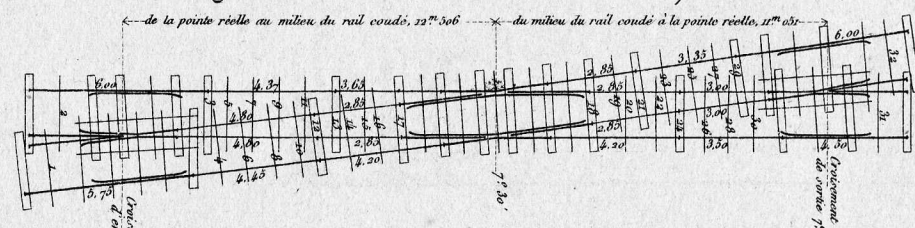


Fig. 32. Changement à trois voies. Plan de pose.

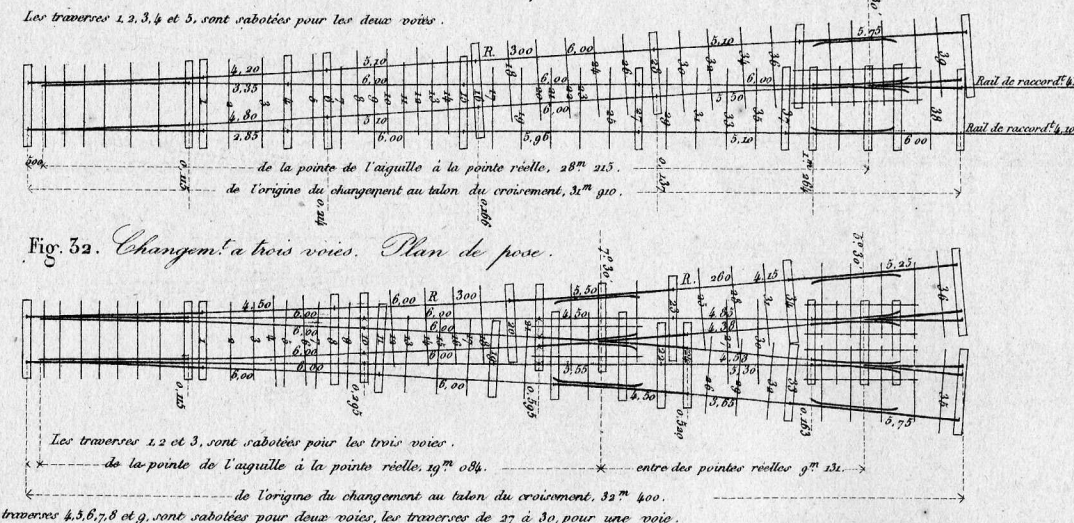


Fig. 8. Elevation de la contre-pointe.

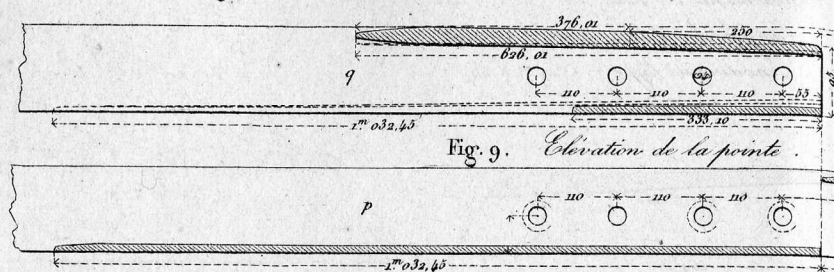


Fig. 10. Plan.

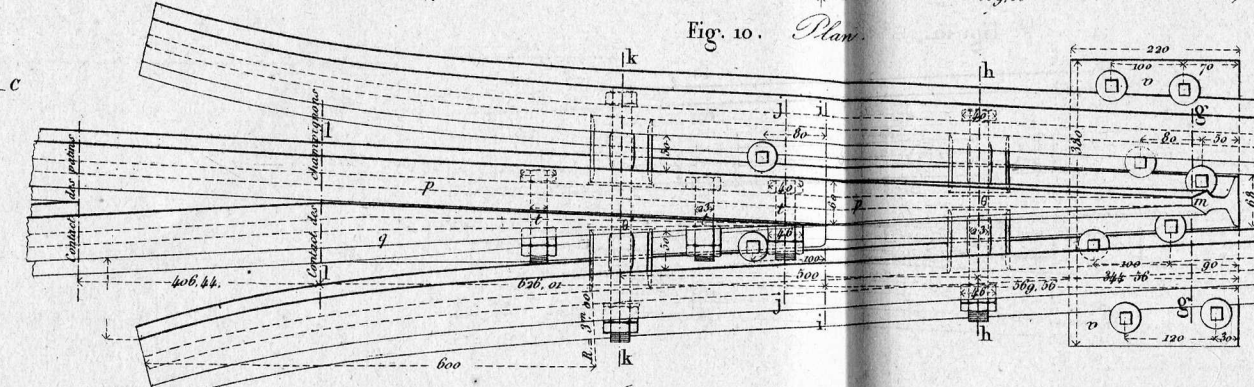


Fig. 12. Coupe gg.

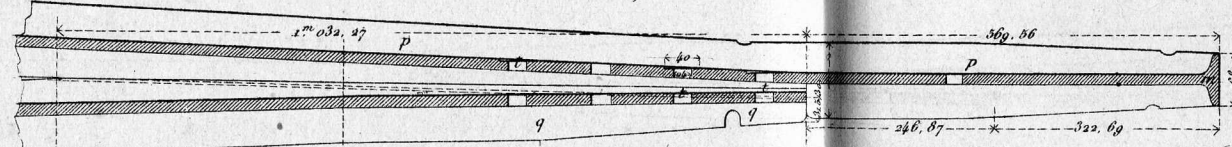


Fig. 14. Coupe ii.

Fig. 15. Coupe jj.

Fig. 18. Coupe mm. (de la Fig. 16.)

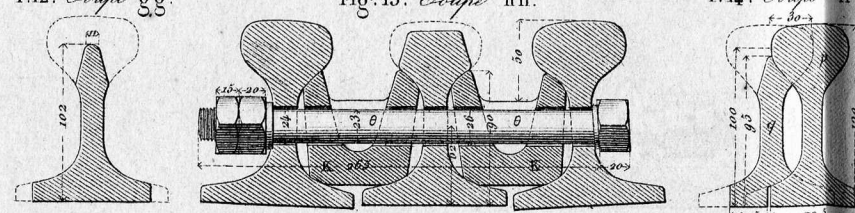
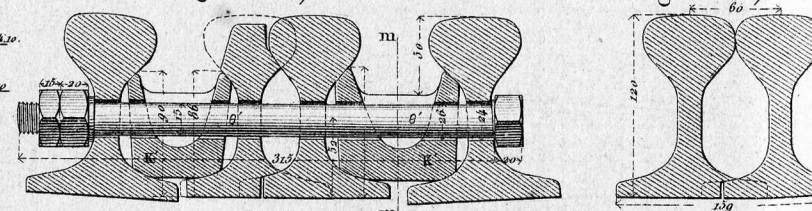


Fig. 17. Coupe ll.



Position des trous des tirfonds à la pointe

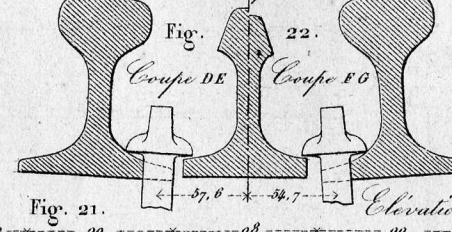


Fig. 22. Coupe DE Coupe FO

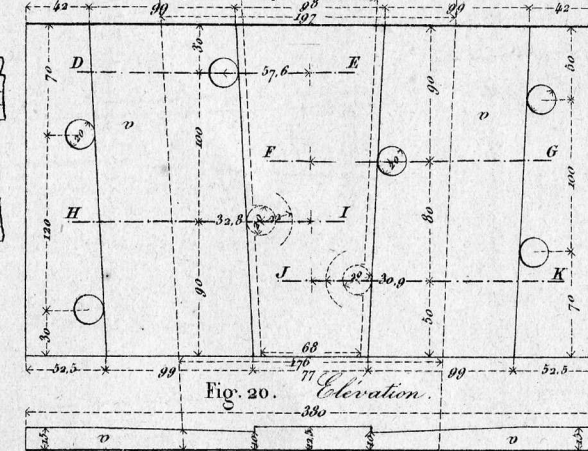
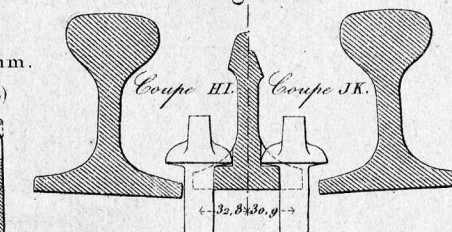


Fig. 23. Coupe III Coupe JK



Croisement de rails se démontant de toutes pièces, pointe en fer battu cimenté ou en Bessemer forgé, de M. Lucien Vander Ebet et C. à Braine le Comte. (Fig. 24 et 25.)

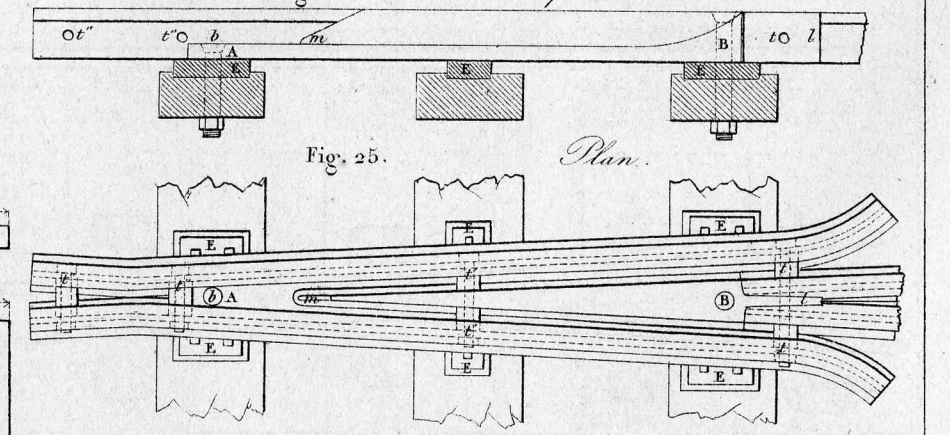


Fig. 26. Croisement avec armature en acier rapportée sur les pattes de ferre. Est bavarois. (Fig. 26 et 27.)

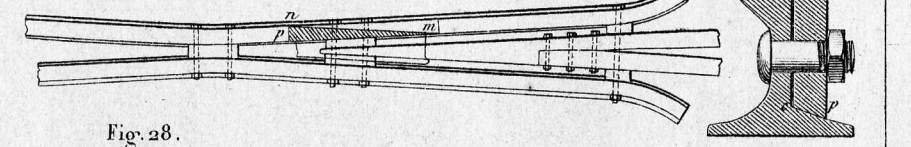


Fig. 28.

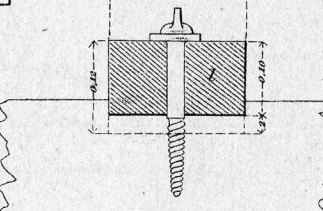
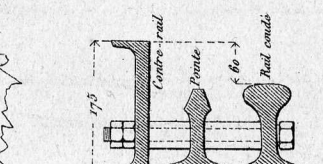
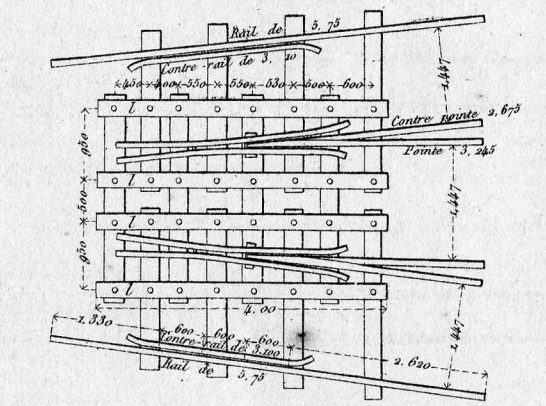


Fig. 29

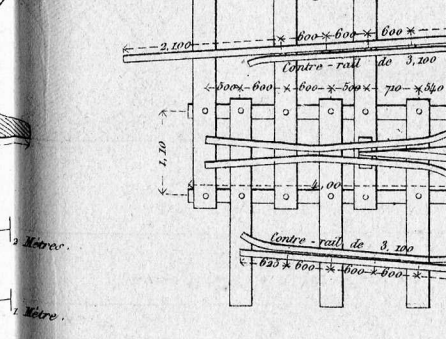
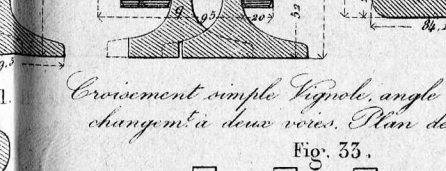
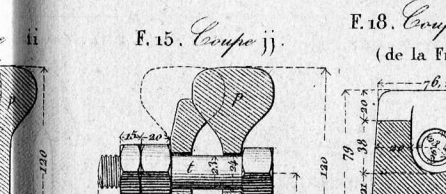
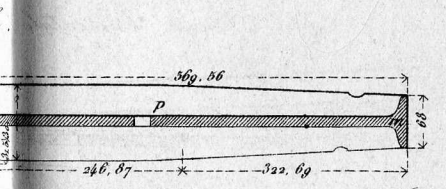
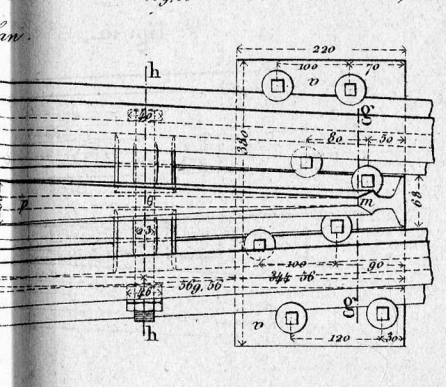
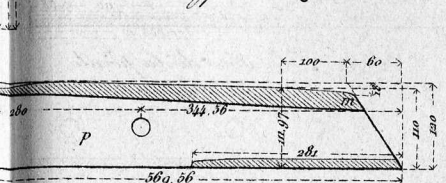


Croisement double Vignole, angle de 5.30' pour changem. à trois voies. Plan de pose (Est)

Fig. 35.

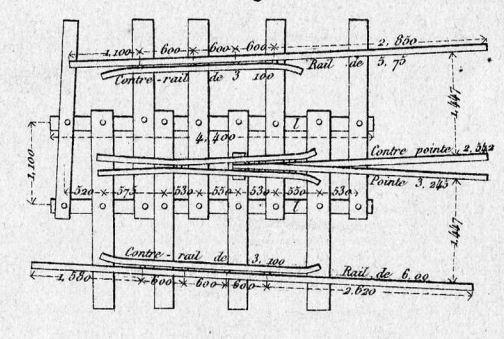


Croisement de voie en rails Vignole angle de 5.30' (Est français) nouveau type. (Fig. 8 à 23.)



Croisement simple Vignole, angle de 5.30' pour changem. à deux voies. Plan de pose (Est)

Fig. 34.



Echelle des Fig. 1, 2, 24 et 25, de 0,05 pour 1 mètre.

Echelle des Fig. 3 à 11, 28 et 29, de 0,10 pour 1 mètre.

Echelle des Fig. 12 à 23 et 27, de 0,20 pour 1 mètre.

Echelle des Fig. 30 à 32, de 0,300 pour 1 mètre.

Echelle des Fig. 33 à 35, de 0,01 pour 1 mètre.

Croisement, angle de 5°.30'. Est français (Fig. 1 à 9.)

Fig. 2. Coupe du chassis suivant la ligne A1.

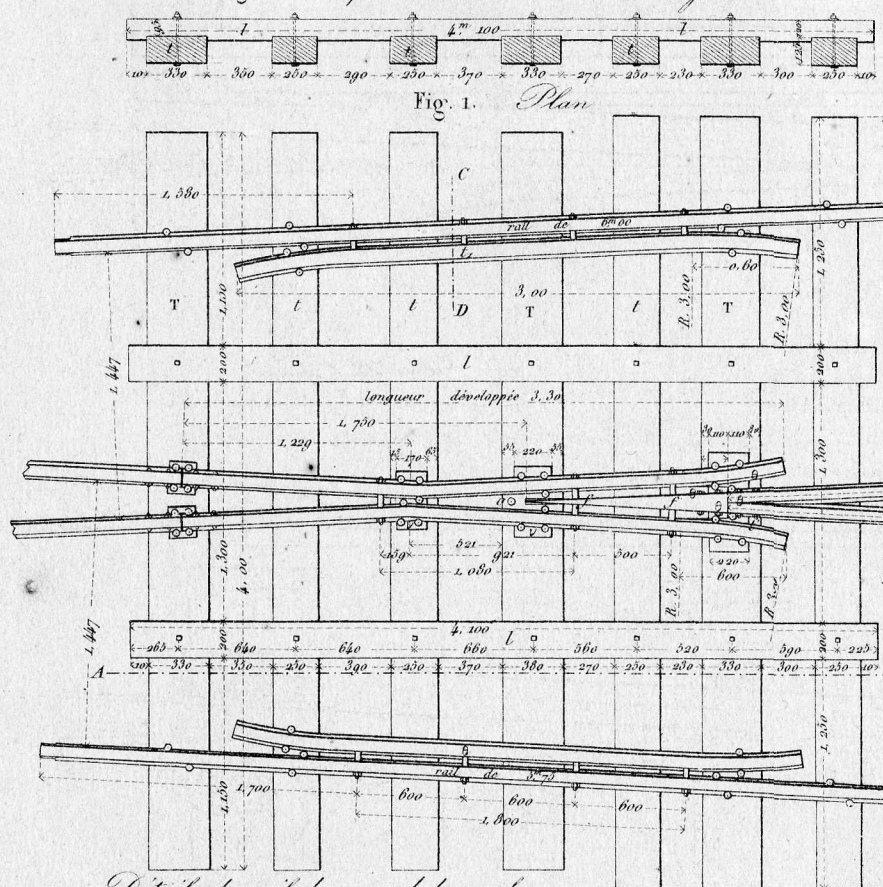


Fig. 1. Plan

Fig. 3. Coupe par CD

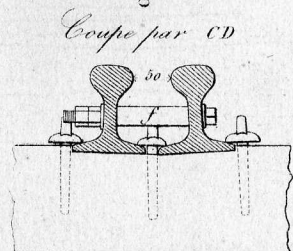
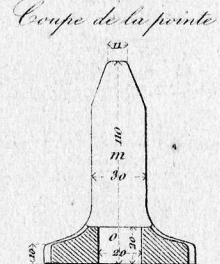
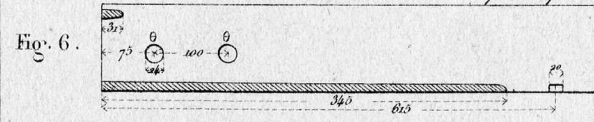


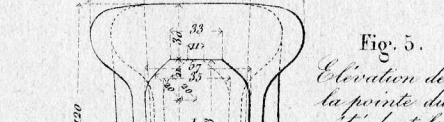
Fig. 4. Coupe de la pointe



Détails du rail de raccord de gauche et rail de raccord de droite est symétrique.



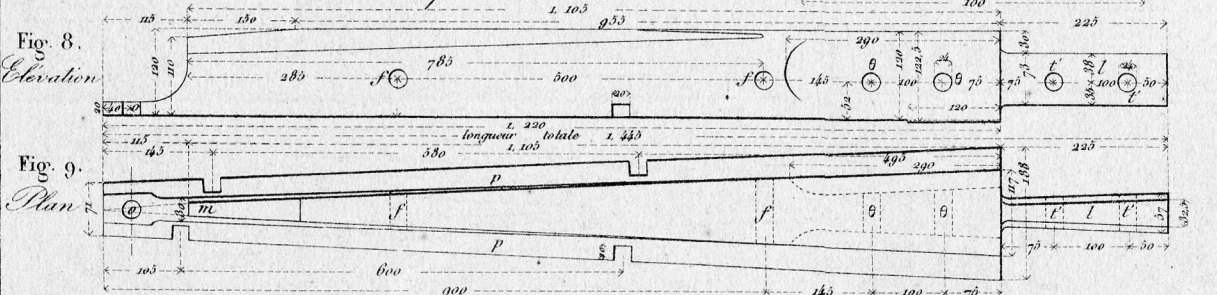
Elevation du côté extérieur



Coupe horizontale



Détails de la pointe



Echelle des Fig. 1, 2, 22 et 23, de 0,025 pour 1 mètre.

Echelle des Fig. 4, 5, 40, 41 et 42, de 0,25 pour 1 mètre.

Echelle des Fig. 10, 17, 18, 29, 30, 33, 34, 44 et 45, de 0,05 pour 1 mètre.

Croisement, double face en acier fondu de 5°.30' se raccordant avec rail à double champignon système Warull, Elwell et Poulot, (Fig. 10 à 16)

Fig. 11. Coupe suivant la ligne EF.

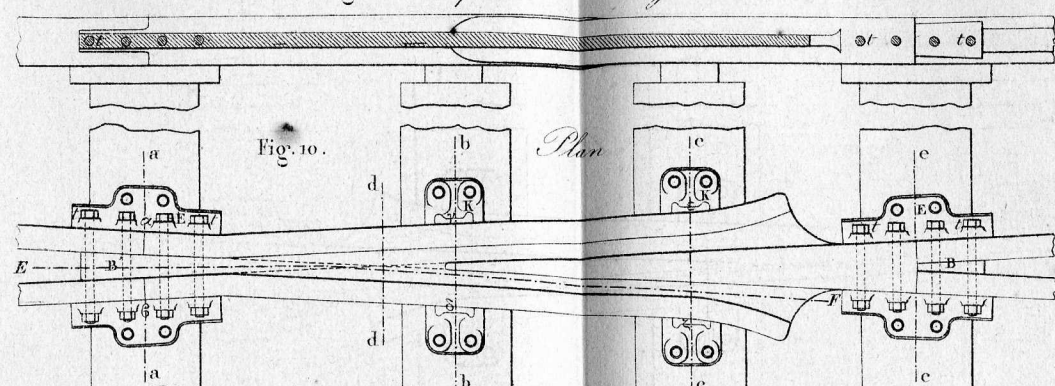
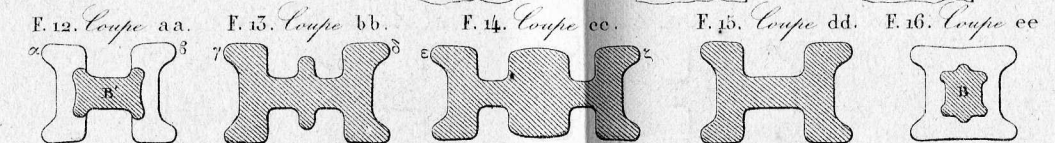


Fig. 10. Plan



Croisement en acier fondu de Nuytor et Vickers à Sheffield, angle de 5°.30' (Est français) (Fig. 17 à 21.)

Fig. 18. Elevation

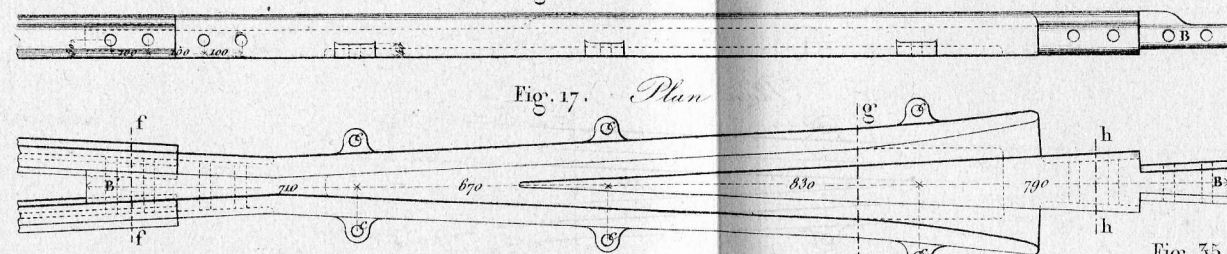


Fig. 17. Plan



Croisement en acier fondu, à patin, se raccordant avec rail Vignole (Fig. 22 à 28.)

Fig. 23. Coupe suivant la ligne GH.

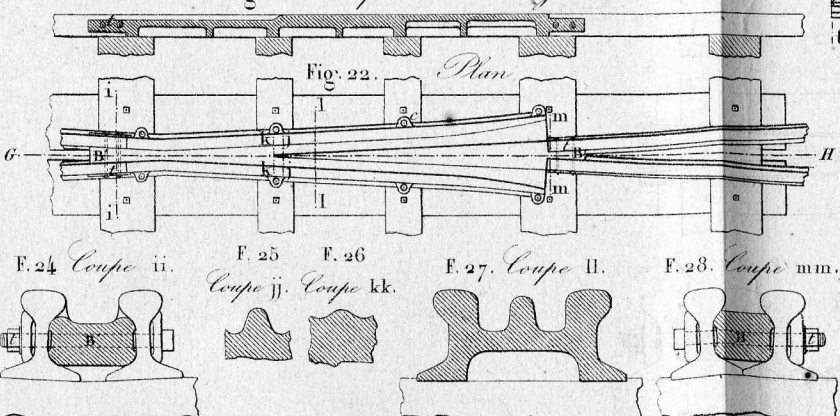
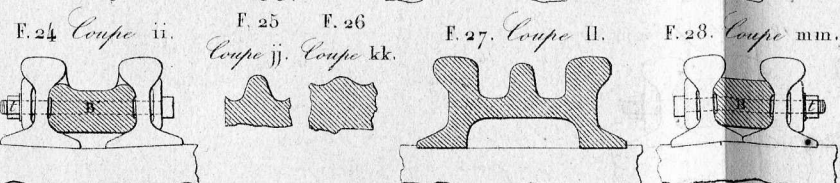


Fig. 22. Plan



Croisement en fonte de M. Grassin, angle de 5°.30' (Est français) (Fig. 29 à 32.)

Fig. 30. Coupe par la ligne IK.

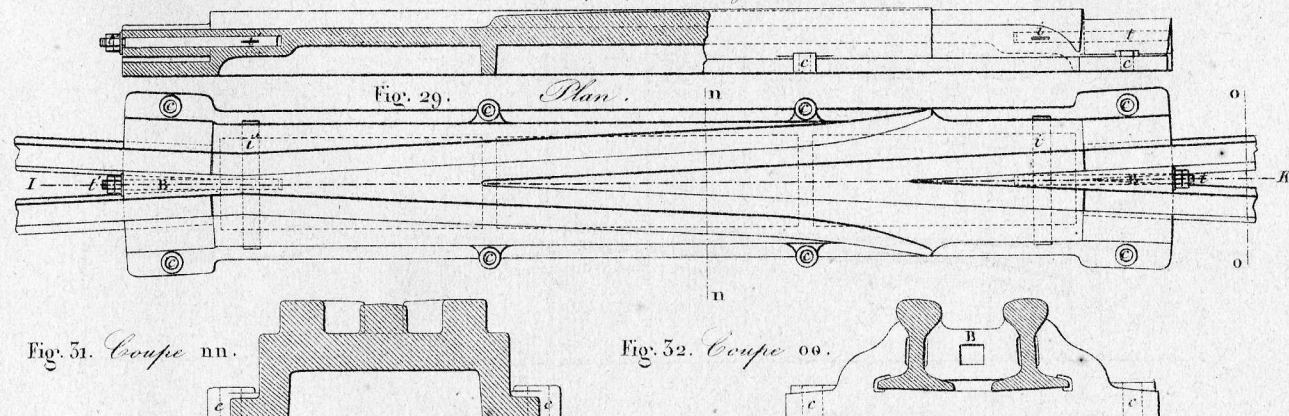


Fig. 29. Plan

Fig. 31. Coupe nn.

