DIBUJO PROFESIONAL

CURSO ELEMENTAL PRACTICO

DE

DIBUJO DE MÁQUINAS

PARA USO

DE LAS ESCUELAS, ENSEÑANZA DE ADULTOS, OBREROS, CONTREMAESTRES, MODELISTAS, etc

Y

de los alumnos que se preparan para los concursos de admision

de las escuelas especiales : CENTRAL, ANGERS, AIX etc

POR

MAURICIO TIXIER, INGENIERO

PARIS

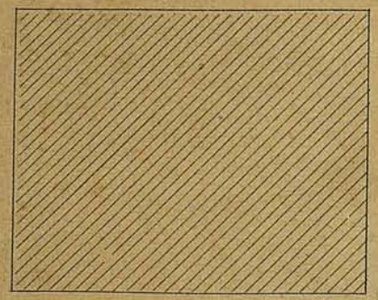
MONROCQ, FRÈRES, *Editeurs-imprimeurs*, 3, RUE SUGER

F.A.S.
308

Elements conventionnels

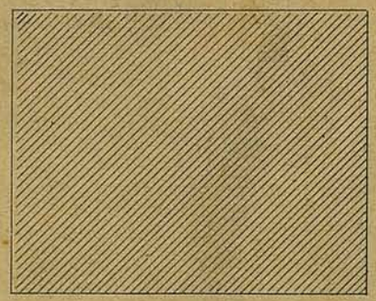
Hachures

fonte e = 1 m/m 1/4



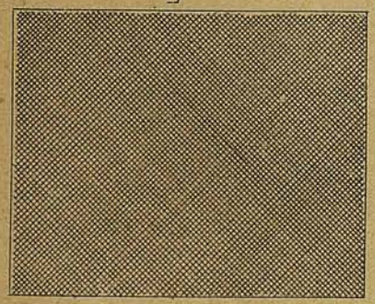
grandes surfaces

fer e = 3/4 m/m

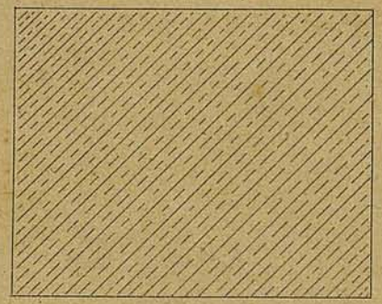


acier doux e = 1/4 à 1/2 m/m

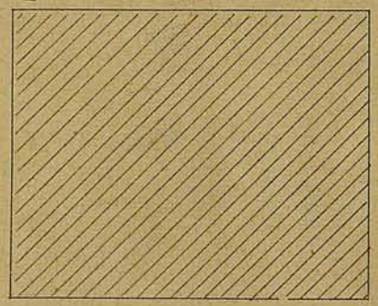
acier trempé e = 1/4 à 1/2 m/m



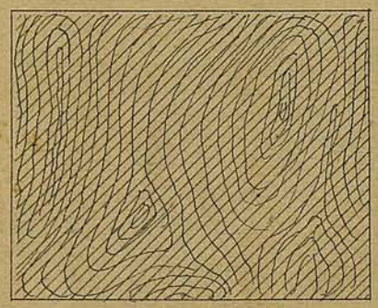
bronze cuivre e = 1 m/m



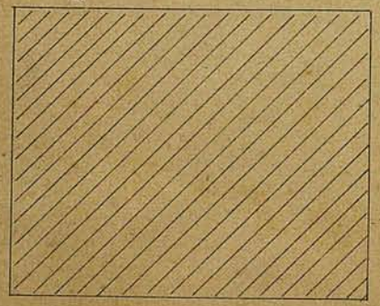
plomb zinc étain e = 1 m/m 1/2



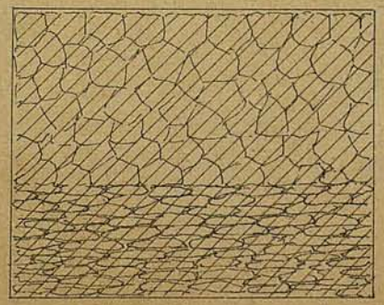
bois e = 1 m/m 1/4



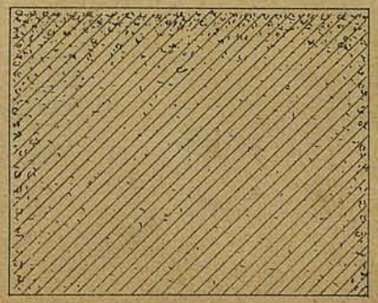
pierre e = 1 m/m 1/2 à 2 m/m



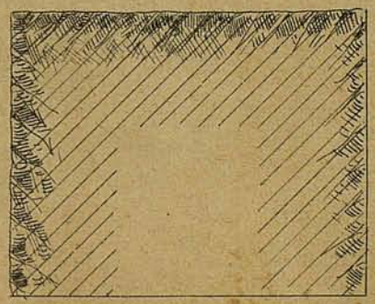
moellons. meulière e = 1 m/m 1/2



béton e = 1 m/m 1/2



terrain.



Nota.

Laisser un liseré blanc de 1/2 à 1 m/m dans les coupes le long des traits eclairés

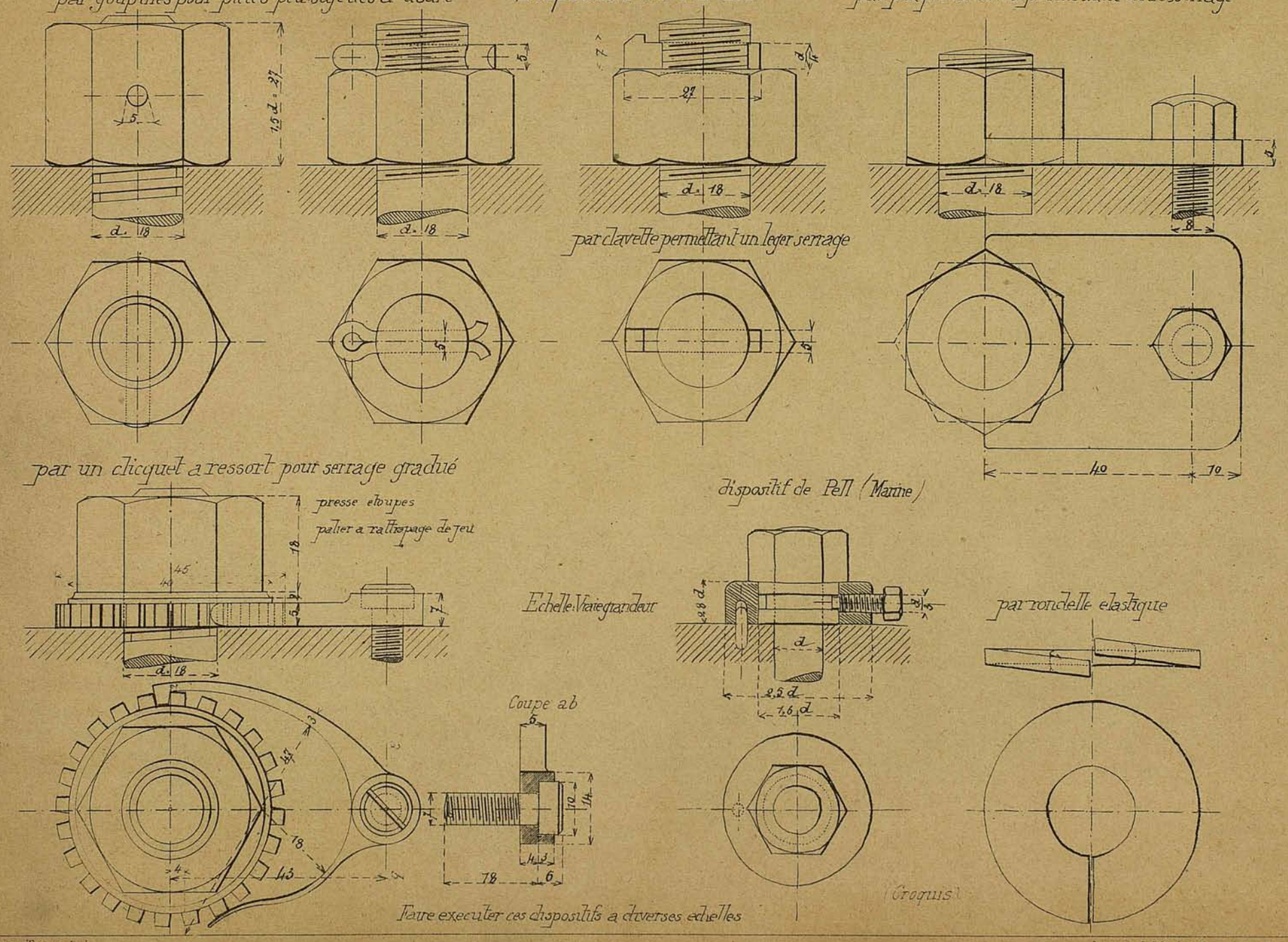
e – espacement des hachures

Maurice Tixier Del

Monrocq, ft Edit. Imp. 3, rue Sugier, Paris

Assemblages par boulons

Dispositifs de sureté



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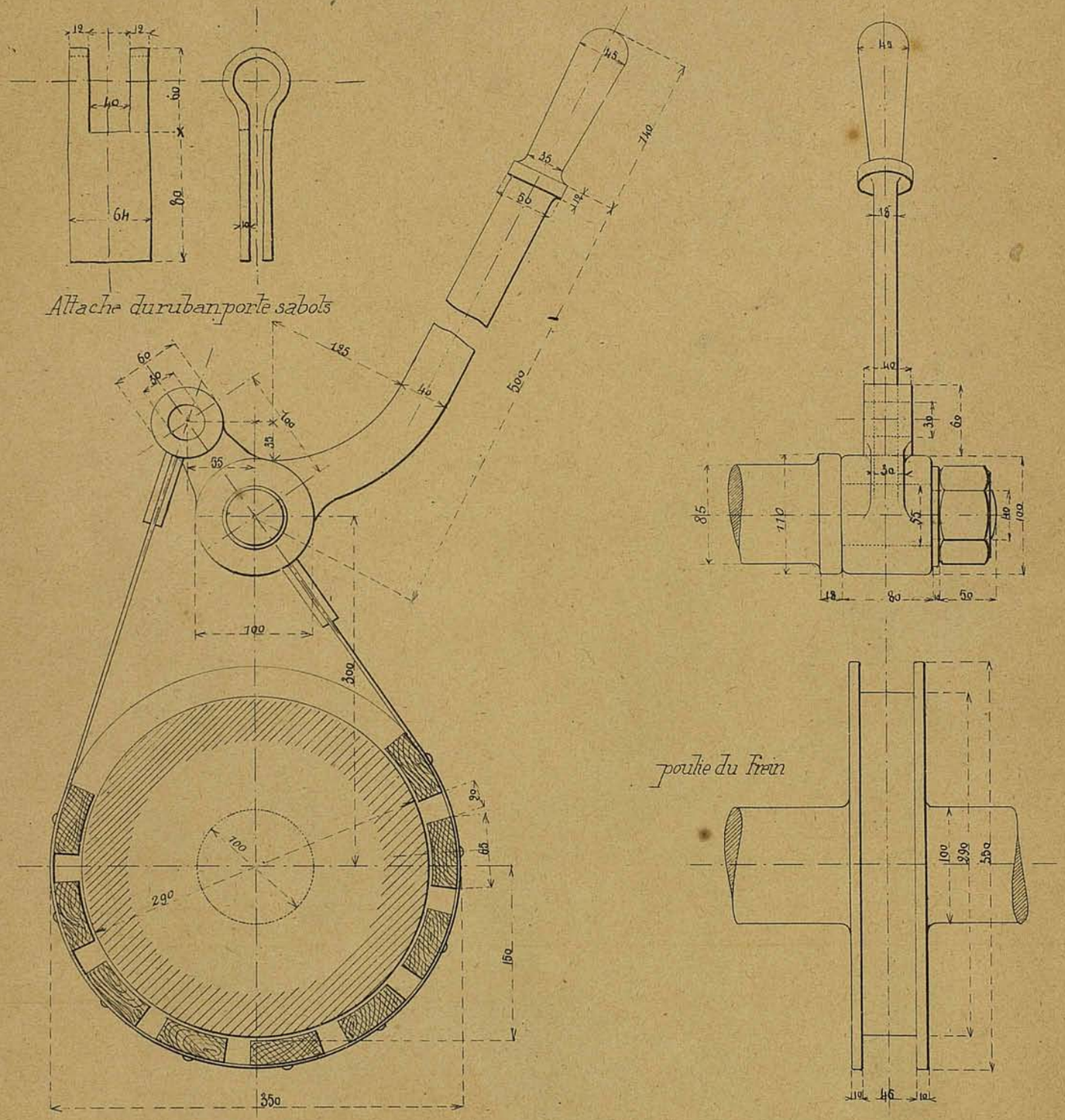
Palanca acodada

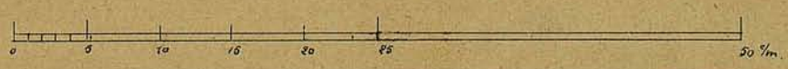
Levier coudé

pour frein a collier

para freno de collar



Echelle 0m20 pour 1m



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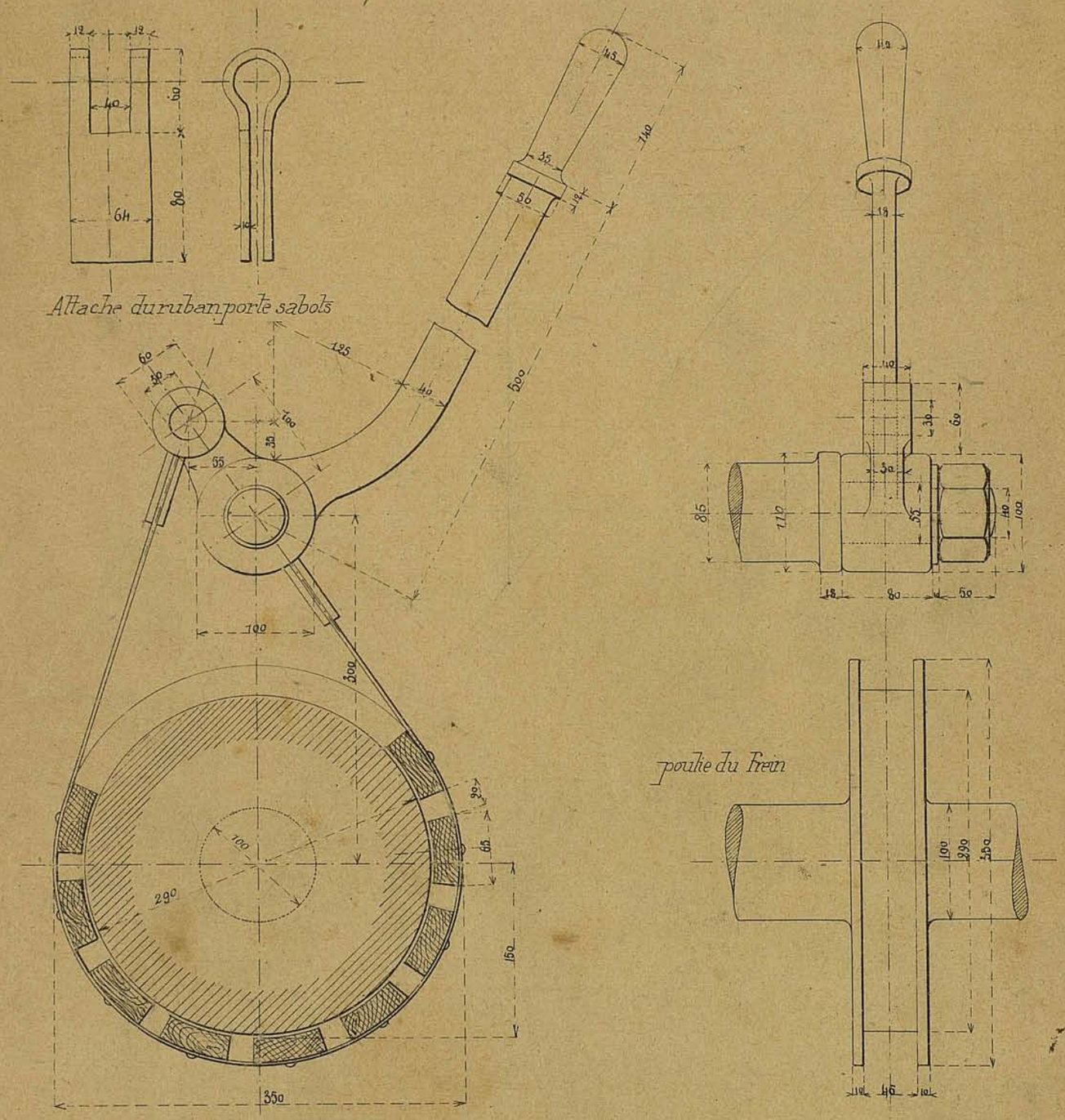
Palanca acodada

~~Levier coudé~~

~~pour frein a collier~~

para freno de collar



Echelle 0m20 pour 1m

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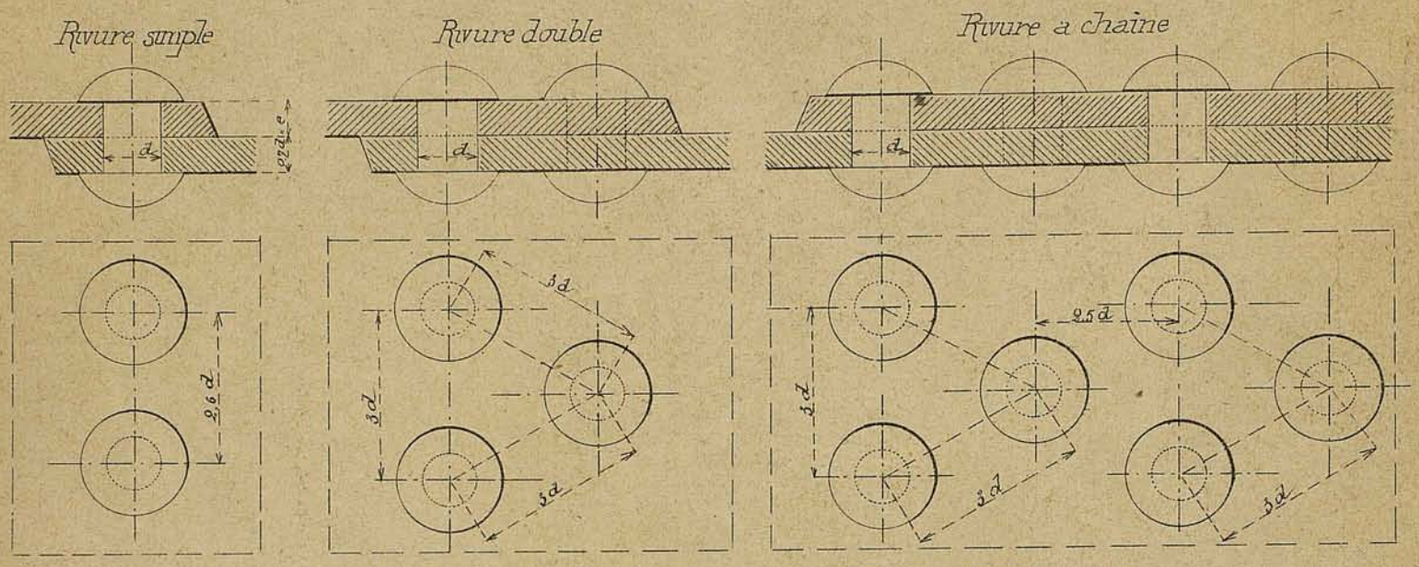
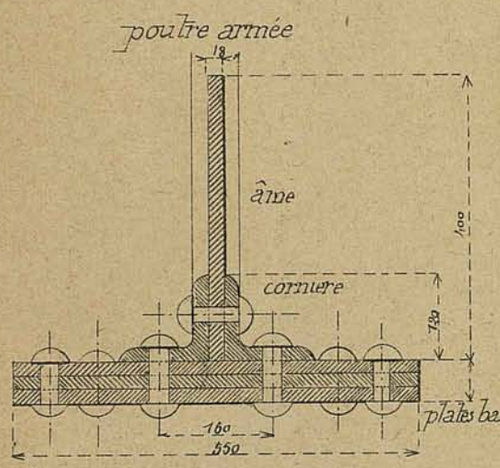
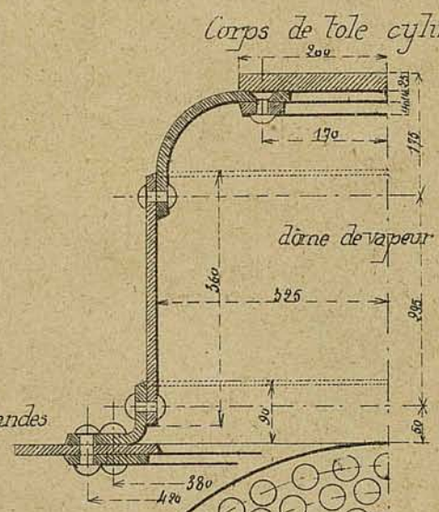
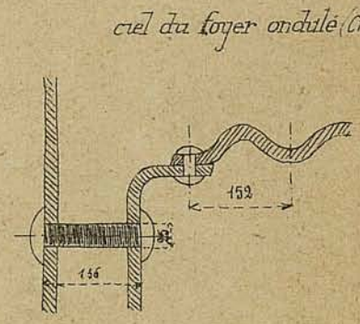
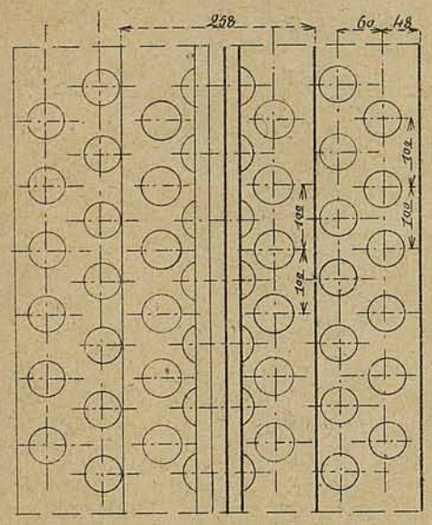
Assemblages de tôles

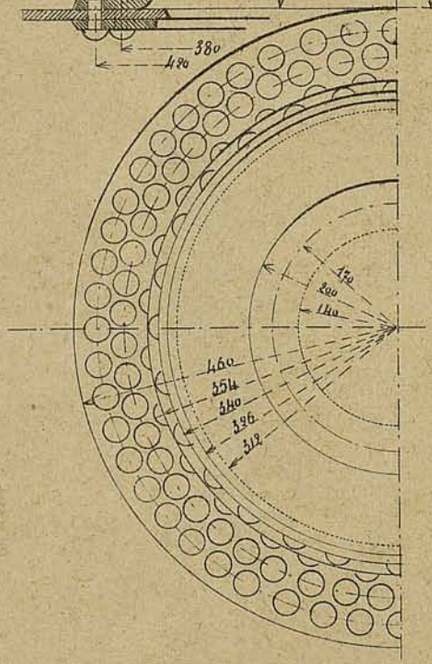


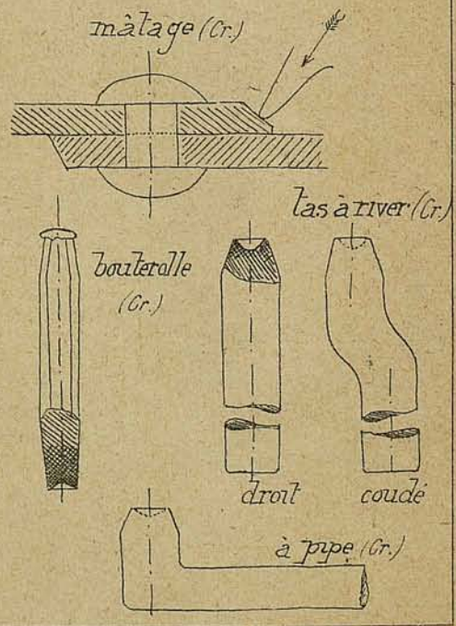












Echelle 0m 10 pour 1m

le nombre et l'espacement des rivets sont calculés d'après la resistance que doit avoir la poutre

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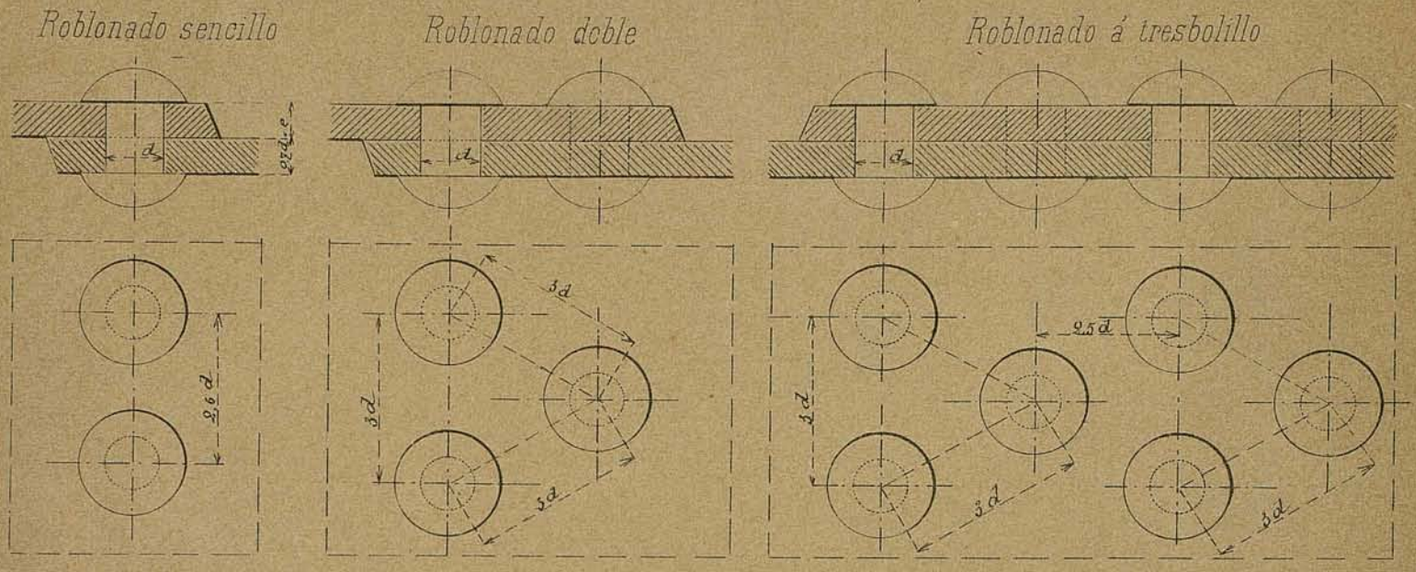
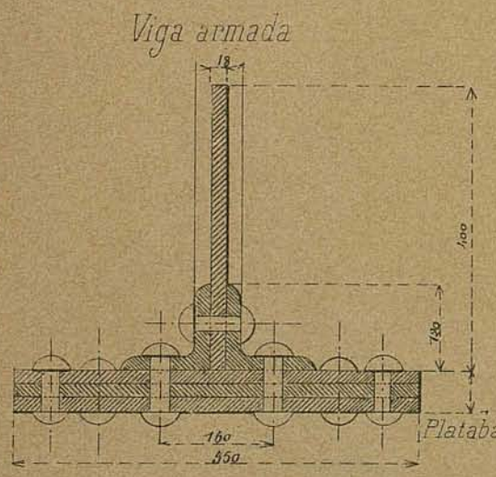
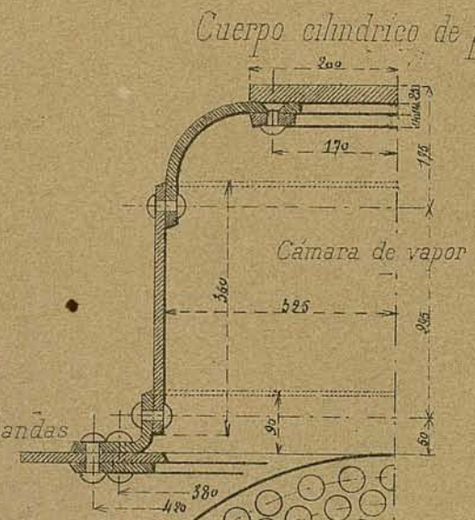
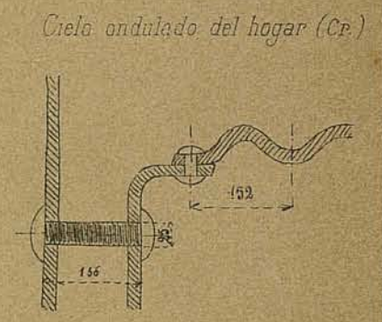
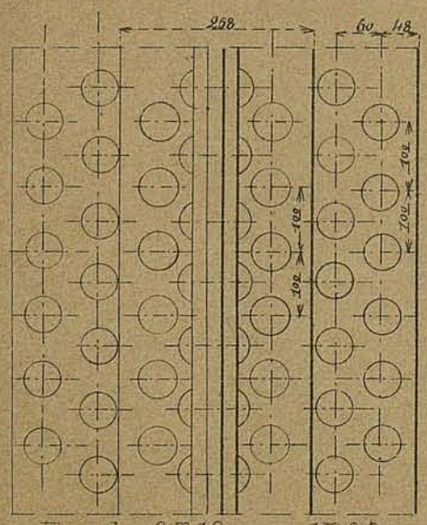
Ensambladuras de palastro





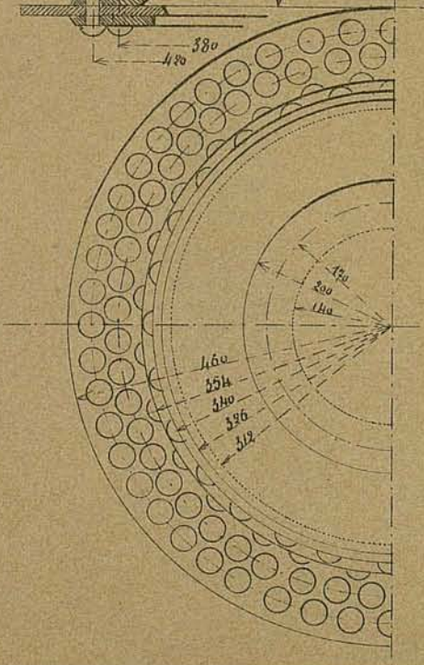




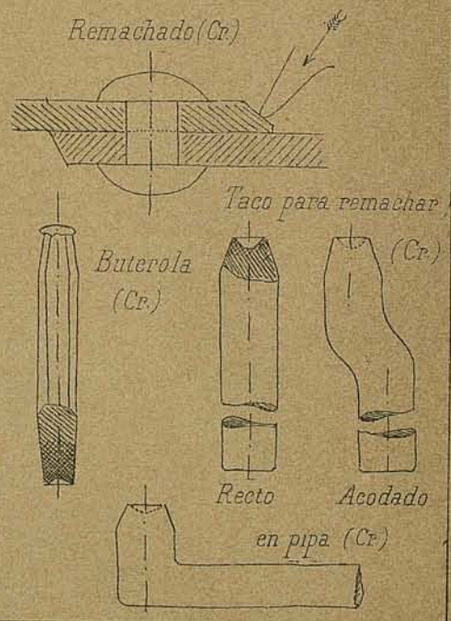


Escala 0^m10 por 1^m00

El número y separación de los roblones se calculan por la resistencia que la viga ha de tener



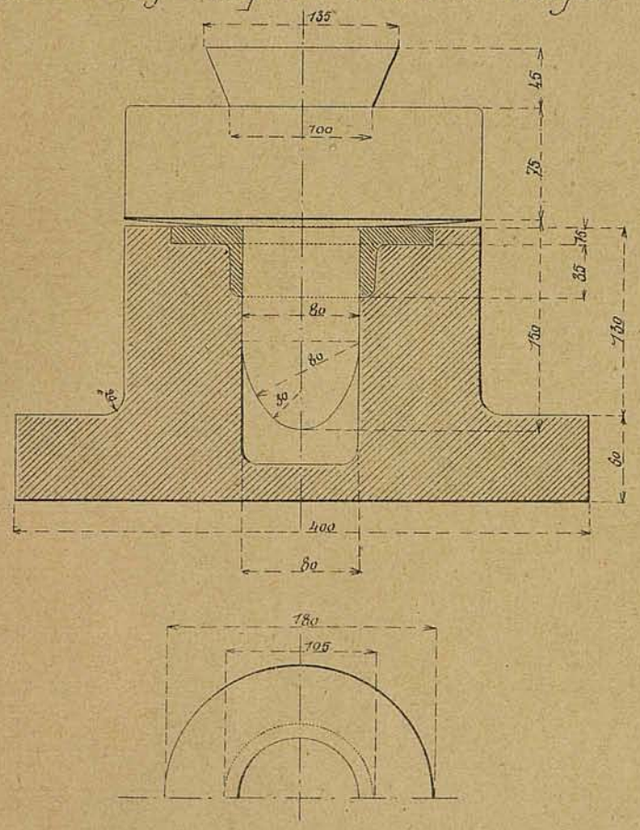
Riostra fileteada y remachada (Cr.)



Emboutissage

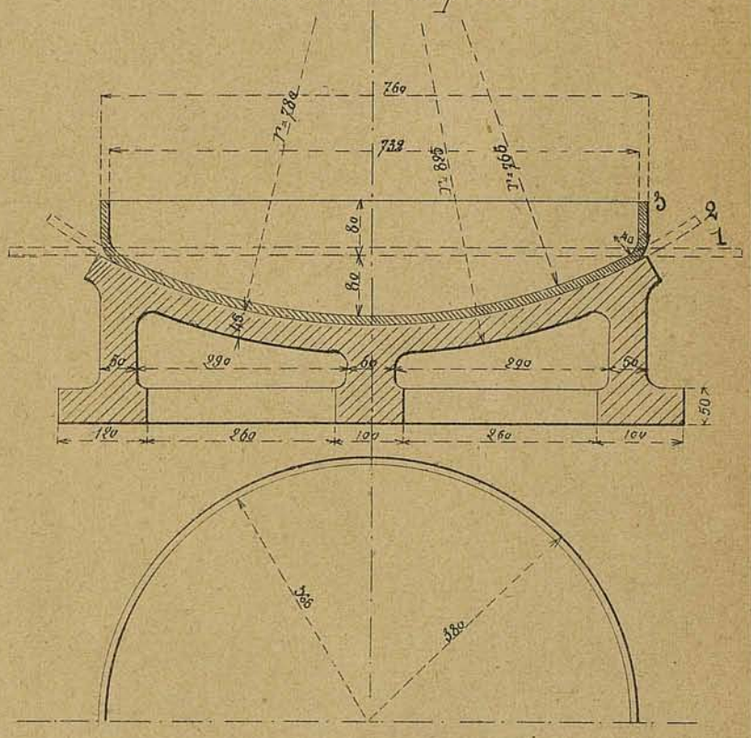
Echelle 0^m20 pour 1^m

Emboutissage à la presse d'une bride de tuyau

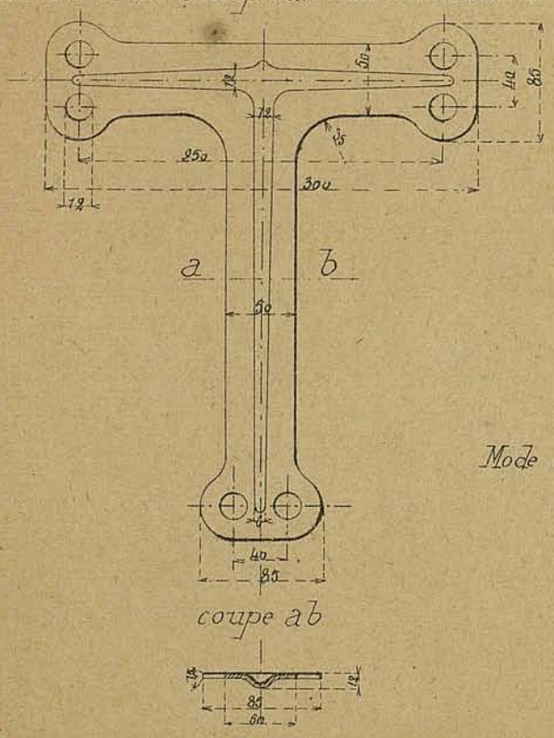


Emboutissage au marteau d'un fond de chaudière

Echelle 0^m10 pour 1^m

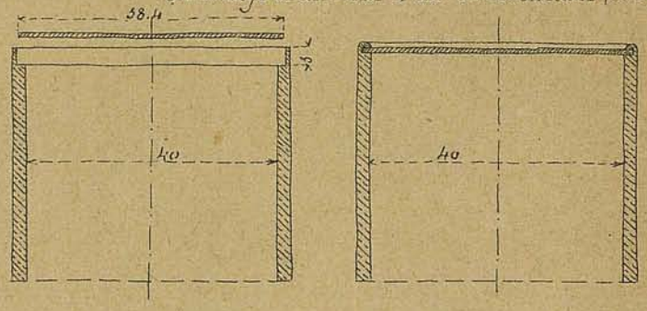


ferrure en tôle découpée avec nervure emboutie

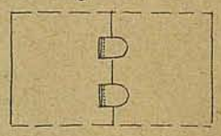


Echelle 0^m20 pour 1^m

sertissage d'un fond à un tube en laiton (Croquis)

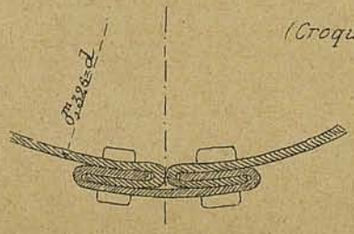


tôle agrafée



Mode d'assemblage des tôles des sas à sable employés à l'exécution d'un cintre

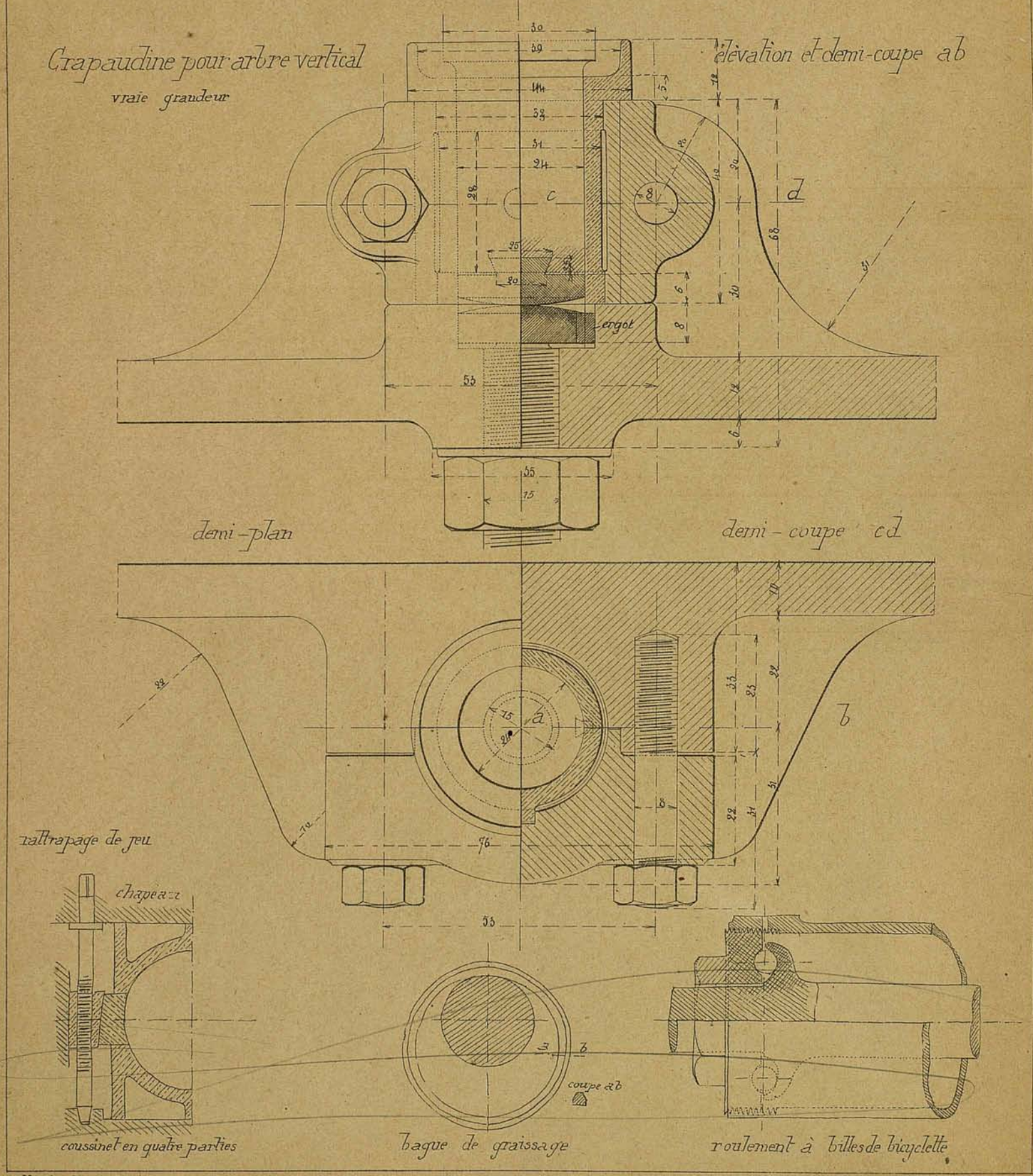
(Croquis)