Fig. 32. Coupe oo.

Croisement, double face en acier fondu Warull Elwell et Poulot angle de 5°.30' se raccordant avec rail Vignole, (Fig. 33 à 38.)

Fig. 34. Coupe suivant la ligne LM.

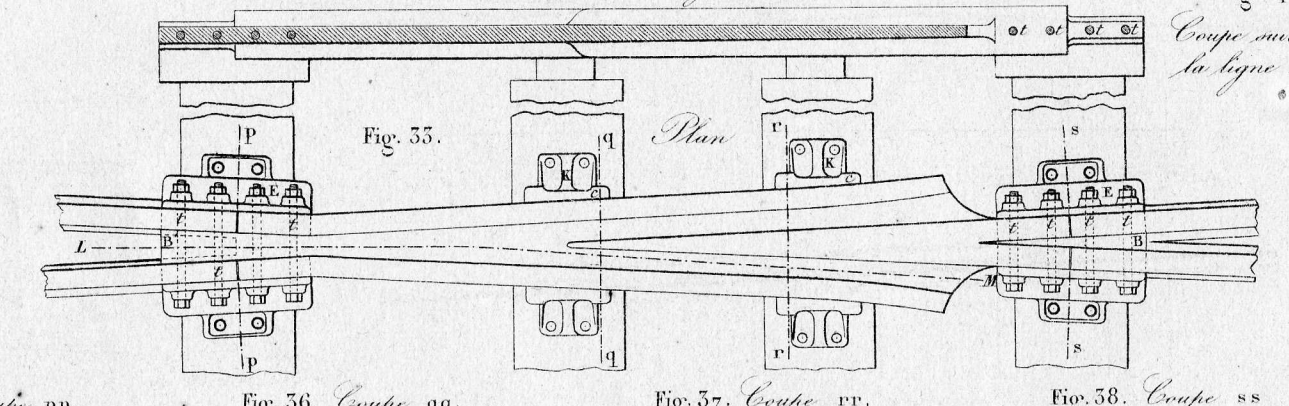
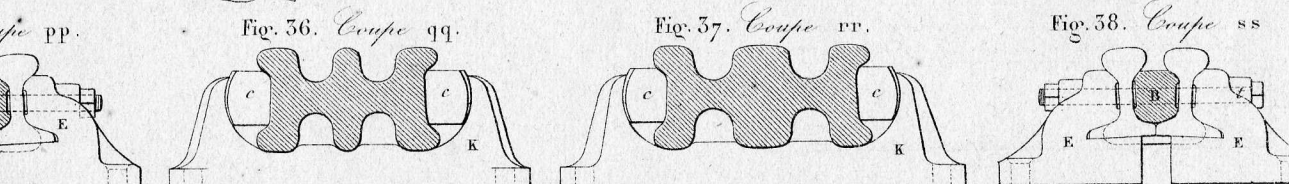


Fig. 33. Plan



Pointe en acier fondu, ligne d'Orléans (Fig. 39 à 42.)

Fig. 39. Plan

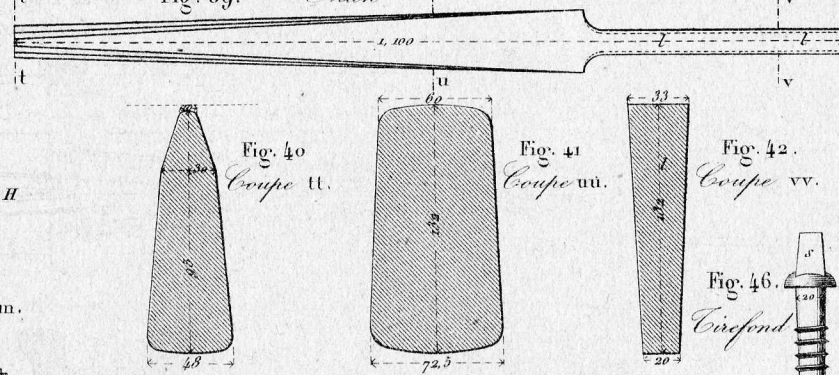


Fig. 40. Coupe tt.

Fig. 41. Coupe uu.

Fig. 42. Coupe vv.

Croisement en acier fondu martelé et raboté, angle de 5°.30' (Ouest français) (Fig. 44 à 46.)

Fig. 45. Coupe par la ligne NOP.

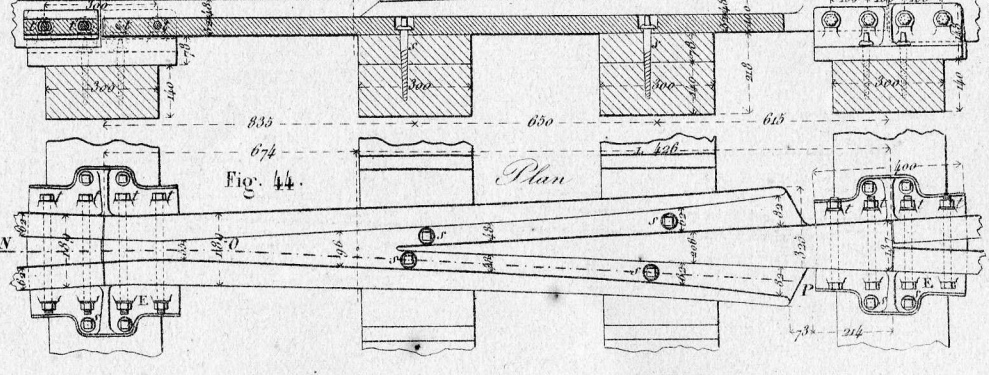
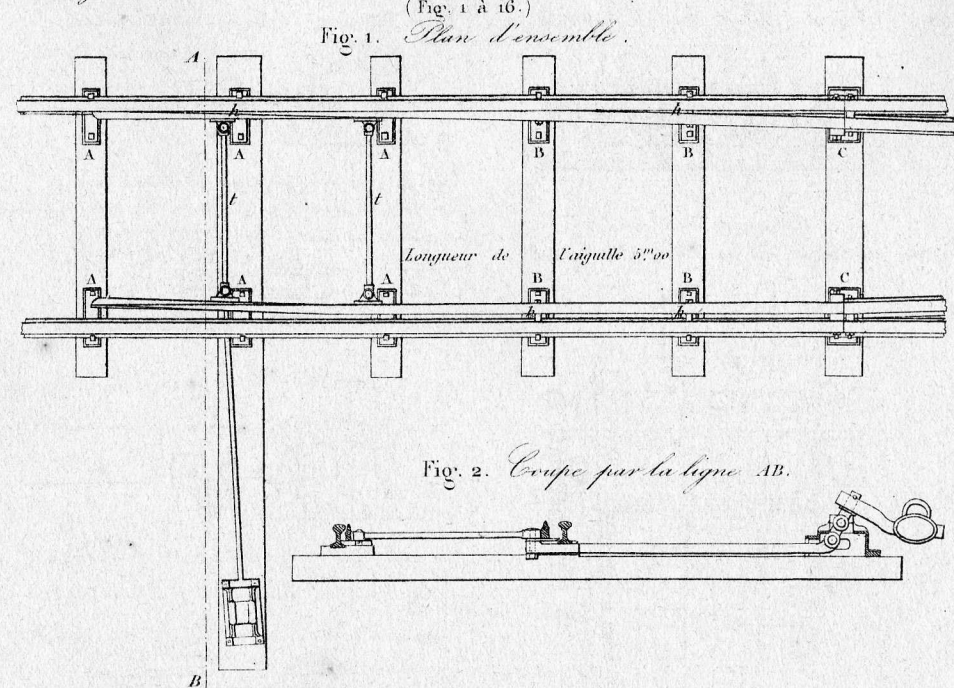


Fig. 44. Plan

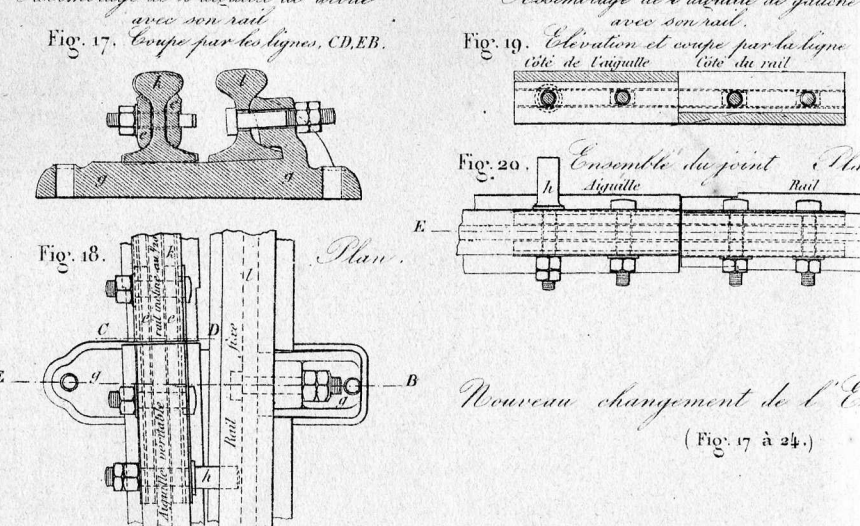
Echelle des Fig. 3, 6 à 9, 12 à 16, 19 à 21, 24 à 28, 31, 32 et 35 à 38 de 0,10 p. m.

Echelle des Fig. 10, 17, 18, 29, 30, 33, 34, 44 et 45, de 0,05 pour 1 mètre.

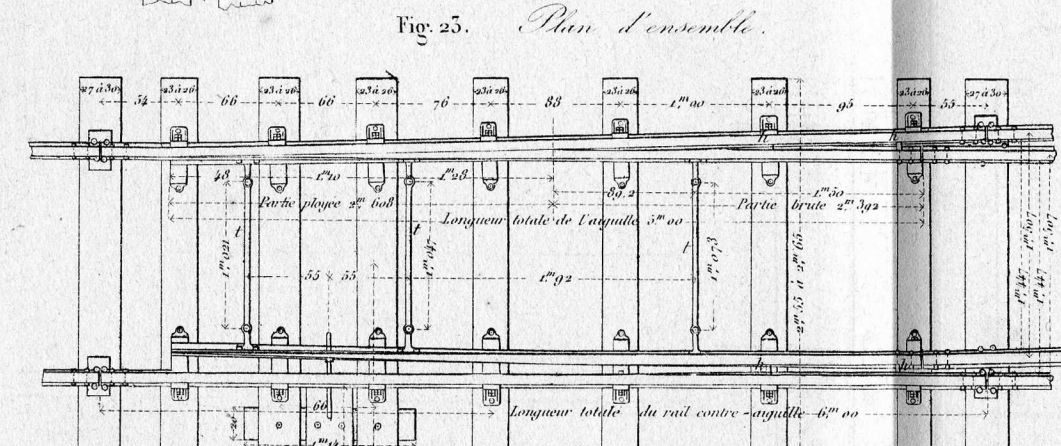
Changement de voie sans raboteuse des rails, de M. S. Van der Elst.



Coussinets et Éclisses pour le talon de l'aiguille. Assemblage de l'aiguille de droite avec son rail.

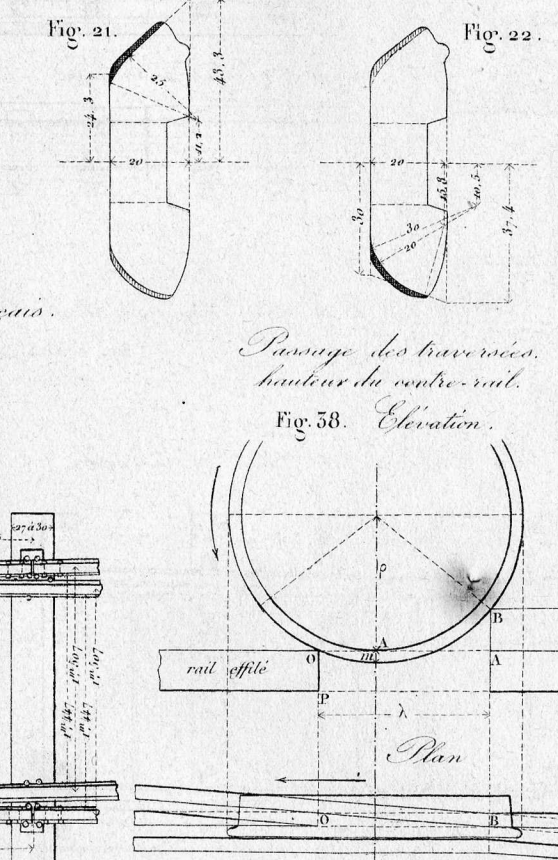


Nouveau changement de l'Est français. (Fig. 17 à 24.)

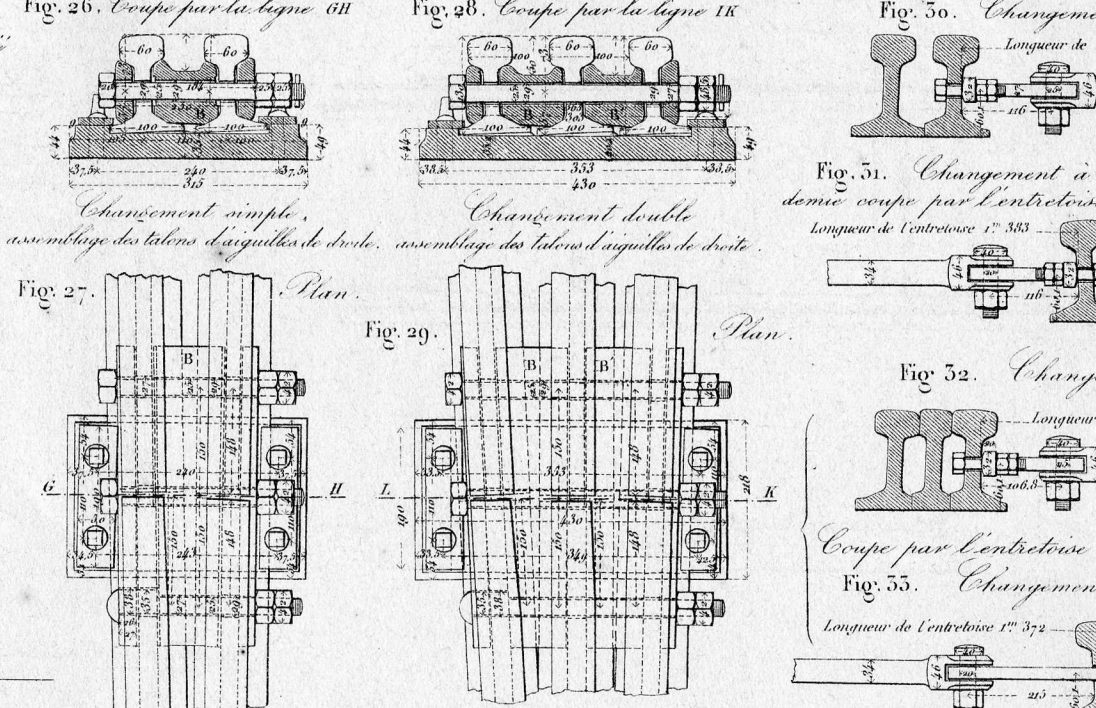


Éclisse

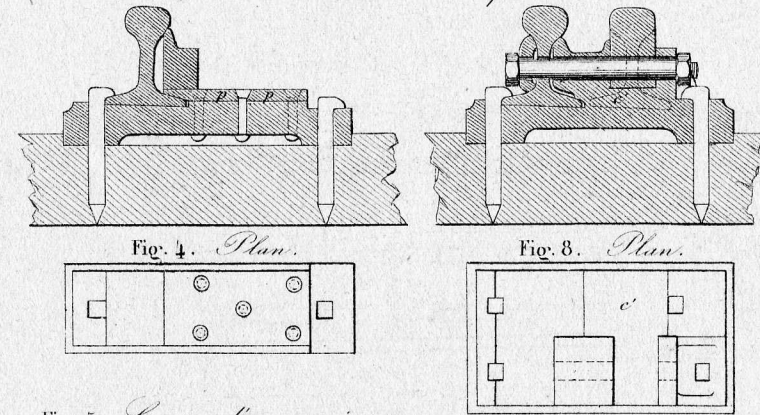
Passage des traverses. hauteur du contre-rail.



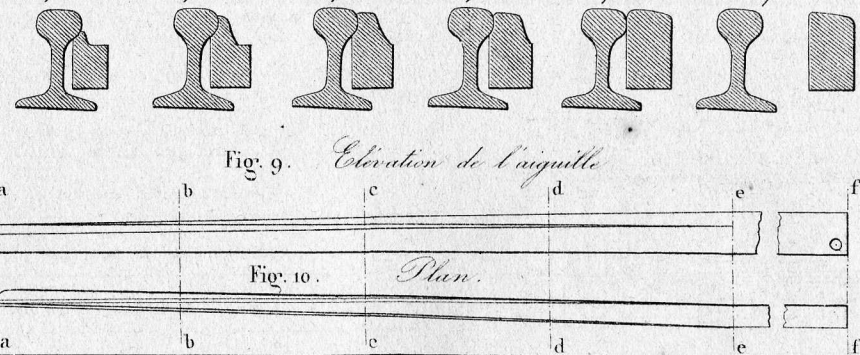
Changement de voie. Paris-Lyon-Méditerranée. (Fig. 25 à 33 et 40.)



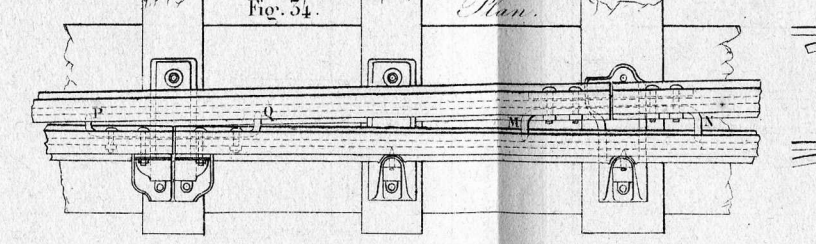
Coupe d'un coussinet A. Coupe d'un coussinet C.



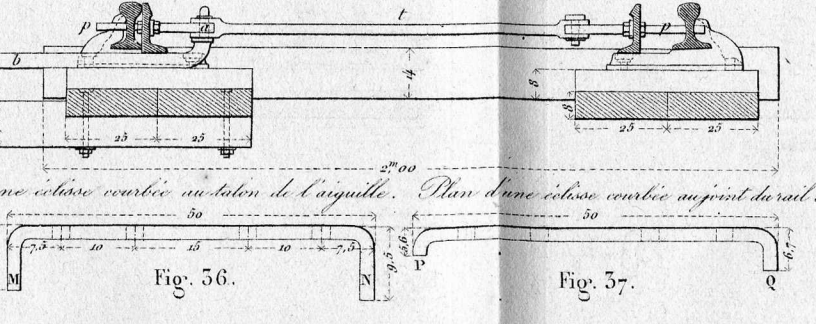
Coupe aa. Coupe bb. Coupe cc. Coupe dd. Coupe ee. Coupe ff.



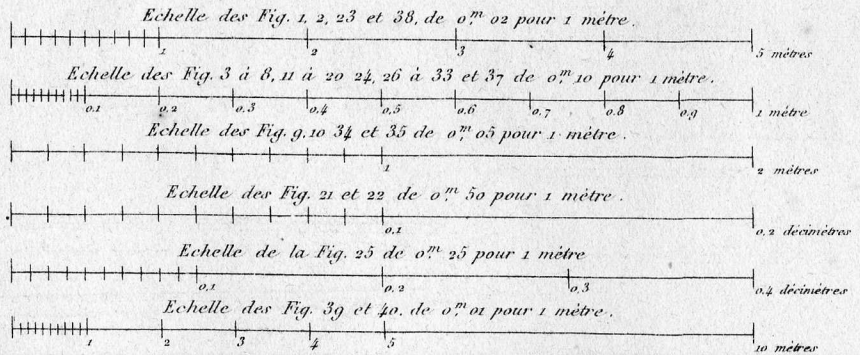
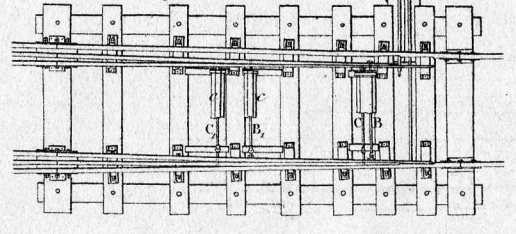
Point de l'aiguille et du contre-aiguille. Nord français. (Fig. 34 à 37.)



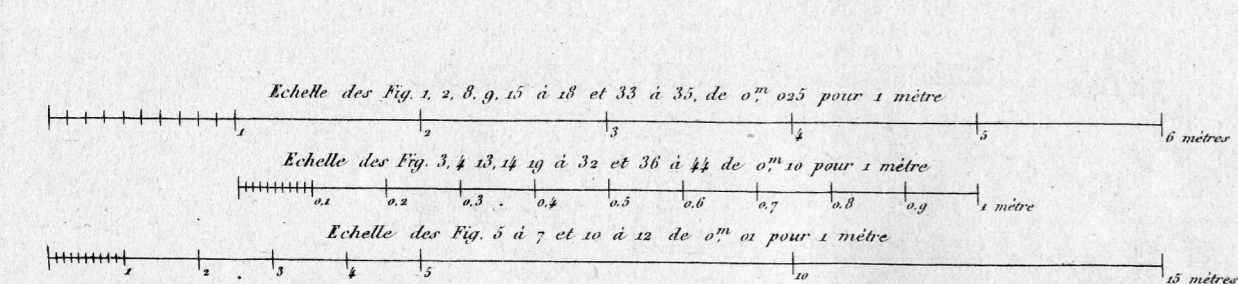
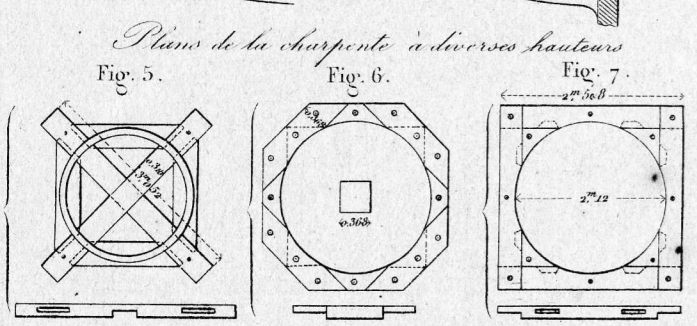
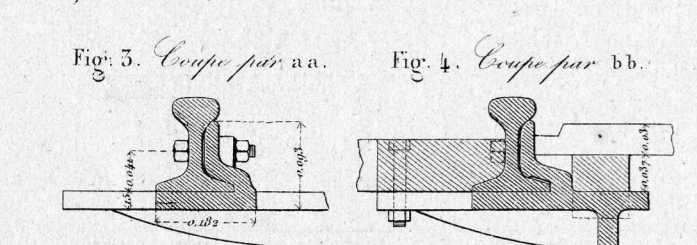
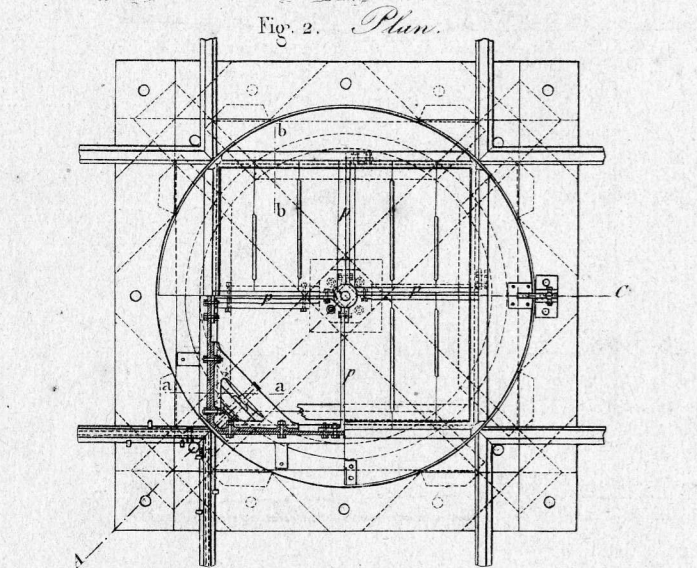
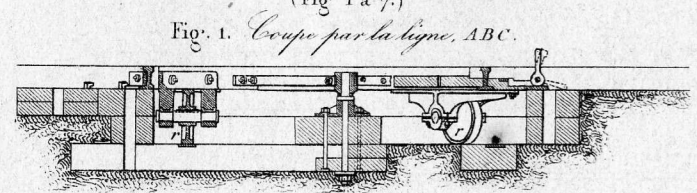
Voie de connexion vers la pointe.



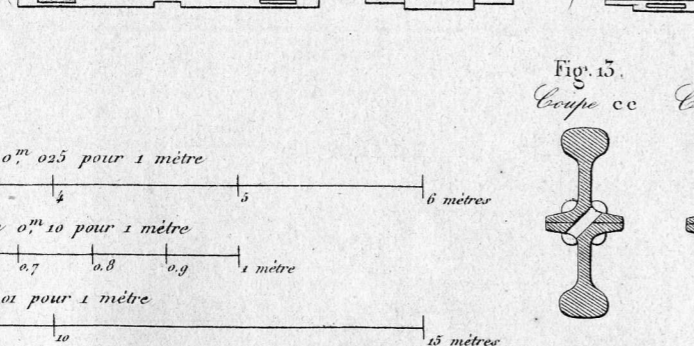
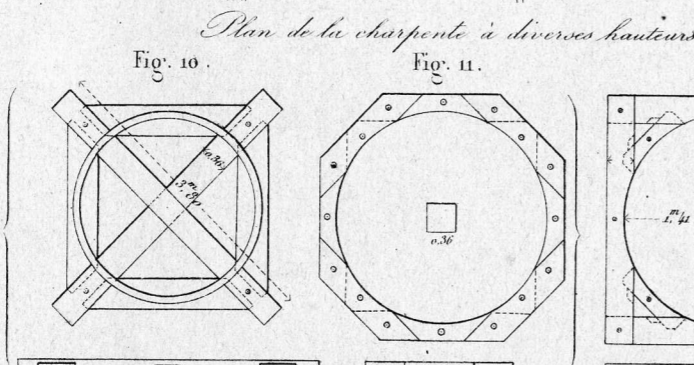
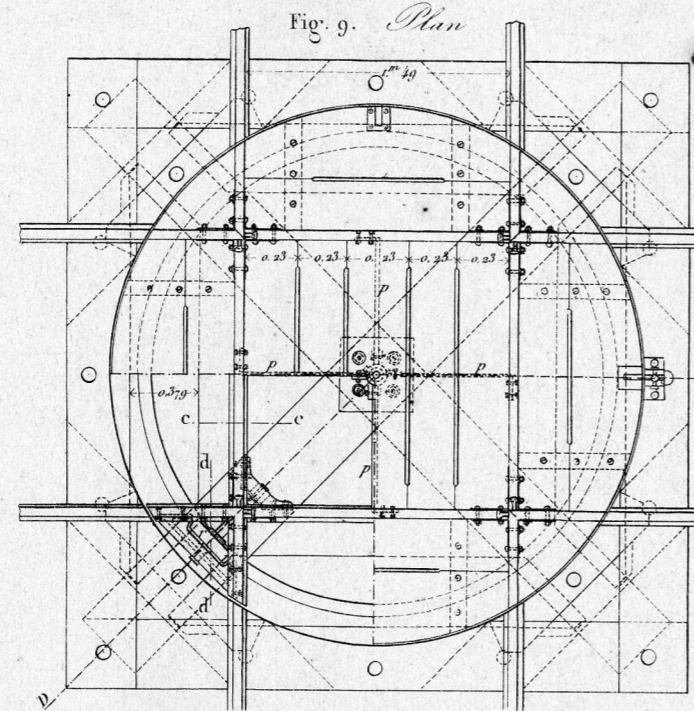
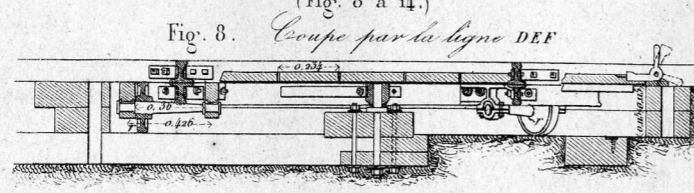
Plan d'ensemble du changement triple de Paris-Lyon-Méditerranée.