tôle repliée

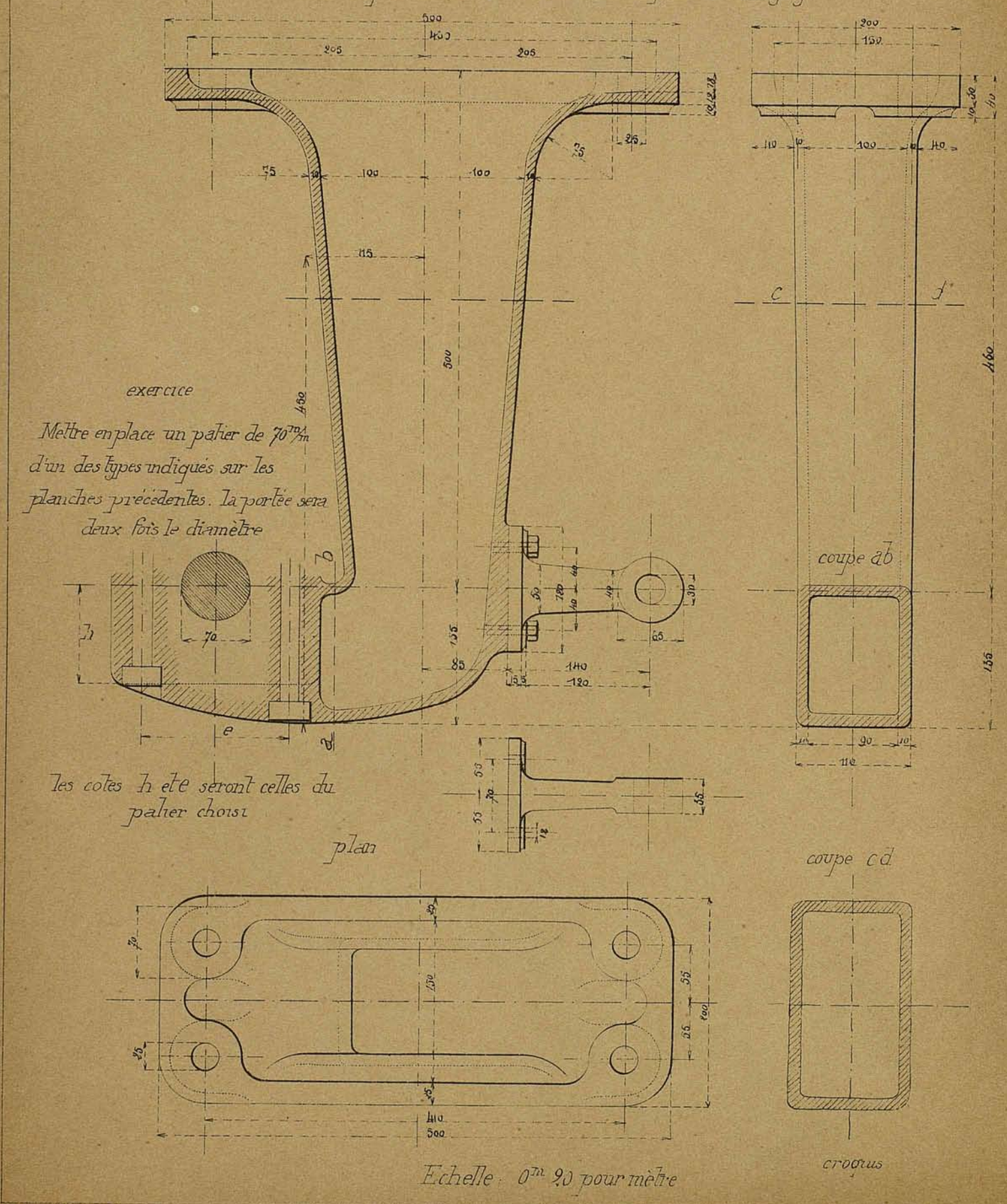
Supports d'arbres

Paliers



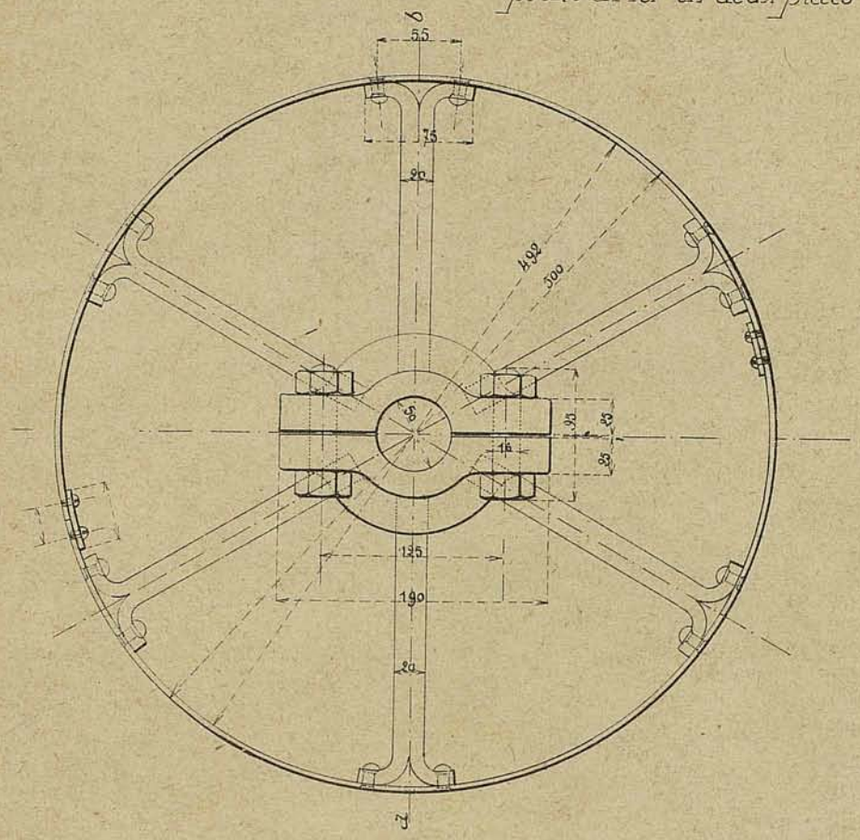
Supports de paliers

Chaise pendante ouverte avec renvoi pour débrayage

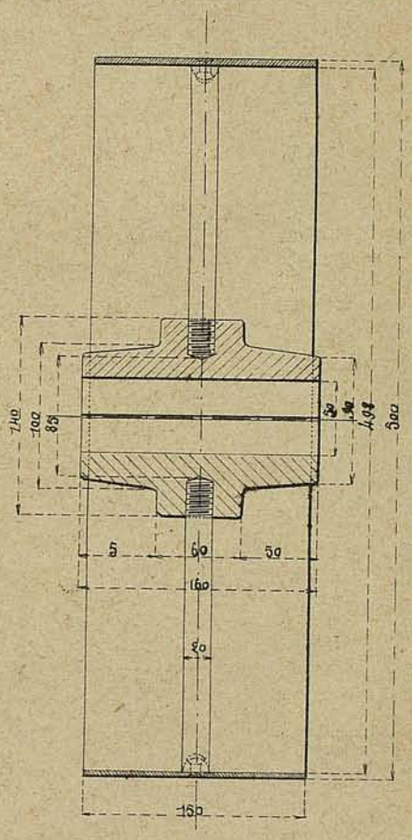


Poulies

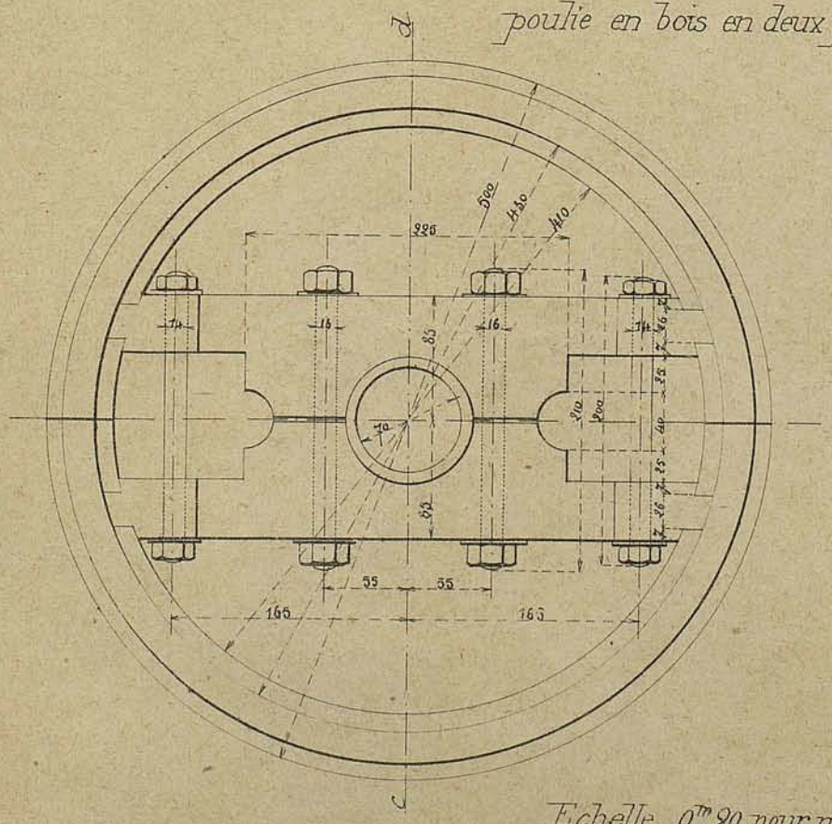
poulie en fer en deux pièces



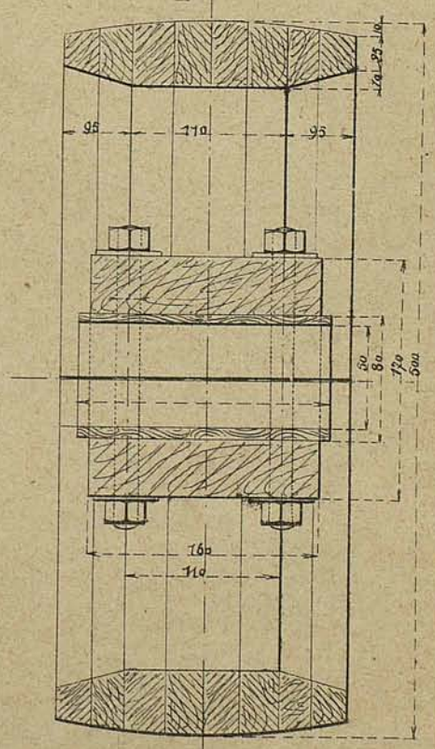
coupe ab



poulie en bois en deux pièces



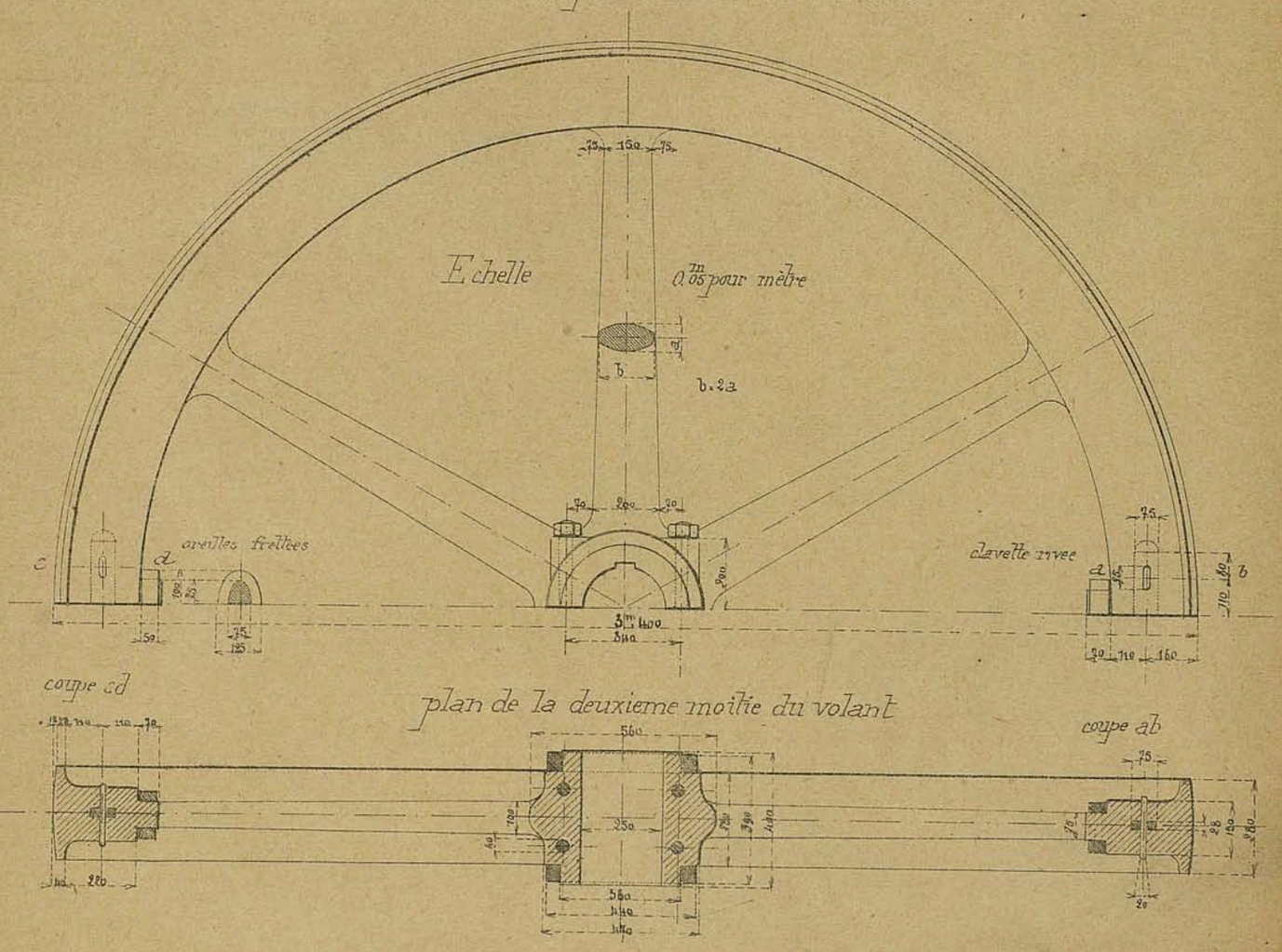
coupe cd



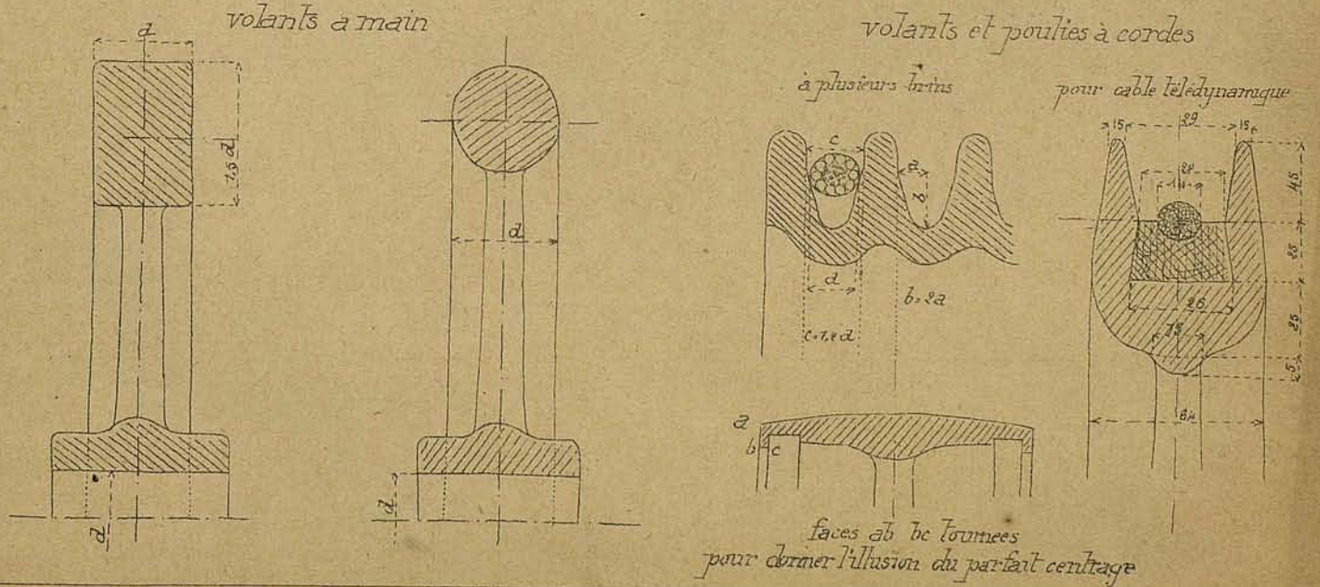
Echelle 0m 20 pour mètre

Volants

Volant en deux pièces boulonnées et frettées



Diverses formes de jantes



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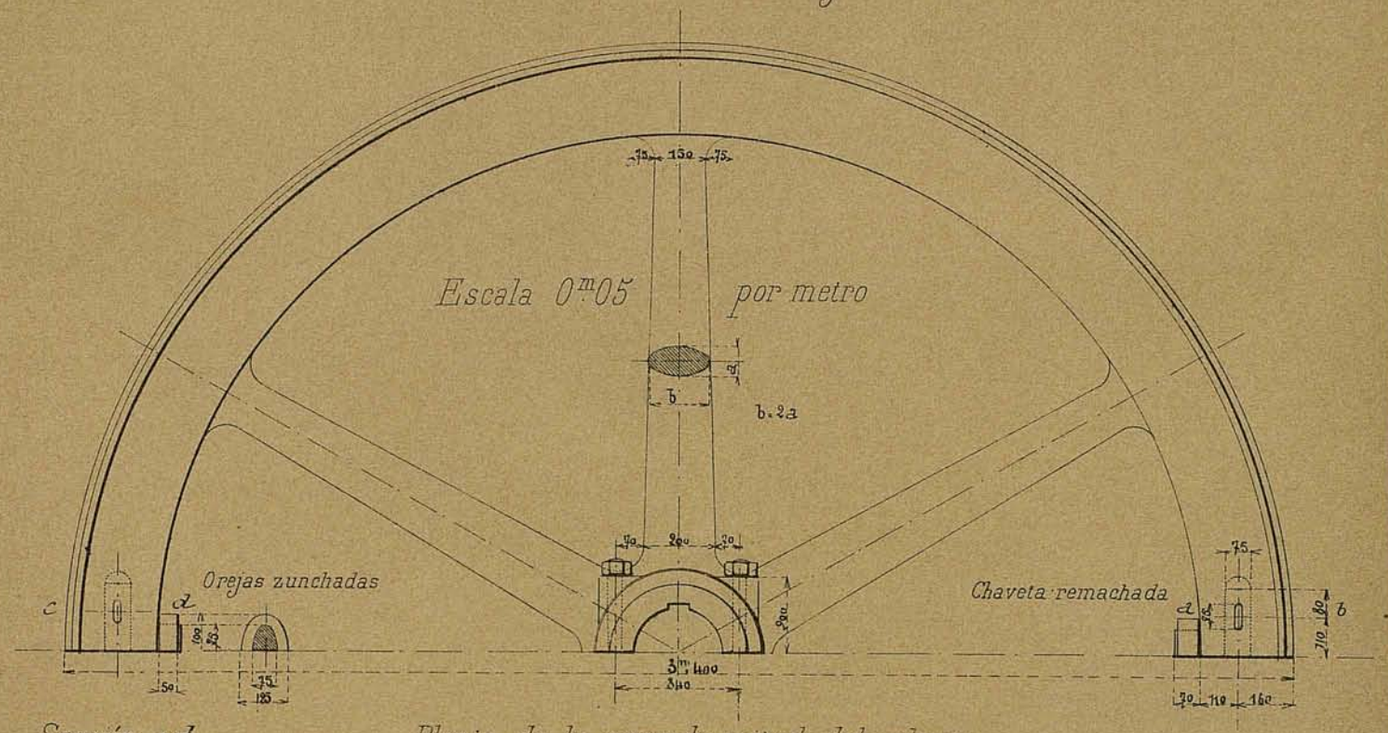
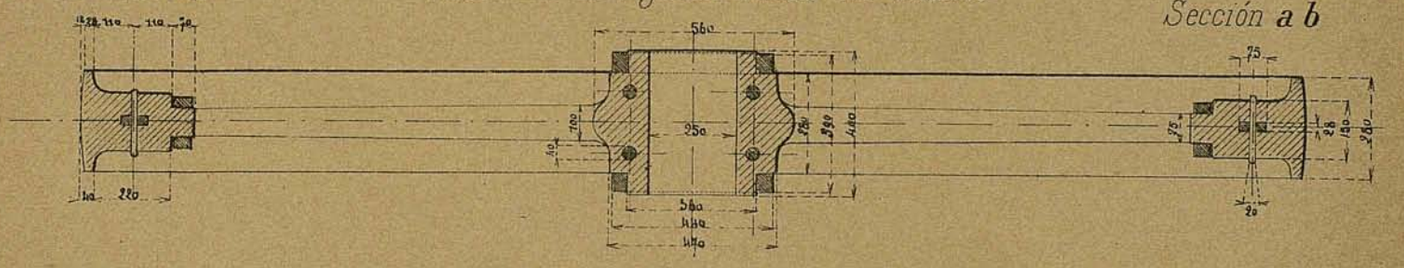
Volantes

Volante en dos trozos atornillados y zunchados

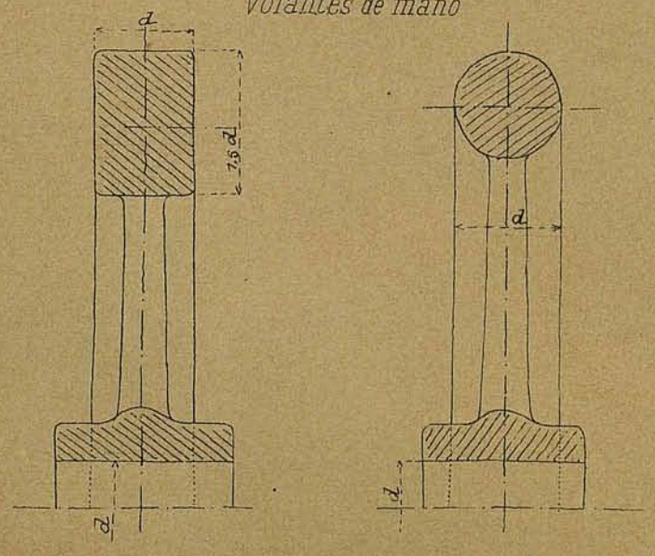


Sección **c d** *Planta de la segunda mitad del volante* *Sección* **a b**



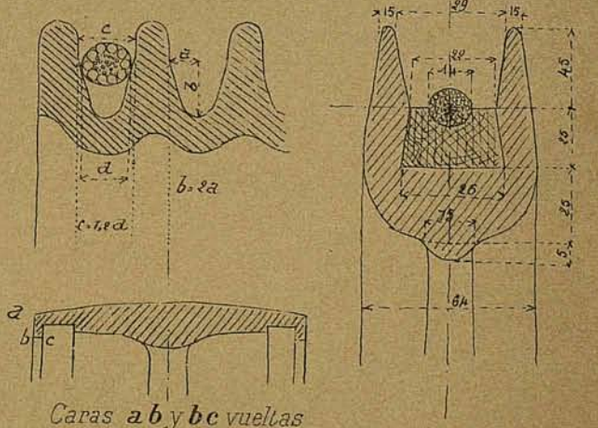
Formas variadas de las llantas

Volantes de mano



Volantes y poleas de cuerdas

de varios cabos *para cable teledinámico*

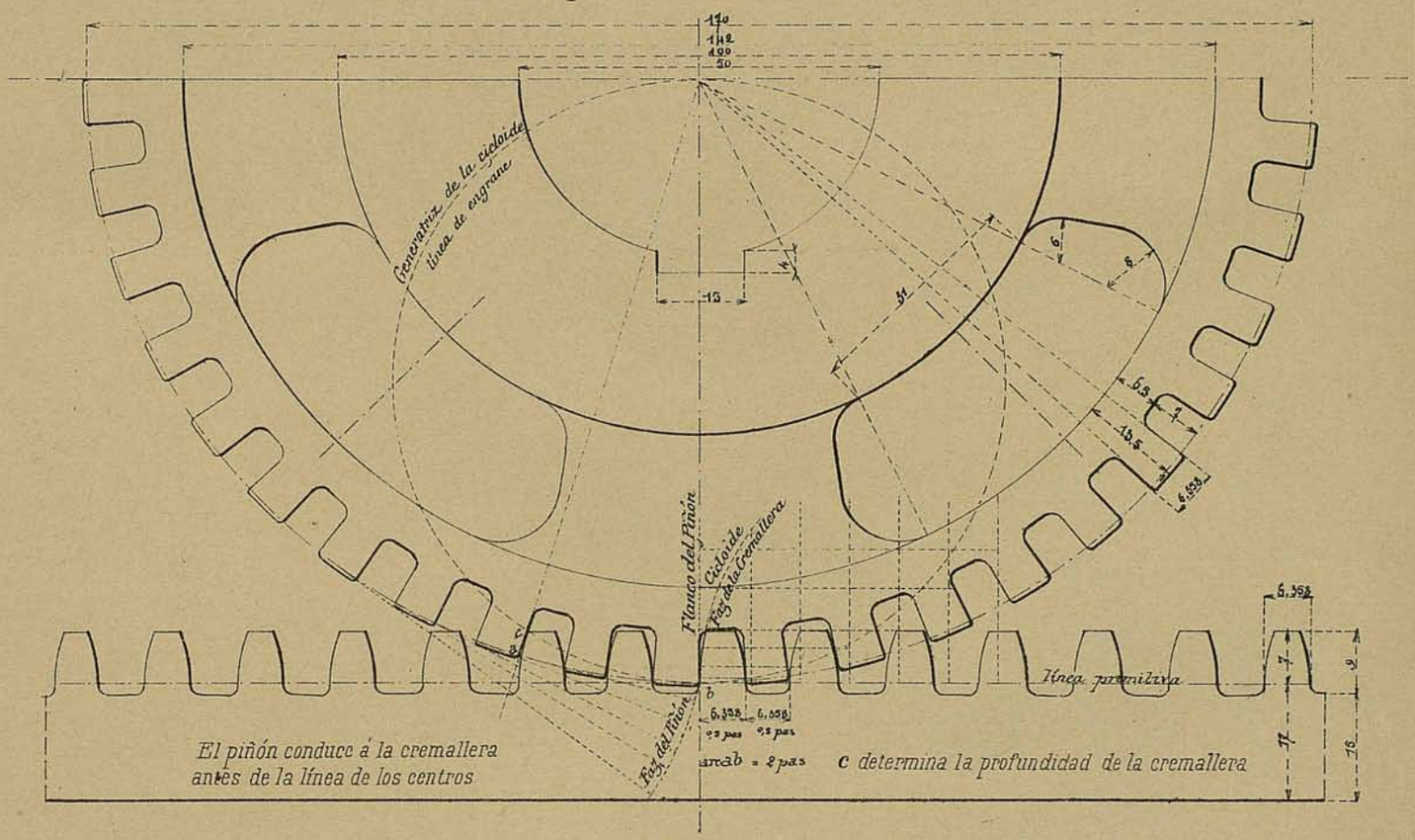


Caras **a b** *y* **b c** *vueltas*
para dar idea del perfecto centrado

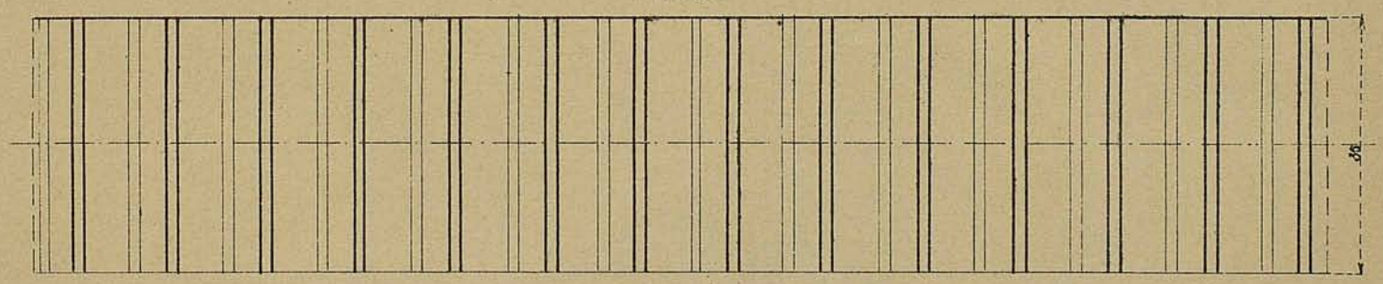
Engranajes

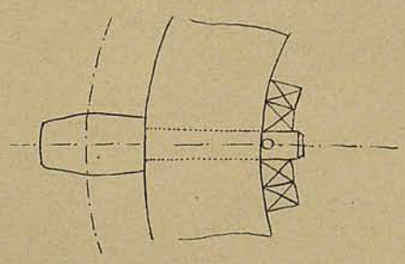
Piñón y cremallera

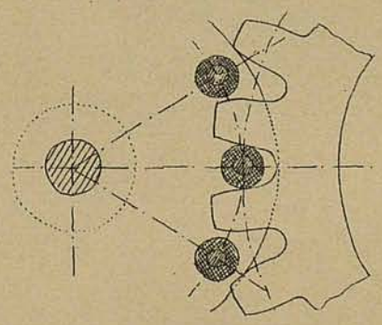
trazado del perfil de los diente de flanco recto

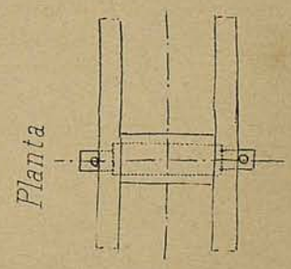


Planta









R Circ. primitiva del piñón 0.m085
P Esfuerzo sobre un diente 36 k
e Espesor del diente $e = 0.105\sqrt{P}$
p Paso del engranaje 2e

Tamaño natural

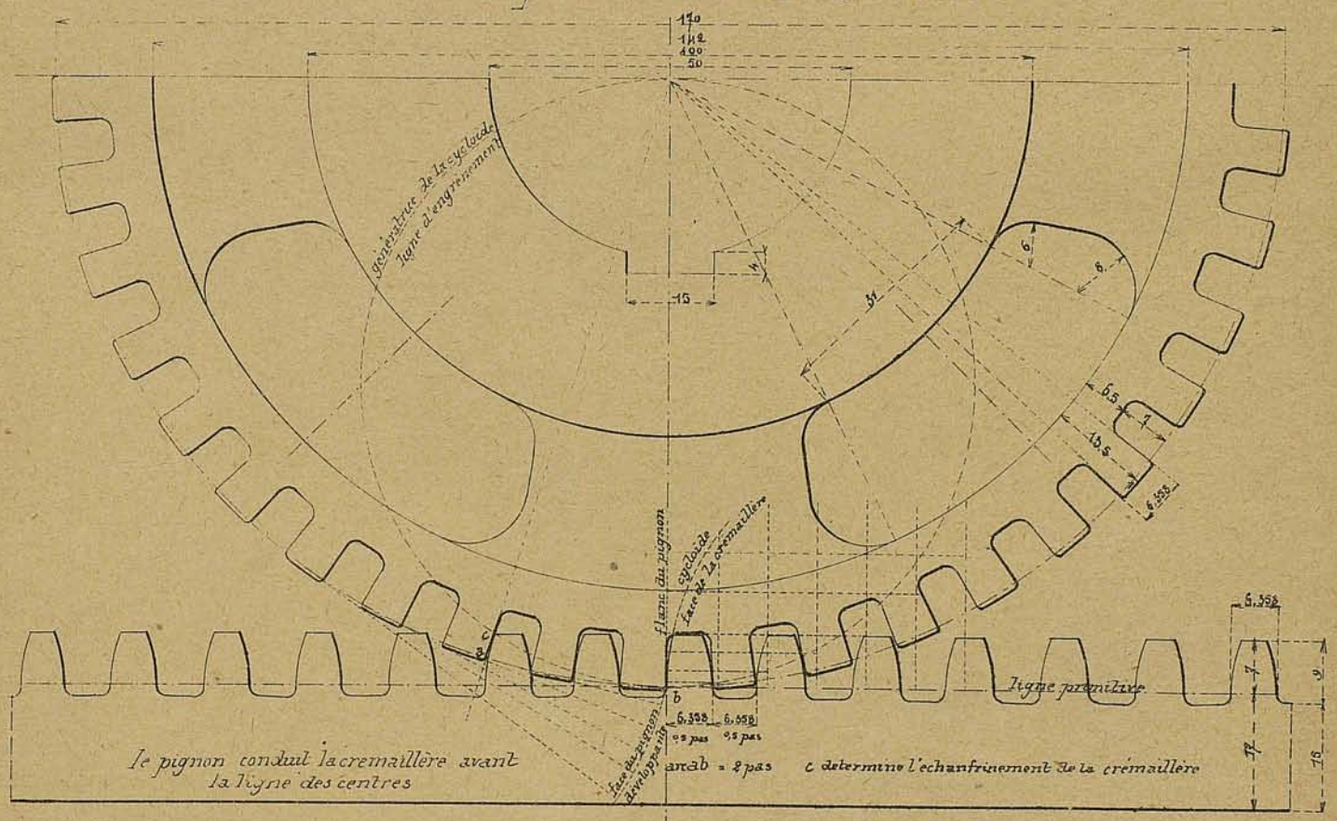
Módulo rectificado $\frac{2\pi R}{P}$ 42
Paso ____ d° ____ 12 m/m 716
Epesor ____ d° ____ 6 m/m 358
Longitud ____ 4 a 6 e ____ 35 m/m

M. Tixier, del

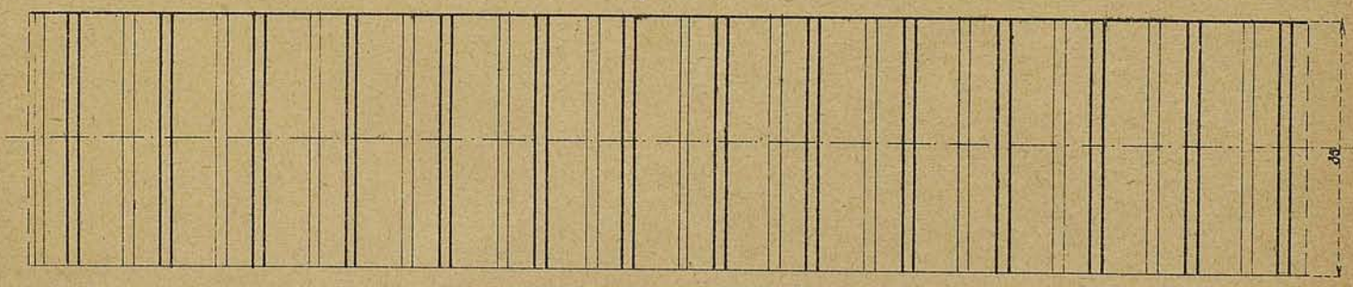
Engrenages

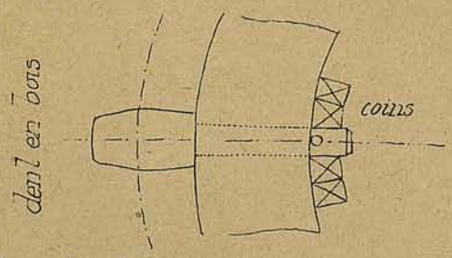
Pignon et cremaillère

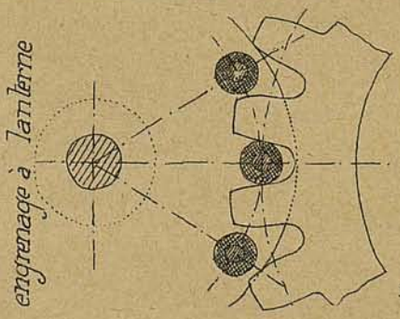
trace du profil des dents a flancs droits