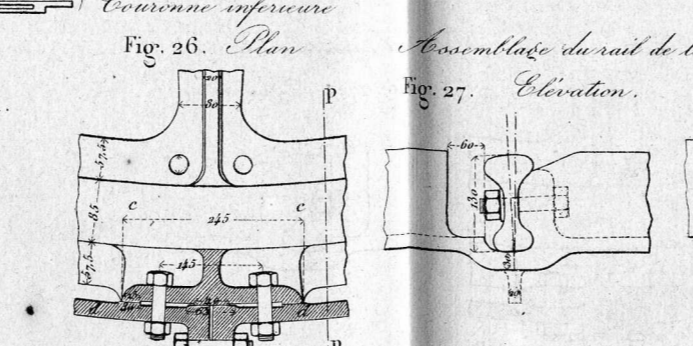
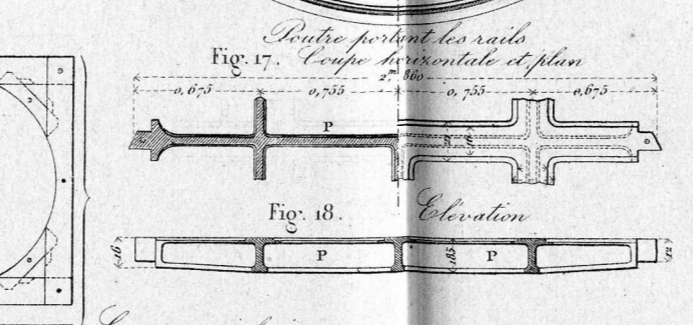
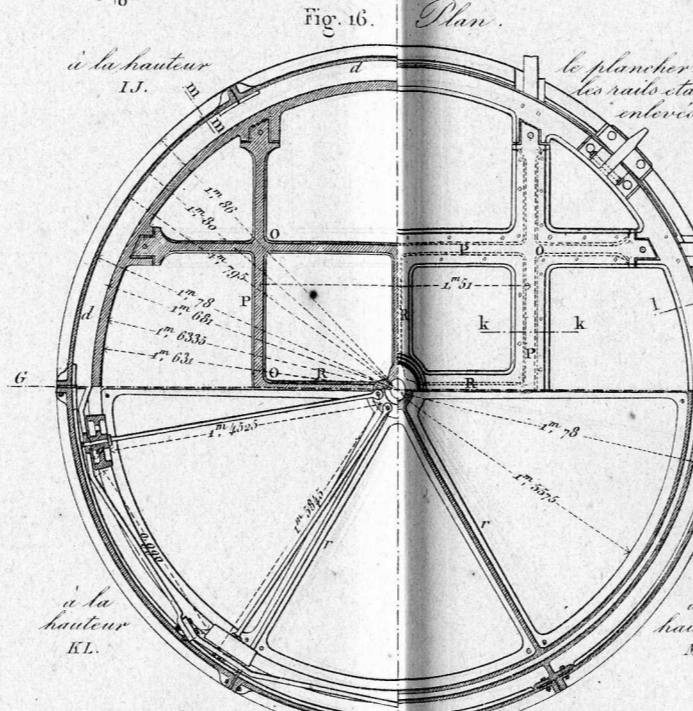
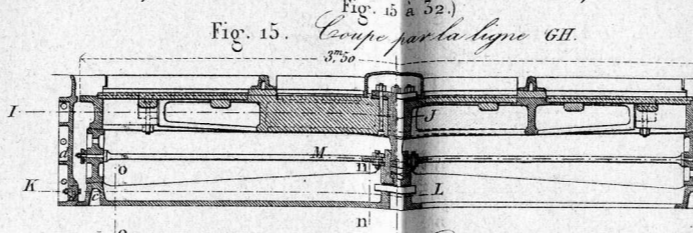
Plaque tournante de 2^m00 du Staat's Bahn autrichien. (Fig. 1 à 7.)



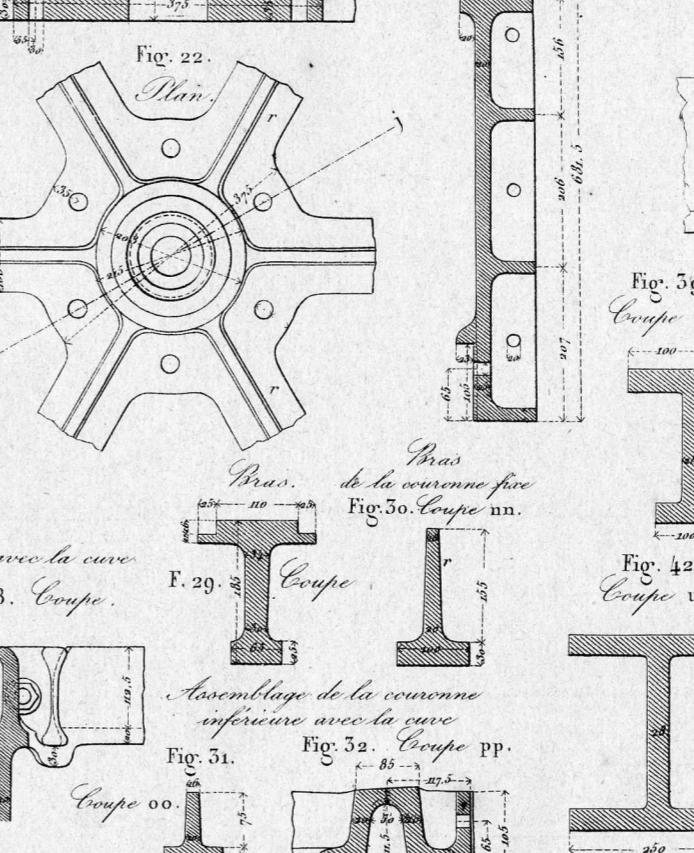
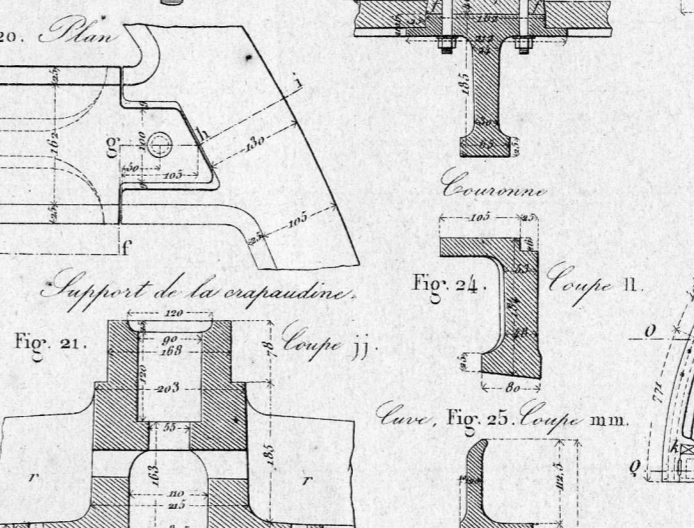
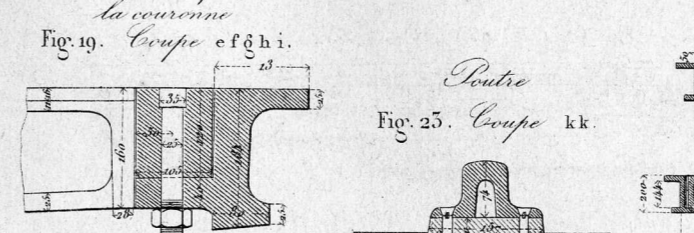
Plaque tournante de 2^m80 du Staat's Bahn autrichien. (Fig. 8 à 14.)



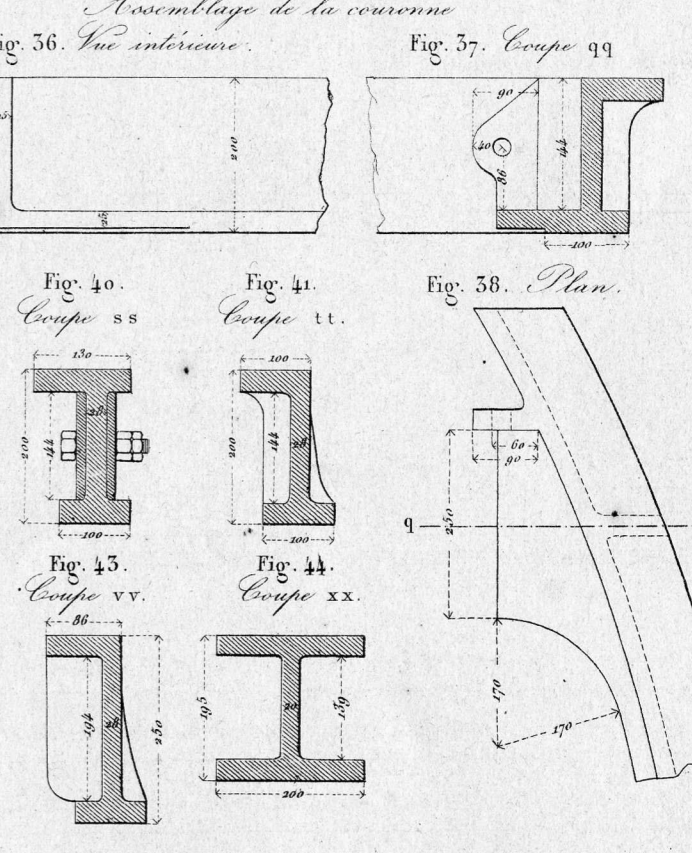
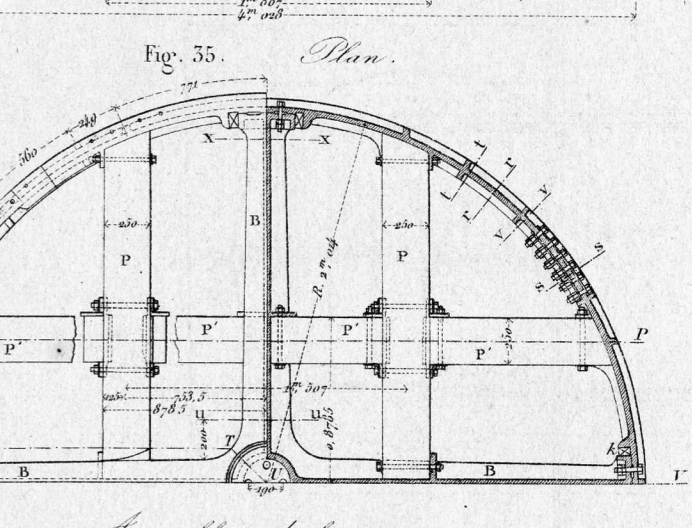
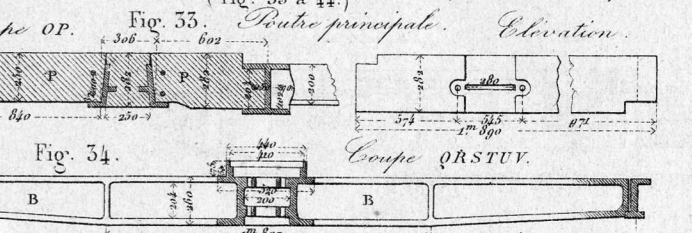
Plaque tournante en fonte de 3^m50 (Est français). (Fig. 15 à 32.)



Assemblée des poutres avec la couronne. (Fig. 33 à 44.)



Plaque tournante de 4^m20 plateau mobile en bois et fonte. (Nord français). (Fig. 33 à 44.)



Plaque tournante de 4^m 50 avec plateau supérieur en acier fondu, (système Poullet) (Fig. 1 à 5.)
Fig. 1. Coupe du plateau supérieur suivant AB. Fig. 2. Vue intérieure de la partie fixe suivant DC.

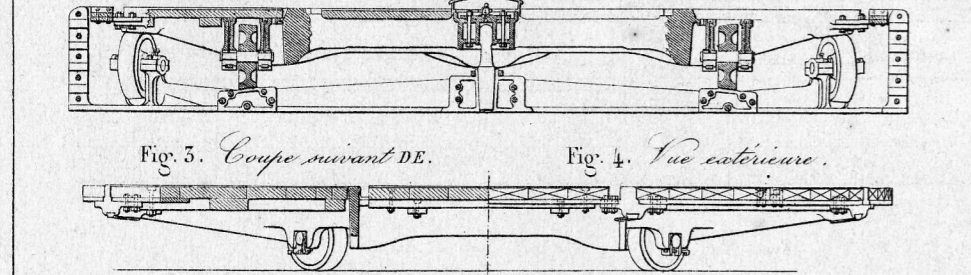


Fig. 5. Coupe suivant DE. Fig. 4. Vue extérieure.
Fig. 5. Plan à diverses hauteurs
Plan du plateau supérieur mobile le tablier étant enlevé. Plan du plateau inférieur et de la cuve.

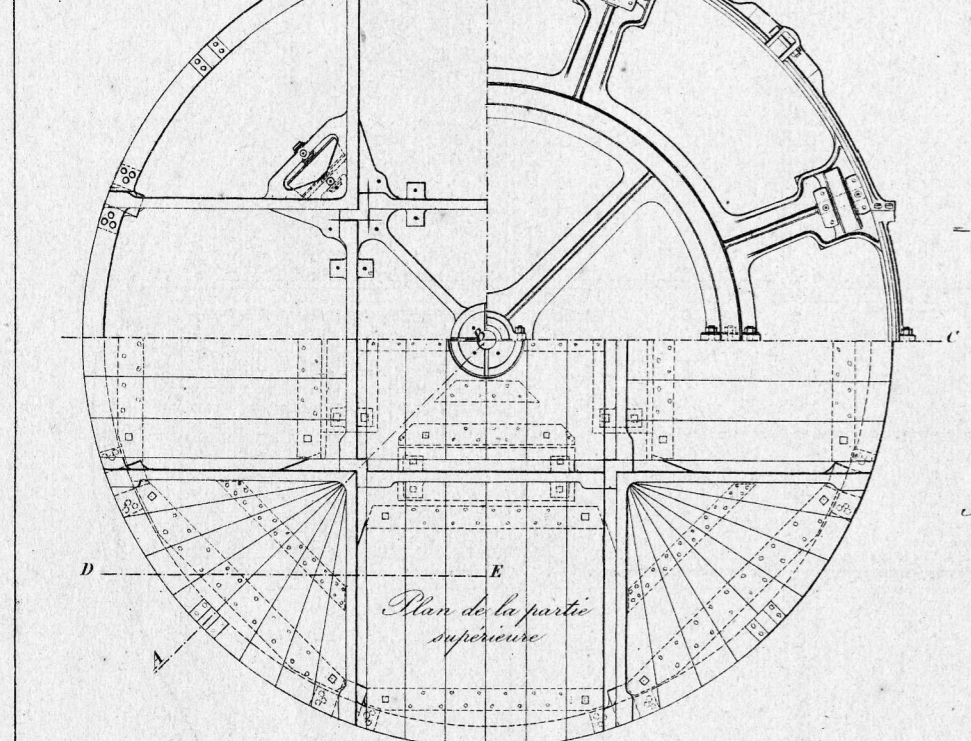


Fig. 6. Assemblage du rail avec la poutre principale (Ligne d'Orléans).
Fig. 13. Elevation.
Fig. 15. Coupe b b (de la Fig. 8.)
Fig. 16. Elevation.
Fig. 17. Coupe cc.
Fig. 18. Coupe dd, (de la F. 8.)
Fig. 19. Pivots.
Fig. 20. Olivette.
Fig. 21. Elevation.
Fig. 22. Coupe ce.
Fig. 23. Coupe ff, (de la Fig. 8.)
Fig. 24. Coupe gg.
Fig. 27. Coupe jj.
Fig. 28. Coupe kk.
Fig. 29. Coupe ll (de la F. 9.)
Fig. 30. Coupe mm.

Plaque tournante de 5^m 00 en fonte et fer. (Ligne de Paris, Lyon et la Méditerranée) (Fig. 7 à 35.)
Fig. 7. Coupe verticale par la ligne FGH.

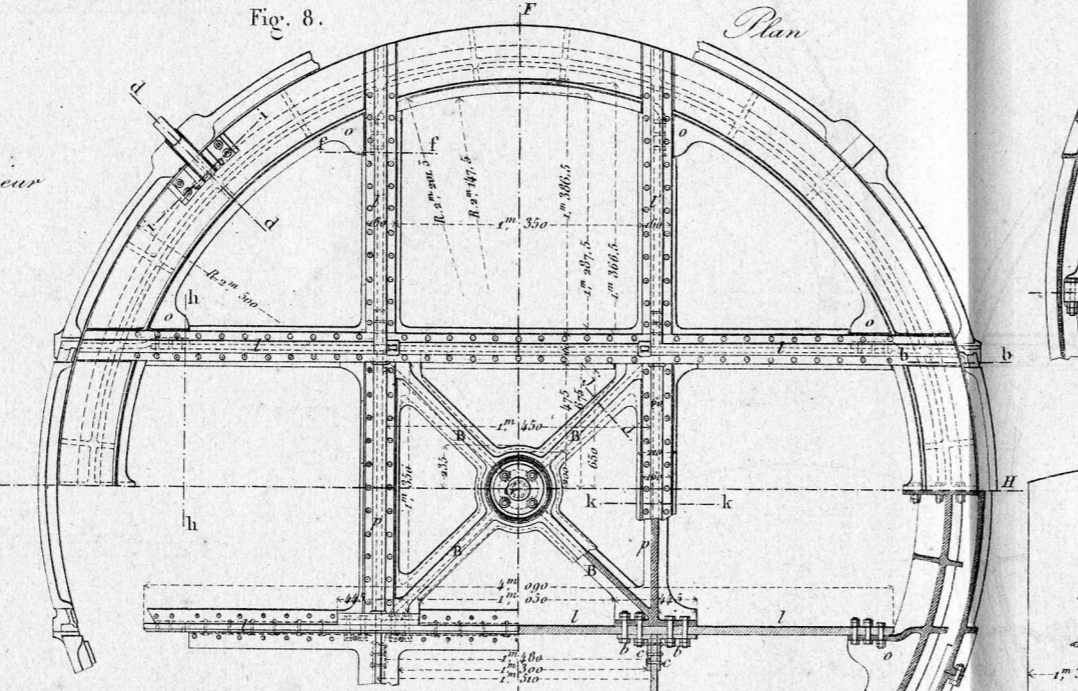
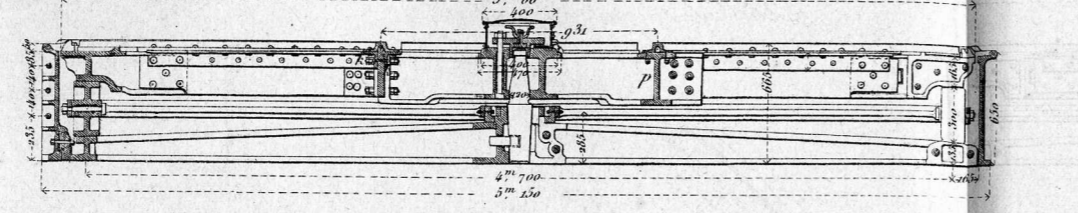


Fig. 9. Plan de la couronne inférieure.
Fig. 10. Assemblage des galets.
Fig. 11. Galets.
Fig. 12. Elevation Coupe aa.
Fig. 13. Coupe bb (de la Fig. 8.)
Fig. 14. Elevation.
Fig. 15. Pivots.
Fig. 16. Olivette.
Fig. 17. Elevation.
Fig. 18. Coupe cc.
Fig. 19. Pivots.
Fig. 20. Olivette.
Fig. 21. Elevation.
Fig. 22. Coupe ce.
Fig. 23. Coupe ff, (de la Fig. 8.)
Fig. 24. Coupe gg.
Fig. 27. Coupe jj.
Fig. 28. Coupe kk.
Fig. 29. Coupe ll (de la F. 9.)
Fig. 30. Coupe mm.

Plaque tournante de 6^m 00. (Est français.) (Fig. 36 et 37.)
Fig. 36. Coupe par IKLM, pour le plateau mobile et par NLM, pour la couronne et le pourtour.

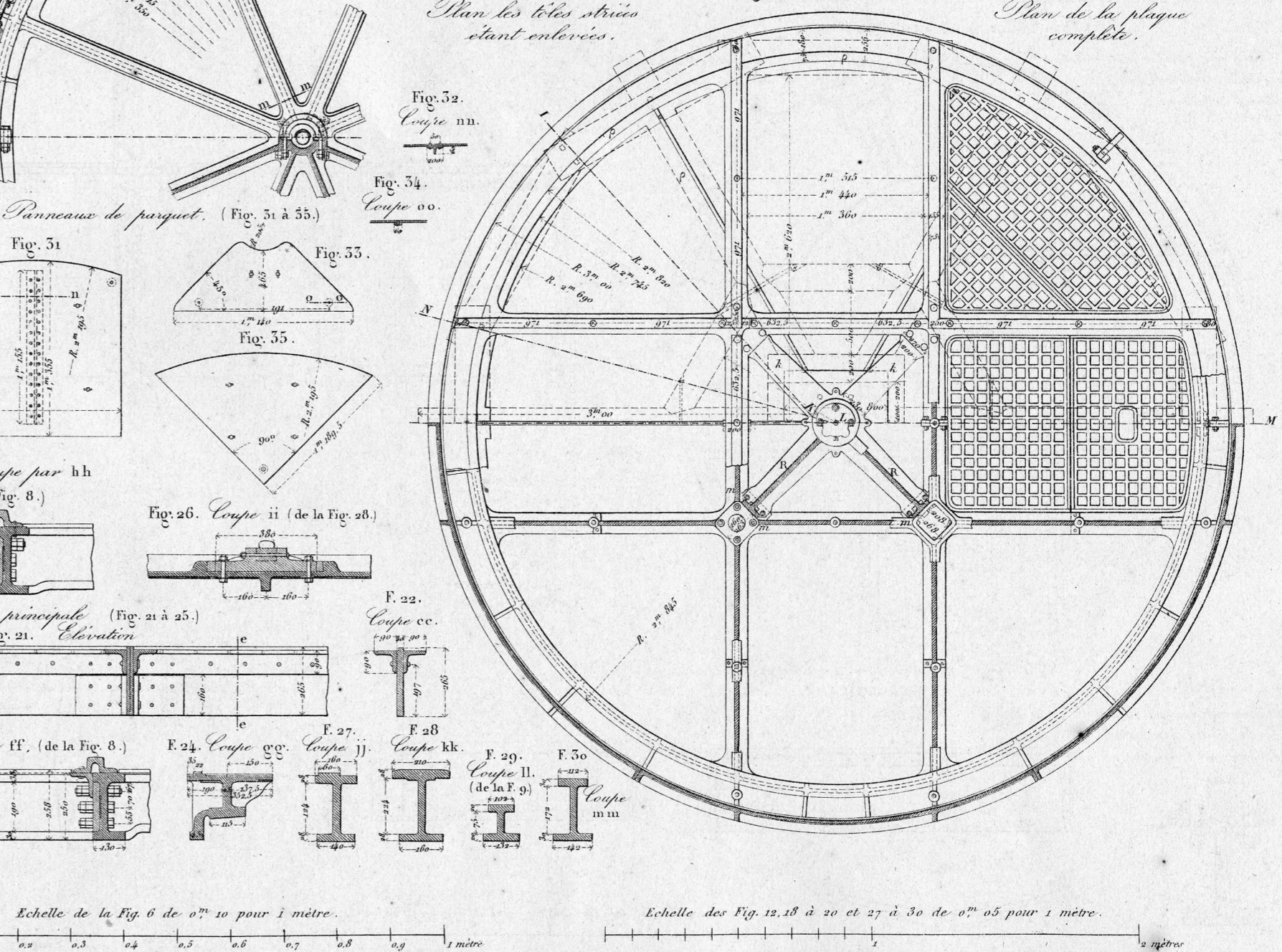
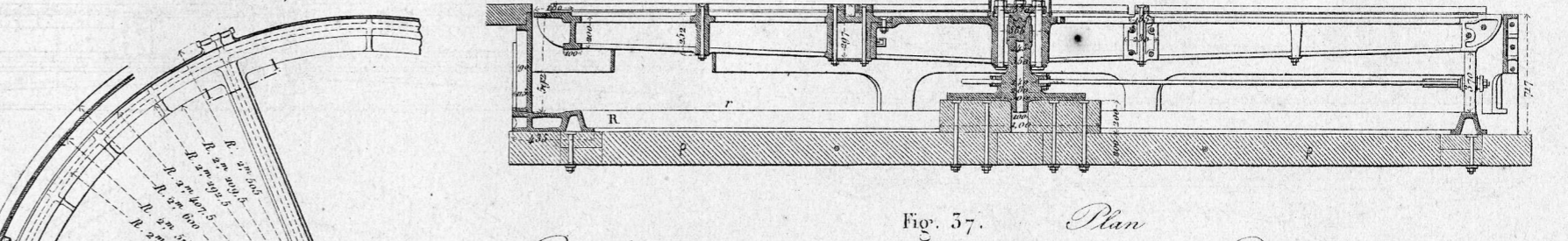


Fig. 38. Plan les têtes striées étant enlevées.
Fig. 39. Plan de la plaque complète.
Fig. 40. Coupe nn.
Fig. 41. Coupe oo.
Fig. 42. Coupe pp.
Fig. 43. Coupe qq.
Fig. 44. Coupe rr.
Fig. 45. Coupe ss.
Fig. 46. Coupe tt.
Fig. 47. Coupe uu.
Fig. 48. Coupe vv.
Fig. 49. Coupe ww.
Fig. 50. Coupe xx.
Fig. 51. Coupe yy.
Fig. 52. Coupe zz.
Fig. 53. Coupe aa.
Fig. 54. Coupe bb.
Fig. 55. Coupe cc.

Echelle des Fig. 1 à 5, 7 à 11, 13 à 17, 21 à 26, et 31 à 37 de 0^m 025 pour 1 mètre.
Echelle de la Fig. 6 de 0^m 10 pour 1 mètre.
Echelle des Fig. 12, 18 à 20 et 27 à 30 de 0^m 05 pour 1 mètre.

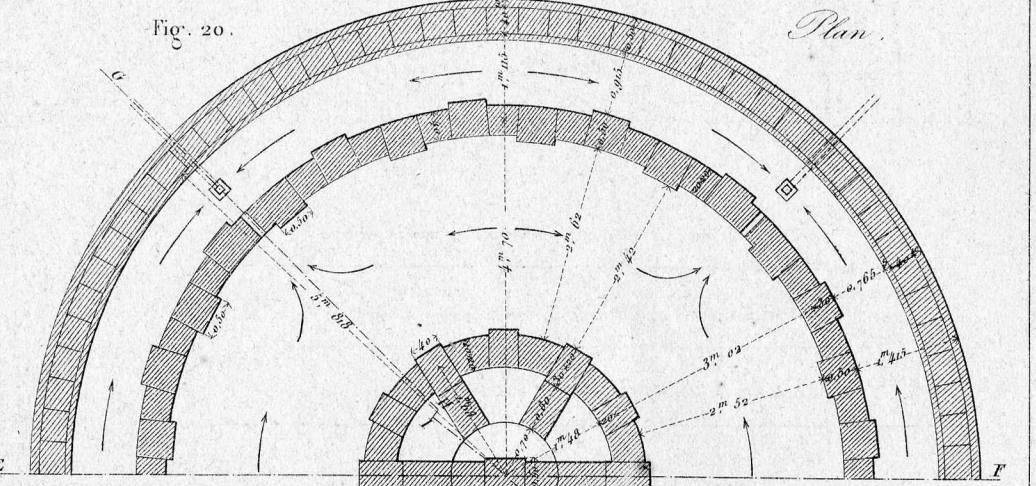
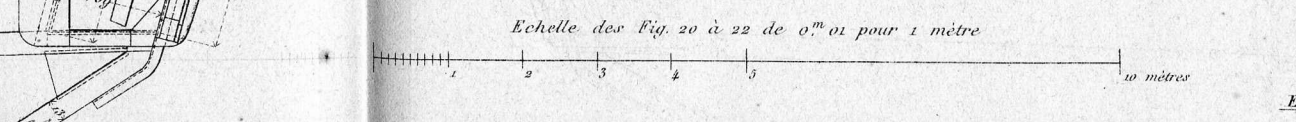
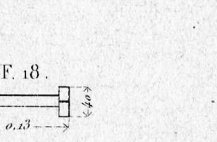
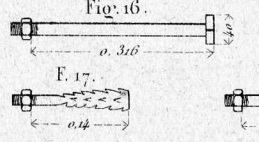
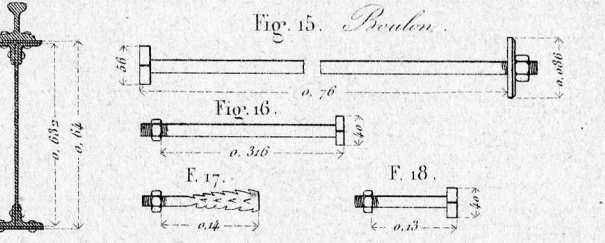
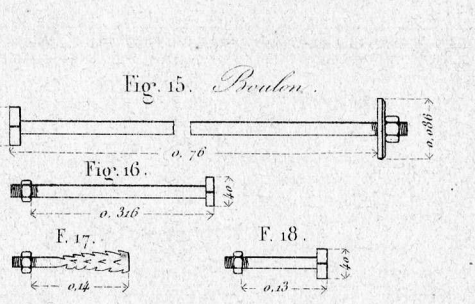
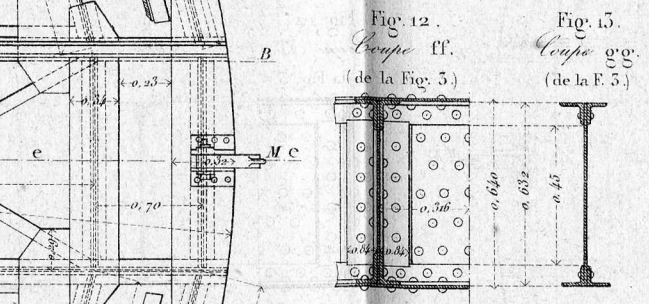
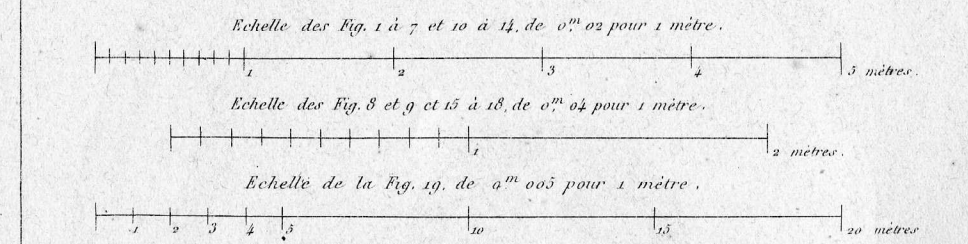
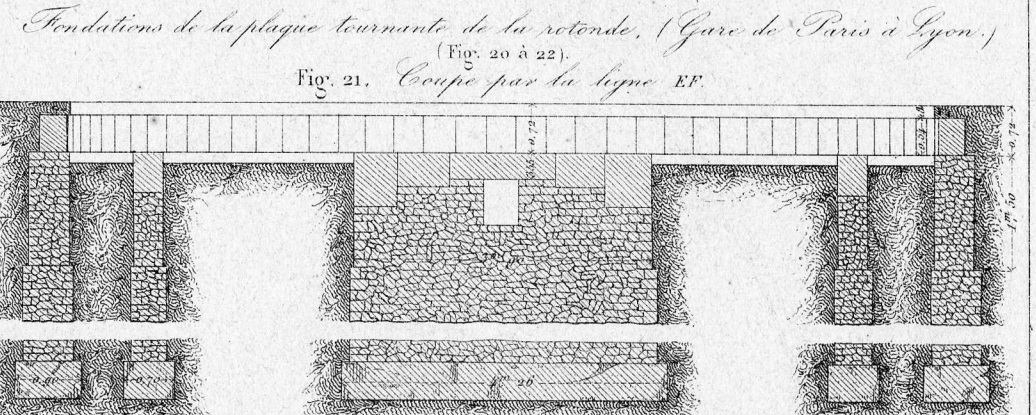
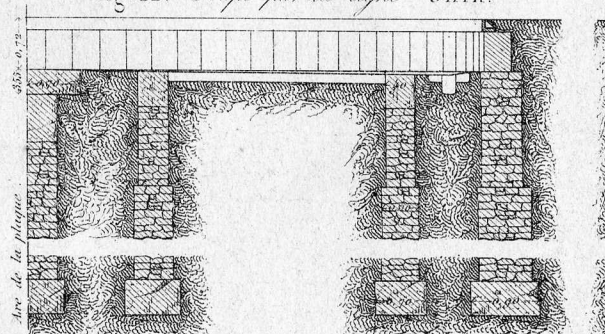
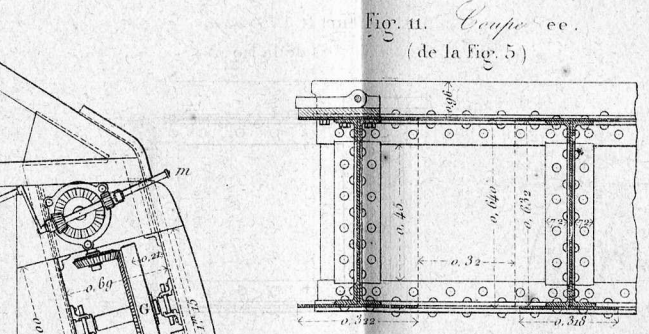
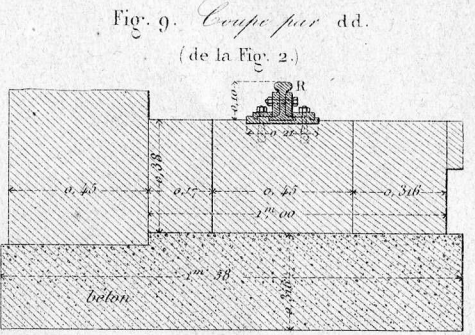
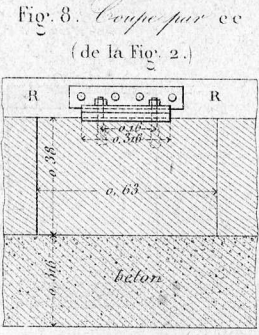
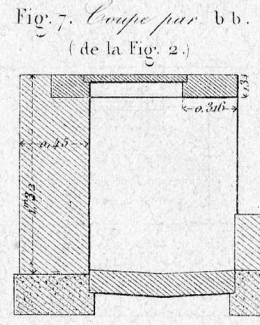
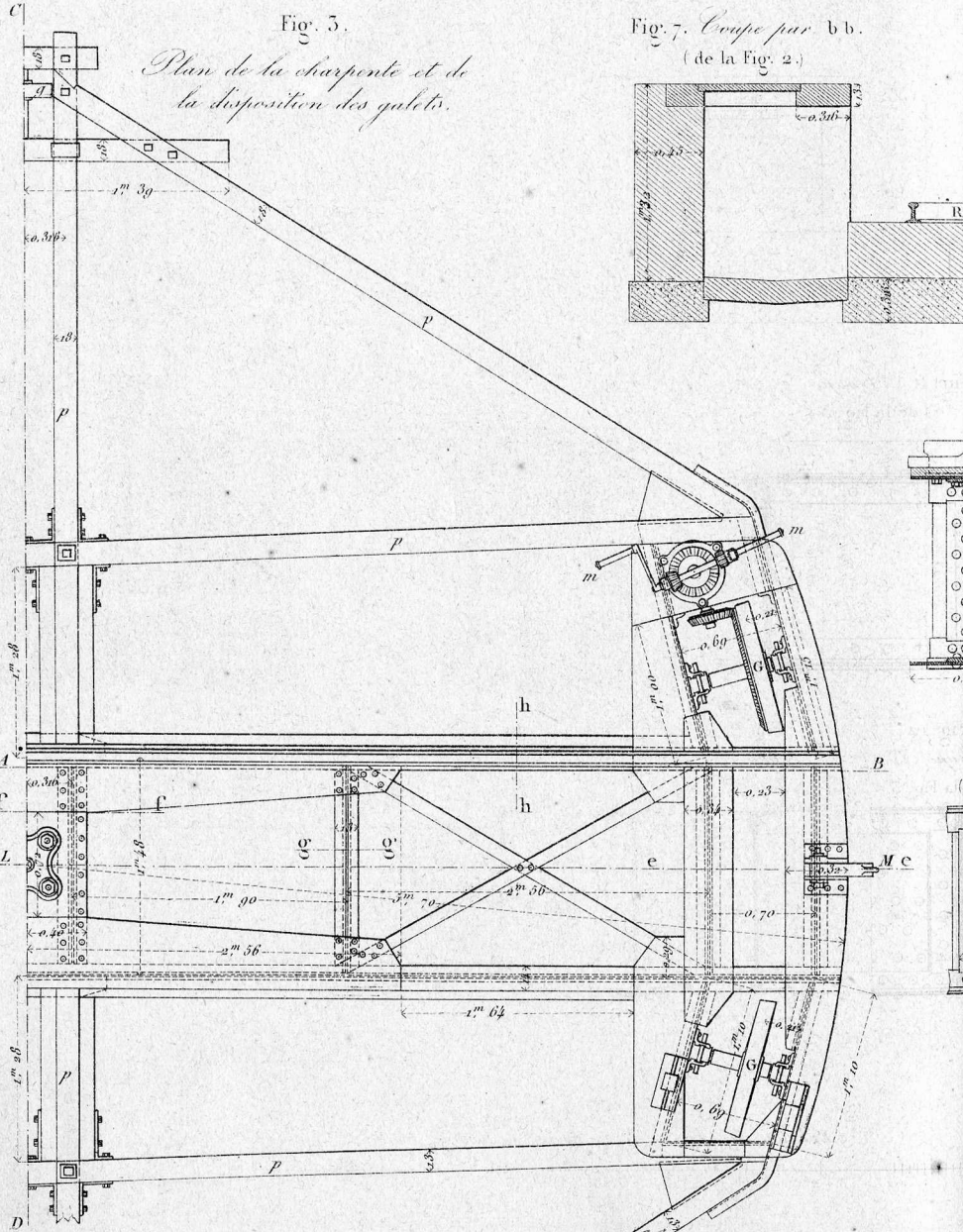
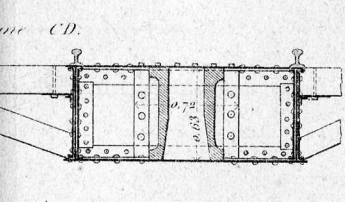
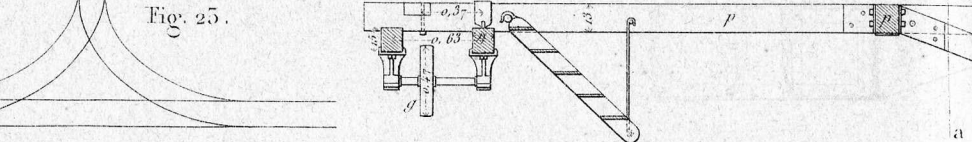
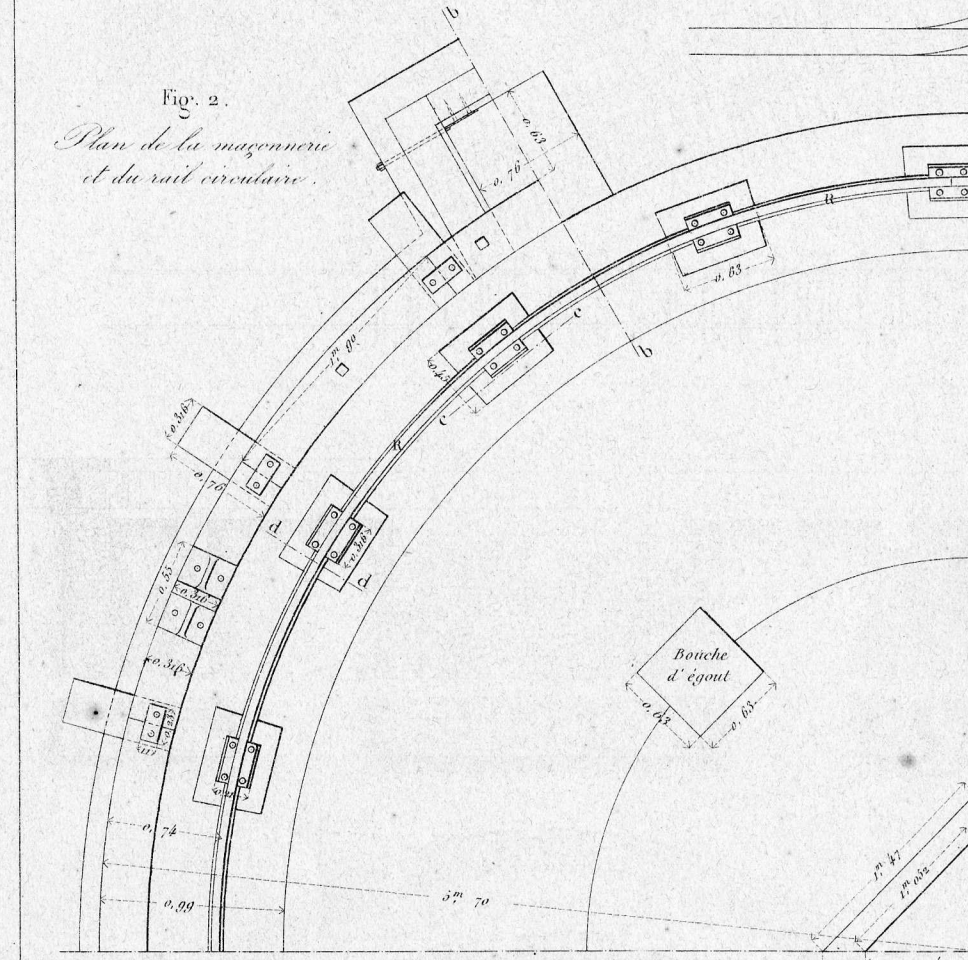
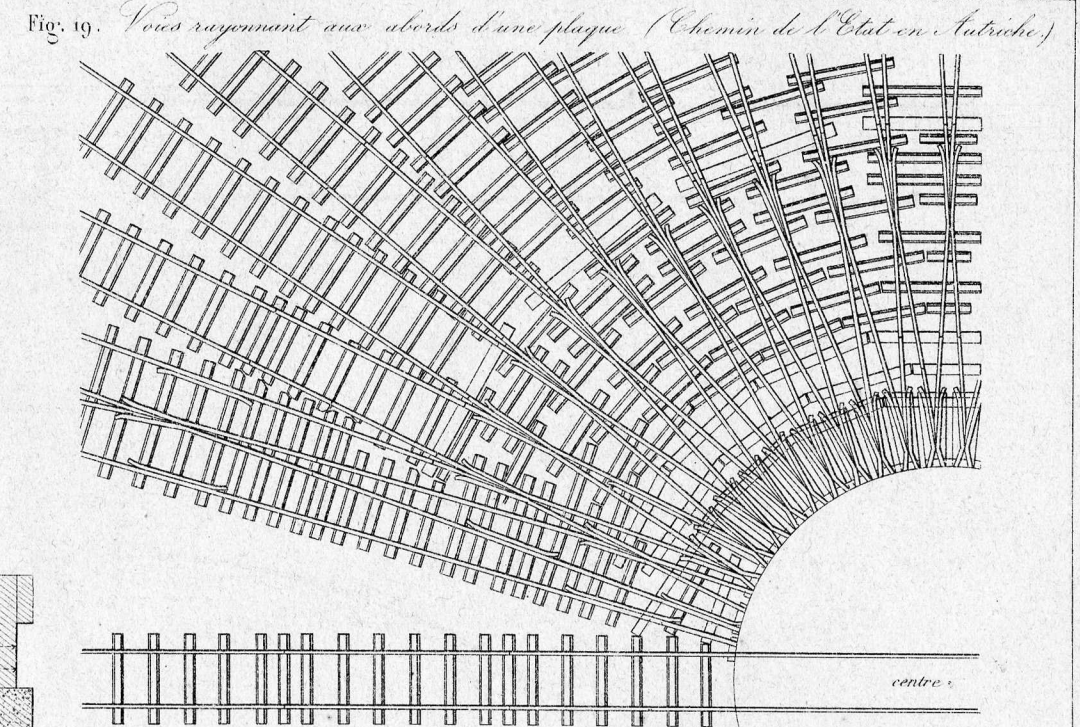
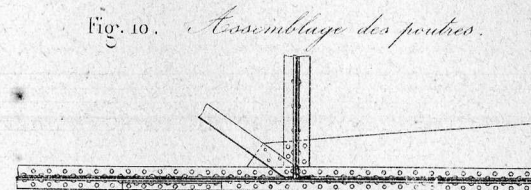
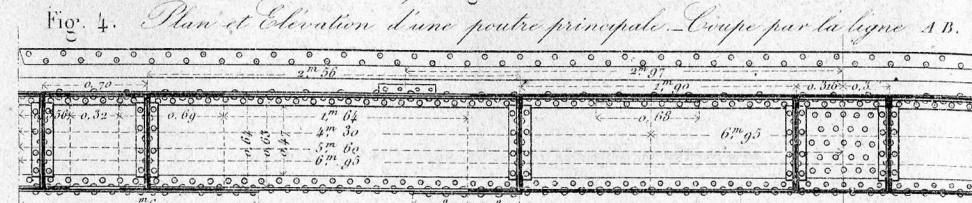
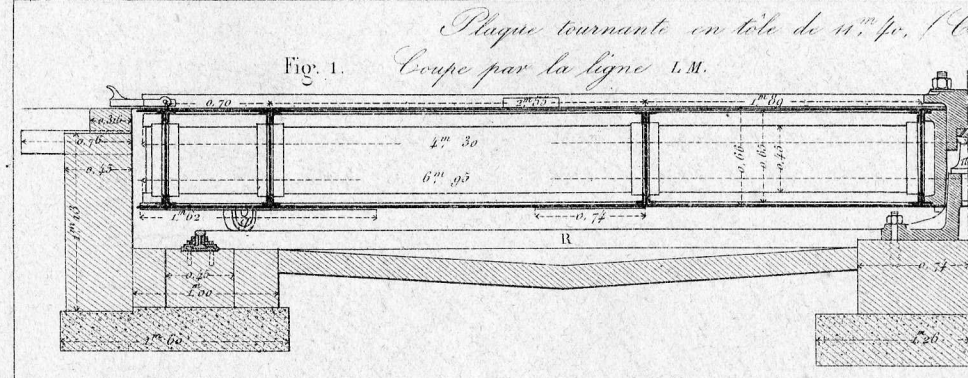
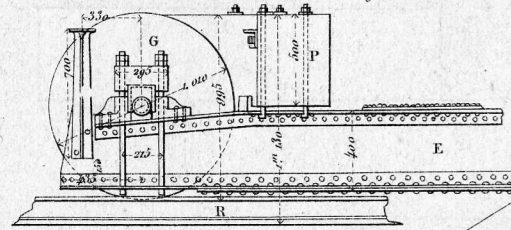


Fig. 4. Elevation d'un grand gabot.



Plaque tournante de 11^m 60. (Est français.) (Fig. 1 à 4.)

Fig. 1. Plan à diverses hauteurs.

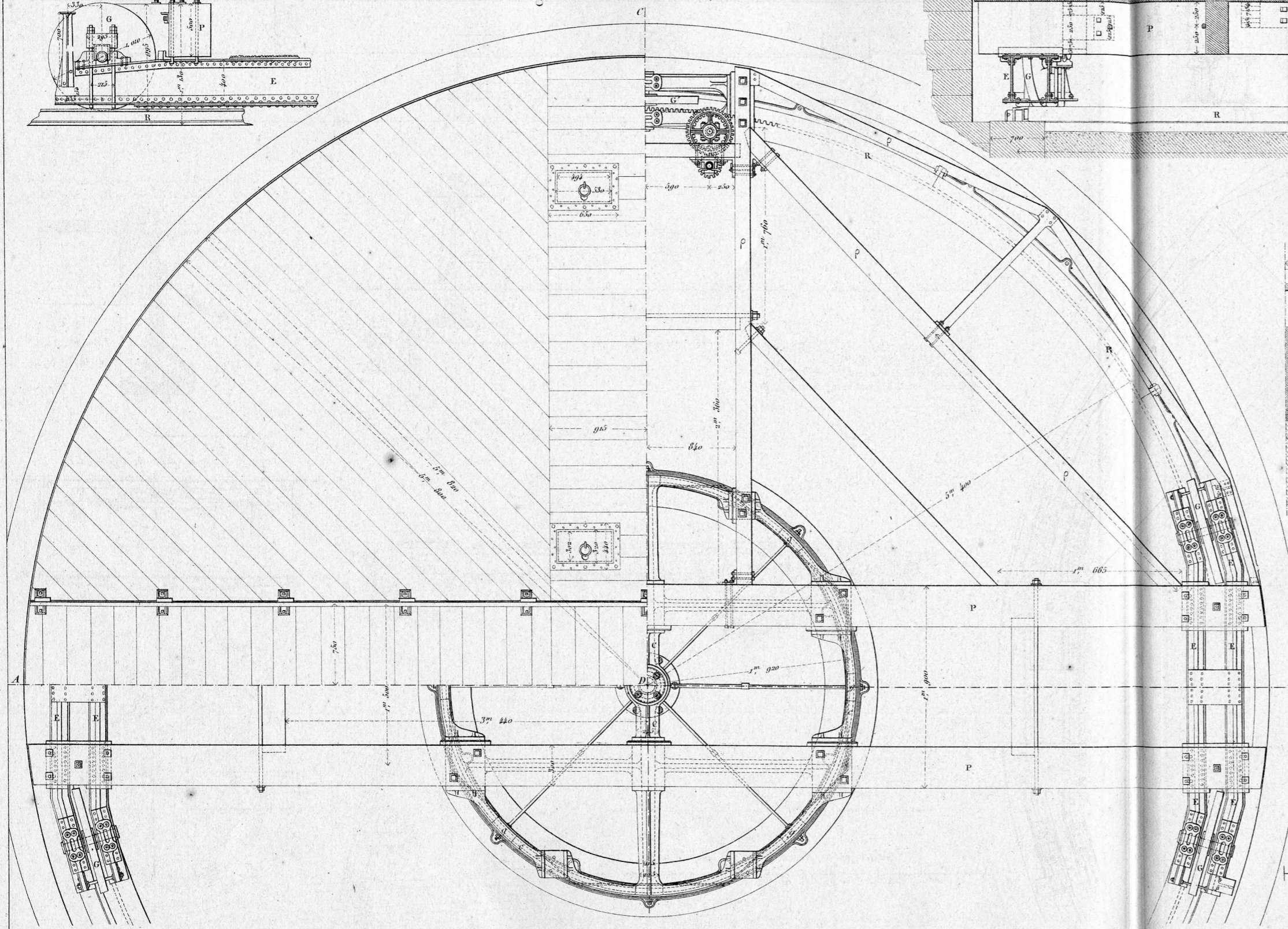


Fig. 2. Coupe verticale par la ligne AB.

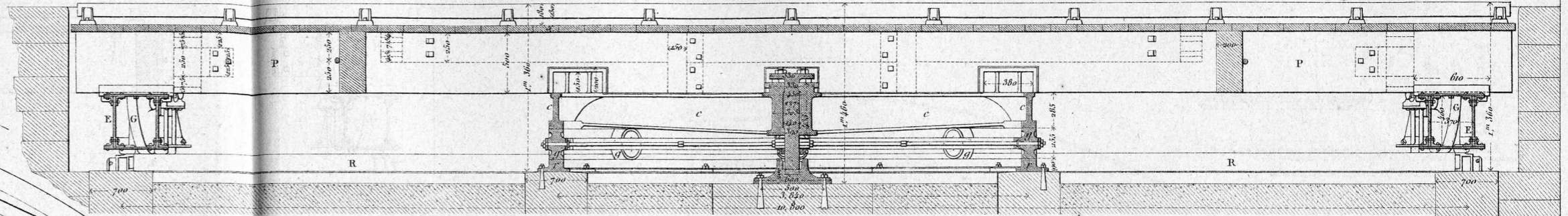
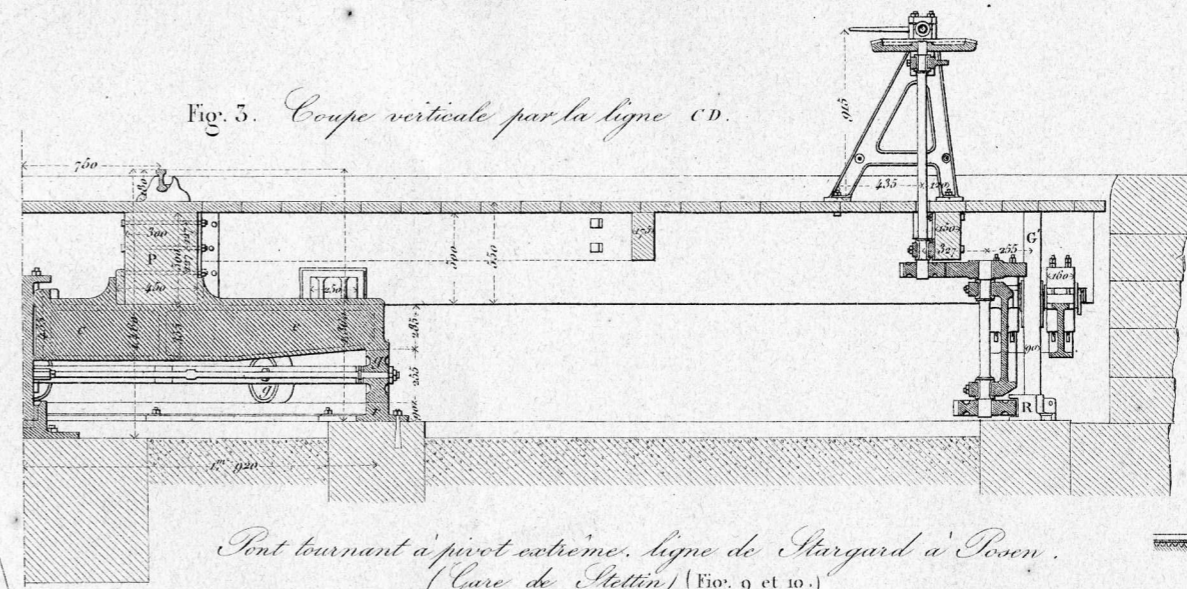


Fig. 5. Coupe verticale par la ligne CD.