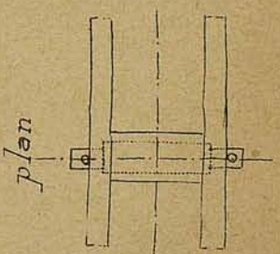


plan









R circonf. primitive du pignon 0,m085

P effort sur une dent 36 k

e epaisseur de la dent $e = 0{,}105\sqrt{P}$

p pas de la denture 2e

Vraie grandeur

module $\frac{2\pi R}{P}$ rectifie 42

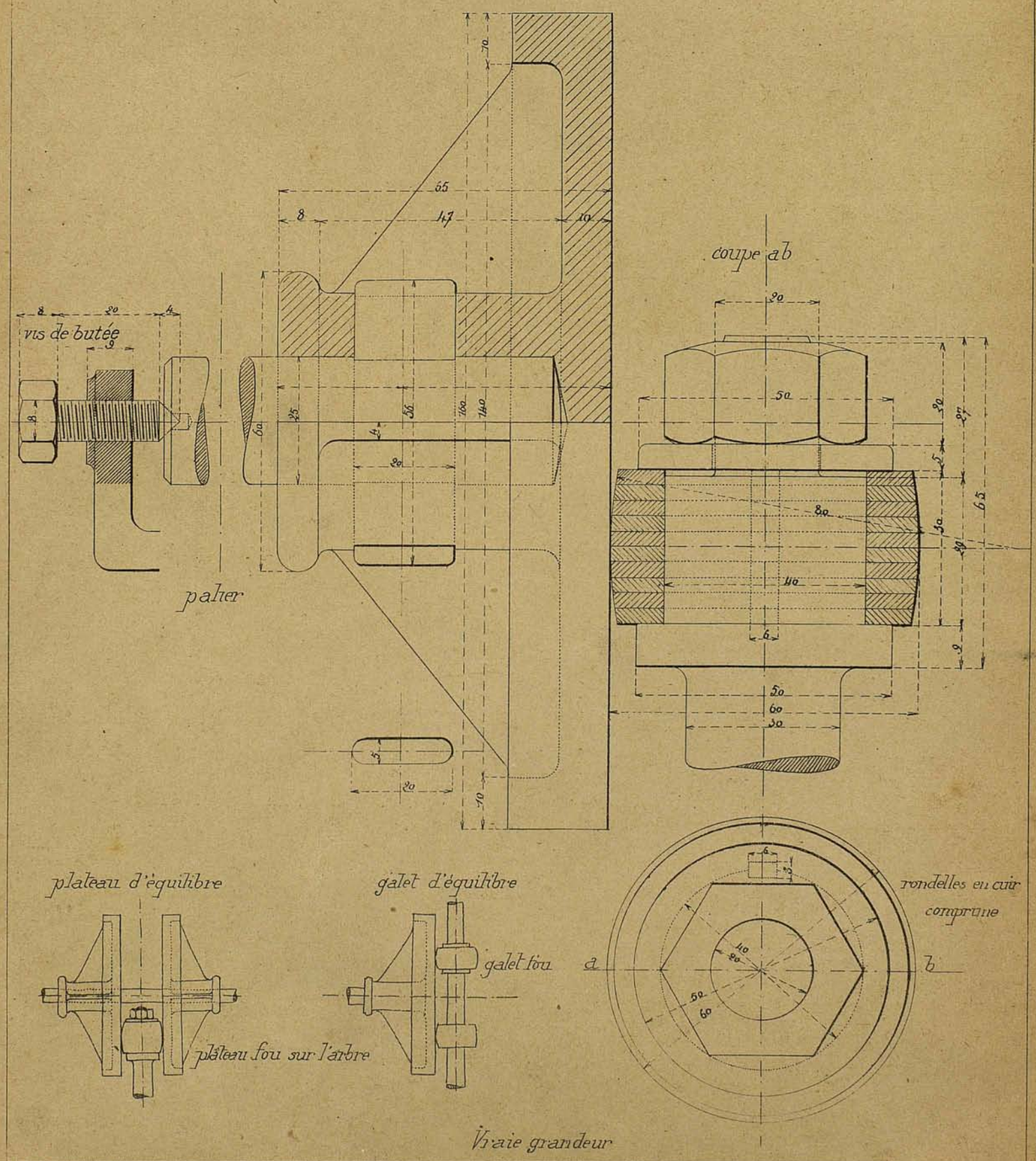
pas rectifie 12 m/m, 716

epaisseur d.to 6 m/m, 358

longueur 4 a 6 e 35 m/m

Plateau de friction

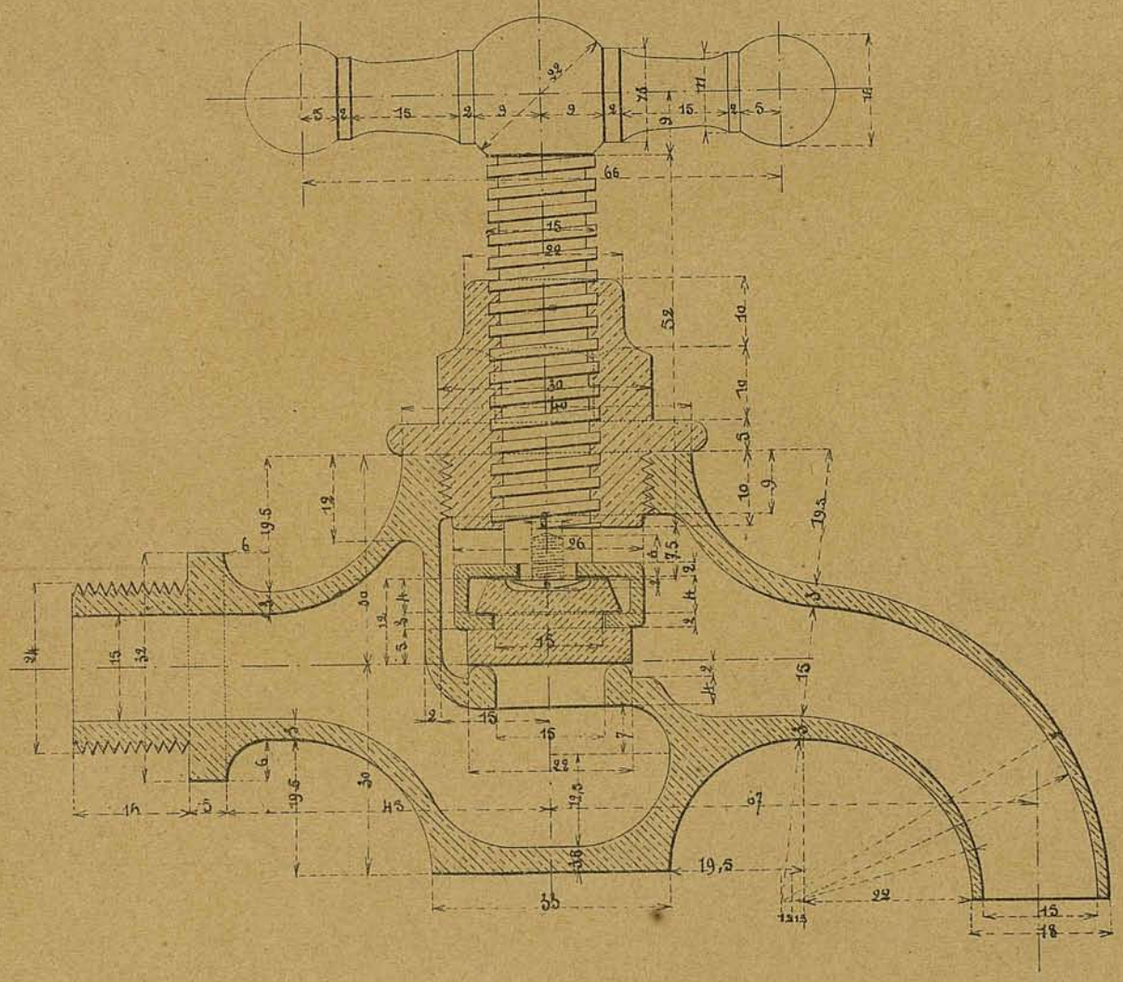
pour transmettre de petits efforts



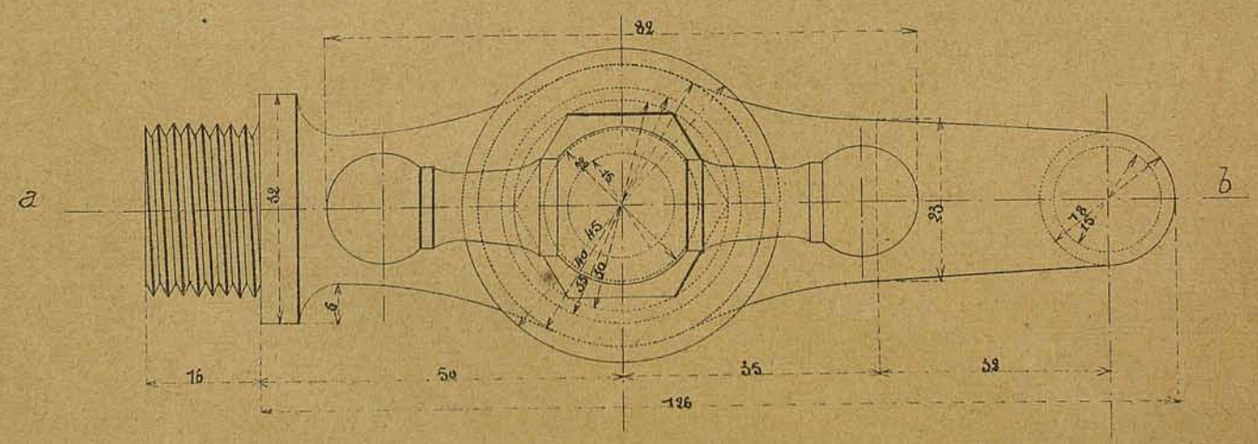
Robinet pour eau

fermeture a vis a caoutchouc

coupe ab



plan

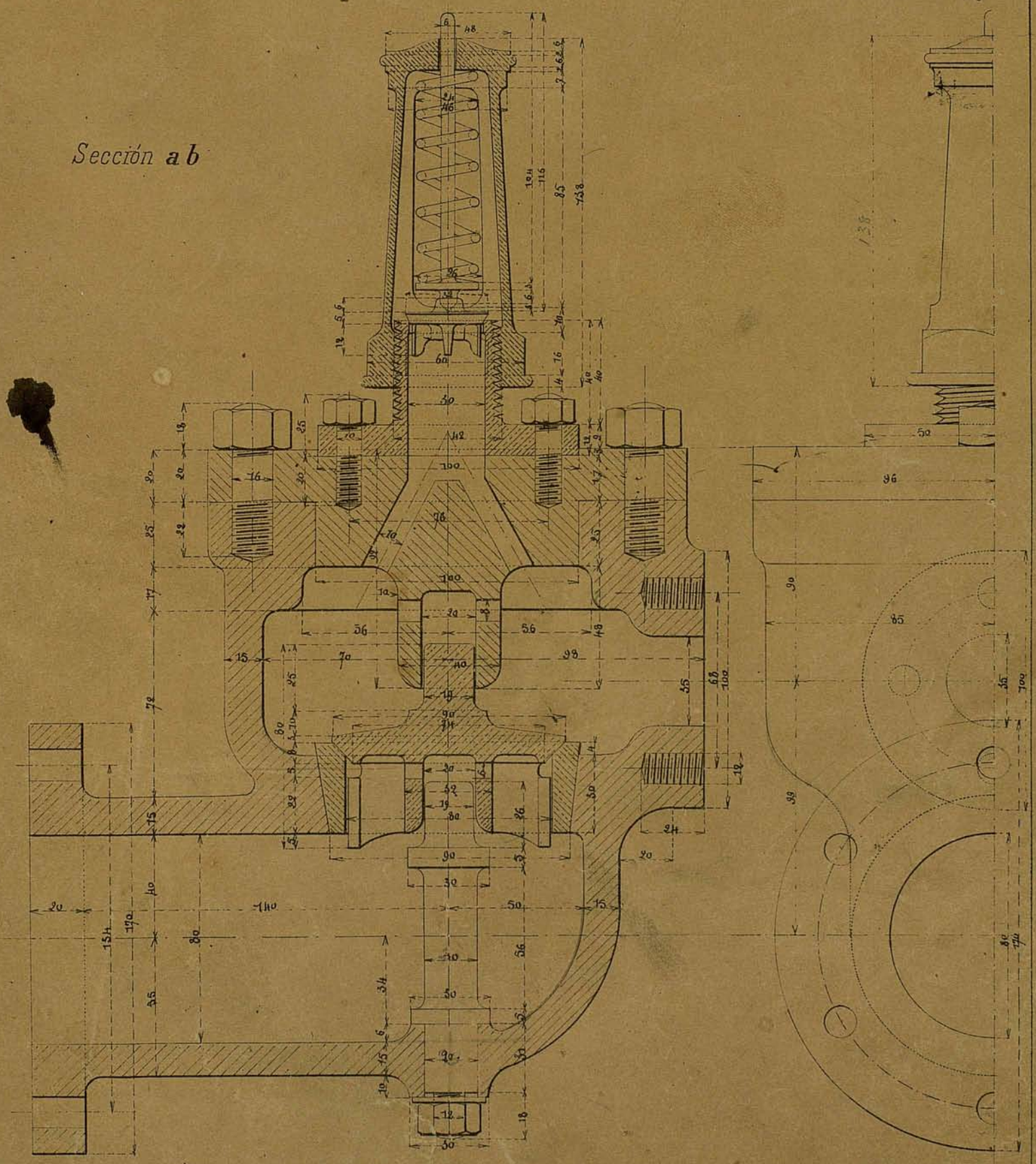


Vraie grandeur

Monrocq & Cie Imp 3 rue Suger PARIS

Caja de válvula de asiento con válvula de seguridad

sobre la impulsión de una bomba de alimentación



Escala 0m50 por metro

M. Tixier, del

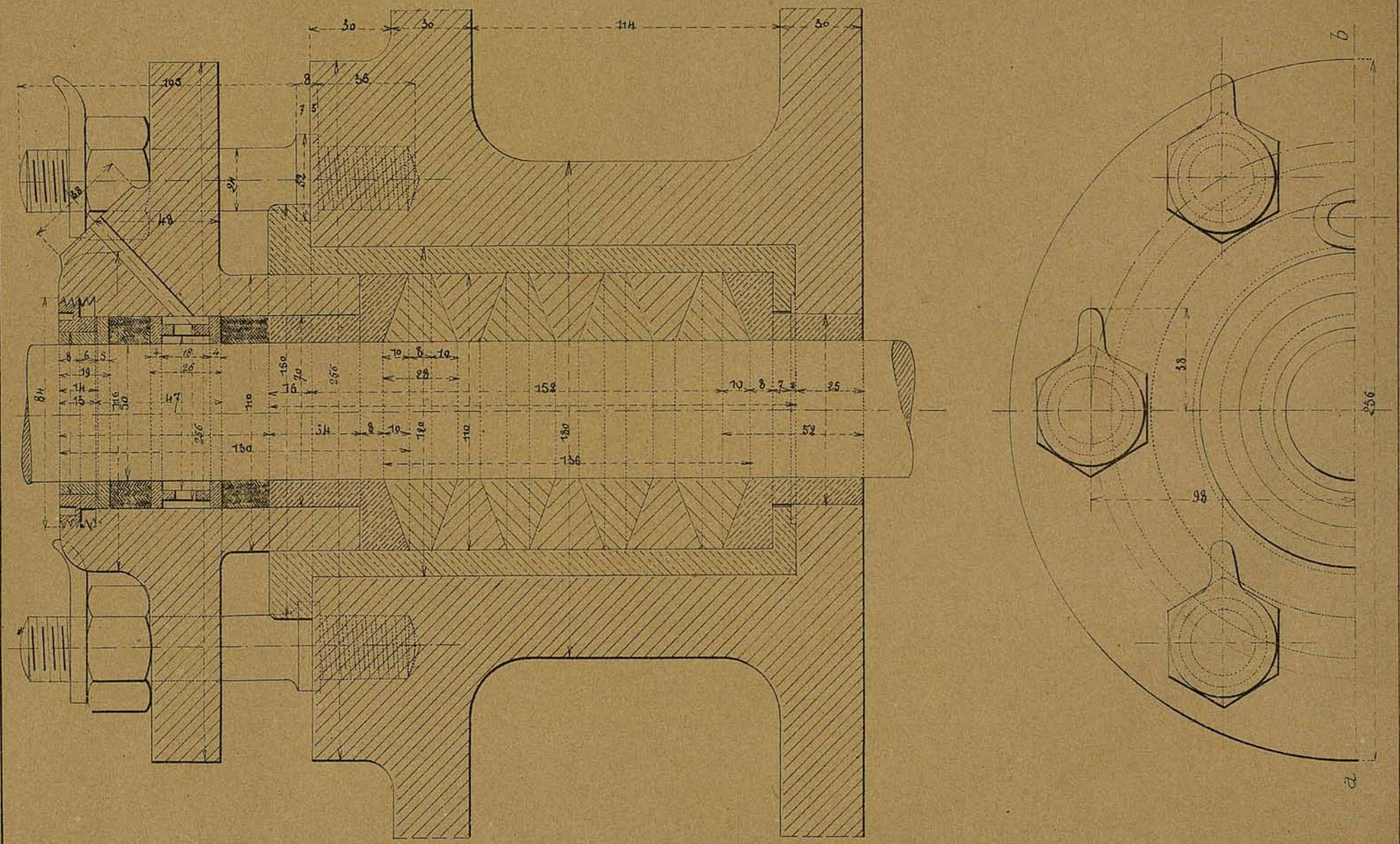
Monrocq, fr. Edit. Imp. 3, rue Sugier. Paris

Prensa-estopas

con guarnición metálica y disco horadado por máquina horizontal

Sección **a b**

1/2 proyección del extremo



Escala 0m.50 por metro

M. Tixier, del

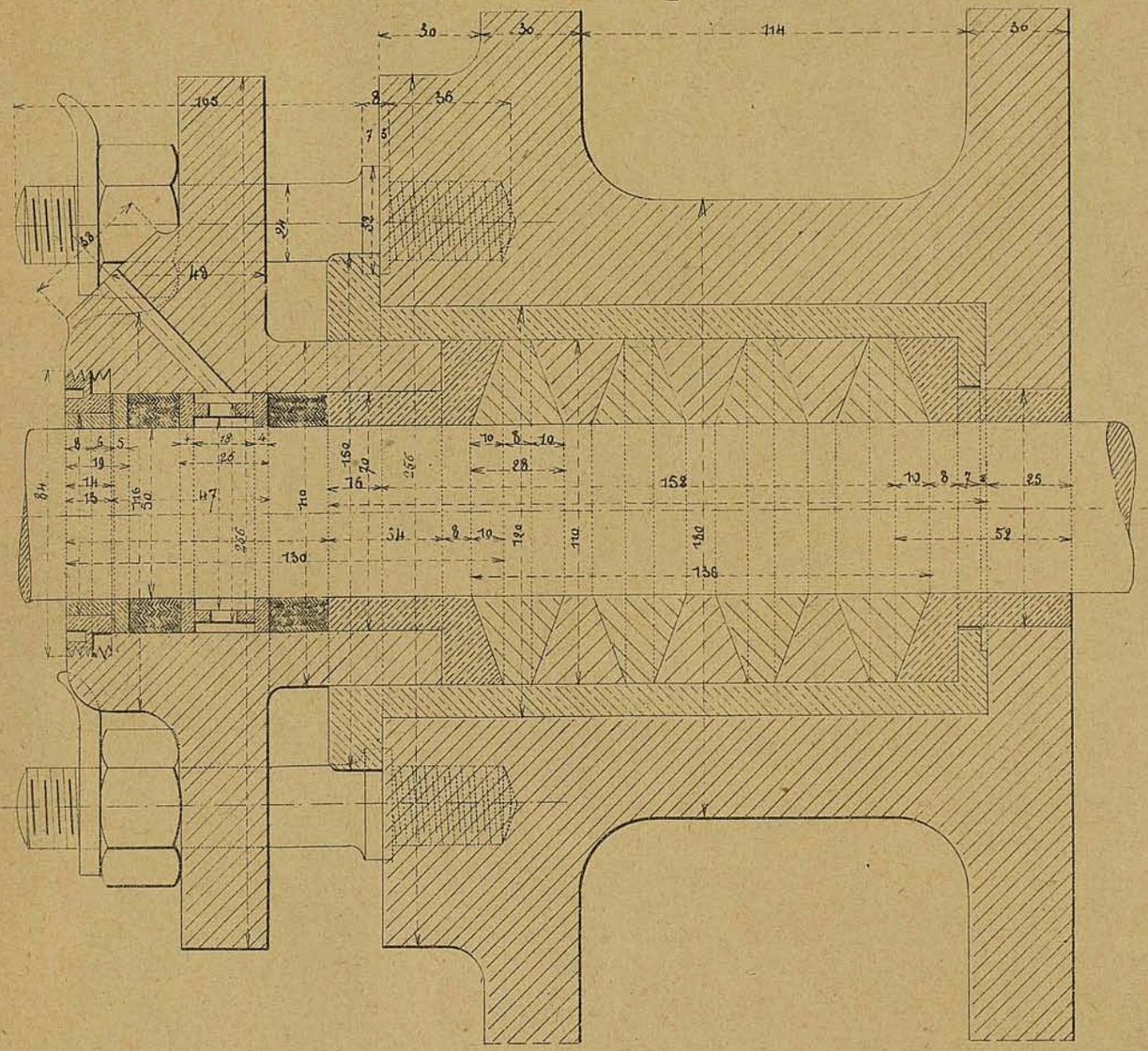
Monrocq, fr. Edit. Imp. 3, rue Suger, Paris

Presse-etoupe

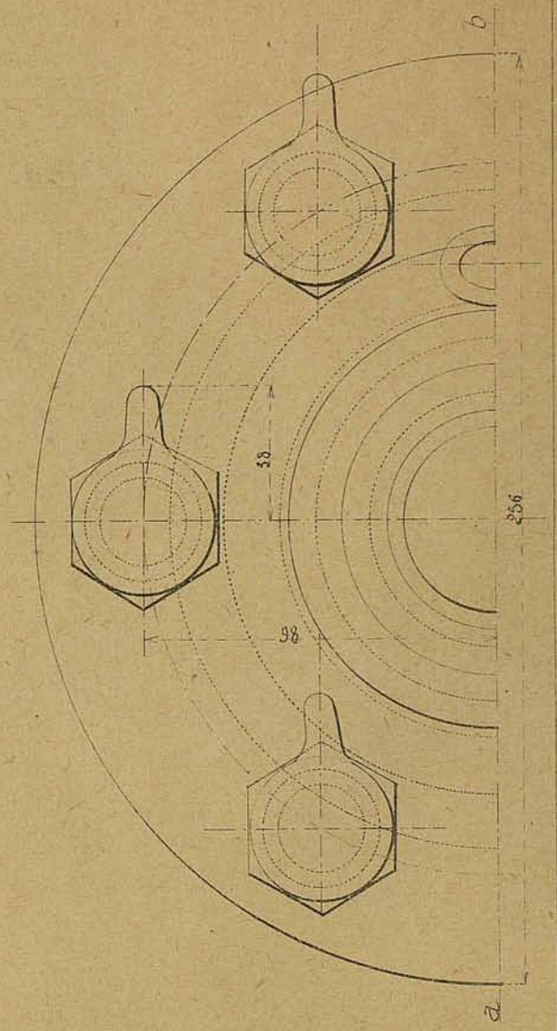
avec garniture métallique et bague evidée