Plaque tournante modifiée du dépôt de Châlons-sur-Marne. (Fig. 5 à 8.)

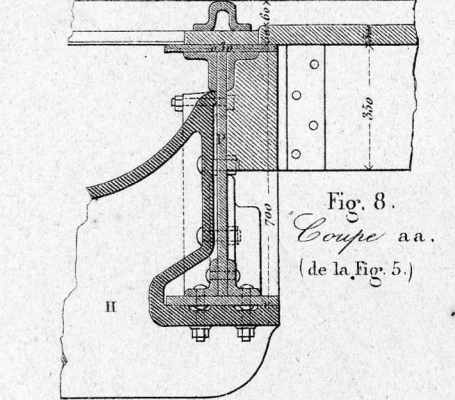


Fig. 8. Coupe aa. (de la Fig. 5.)

Pont tournant à pivot extrême. ligne de Stargard à Posen. (Gare de Stettin) (Fig. 9 et 10.)

Fig. 9. Coupe verticale.

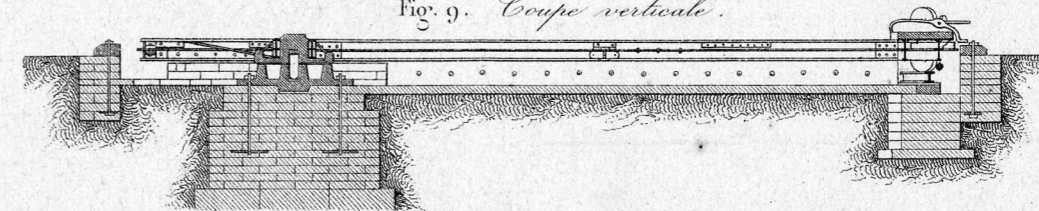


Fig. 6. Coupe par la ligne EF.

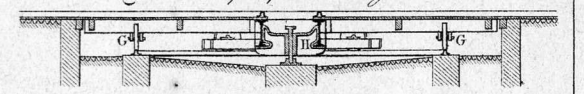


Fig. 7. Coupe par la ligne GH.

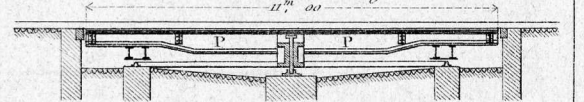


Fig. 5. G. Plan.

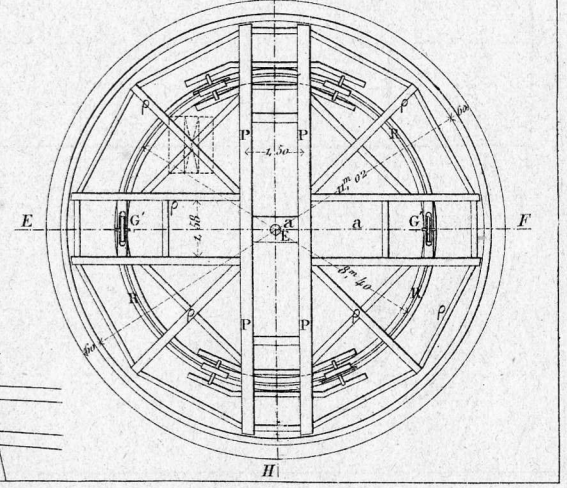
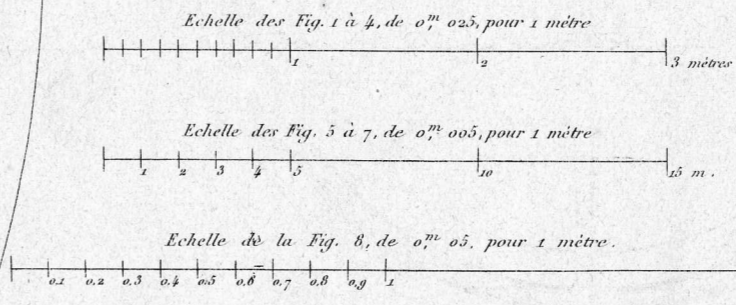


Fig. 10. Plan général.

Plan général.



Plaque tournante de la nouvelle remise de la gare de Berlin, Potsdam, Magdebourg. (Fig. 1 à 5.)

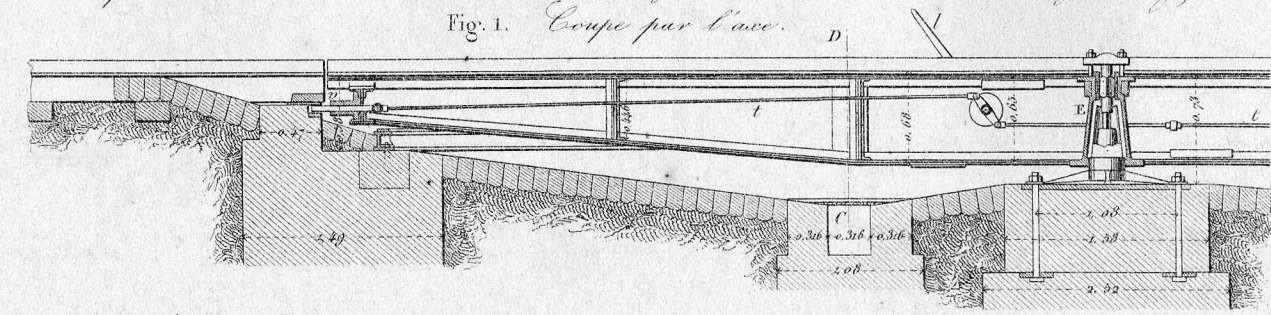


Fig. 1. Coupe par l'axe.

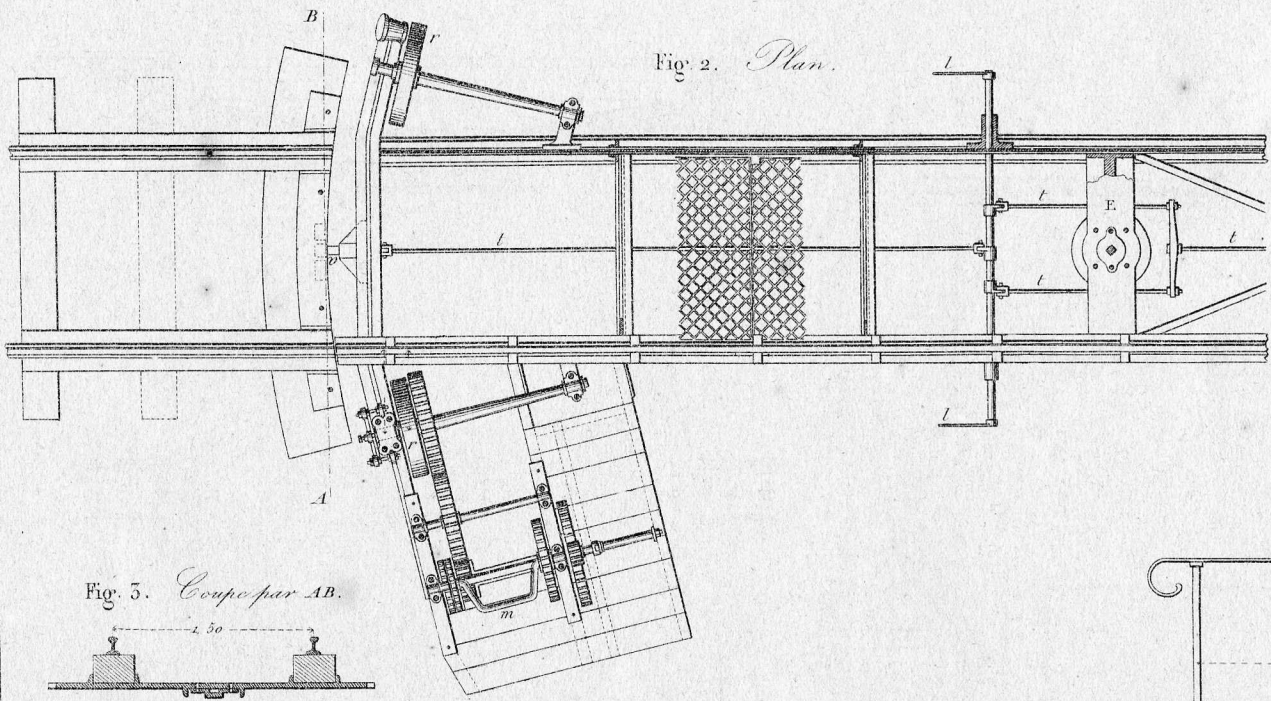


Fig. 2. Plan.

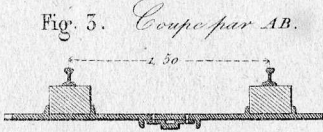


Fig. 5. Coupe par AB.

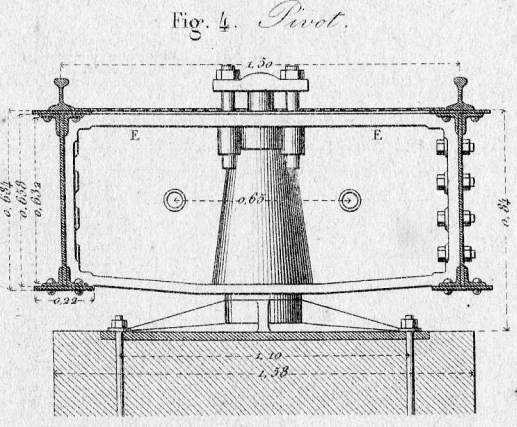


Fig. 4. Pivot.

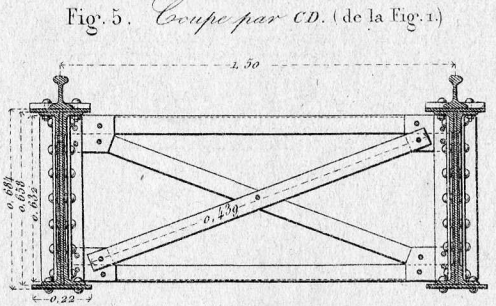
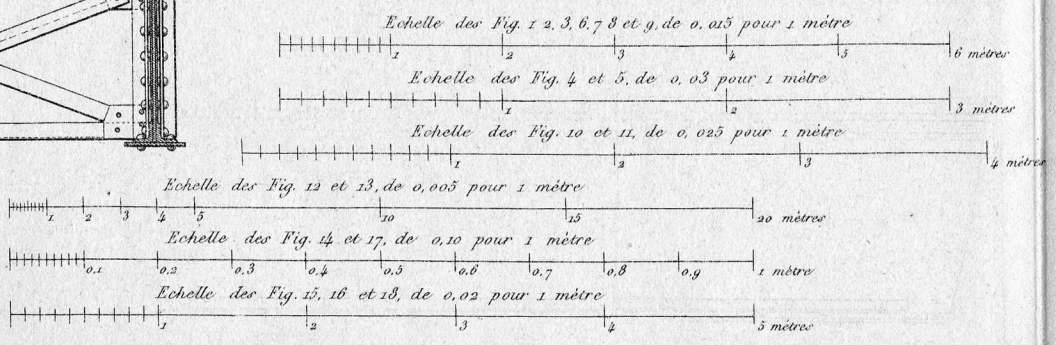


Fig. 5. Coupe par CD. (de la Fig. 1.)



Plaque tournante de 17^m. 00. (Nord français.) (Fig. 6 à 18.)

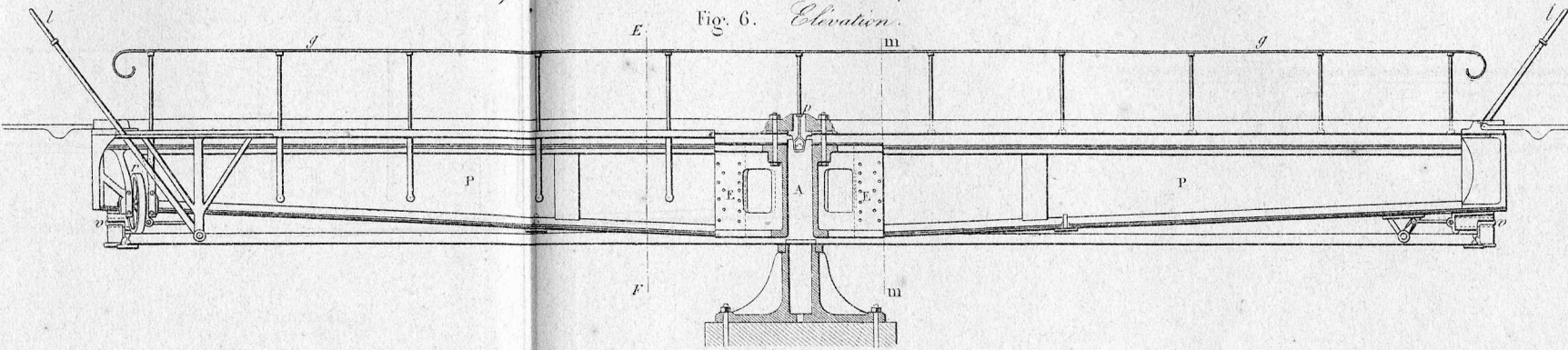


Fig. 6. Elevation.

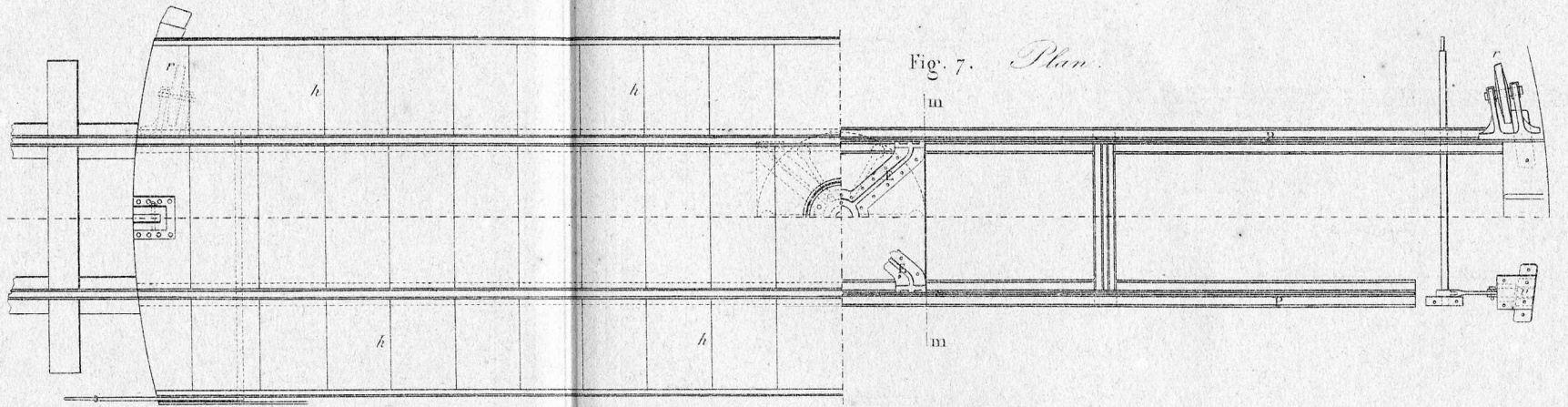


Fig. 7. Plan.

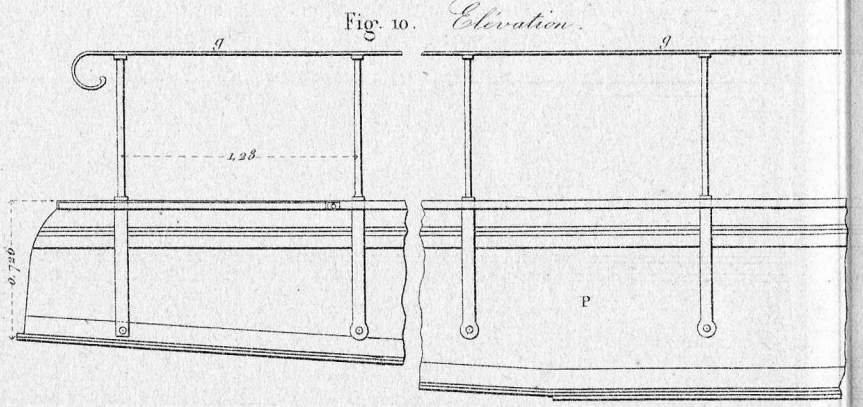


Fig. 10. Elevation.

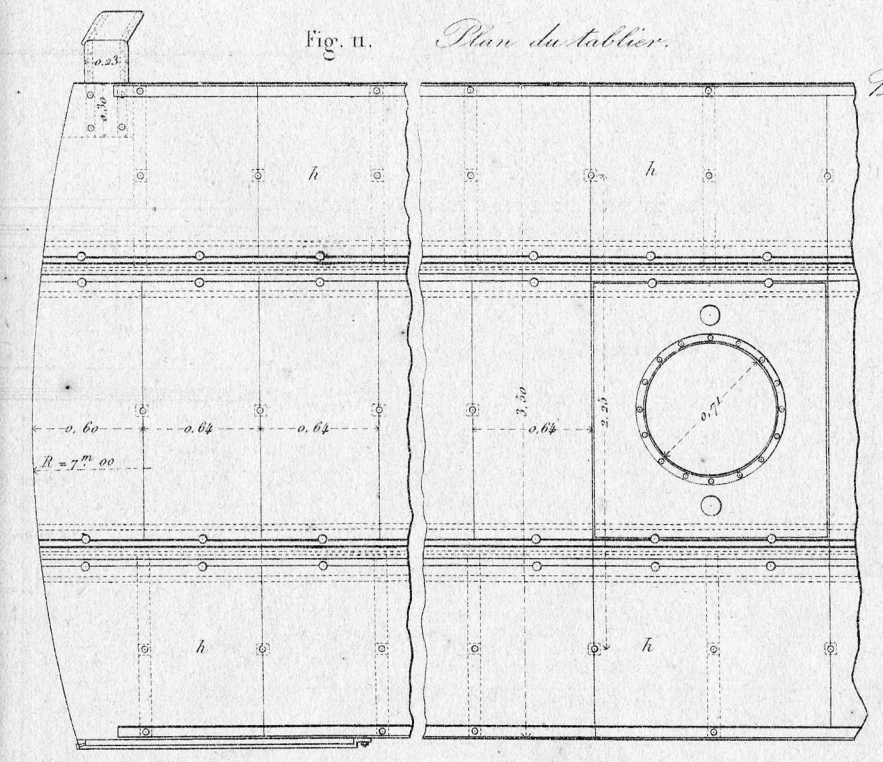


Fig. 11. Plan du tablier.

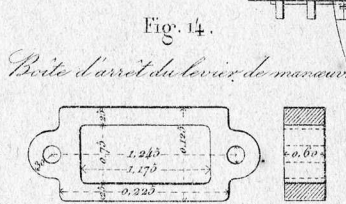


Fig. 14. Boite d'arrêt du levier de manœuvre.

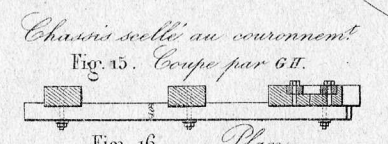


Fig. 15. Coupe par GH.

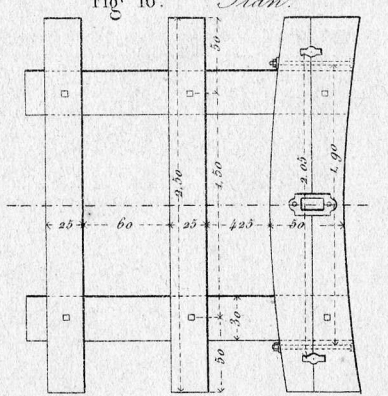


Fig. 16. Plan.

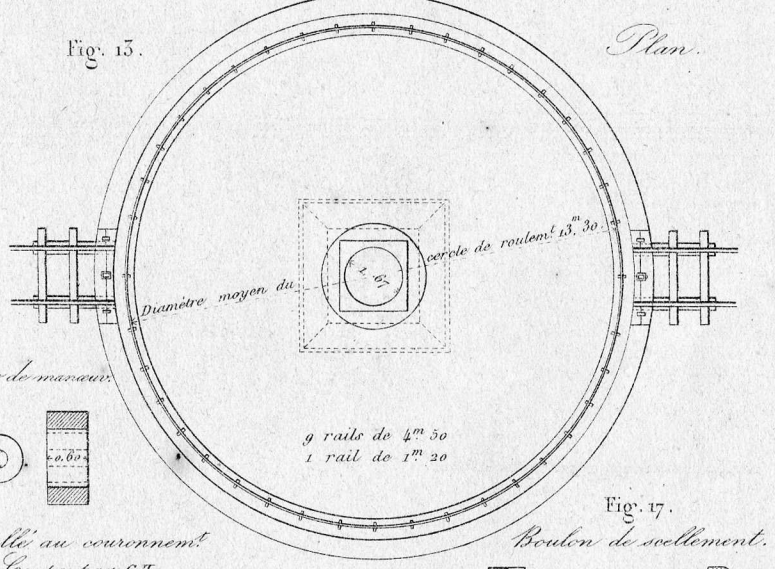


Fig. 13. Coupe par l'axe.

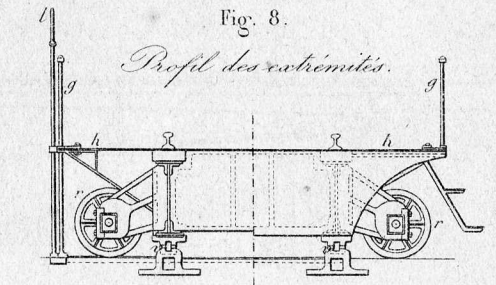


Fig. 8. Profil des extrémités.

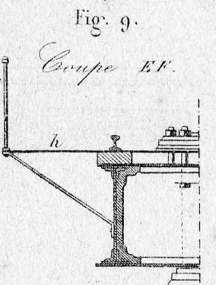


Fig. 9. Coupe EF.

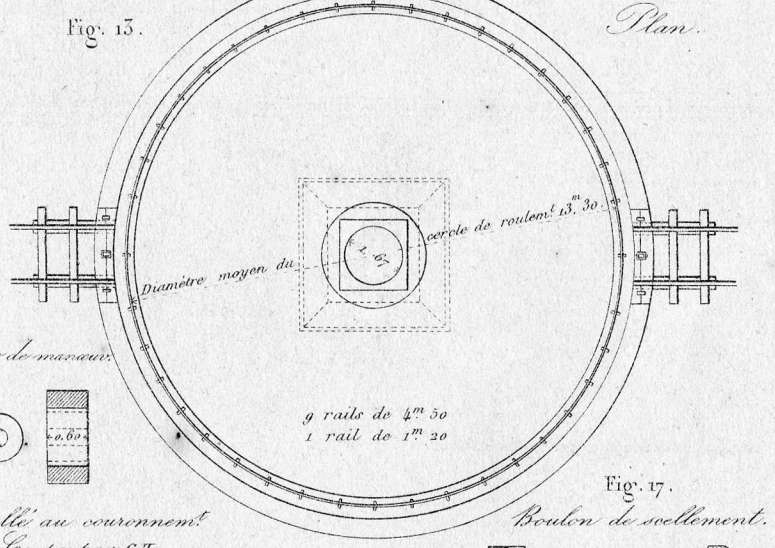


Fig. 15. Plan.

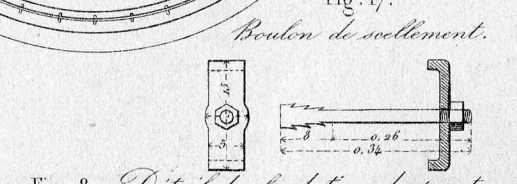


Fig. 17. Boulon de scellement.

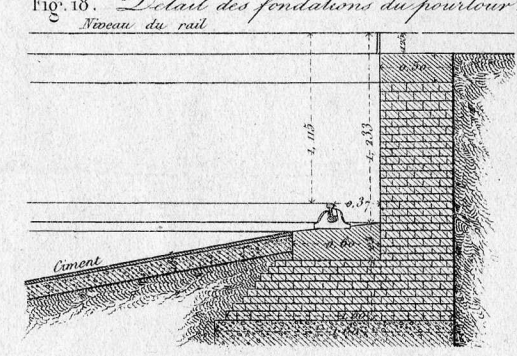
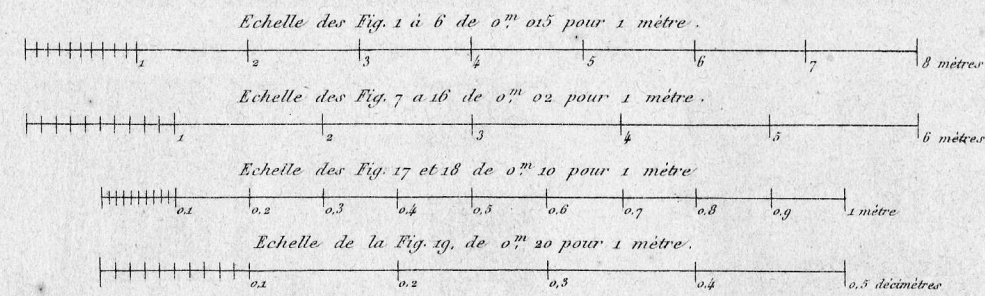
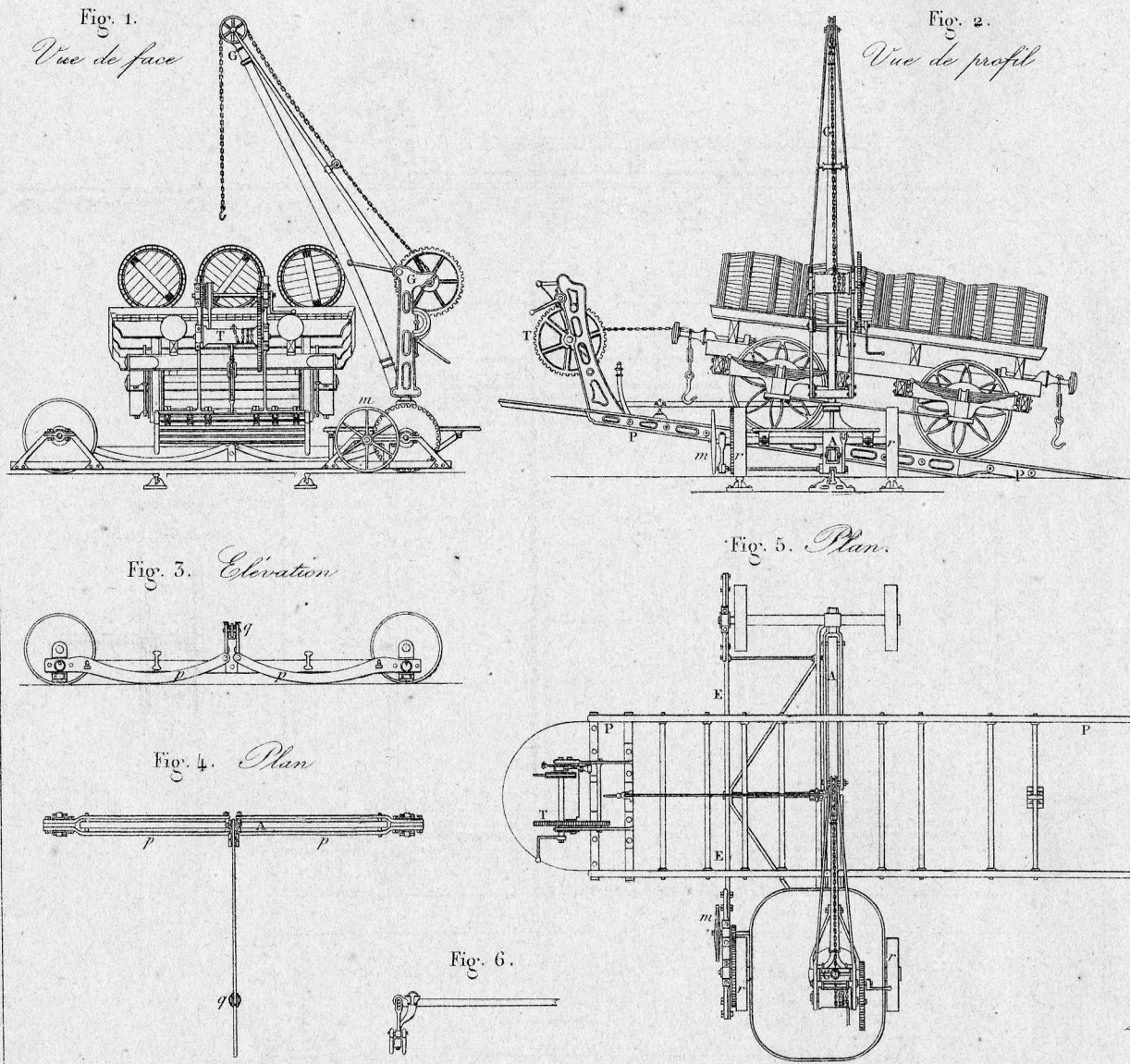


Fig. 18. Detail des fondations du pourtour.