pour machine horizontale

coupe ab



¼ vue en bout



Echelle 0m50 pour mètre

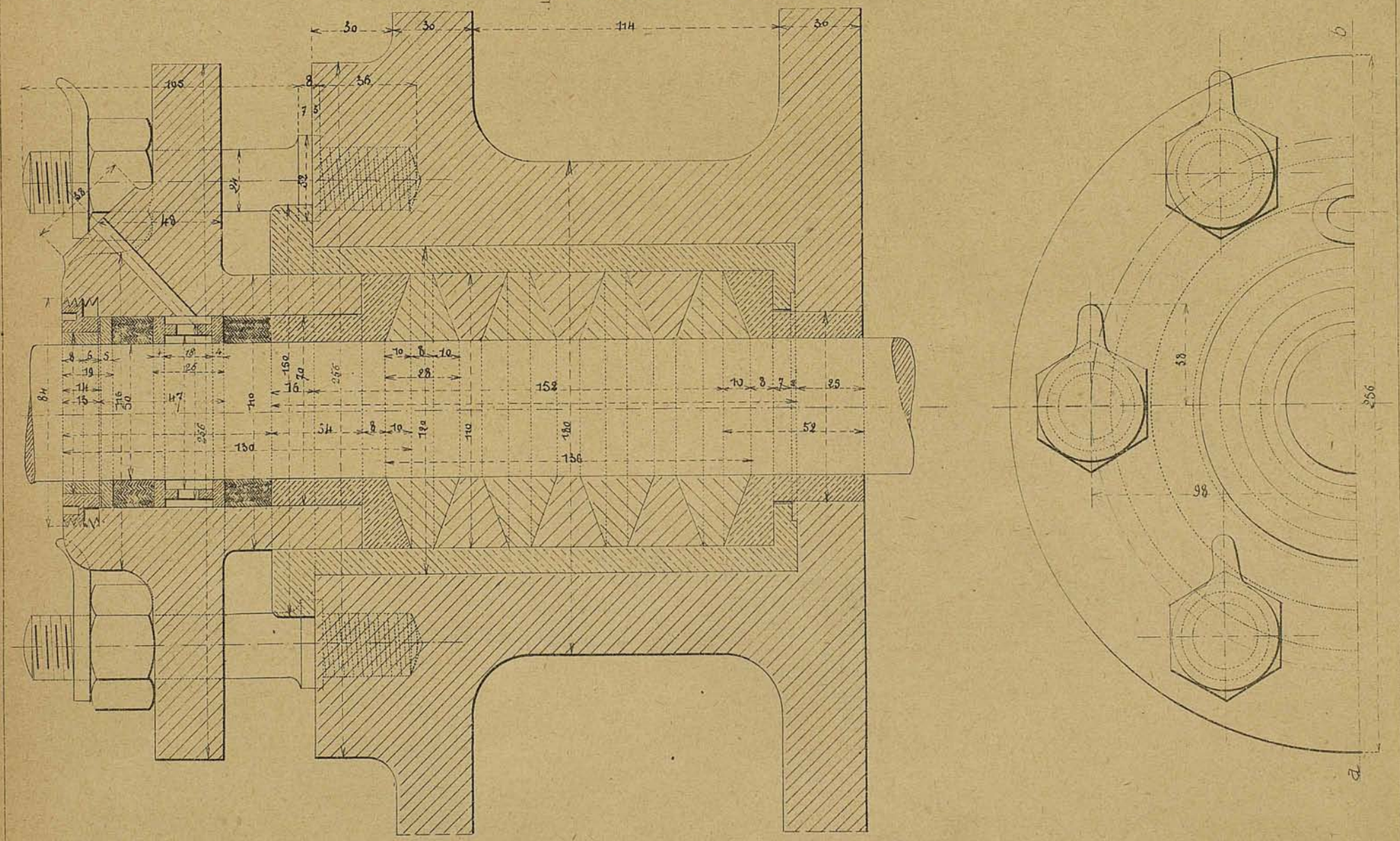
Presse-etoupe

avec garniture métallique et bague evidée

pour machine horizontale

coupe ab

½ vue en bout



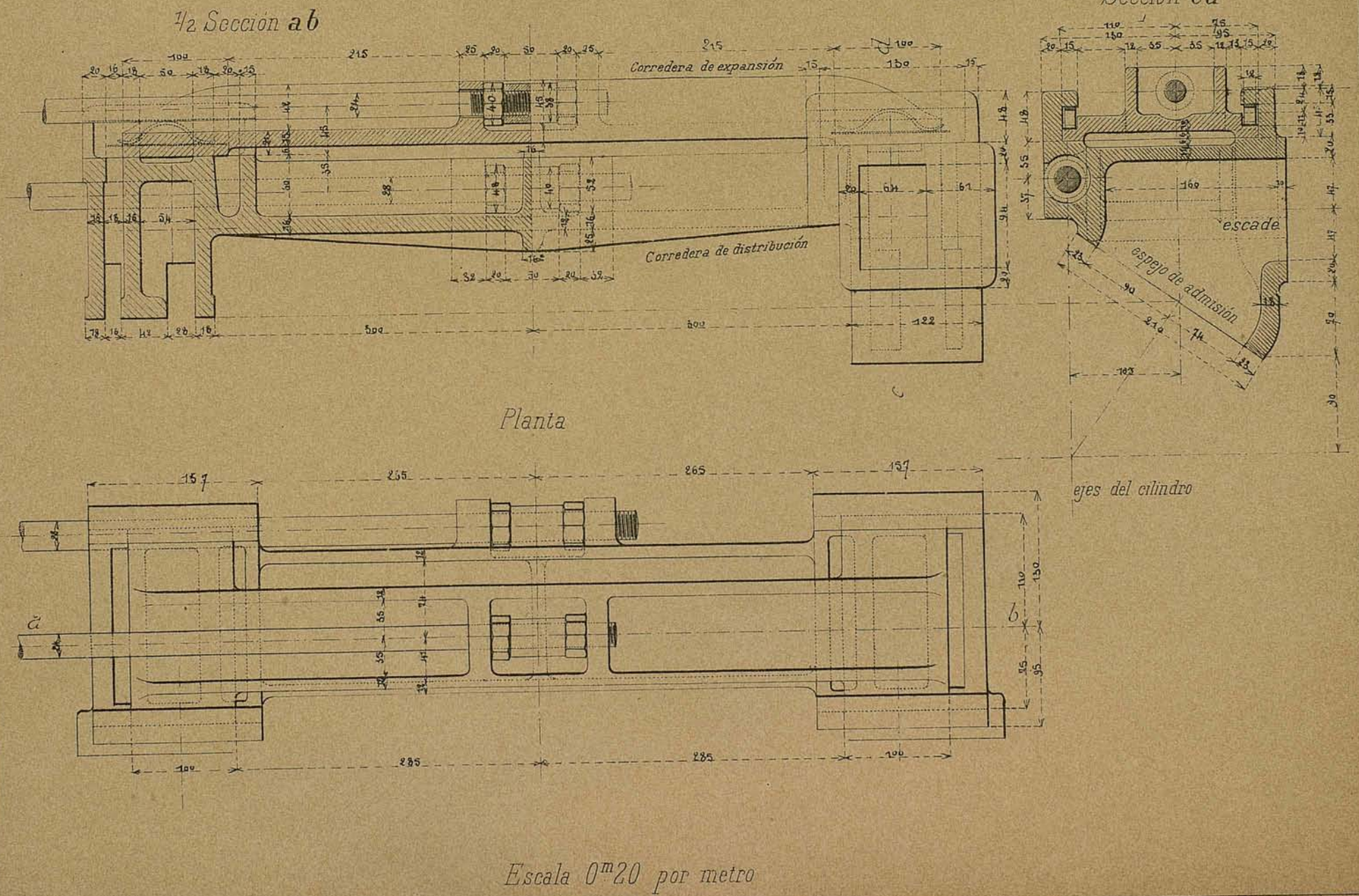
Echelle 0m50 pour mètre

Maurice TIXIER Del

Monrocq. fr. Edit. Imp. 3, rue Suger. PARIS

Corredera de distribución

con expansión variable por medio del regulador



Escala 0m20 por metro

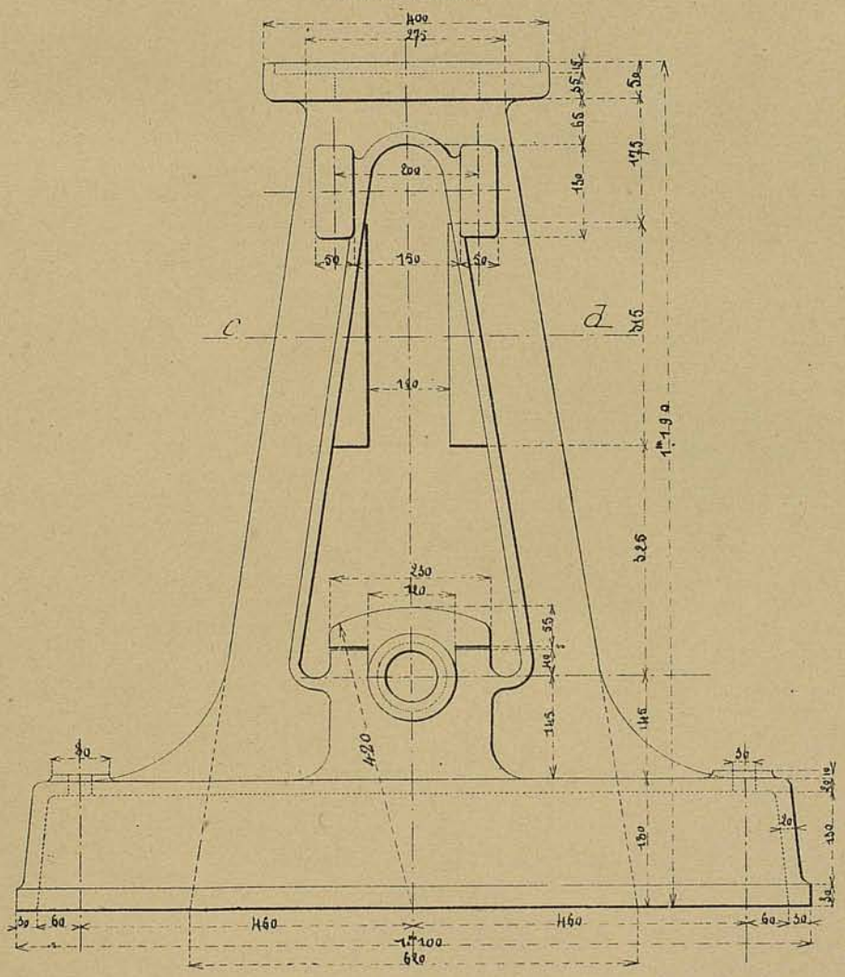
M. Tixier, del

Monrocq, fr. Edit. Imp. 3, rue Suger. Paris

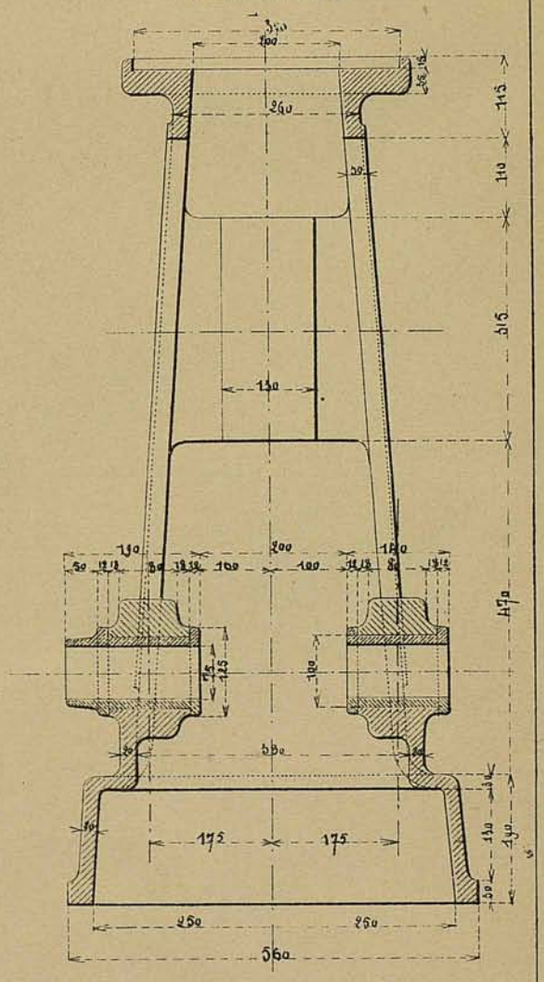
Armazón vertical

para máquina de vapor

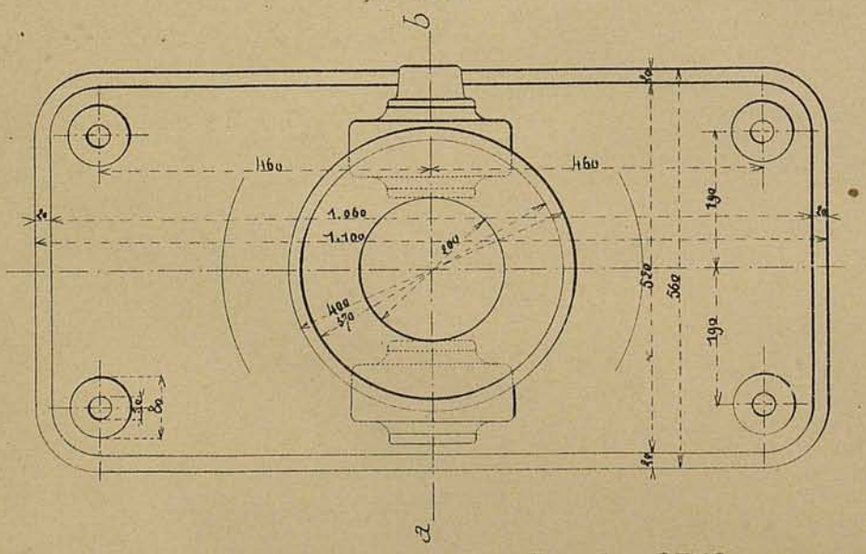
Elevación



Sección **ab**

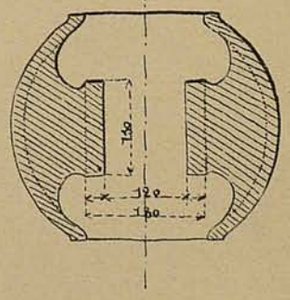


Planta



Sección **cd**

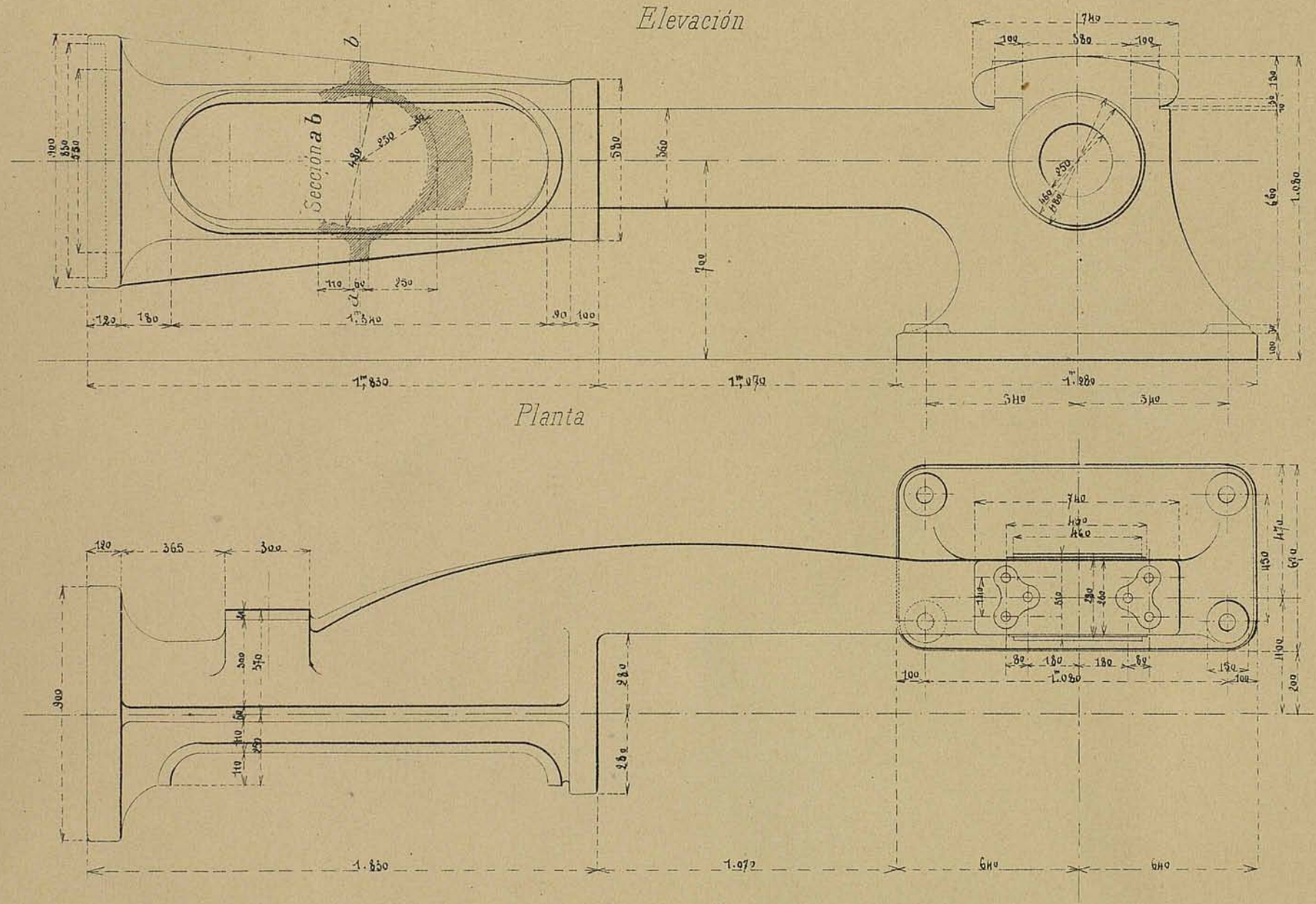
Croquis



Escala $0^{m}10$ *por metro*

Amazón horizontal

para máquina de vapor

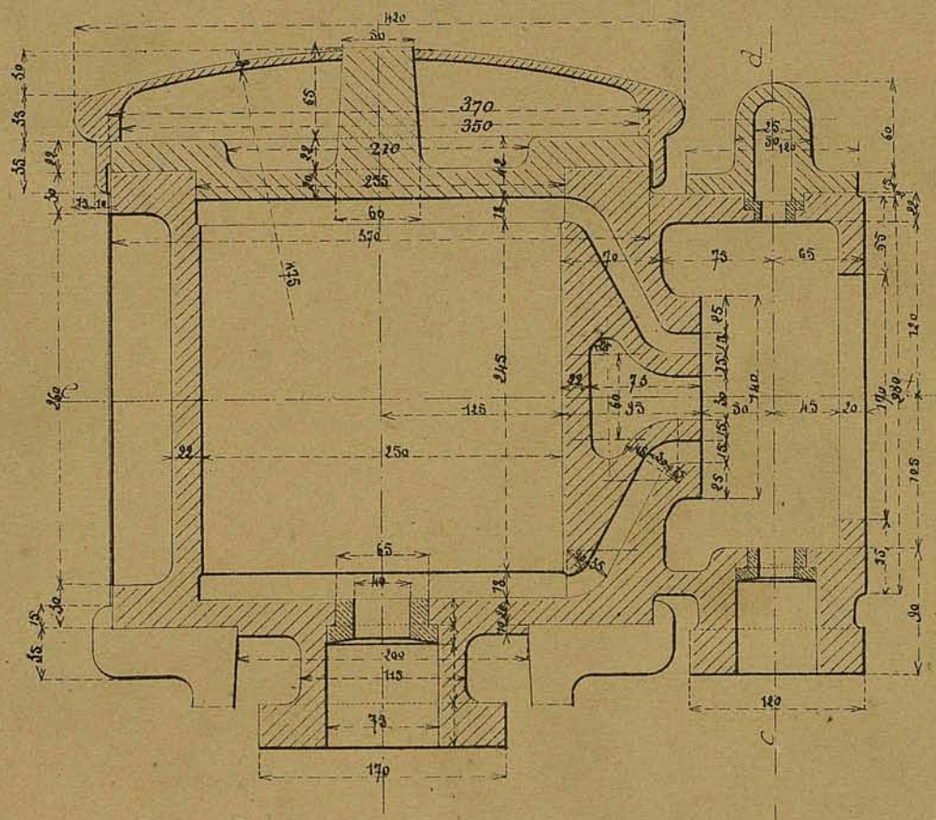


Escala 0m.05 por metro

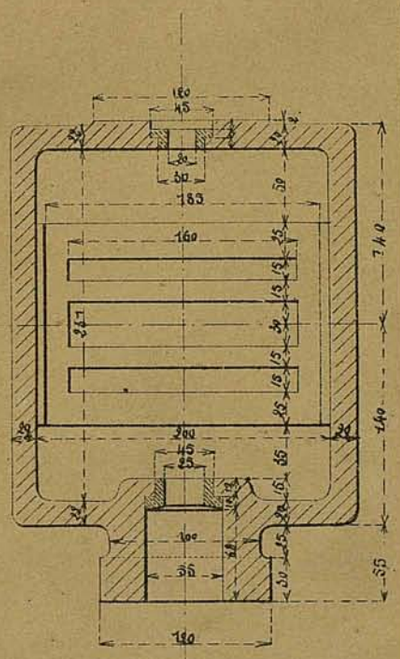
Cilindro

para maquina de vapor vertical de

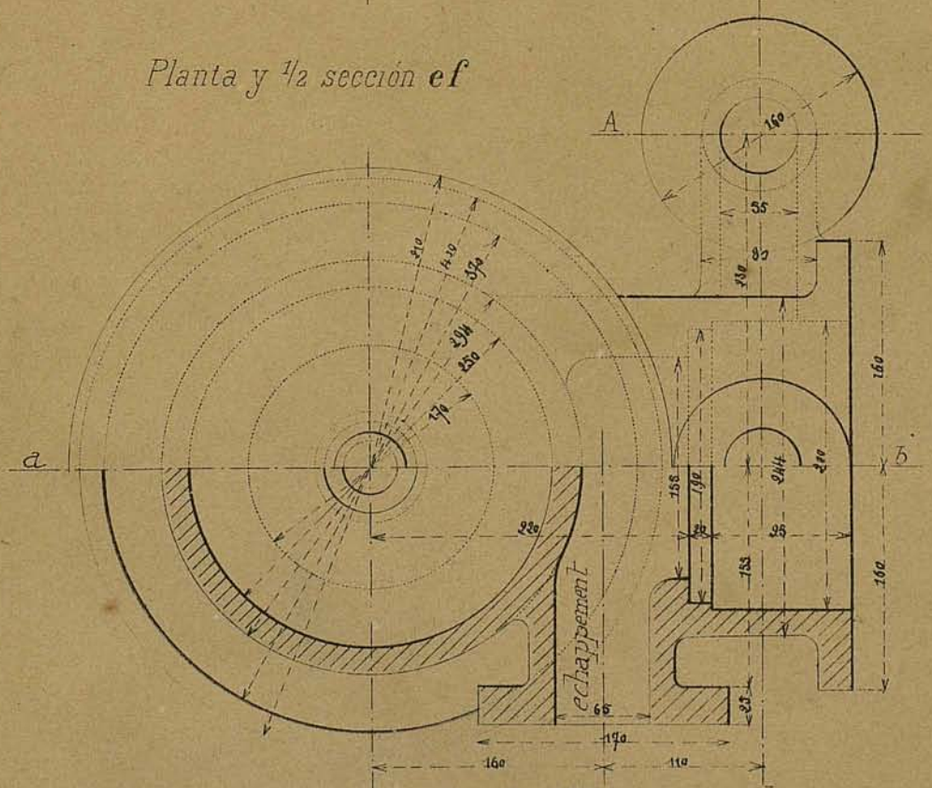
Sección **a b**



Sección **c d**



Planta y 1/2 sección **e f**



Escala 0m20 por metro

Nota:

Sobre el tubo ***A*** *que sirve para la admisión se coloca una válvula de vapor de mariposa accionada por el regulador*

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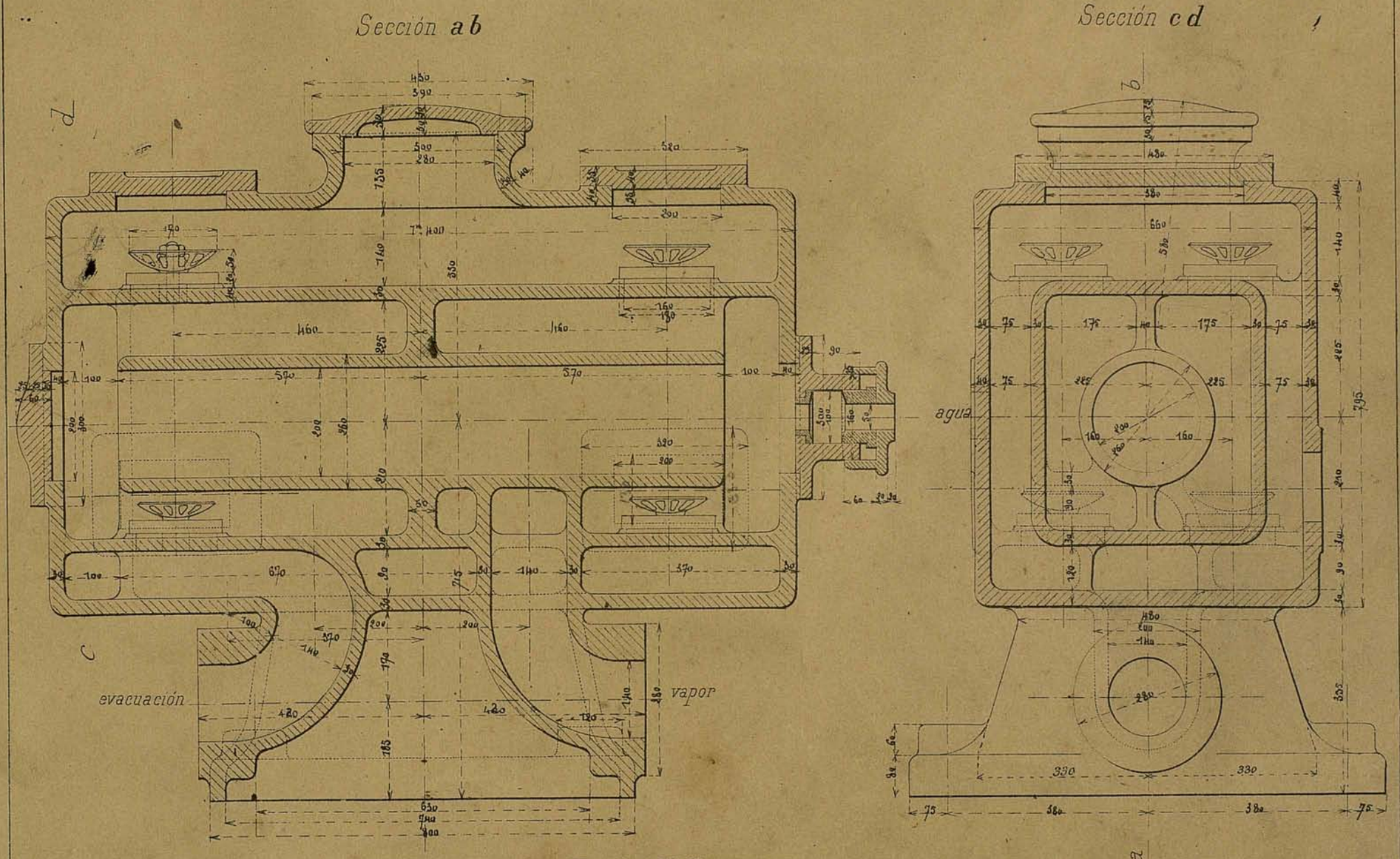
Monrocq, fr. Edit. Imp. 3, rue Suger, Paris

Condensador de inyección

para máquina de vapor

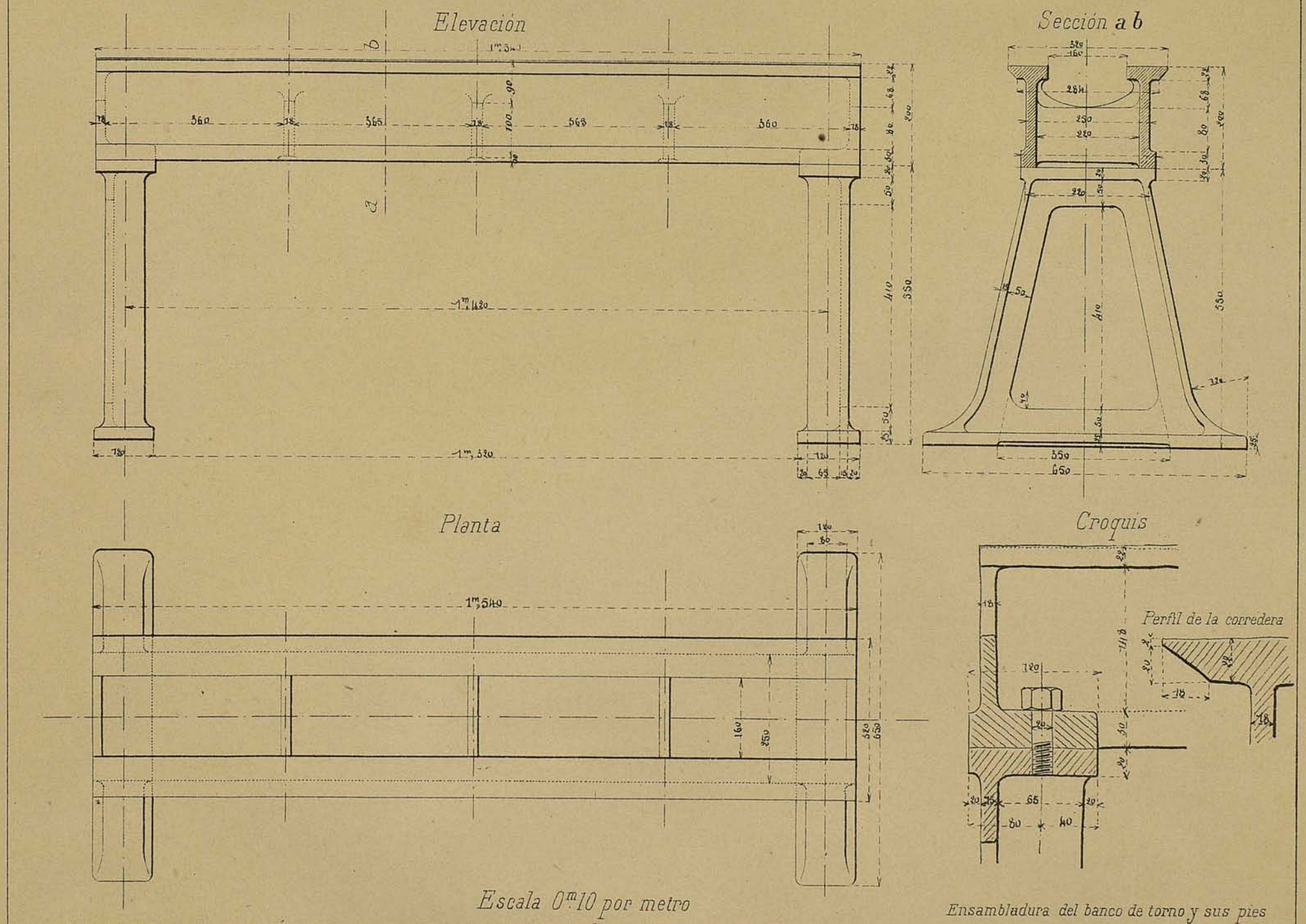


Escala 0m10 por metro

M. Tixier, del

Manrocq ft. Edit. Imp. 3, rue Suger. Paris

Banco de torno



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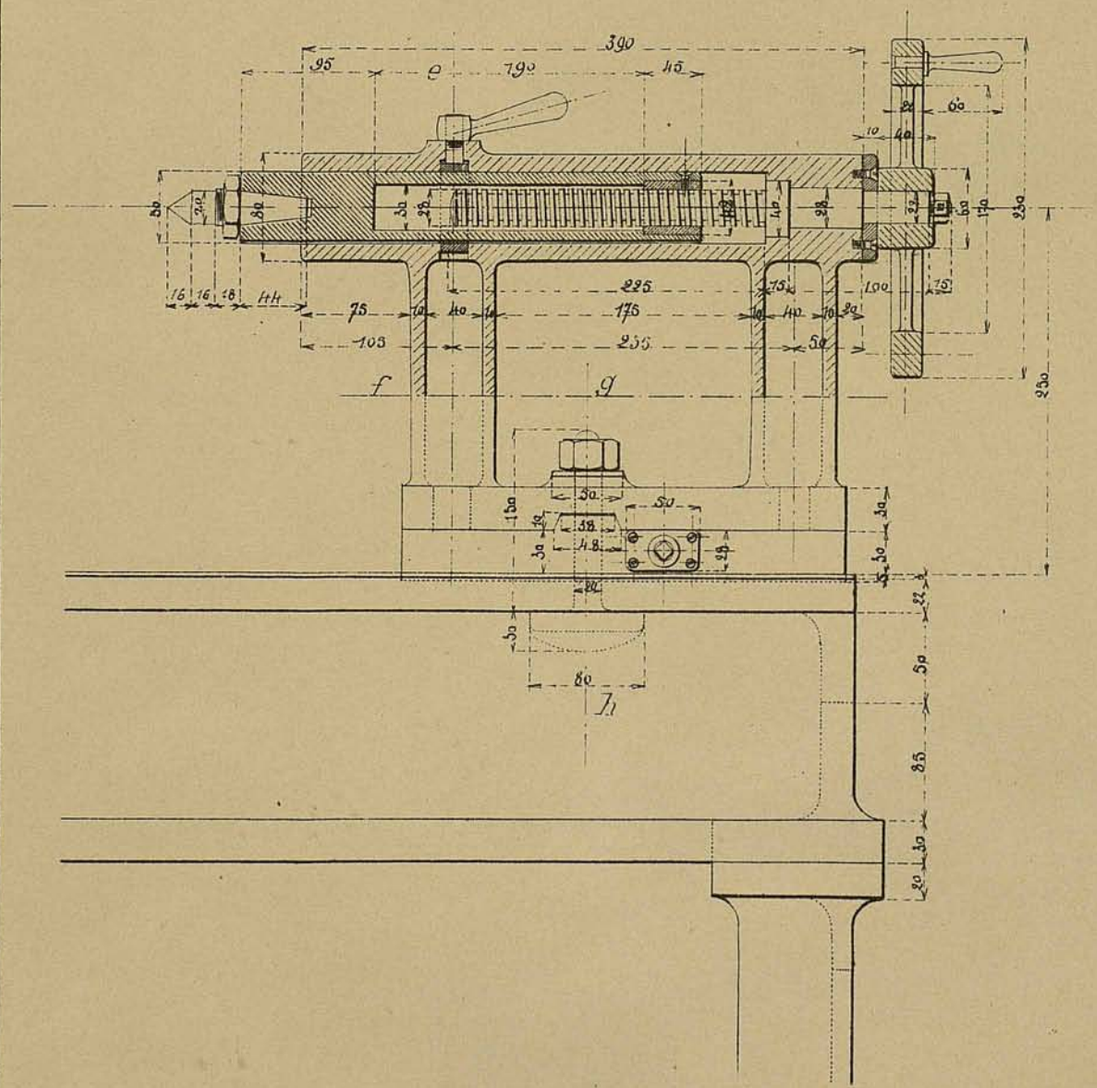
Monrocq fr. Edit. Imp. 3, rue Suger. Paris

Punto de torno

movible que permite el torneado cónico

altura de los puntos 0m25

Sección **abcd**



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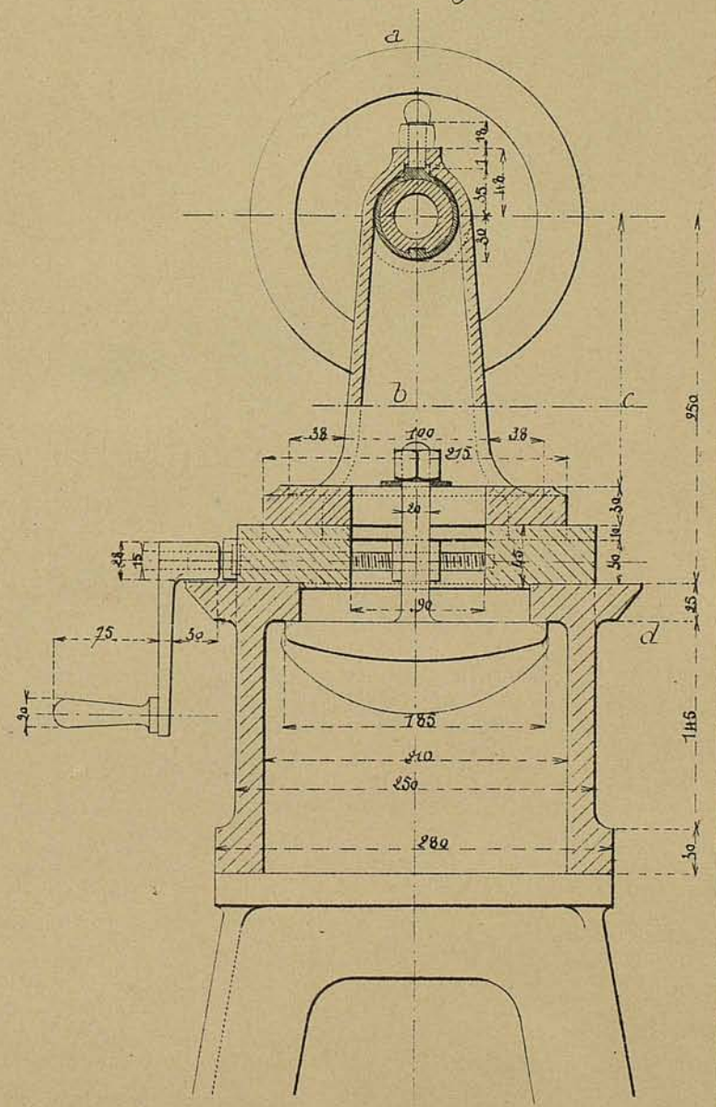
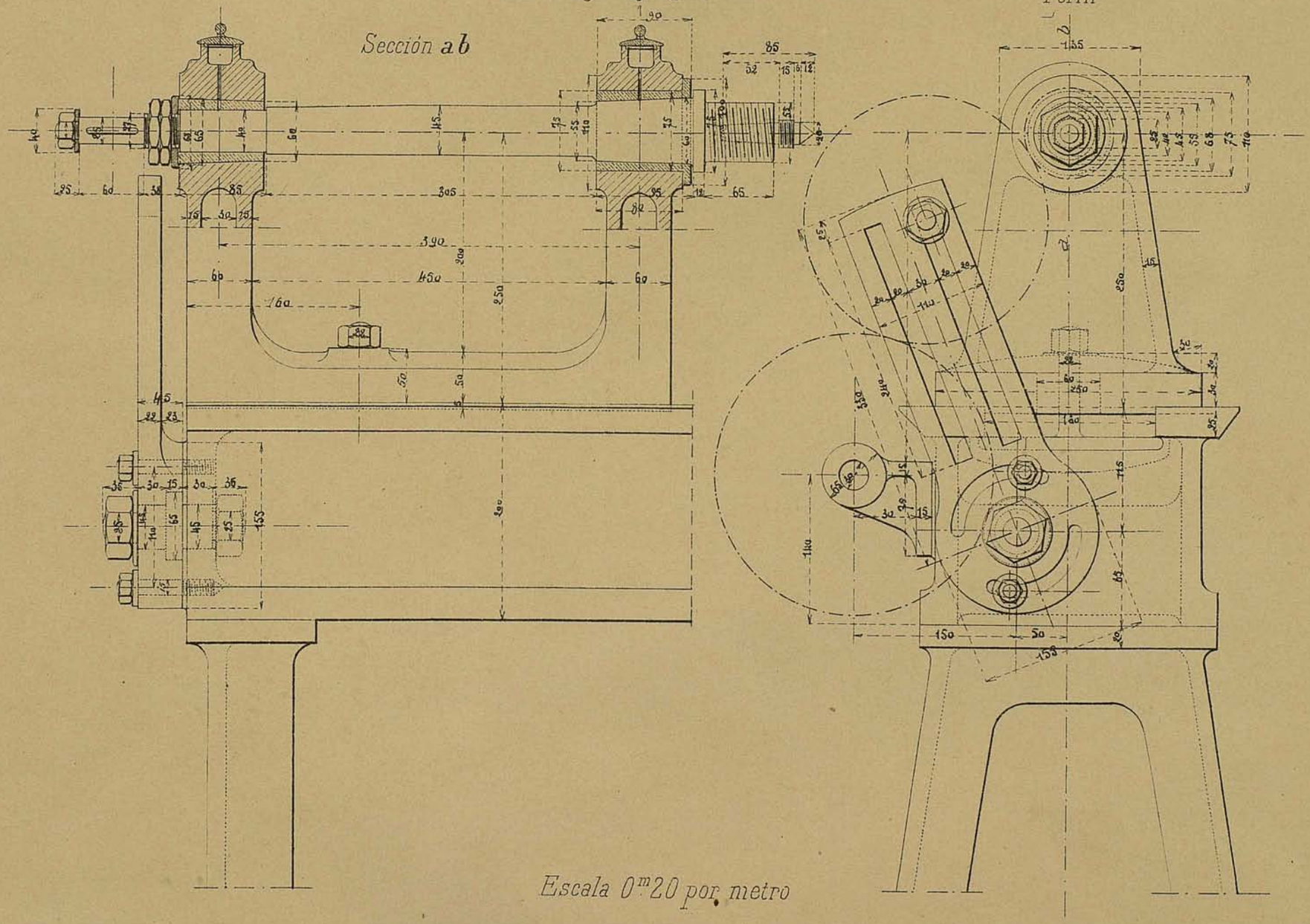


Escala 0m20 por metro

Punto fijo

Tren de engranajes para mover el carro



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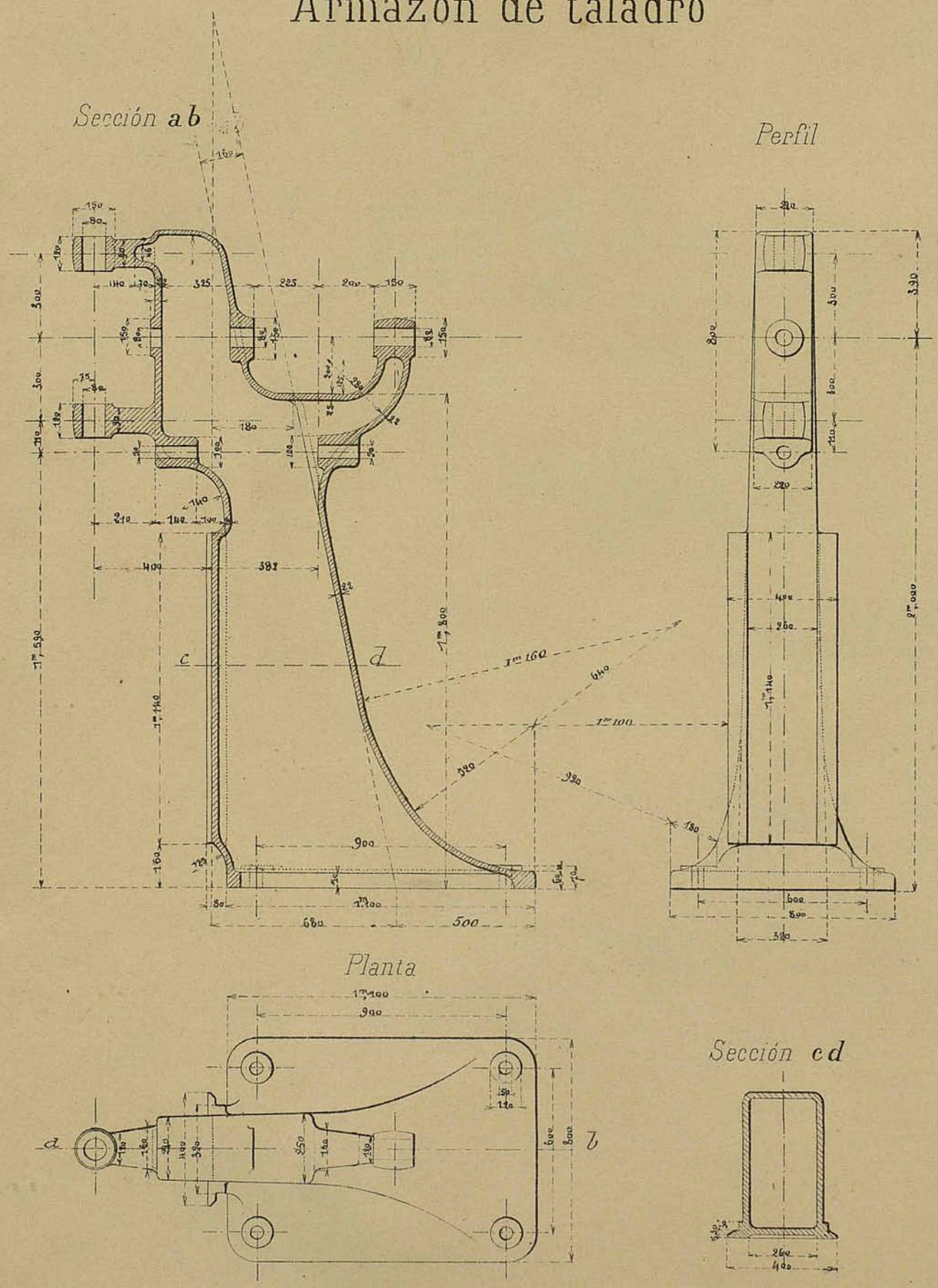
Armazón de taladro



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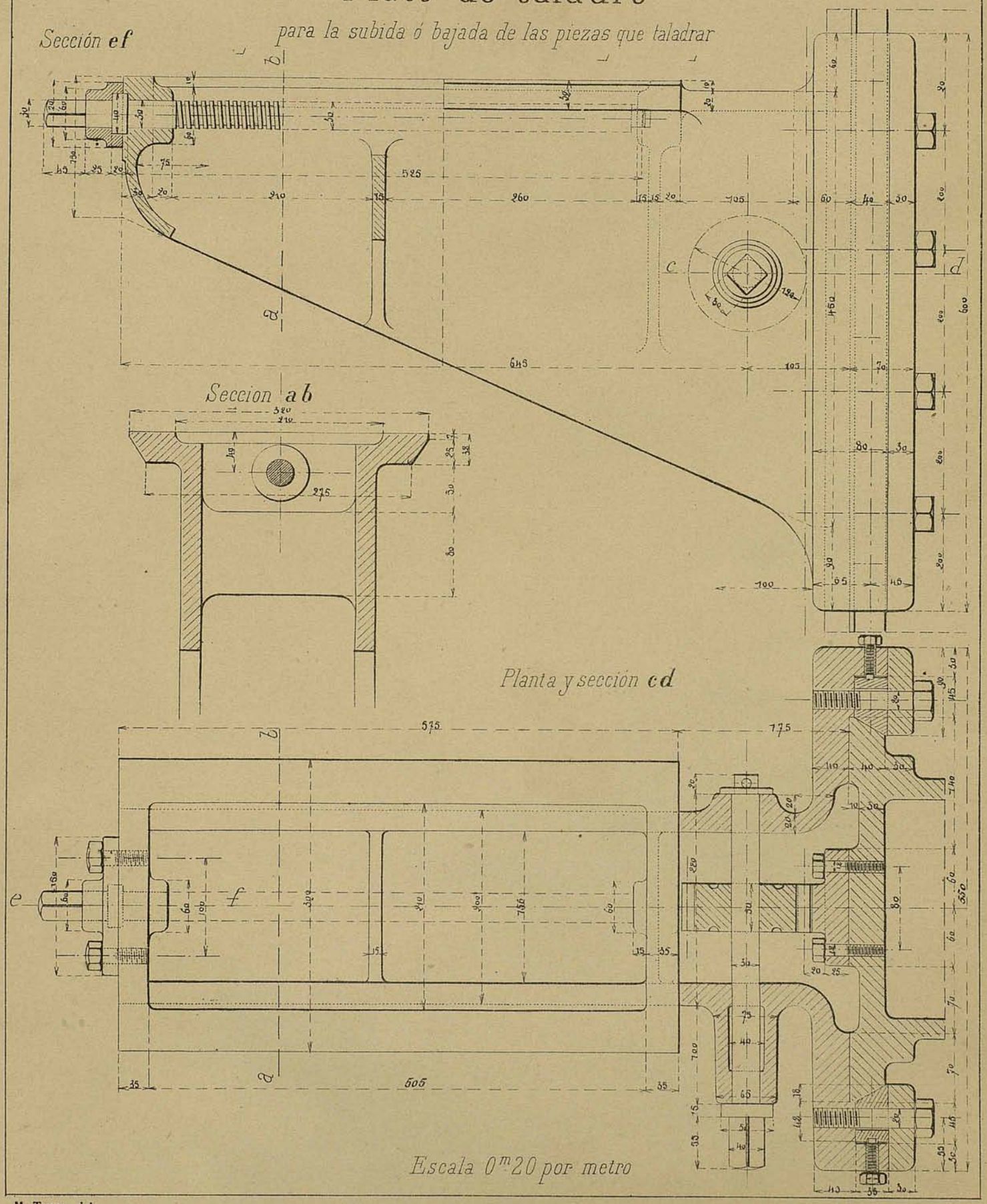
Monrocq, fr. Edit. Imp. 3, rue Suger, Paris

Plato de taladro

para la subida ó bajada de las piezas que taladrar



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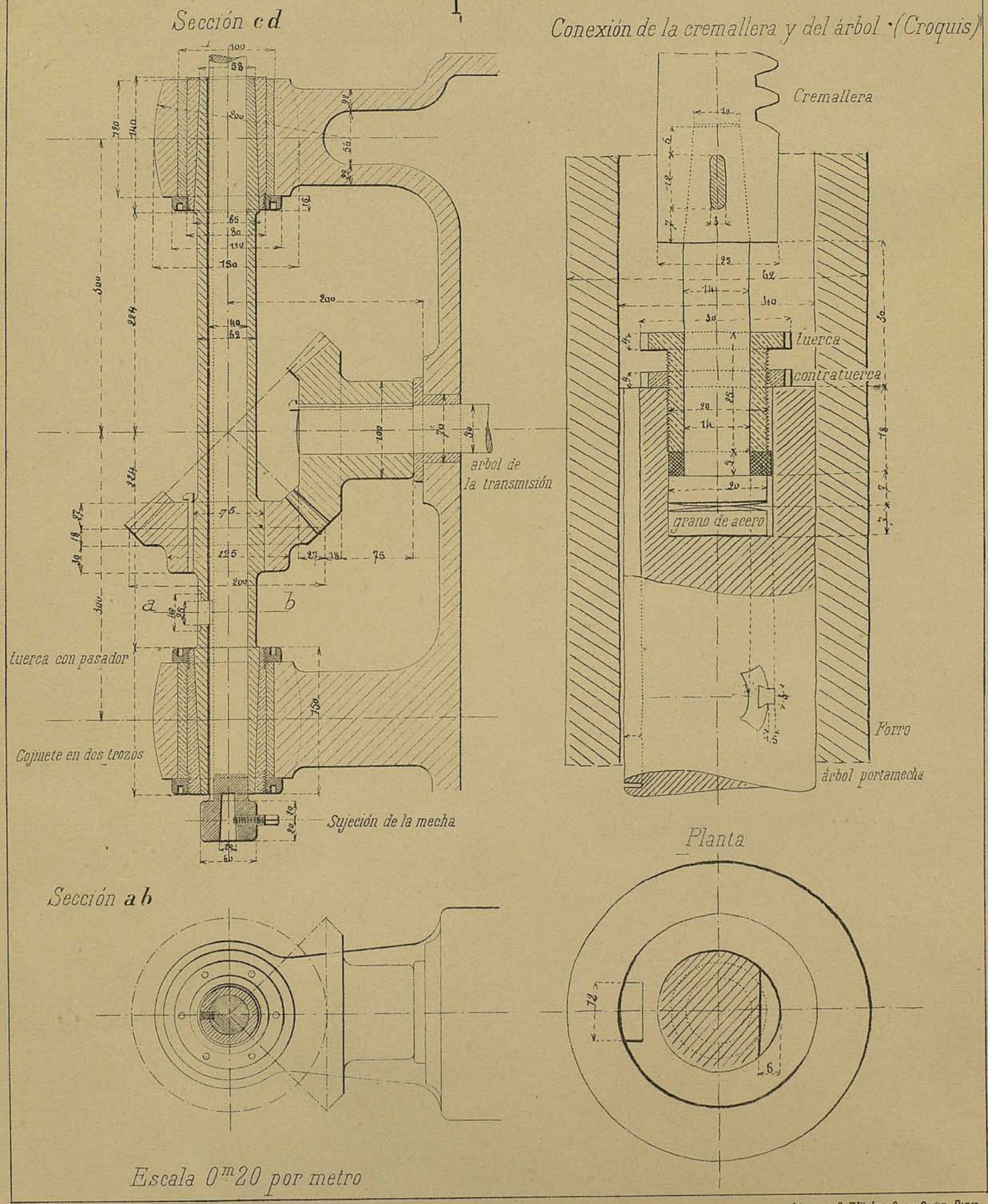
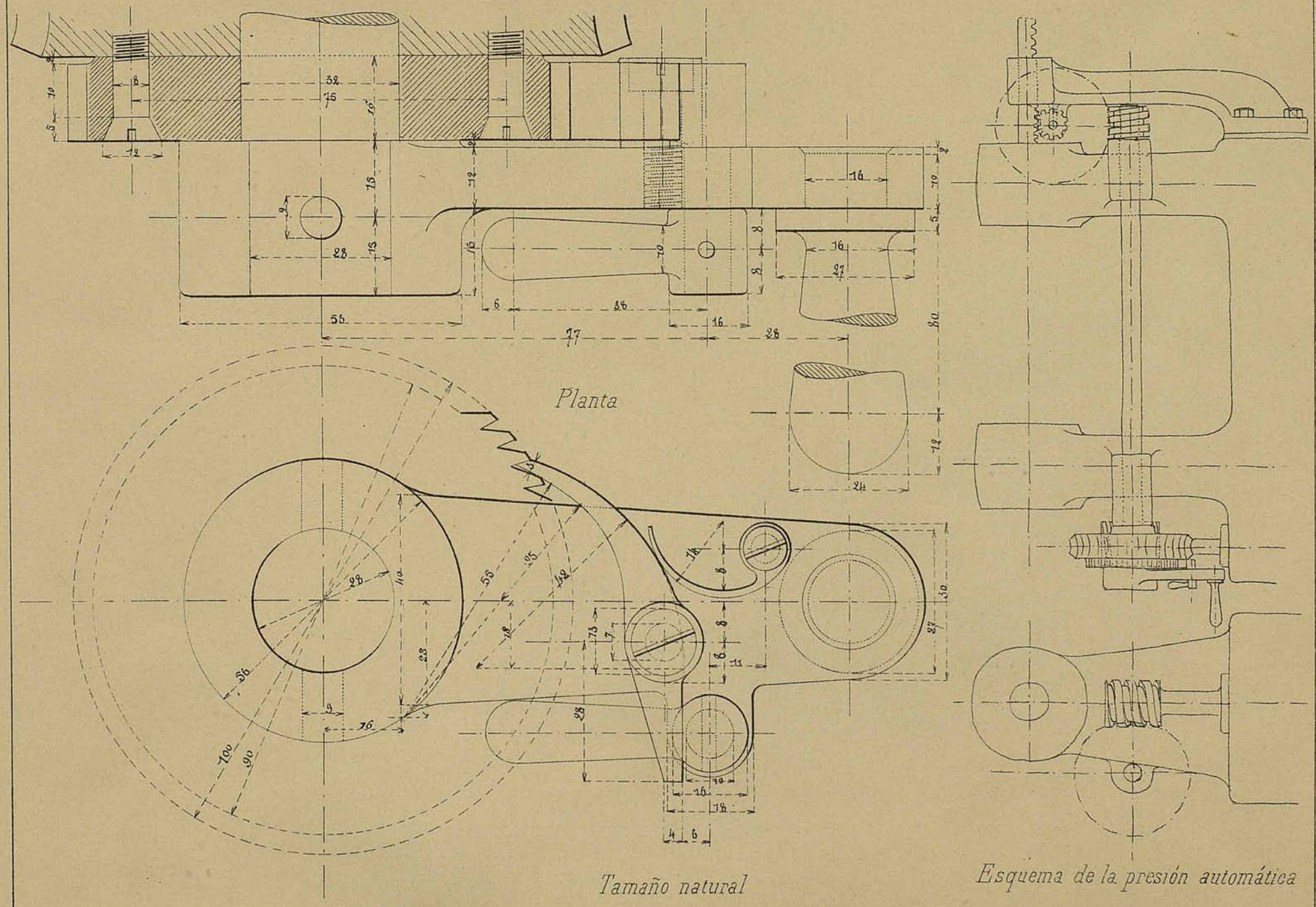
Arbol portamecha