Chariot à bascule proposé en Belgique.

(Fig. 1 à 6.)



Chariot roulant du Staat's Bahn autrichien.

(Fig. 7 à 10.)

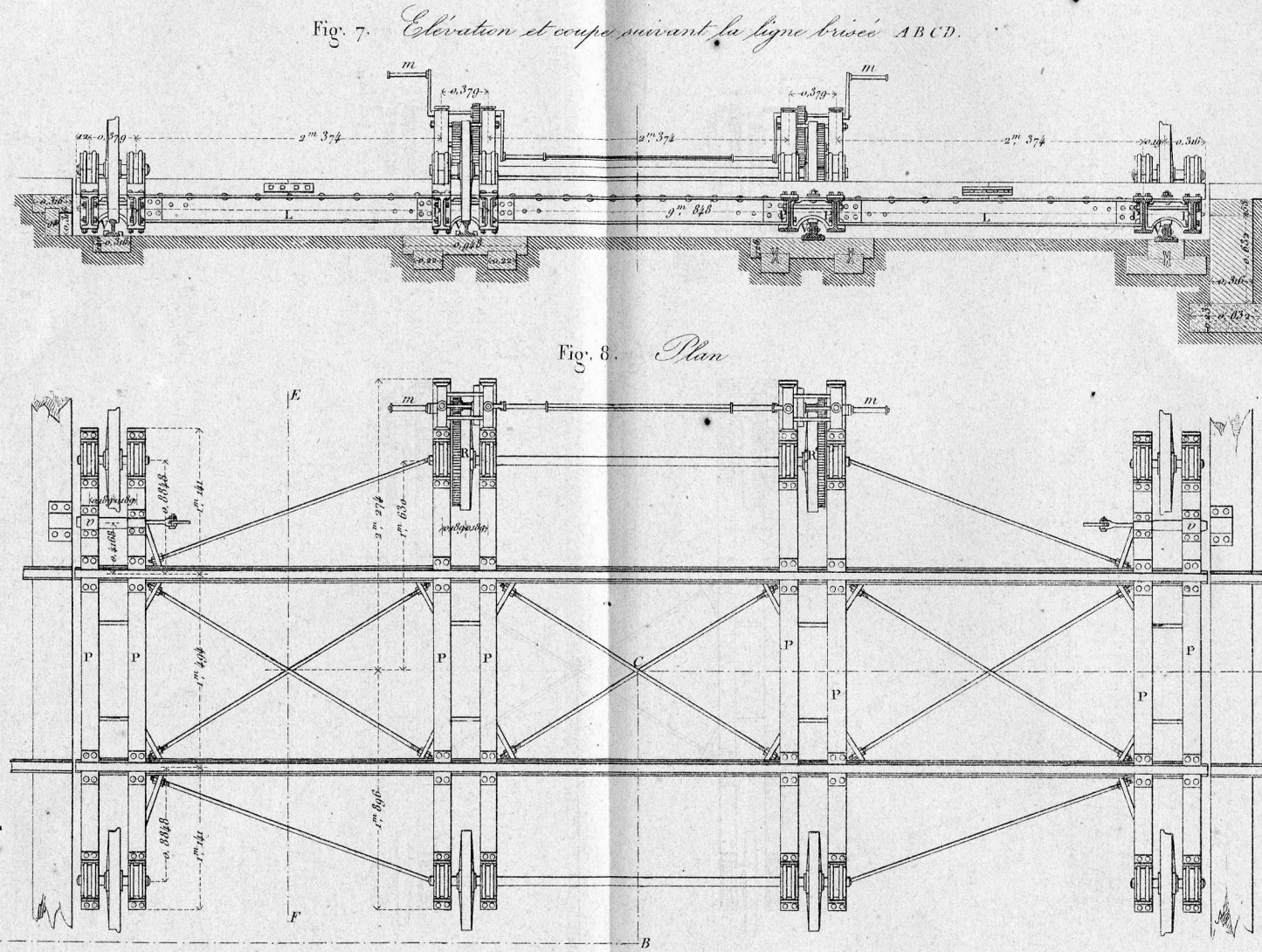


Fig. 9. Coupe transversale par la ligne EF.

Fig. 10. Elevation vue par bout.

Chariot roulant à quatre roues pour wagons pesant de 15 à 20 tonnes chargés lignes de Paris à la Méditerranée. (Fig. 11 à 19.)

Fig. 11. Coupe par la ligne GHJK. Fig. 12. Elevation vue par bout.

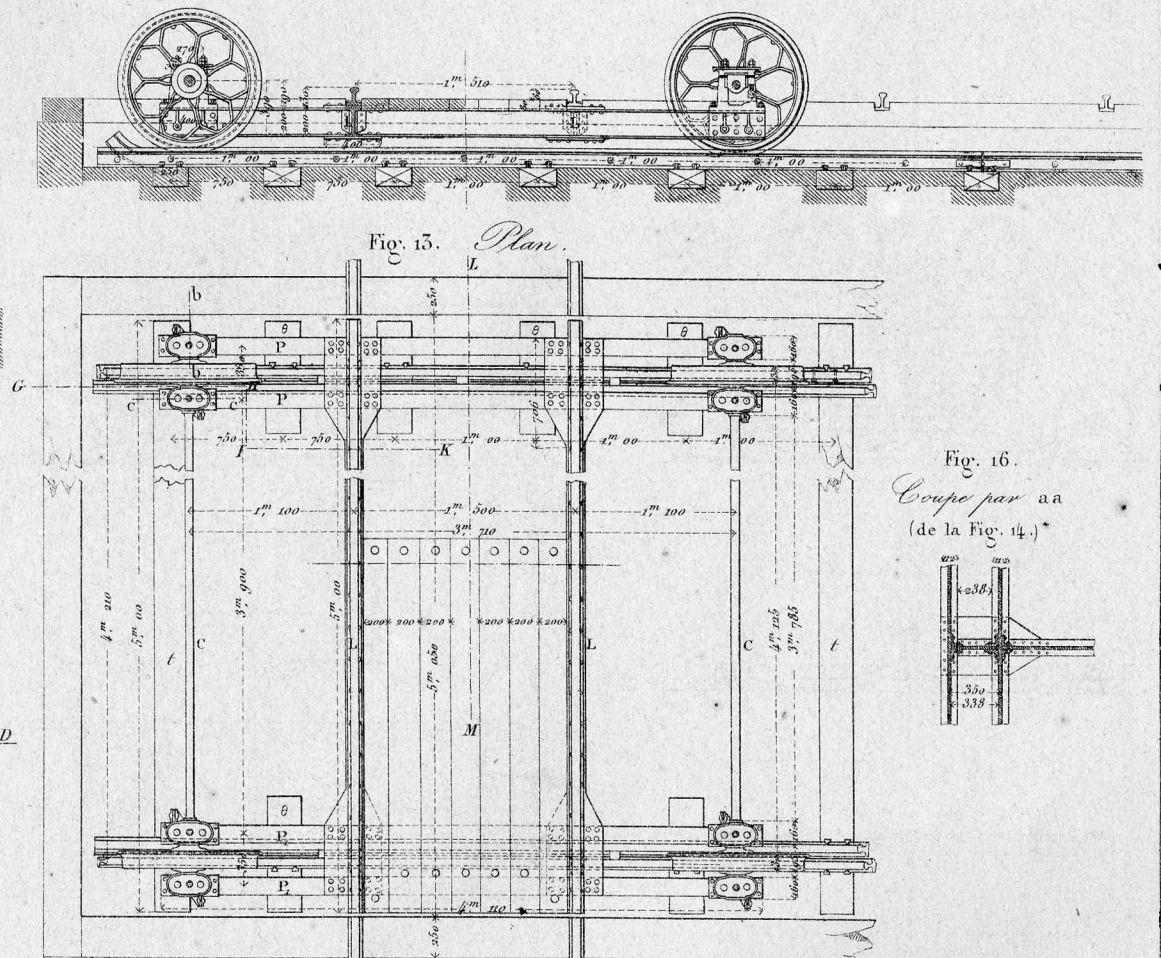


Fig. 14. Coupe par la ligne LM.

Fig. 15. Elevation.

Fig. 19. Coupe pesant 3^k 50

Fig. 17. Coupe bb. (de la Fig. 15.)

Fig. 18. Coupe cc. (de la Fig. 15.)

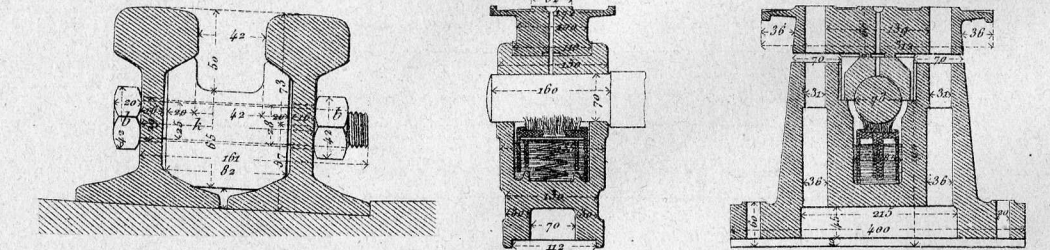


Fig. 1. Chariot roulant à niveau. (Est français.) (Fig. 1 à 7.) Elevation. Fig. 2. Coupe par la ligne AB.

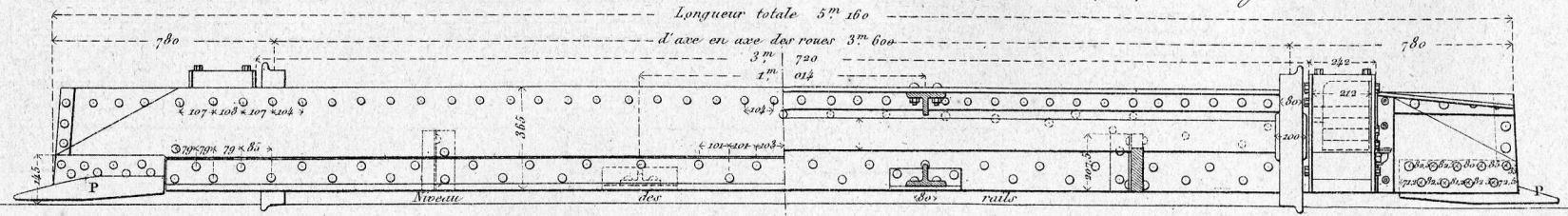


Fig. 3. Plan.

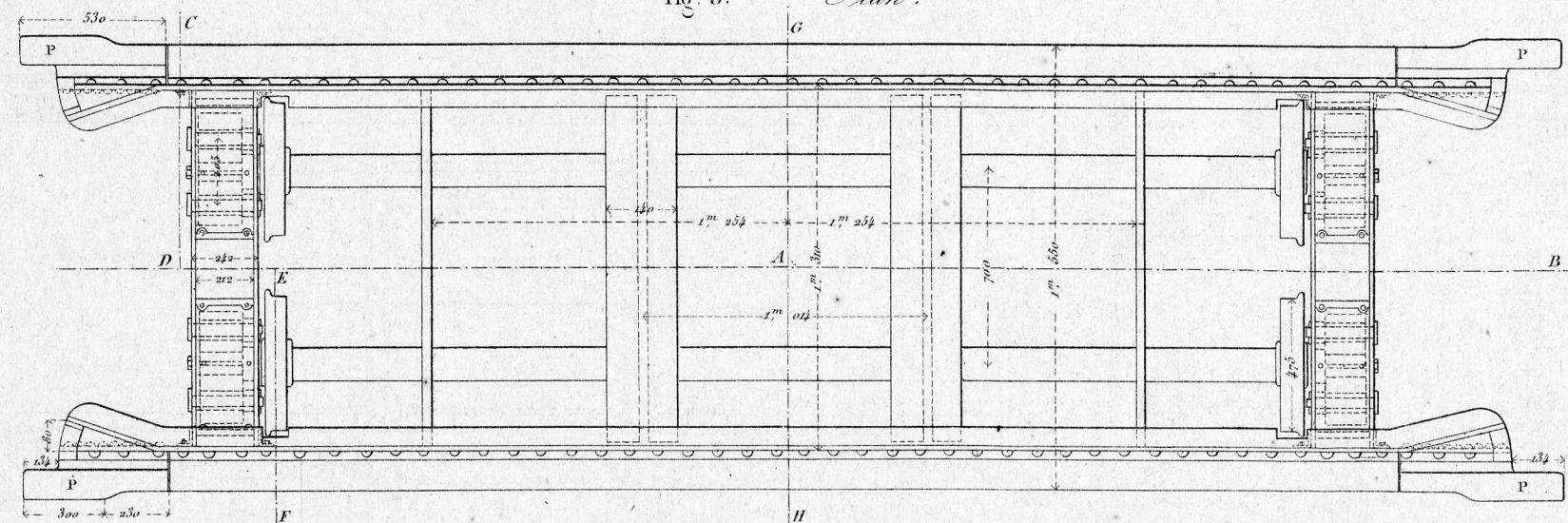


Fig. 4. Vue par bout

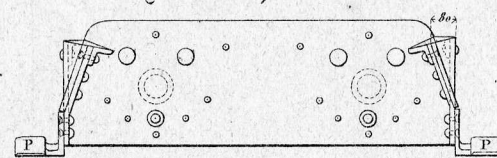


Fig. 5. Coupe transversale suivant CD. Fig. 6. Coupe transversale suivant EF.

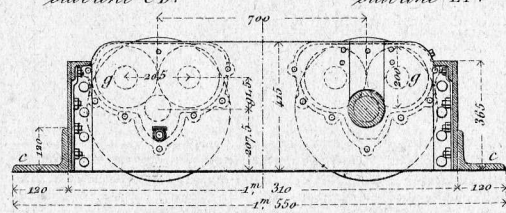


Fig. 7. Coupe transversale suivant GH.

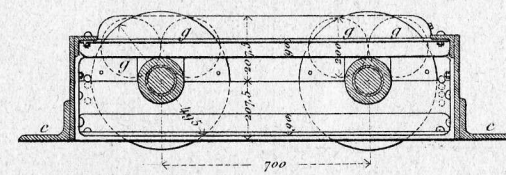
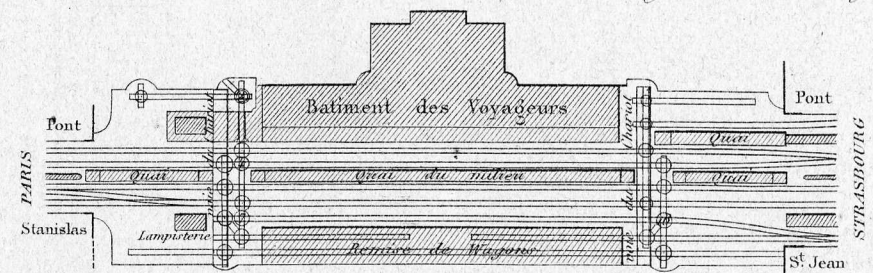


Fig. 8. Chariots Dunn remplissant des plaques. (Gare de Nancy.)



Echelle des Fig. 1 à 7 et 9 à 11 de 0m 04 pour 1 metre.

Echelle de la Fig. 8 de 0m 0005 pour 1 metre.

Echelle des Fig. 14 et 15 de 0m 20 pour 1 metre.

Echelle des Fig. 12 et 13 de 0m 025 pour 1 metre.

Echelle de la Fig. 16 de 0m 10 pour 1 metre.

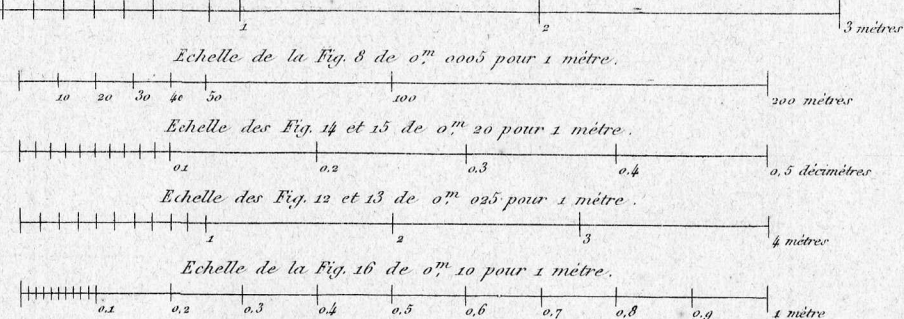


Fig. 11. Coupe transversale par la ligne IK.

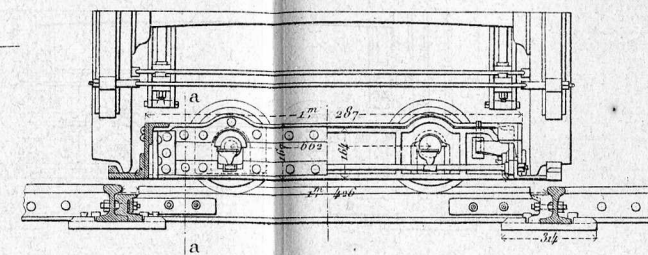


Fig. 14. Coupe par aa (de la Fig. 11.)

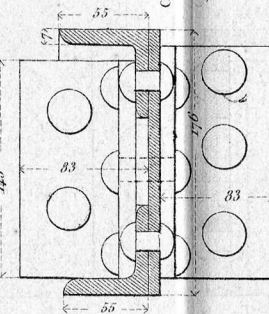


Fig. 15. Coupe d'un longeron.

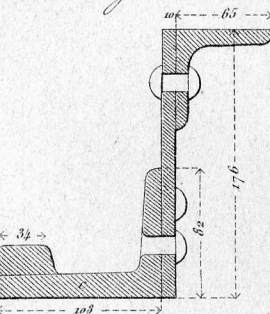
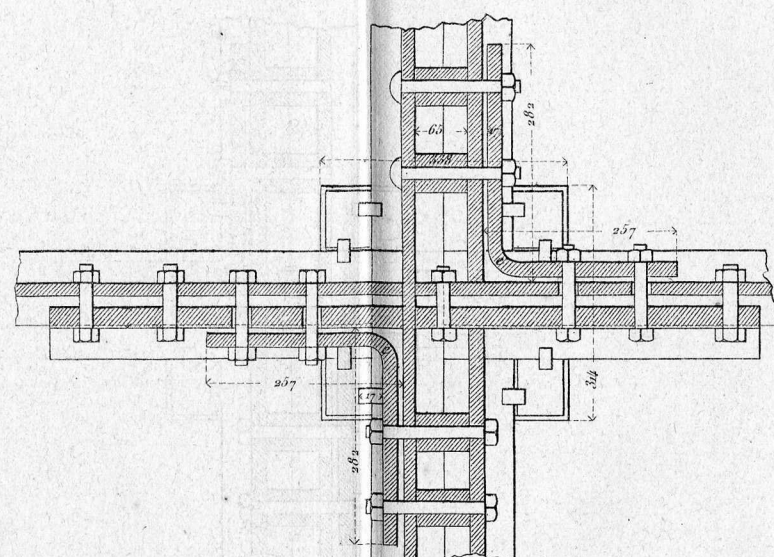


Fig. 16. Coupe horizontale par bb. (de la Fig. 9.)



Chariot à niveau pour voitures à 4 roues du Staat's Bahn autrichien (Fig. 9 à 16.) Fig. 9. Coupe longitudinale

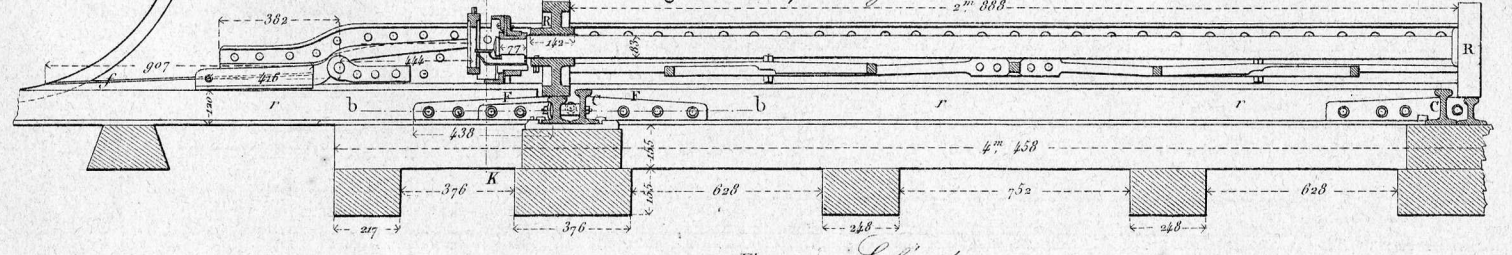


Fig. 10. Elevation.

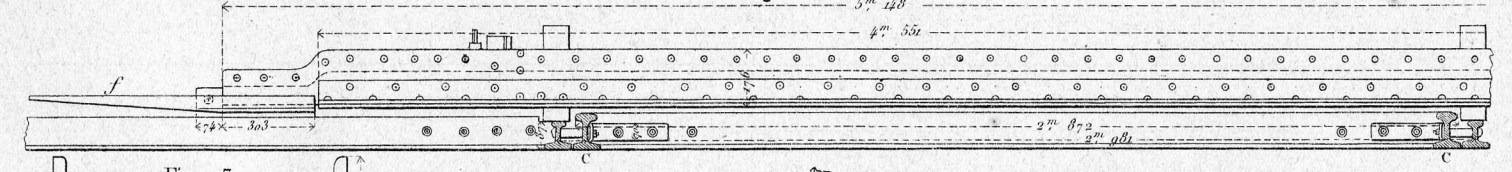


Fig. 15. Plan du chariot.

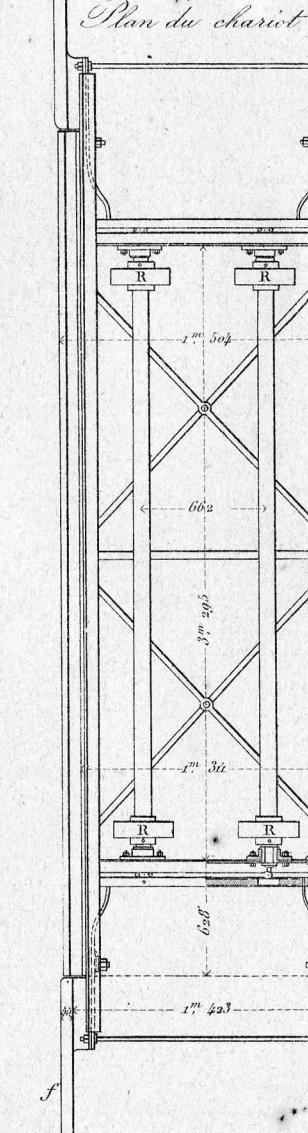
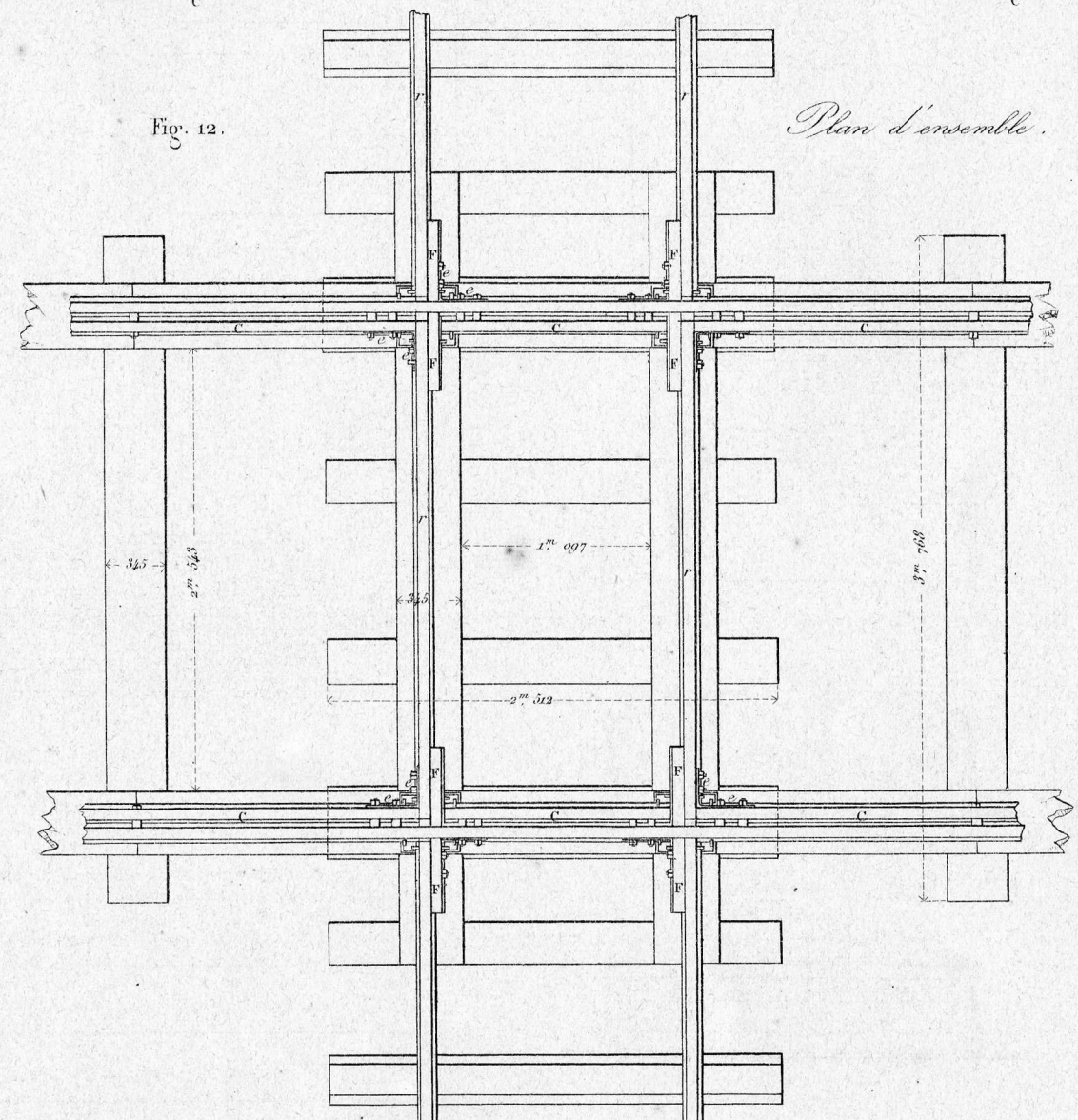


Fig. 12.



Plan d'ensemble.

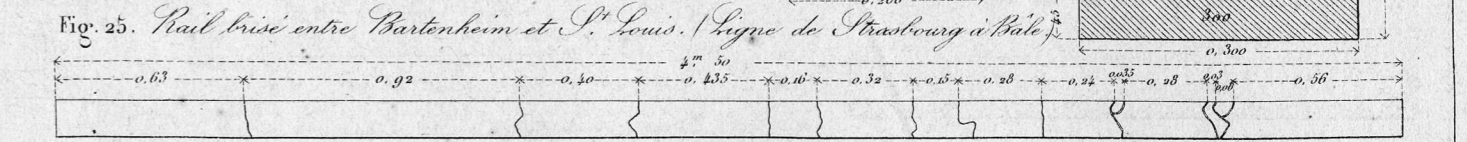
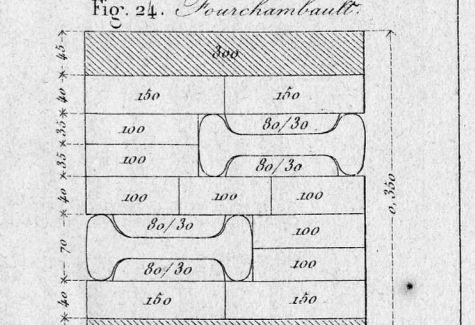
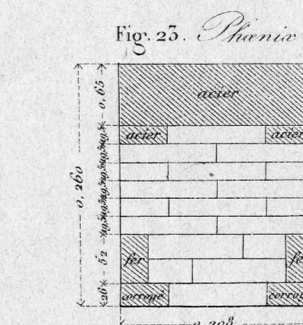
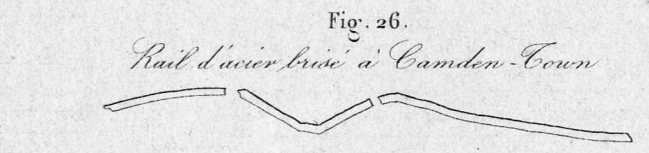
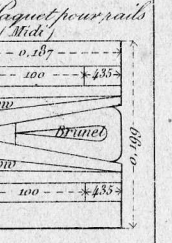
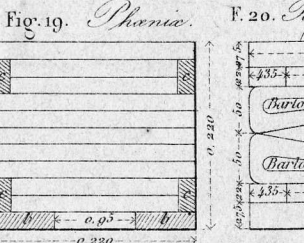
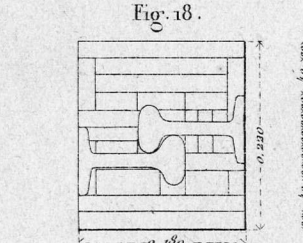
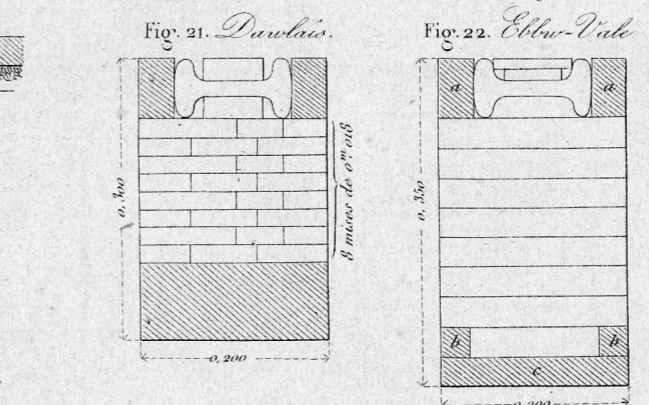
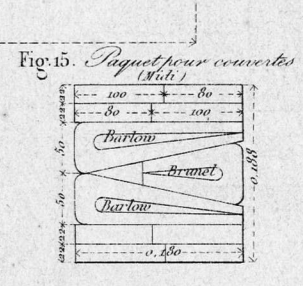
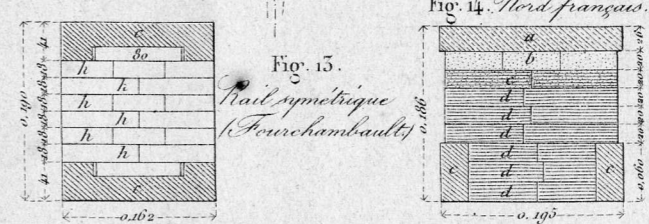
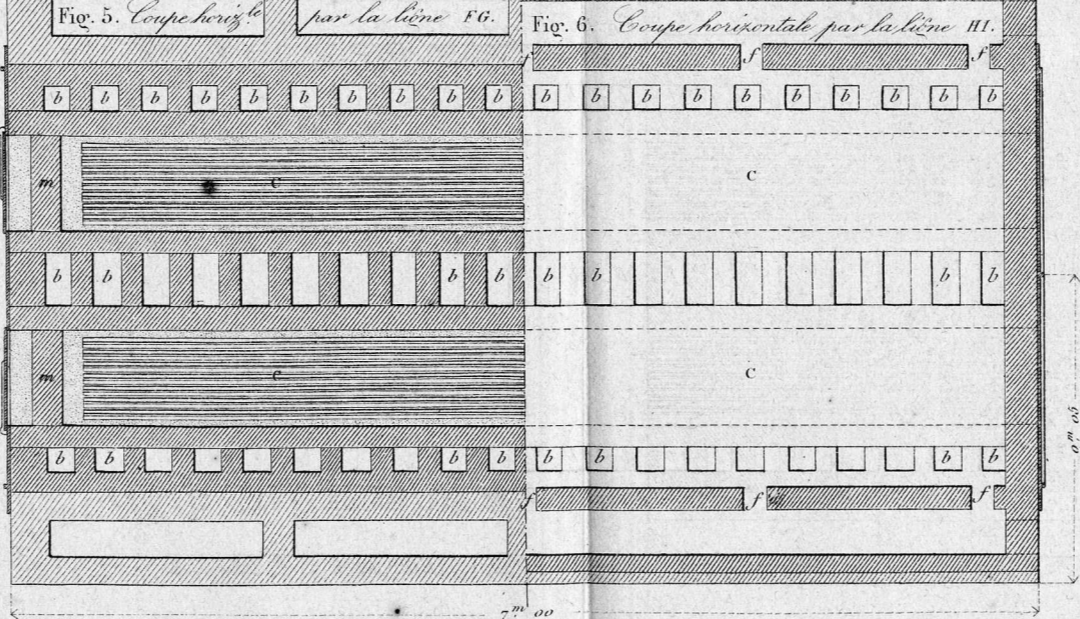
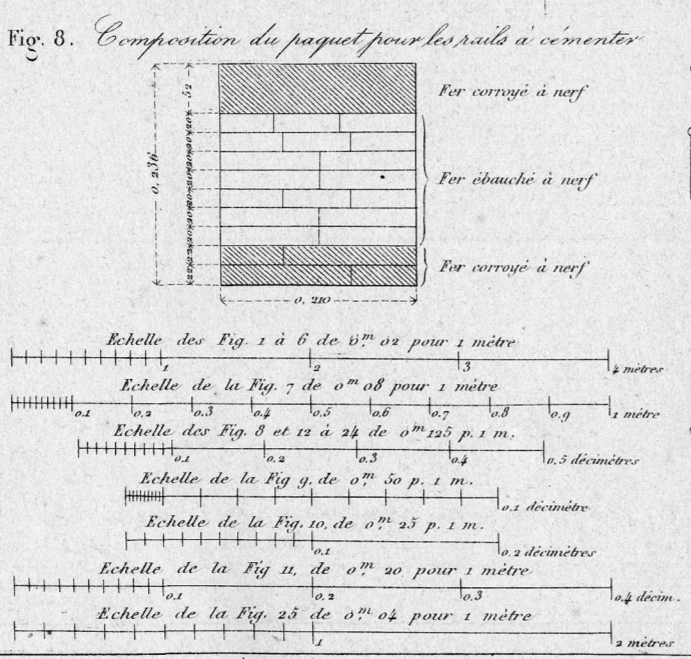
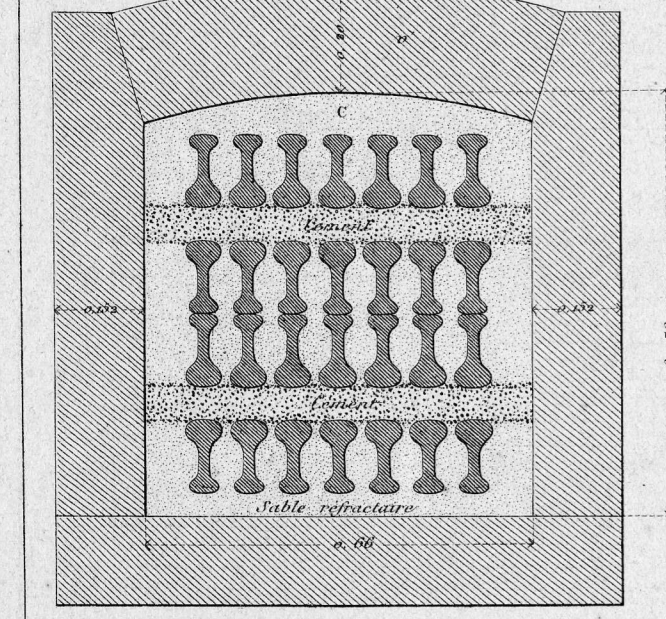
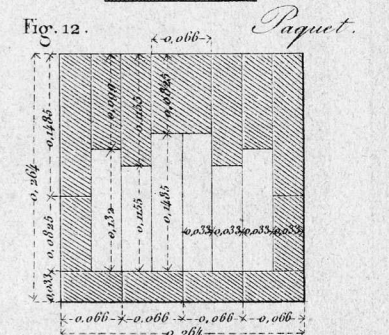
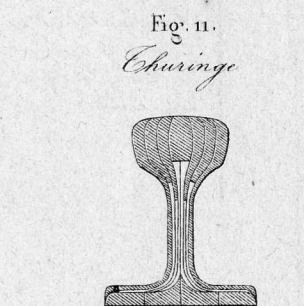
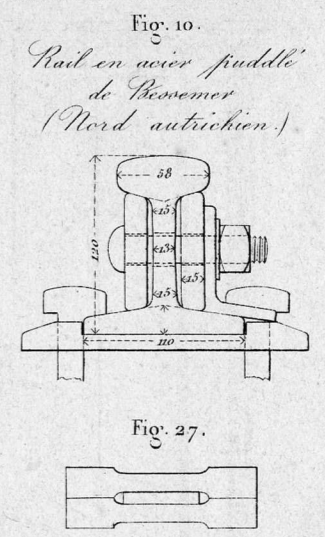
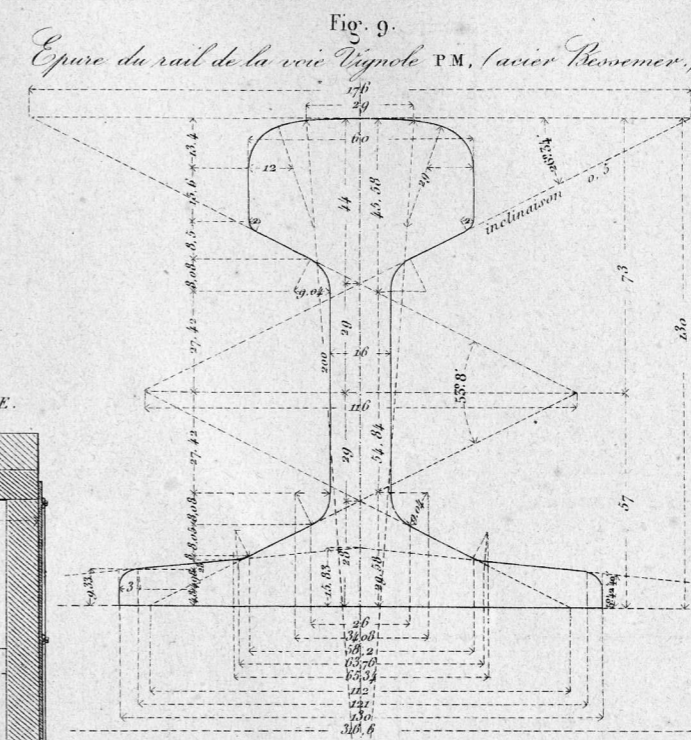
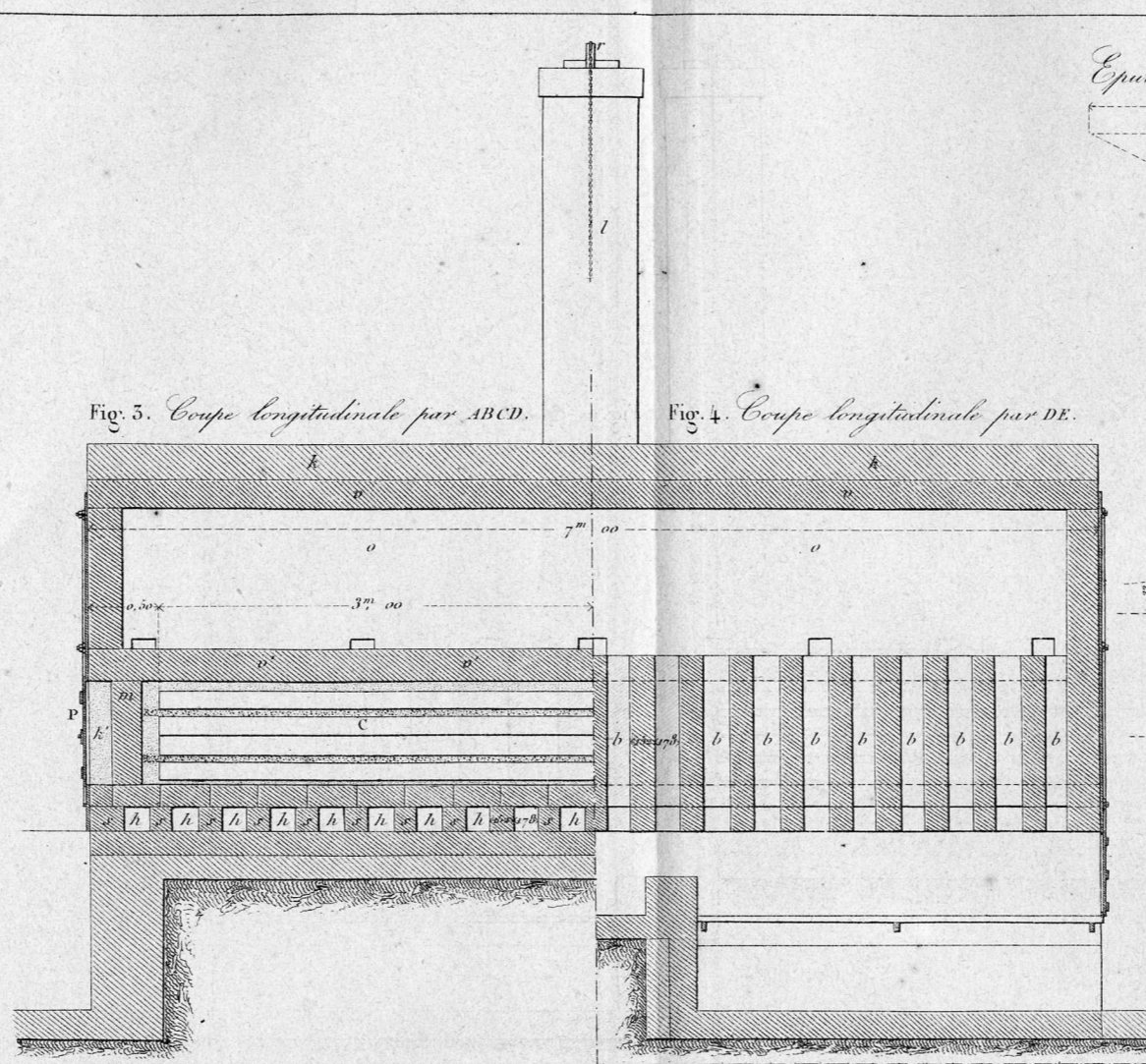
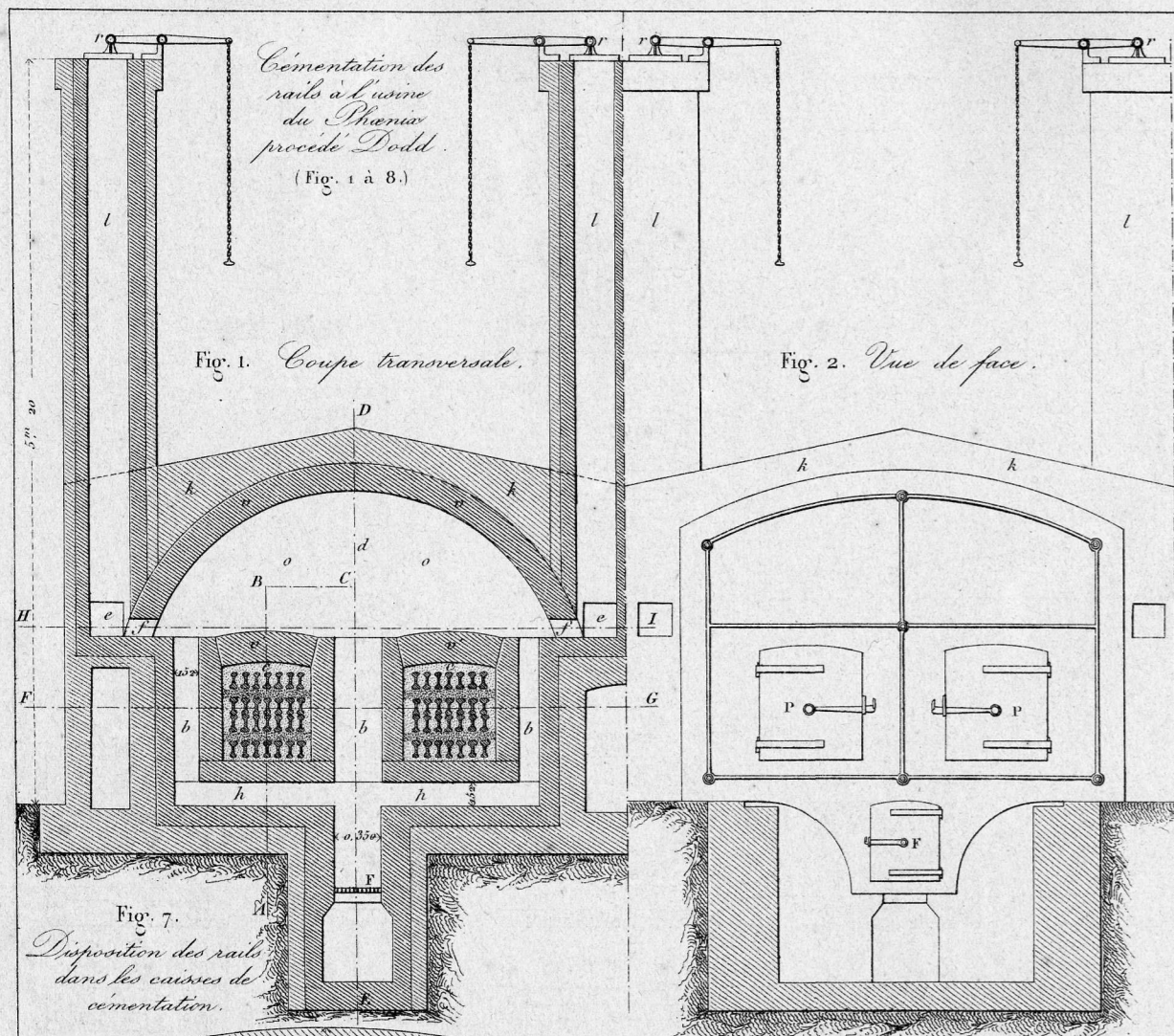


Fig. 1. Dans un terrain en pente ou dans un sol perméable et absorbant.

Profils en remblais.
(Fig. 1 et 2.)

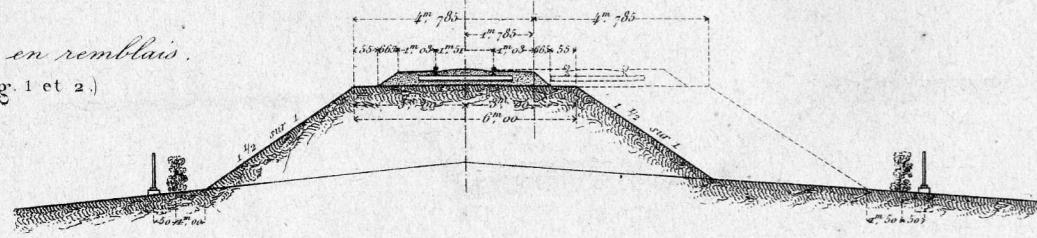
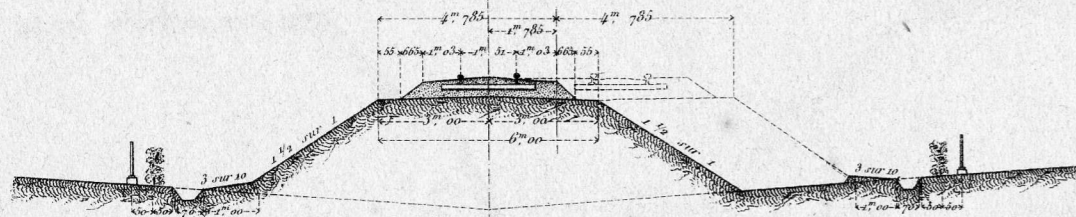


Fig. 2. Dans un terrain en rampe et imperméable.



Echelle des Fig. 1 à 6 de 0m 005 pour 1 mètre



Profils types du réseau de l'Est.

Fig. 3. Dans les terrains calcaires ou perméables.

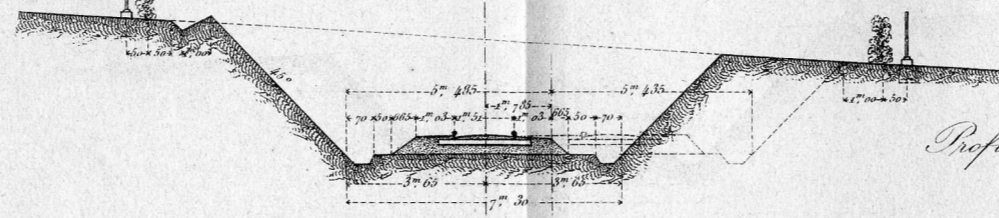
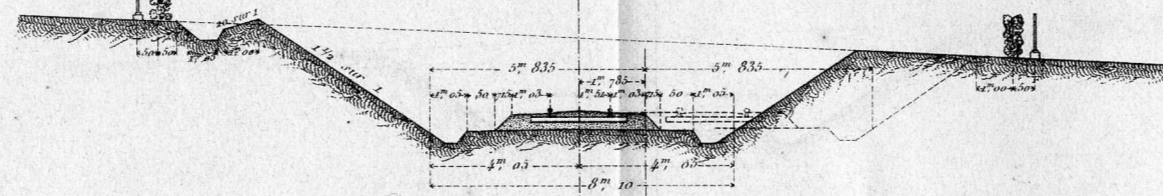


Fig. 4. Dans les terrains argileux.



Profils en déblais. (Fig. 5 à 6.)

Fig. 5. Tranchées dans les roches calcaires ou autres, jusqu'à 3m de profondeur.

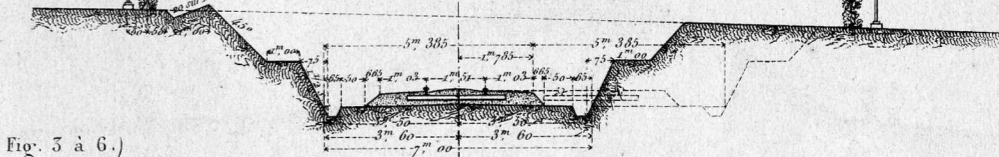


Fig. 6. Tranchées profondes dans les roches calcaires ou autres.

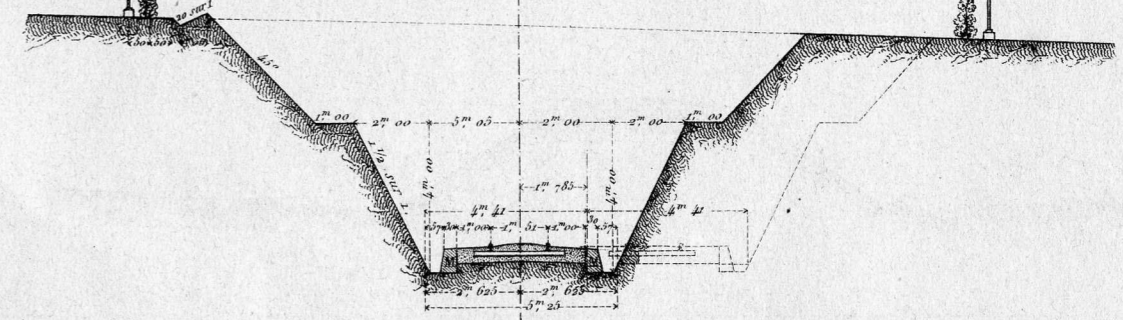
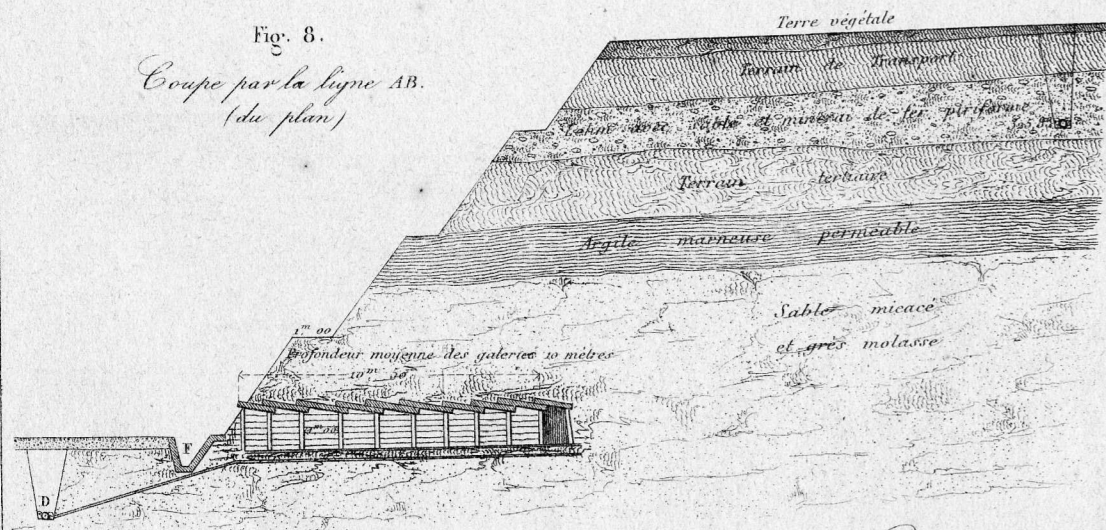


Fig. 8.

Coupe par la ligne AB.
(du plan)



Tranchée du Dochenberg. (Ligne de Paris à Mulhouse.)