Compresión del árbol portamecha

Manivela con escape para verificar la presión automáticamente ó á mano



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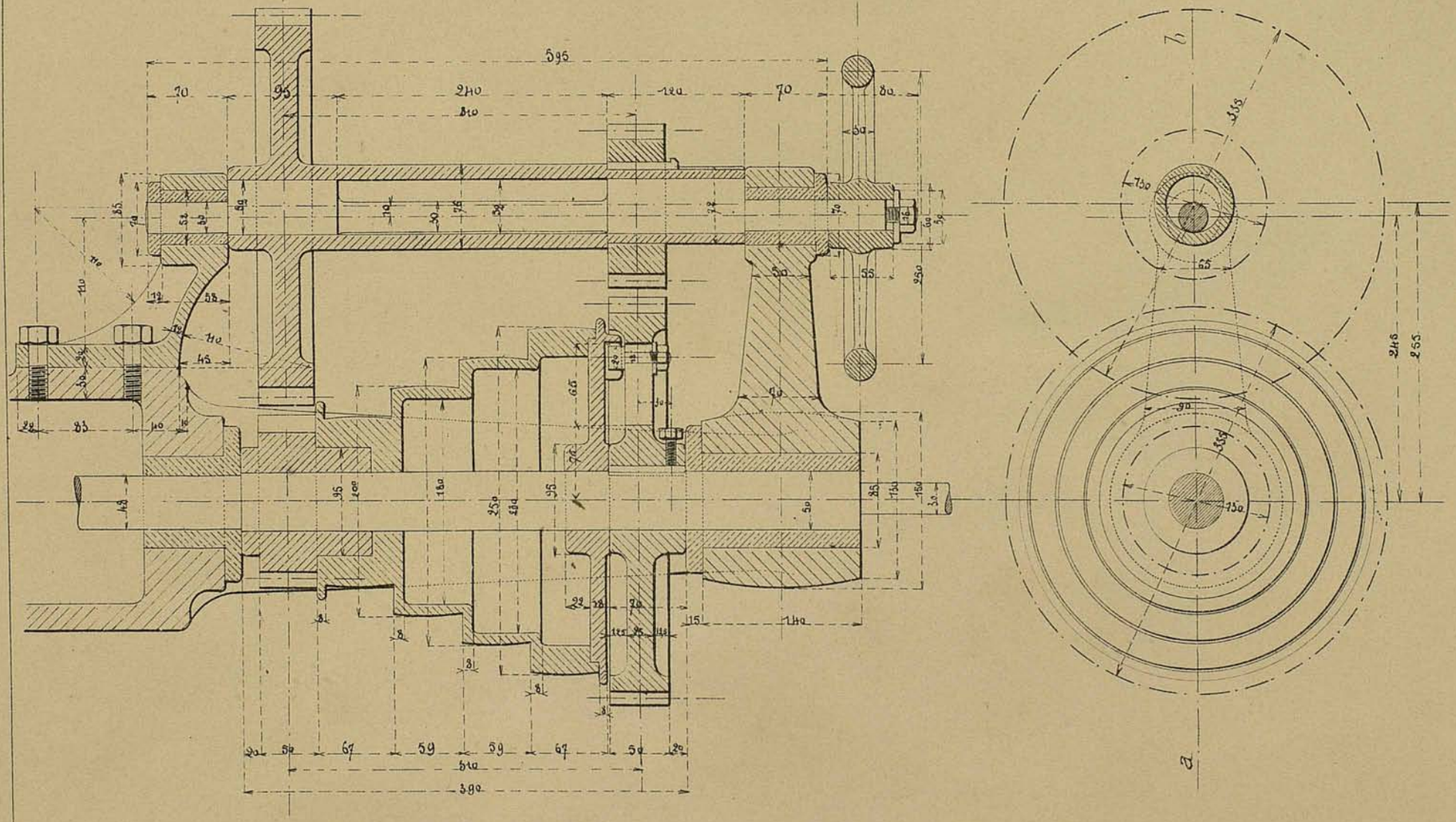
Embrague del árbol motor

para permitir una gran variación de velocidad

*Sección **a b***

Proyección del extremo



Escala 0m20 por metro

Cajeadora

armazón

Sección ab

Frente

Sobre el banco se mueve un conjunto de carros que sostienen un plato circular de rotación

Planta

Cabeza giratoria

Croquis

Escala 0m05 por metro

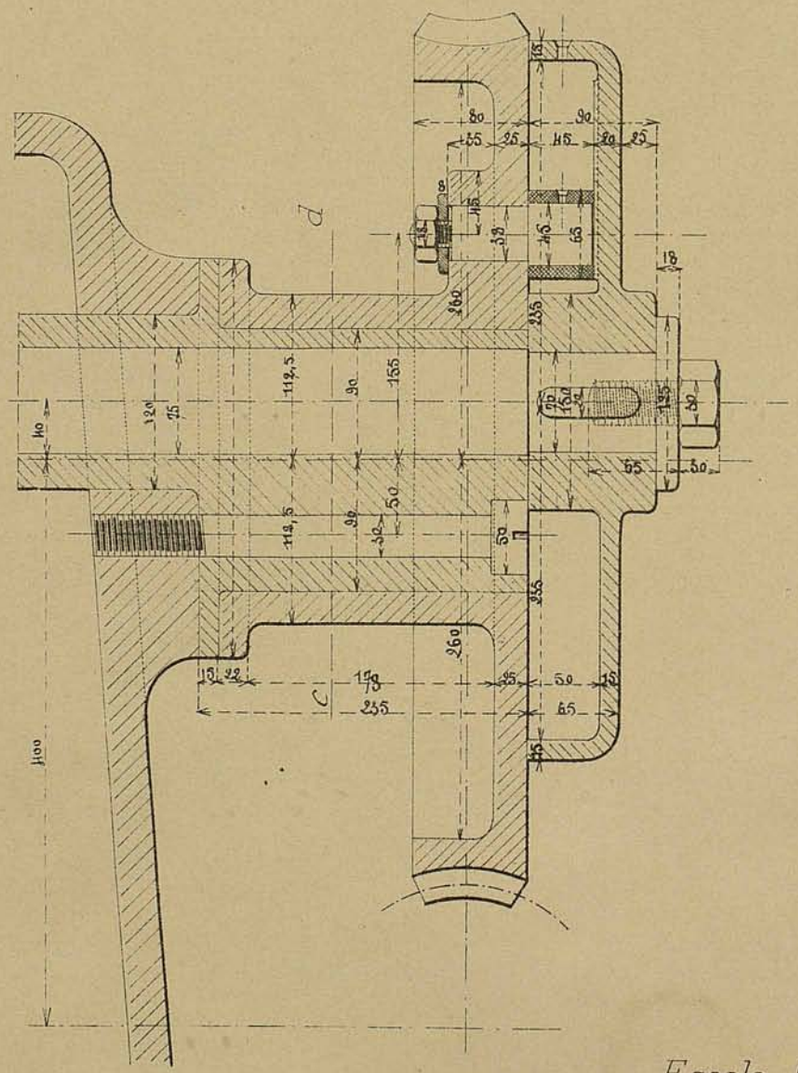
M. Tixier, del

Monrocq, fr. Edit. Imp. 3, rue Suger. Paris

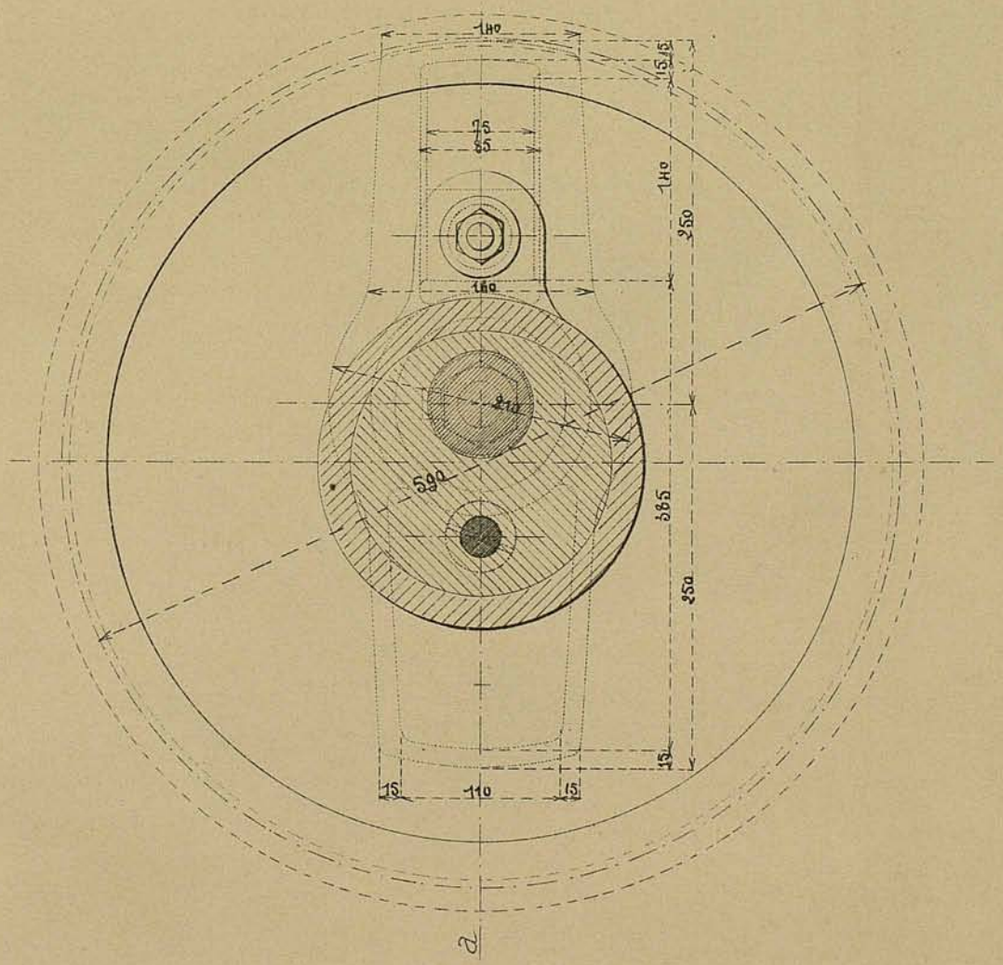
Cajeadora

movimiento de retroceso rápido de la flecha portaútil

Sección **a b**



Sección **c d**



Escala $0^{m}.20$ *por metro*

La rueda dentada es loca sobre su manguito descentrado y transmite el movimiento al árbol por medio de la manivela ajustada encima

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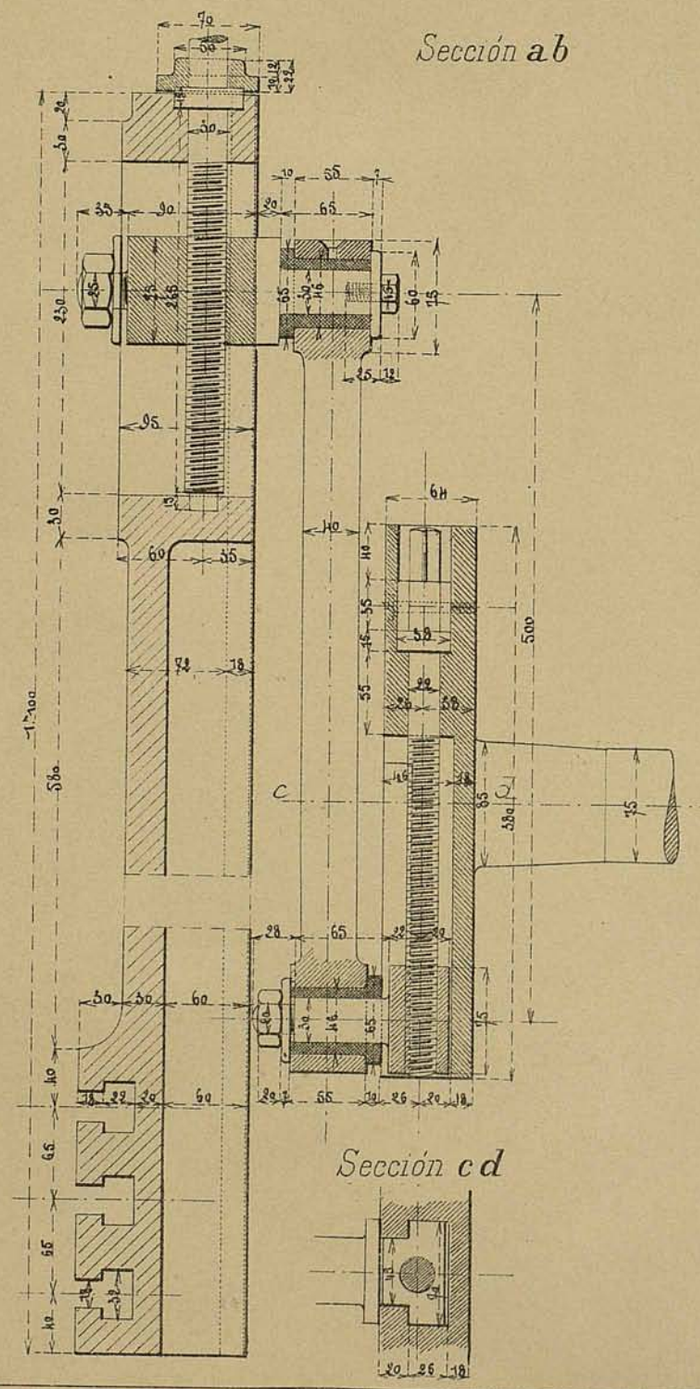
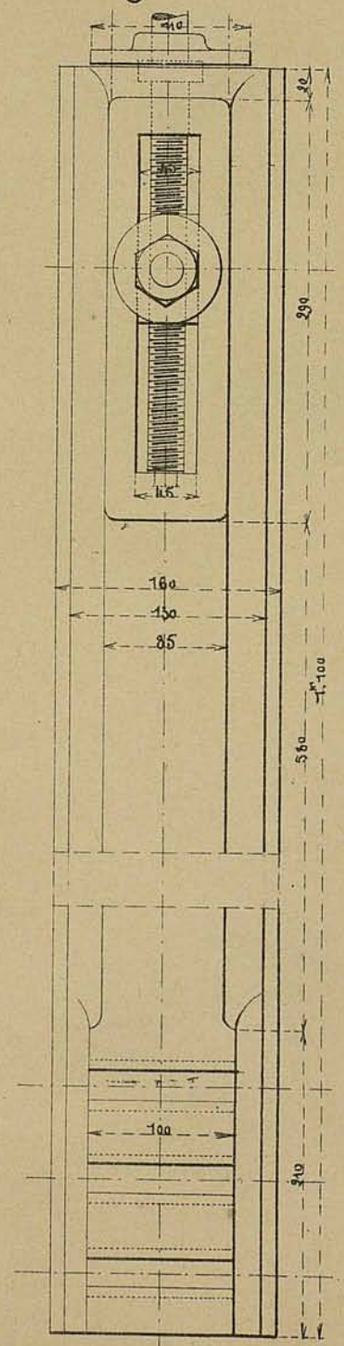
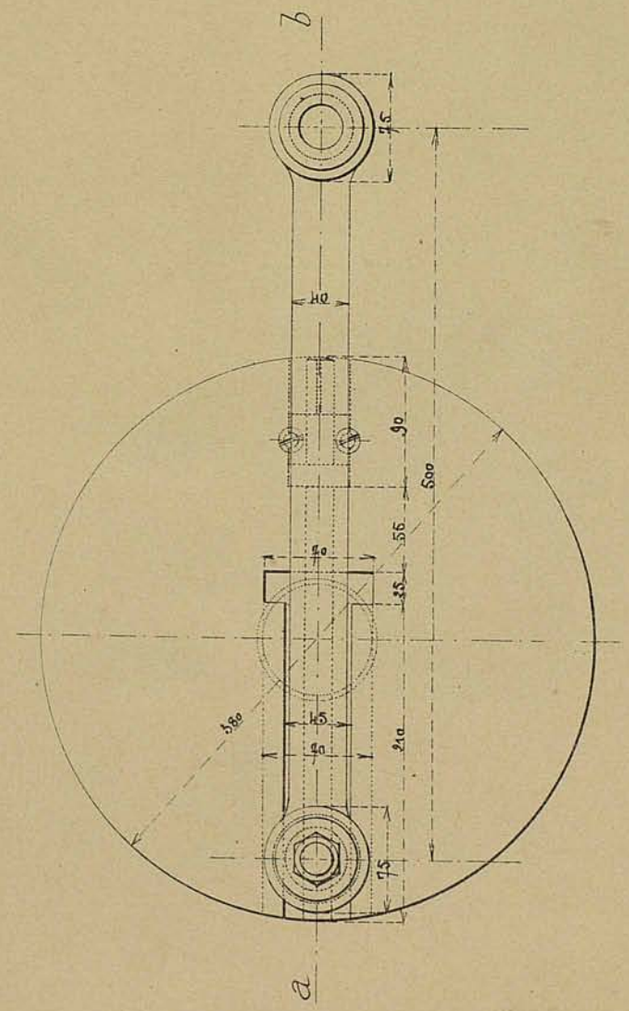
Monrocq, fr. Edit. Imp. 3, rue Sugier. Paris

Cajeadora







Movimiento vertical de la flecha portaútil

Escala 0m20 por metro

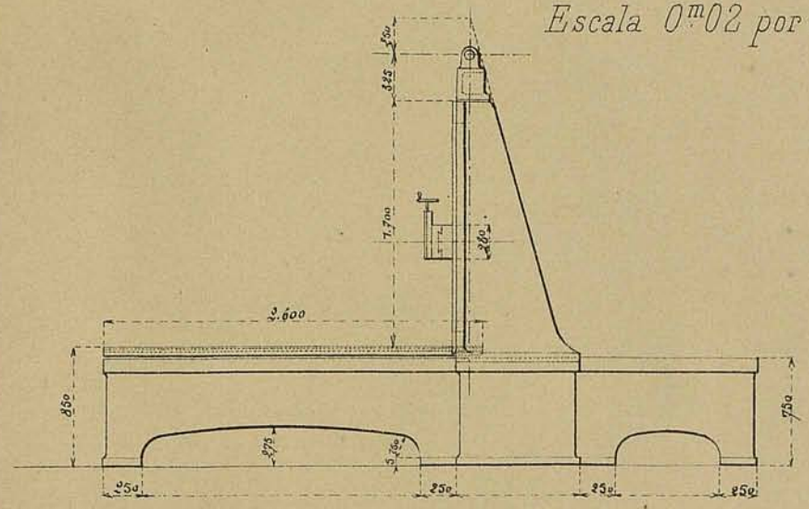
M. Tixier, del

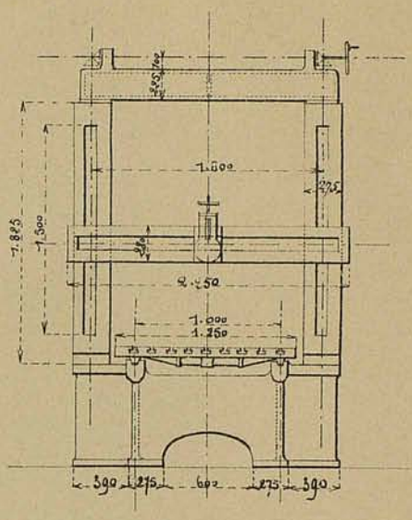
Manrocq, fr. Edit. Imp. 3, rue Suger, Paris