Fig. 9. Coupe par la ligne CD.
(du plan)

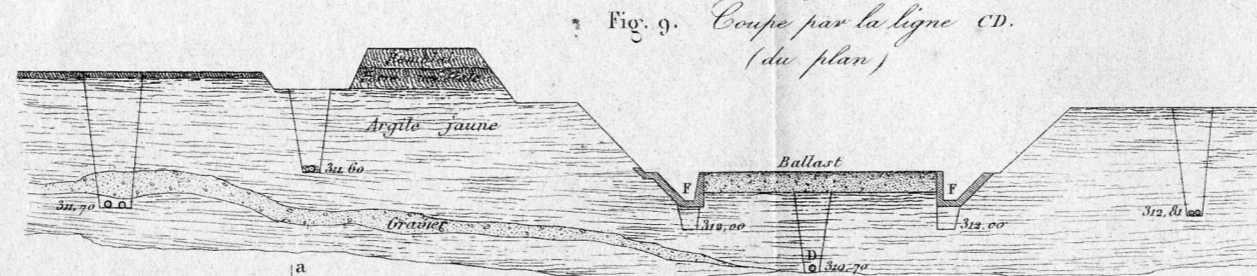


Fig. 10. Coupe par la ligne EF.
(du plan)

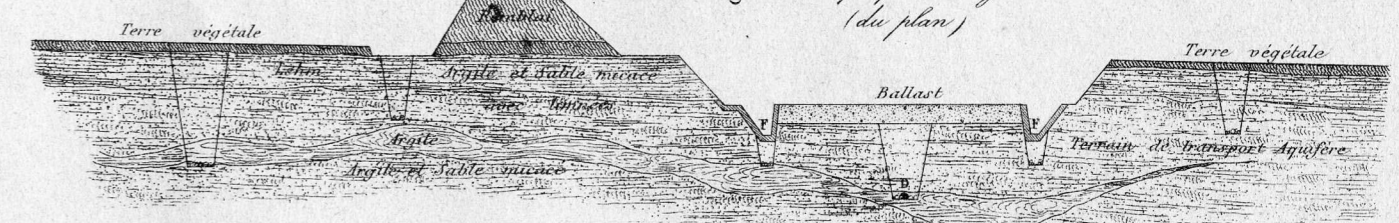


Fig. 13.

Coupe par bb du plan

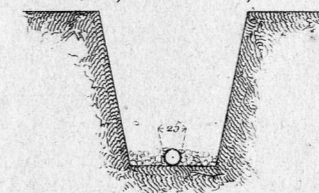


Fig. 11.

Plan des contreforts et voûtes GG.
(Fig. 7.)

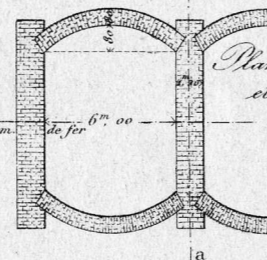
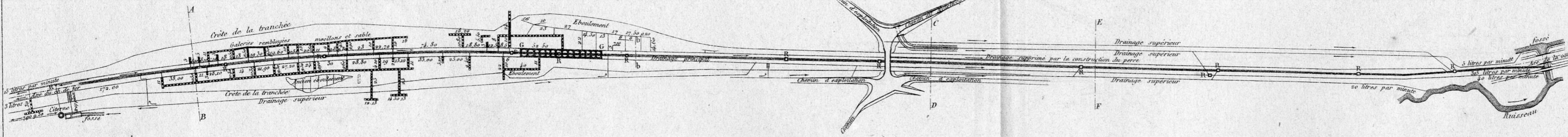


Fig. 12.



Fig. 7. Plan d'ensemble.

(N° Les drainages fournissent 398 litres par minute.)

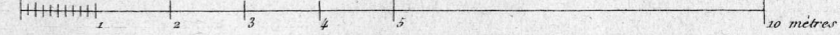
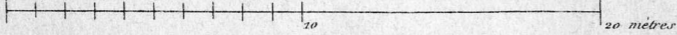


Echelle de la Fig. 7 de 0m 001 pour 4 mètres

Echelle des Fig. 8 à 10, de 0m 004 pour 1 mètre

Echelle des Fig. 11 et 12 de 0m 005 pour 1 mètre

Echelle des Fig. 13 à 15 de 0m 01 pour 1 mètre



C. COUCHE. Chemins de Fer.

Tranchée de Loxeville (Ligne de Paris à Strasbourg)

Fig. 2. Talus de gauche.

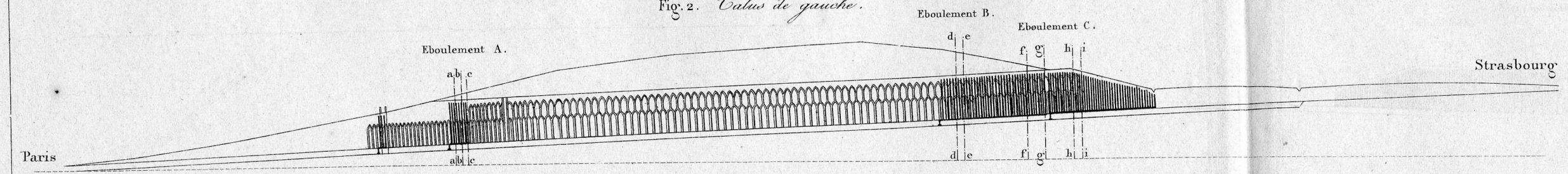


Fig. 1. Plan

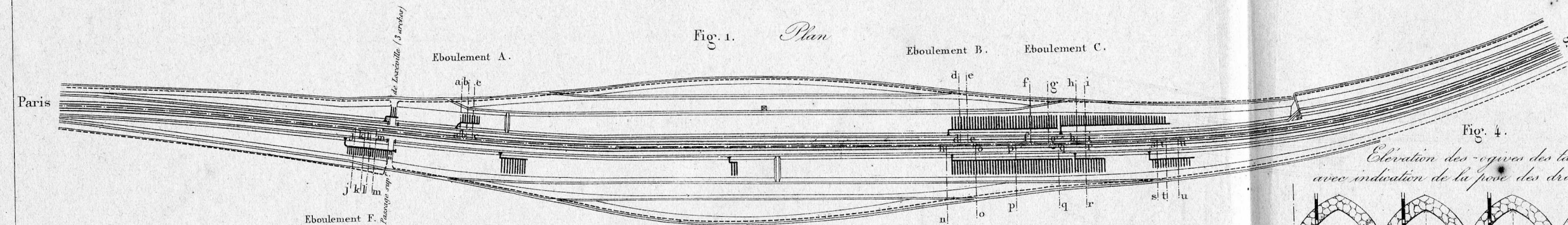


Fig. 3. Talus de droite.

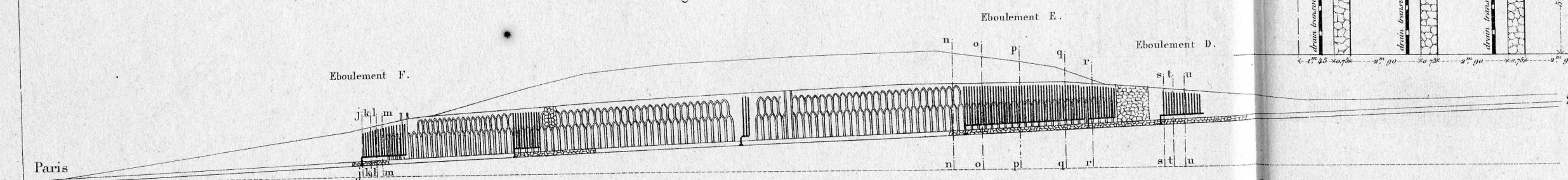
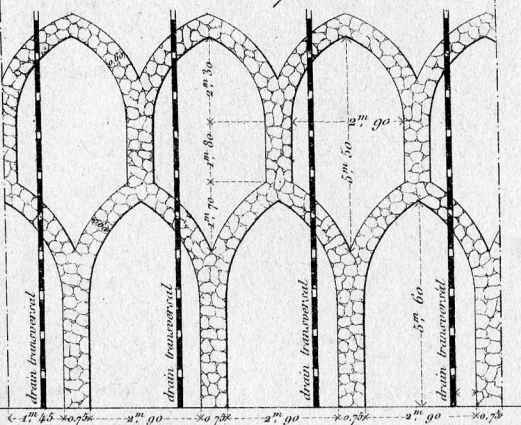
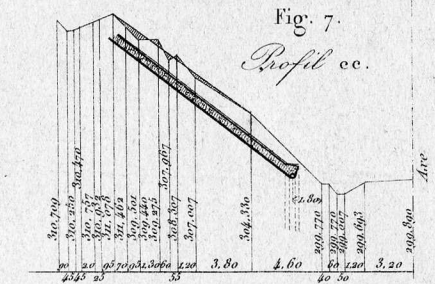
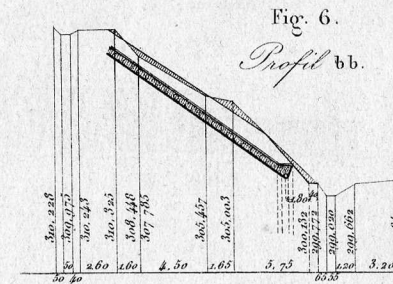
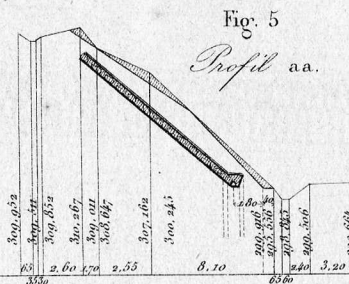


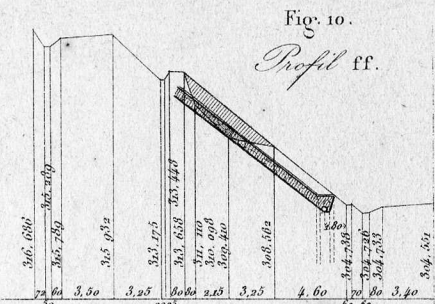
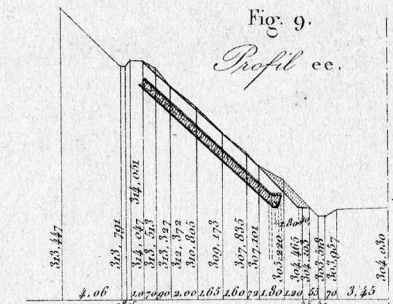
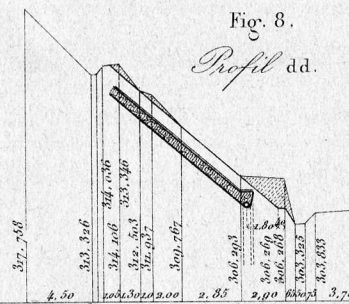
Fig. 4. Elevation des ogives des talus avec indication de la pose des drains.



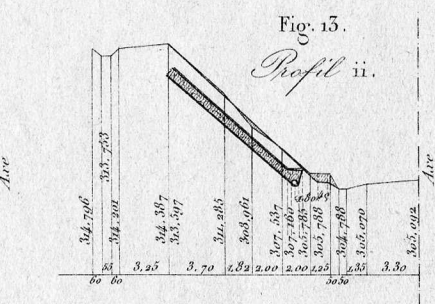
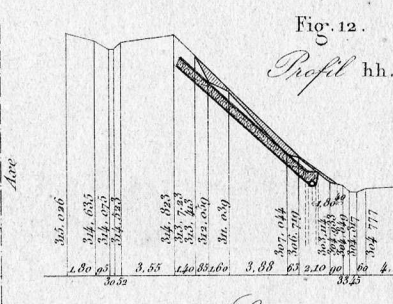
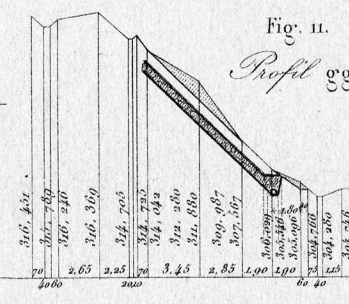
Eboulement A. (Fig. 5 à 7.)



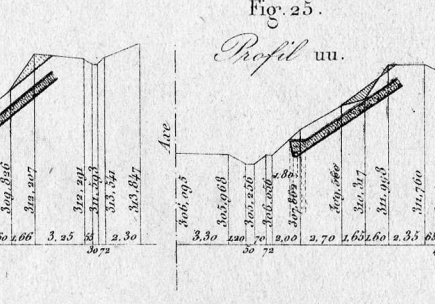
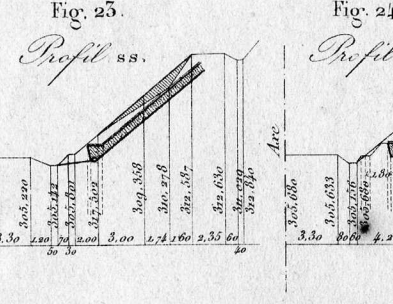
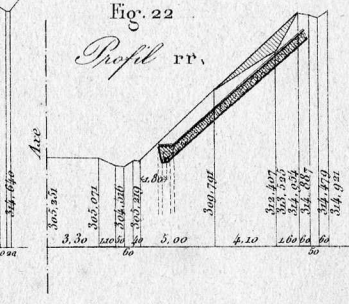
Eboulement B. (Fig. 8 et 9.)



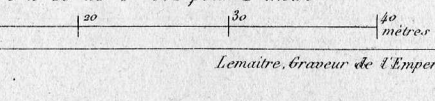
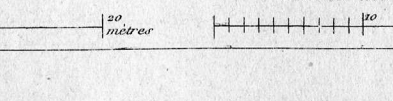
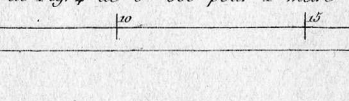
Eboulement C. (Fig. 10 à 13.)



Eboulement E. (Fig. 18 à 22.)



Eboulement D. (Fig. 23 à 25.)



Eboulement F. (Fig. 14 à 17.)



Eboulement F. (Fig. 17.)

Echelle des longueurs des Fig. 1, 2 et 3 de 0^m 001 pour 5 mètres.

Echelle des largeurs de la Fig. 1. de 0^m 004 pour 10 mètres.

Echelle des hauteurs des Fig. 2 et 3 de 0^m 005 pour 1 mètre.

Echelle de la Fig. 4 de 0^m 005 pour 1 mètre.

Echelle des Fig. 5 à 25 de 0^m 002 pour 1 mètre.

Fig. 1. Déformation des piedsroits par suite des sous-pressions du gypse.

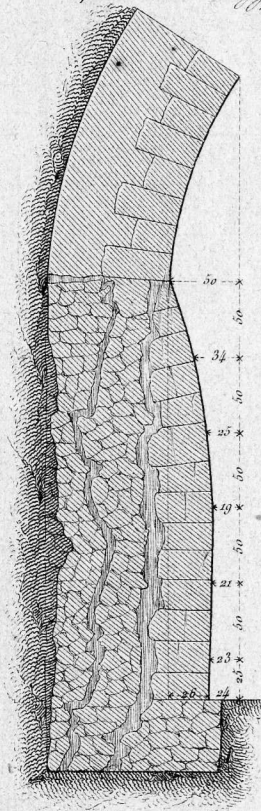
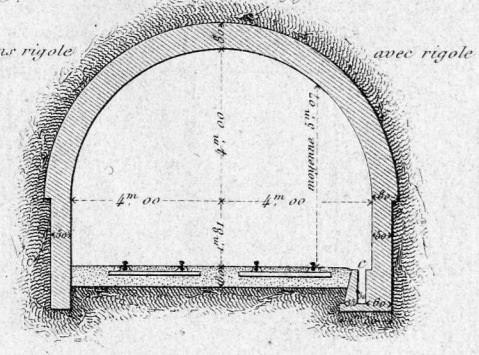
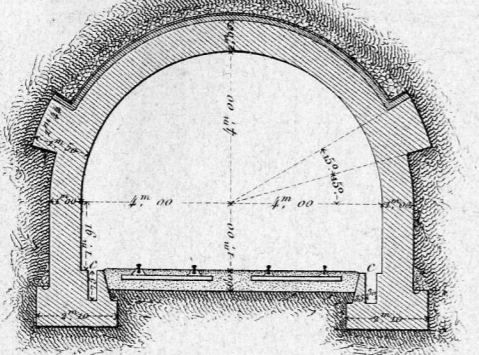


Fig. 2. Dans le gypse.



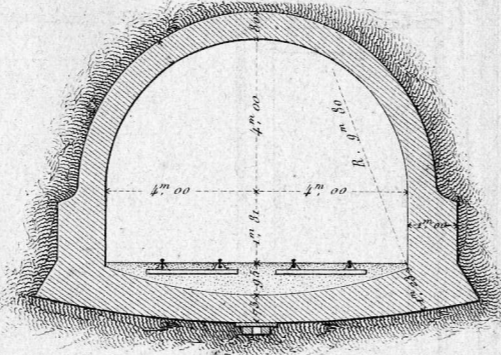
Coupes transversales (Fig. 2 à 4.)

Fig. 3. Dans les marnes.



Souterrain de Genevreuille. Dans le gypse avec radier.

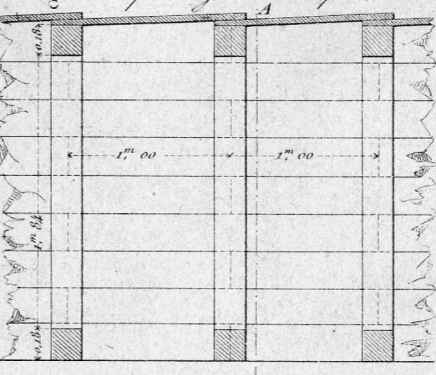
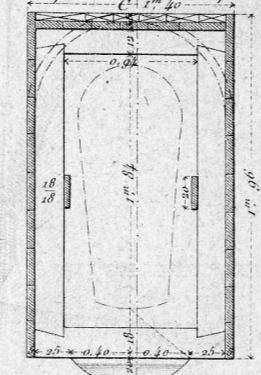
Fig. 4.



Ligne de Paris à Moulhouse (Fig. 1 à 14.)

Fig. 5. Coupe transversale par AB.

Fig. 6. Coupe longitudinale par CD.



Détails de la galerie d'assainissement (Fig. 5 à 15.)

Fig. 7. Coupe de la galerie dans les marnes.

Fig. 8. Coupe transversale par EF.

Fig. 9. Coupe longitudinale par GH.

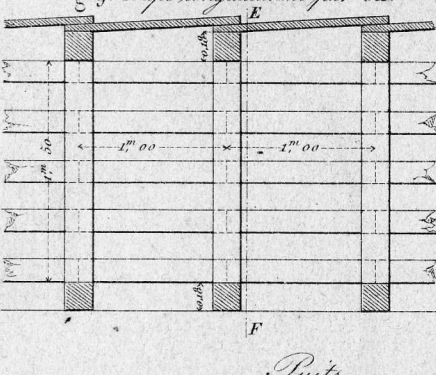
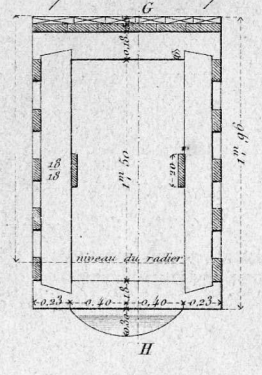
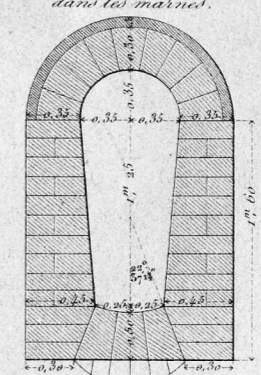


Fig. 19. Coupe par ST.

(des Fig. 16 et 17.)

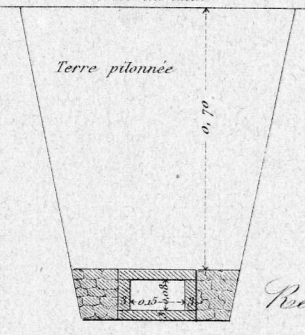


Fig. 18. Coupe par PQ.

(de la Fig. 16.)

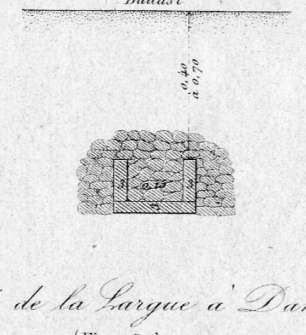
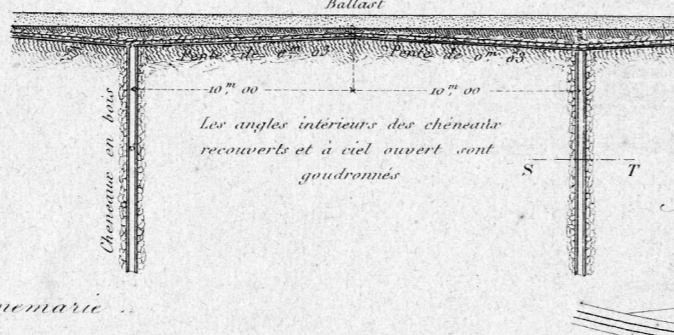
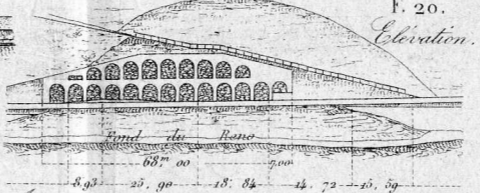


Fig. 17. Coupe suivant PQR.

(de la Fig. 16.)



Consolidation de la tranchée du Sud (Statie centrale.)



Assainissement de la tranchée du Greppo (Statie centrale.)

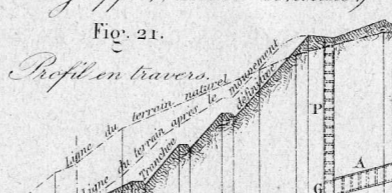
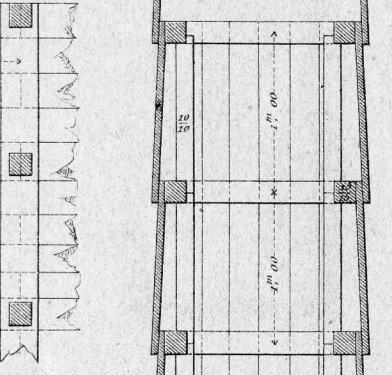
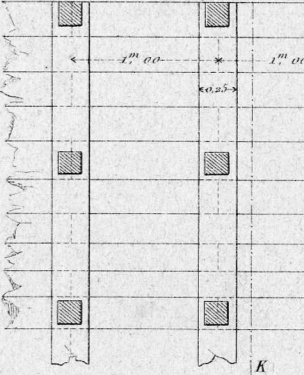
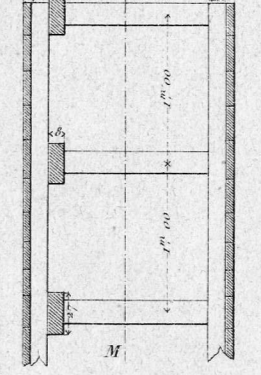


Fig. 10. Coupe transversale par IK.

Fig. 11. Coupe longitudinale par LM.

Fig. 12. Coupe verticale par NO.



Remblai de la Lorgue à Dannemarie (Fig. 15 à 19.)

Fig. 16. Côté de Moulhouse.

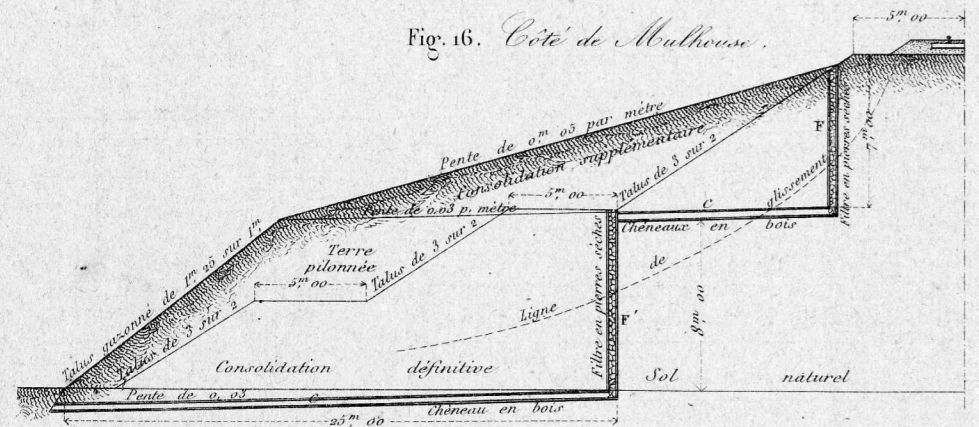
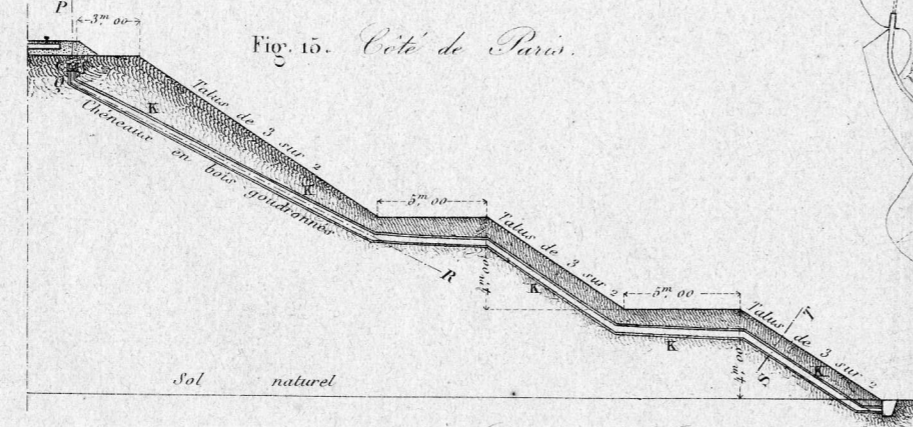


Fig. 15. Côté de Paris.



Consolidation du remblai d'Isle (Statie centrale.)



Projet de M. Saxidly.

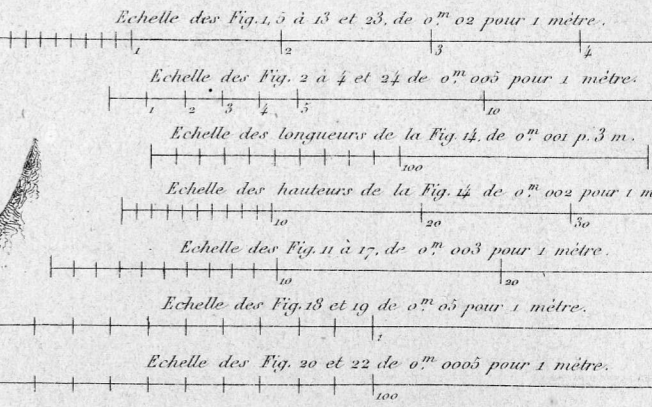
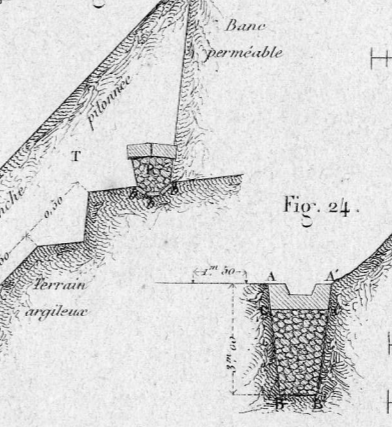


Fig. 14. Souterrain de Genevreuille. Profil en long de la galerie d'assainissement.