Cepillo

Conjunto

Escala 0m02 por metro

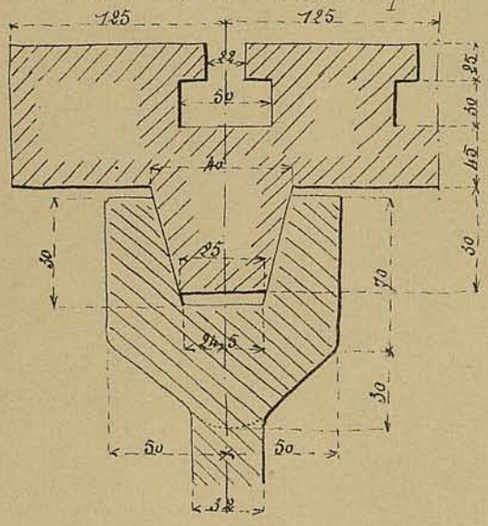


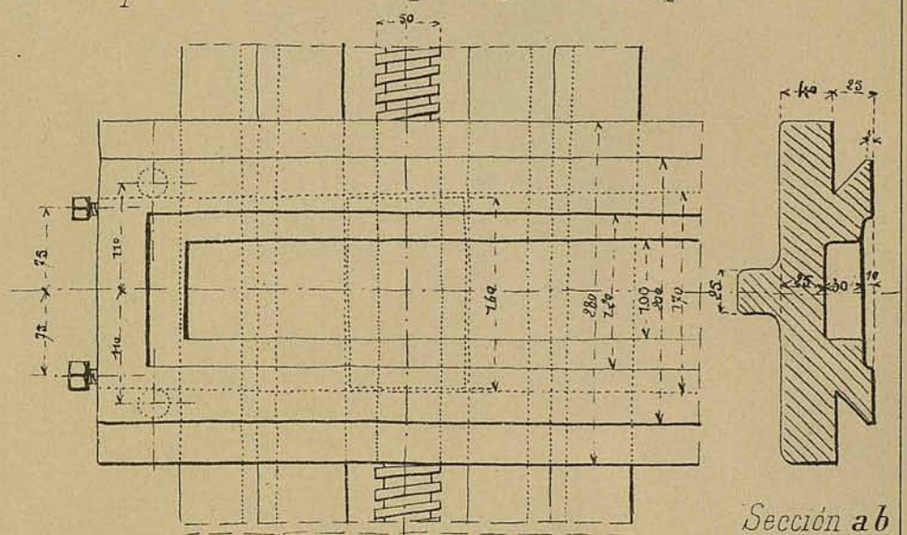


Sección de la corredera del plato

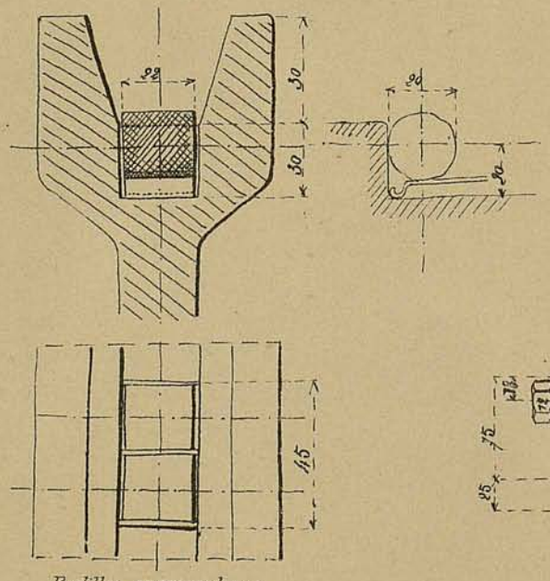
Croquis

Sección por el eje del carro portaútil

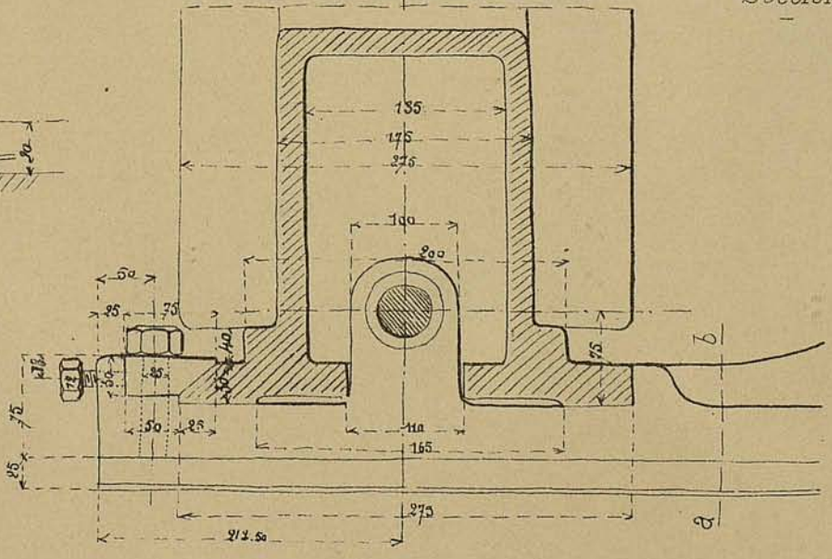




Sección ab



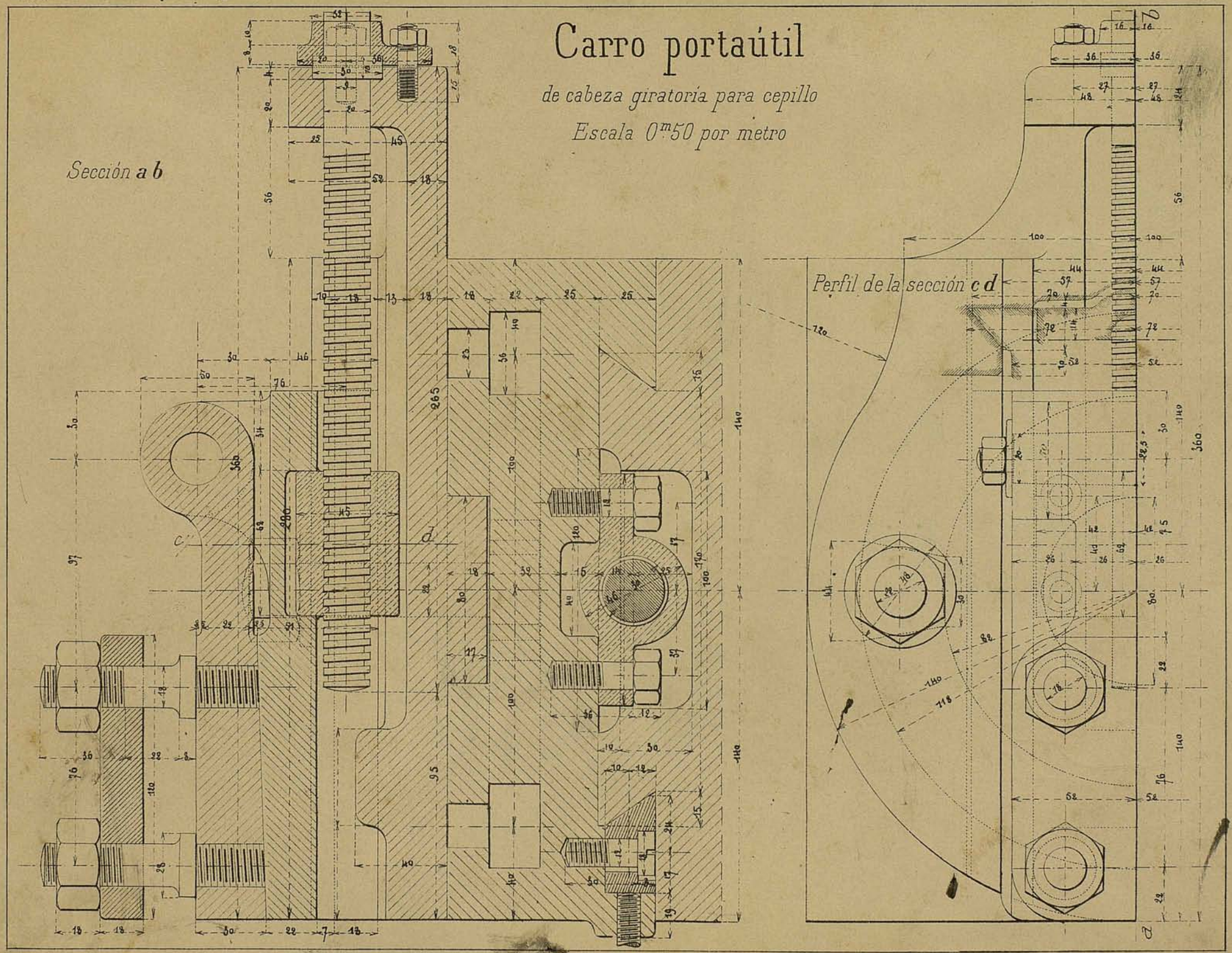
Rodillos engrasadores



Carro portaútil

de cabeza giratoria para cepillo

Escala 0m50 por metro



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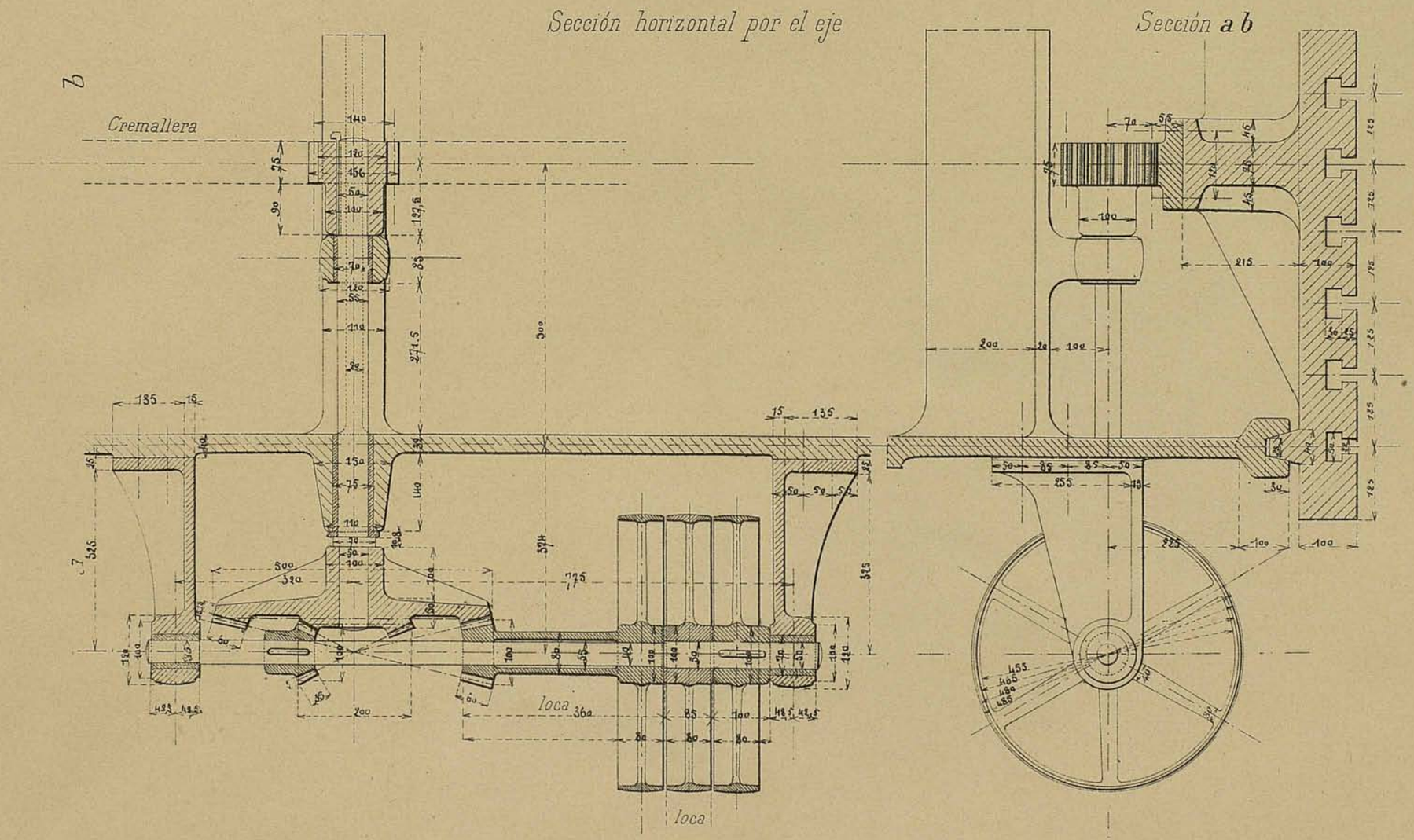
Movimiento del plato

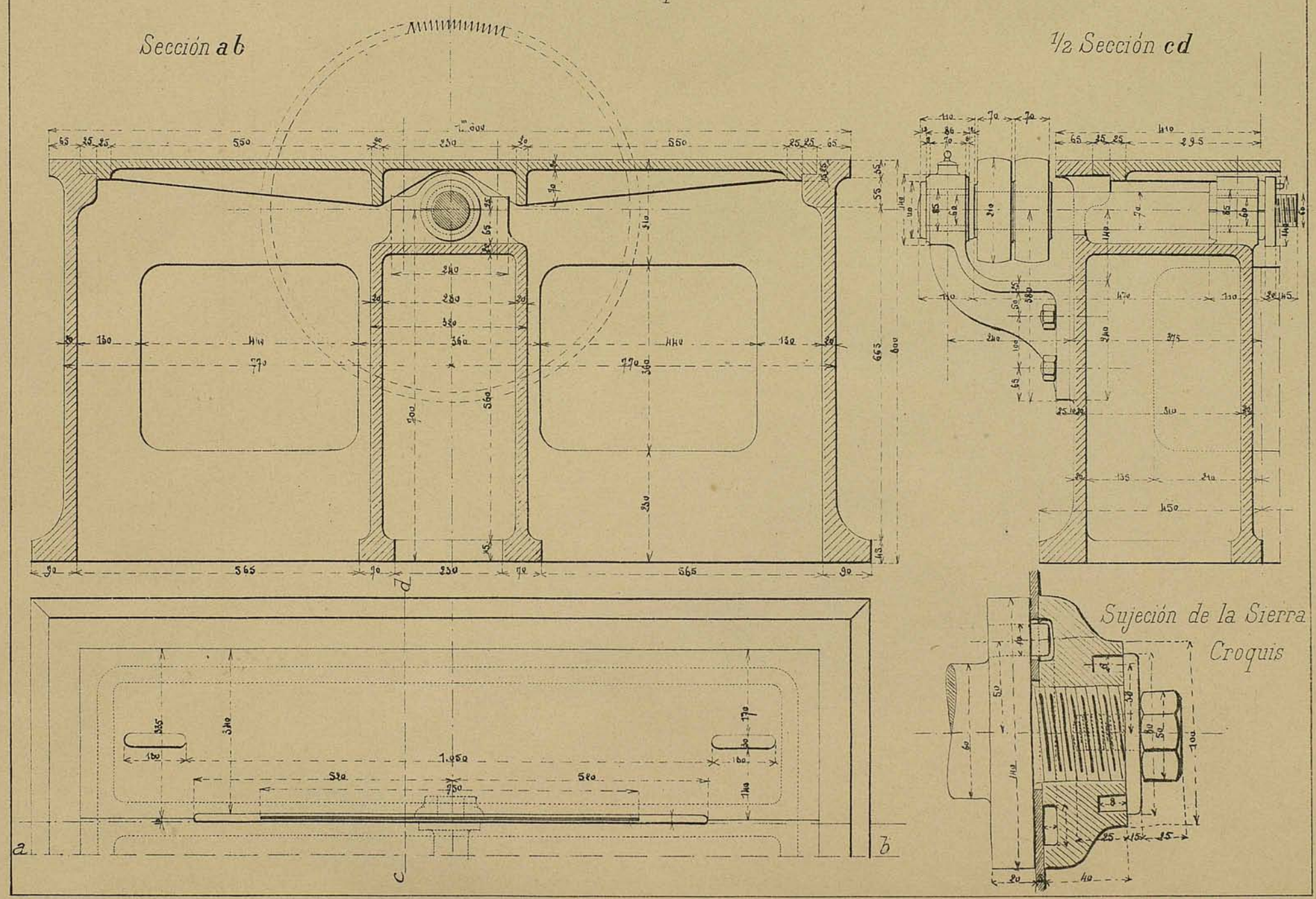
con retroceso rápido



Escala 0m10 por metro

Sierra circular

Escala 0m10 por metro



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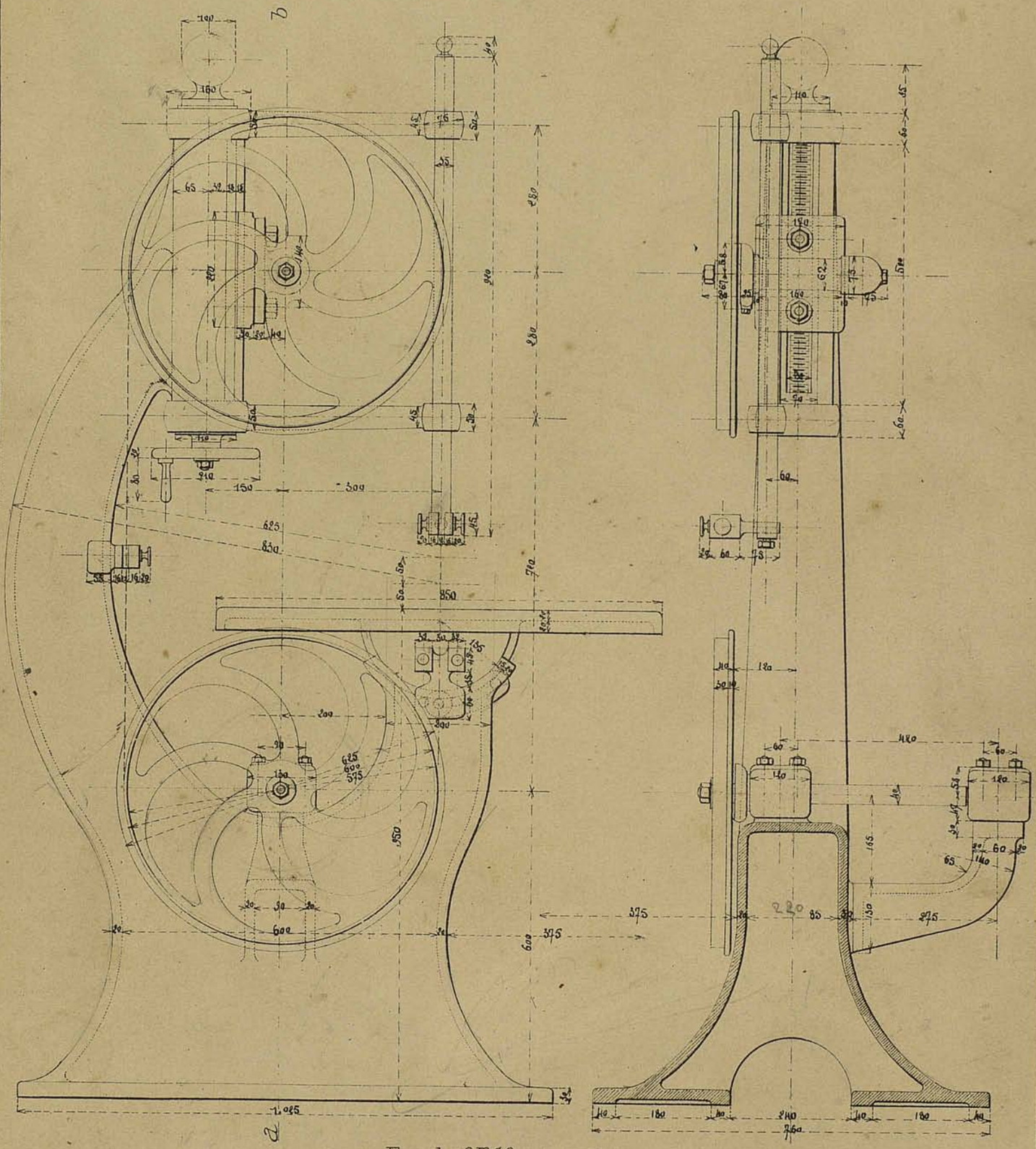
Sierra de cinta

con tablero movible para el trabajo de la madera

Elevación *Sección* ***ab***



Escala 0m10 por metro

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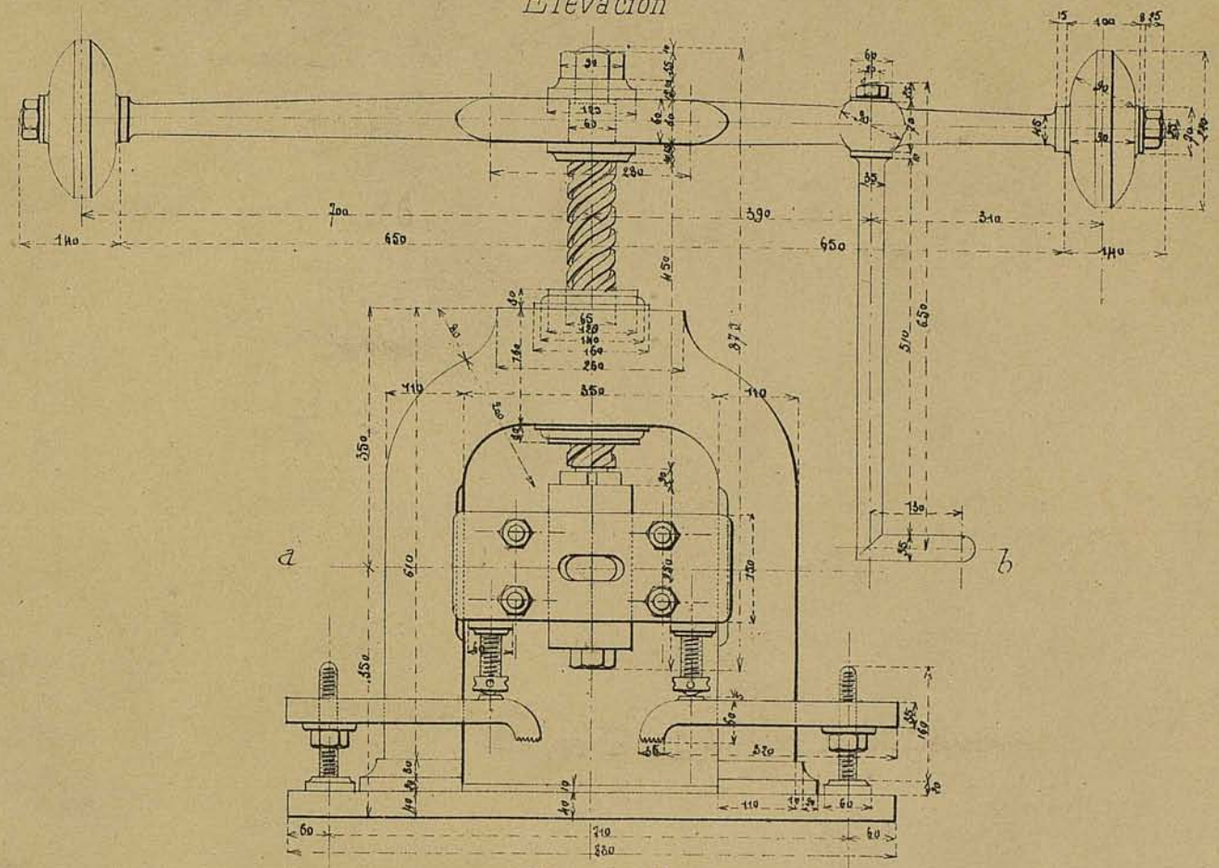
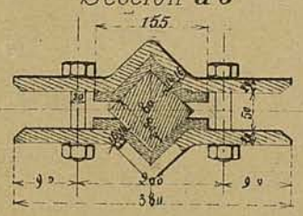
Balancín para recortar metales

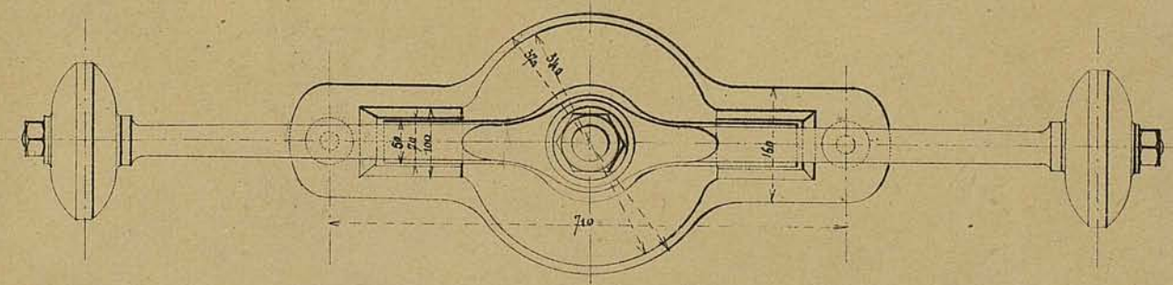
Elevación



Sección **a b**

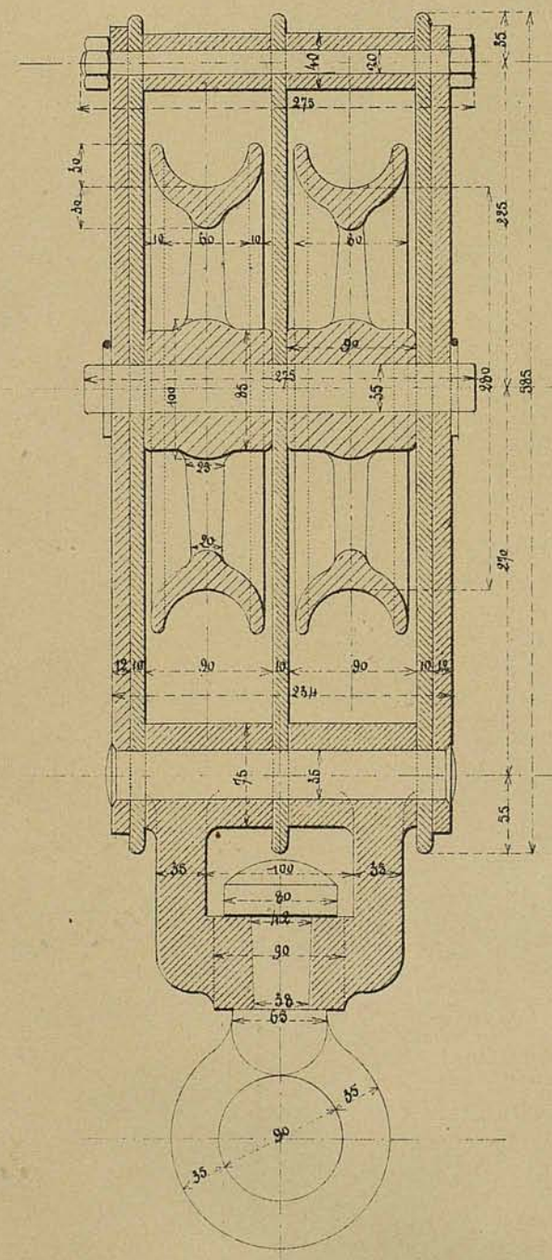


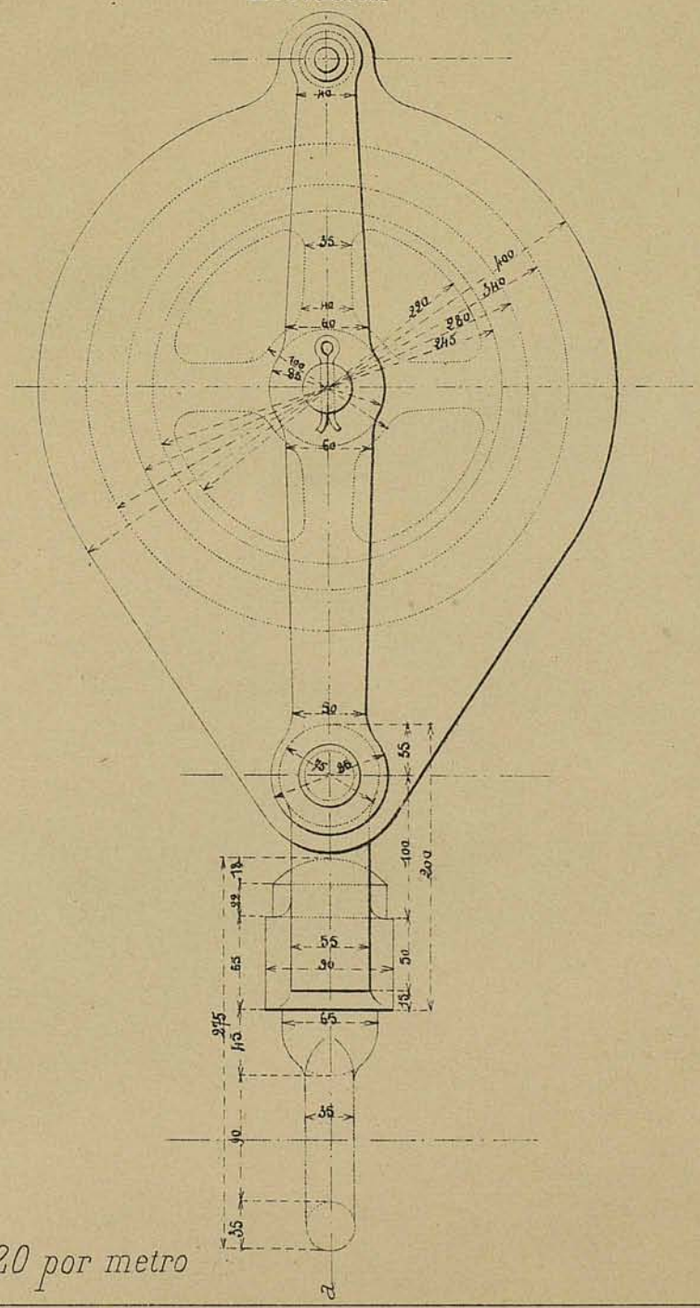
Planta



Escala 0m.10 por metro

Aparejo de dos poleas





Escala 0^m20 por metro

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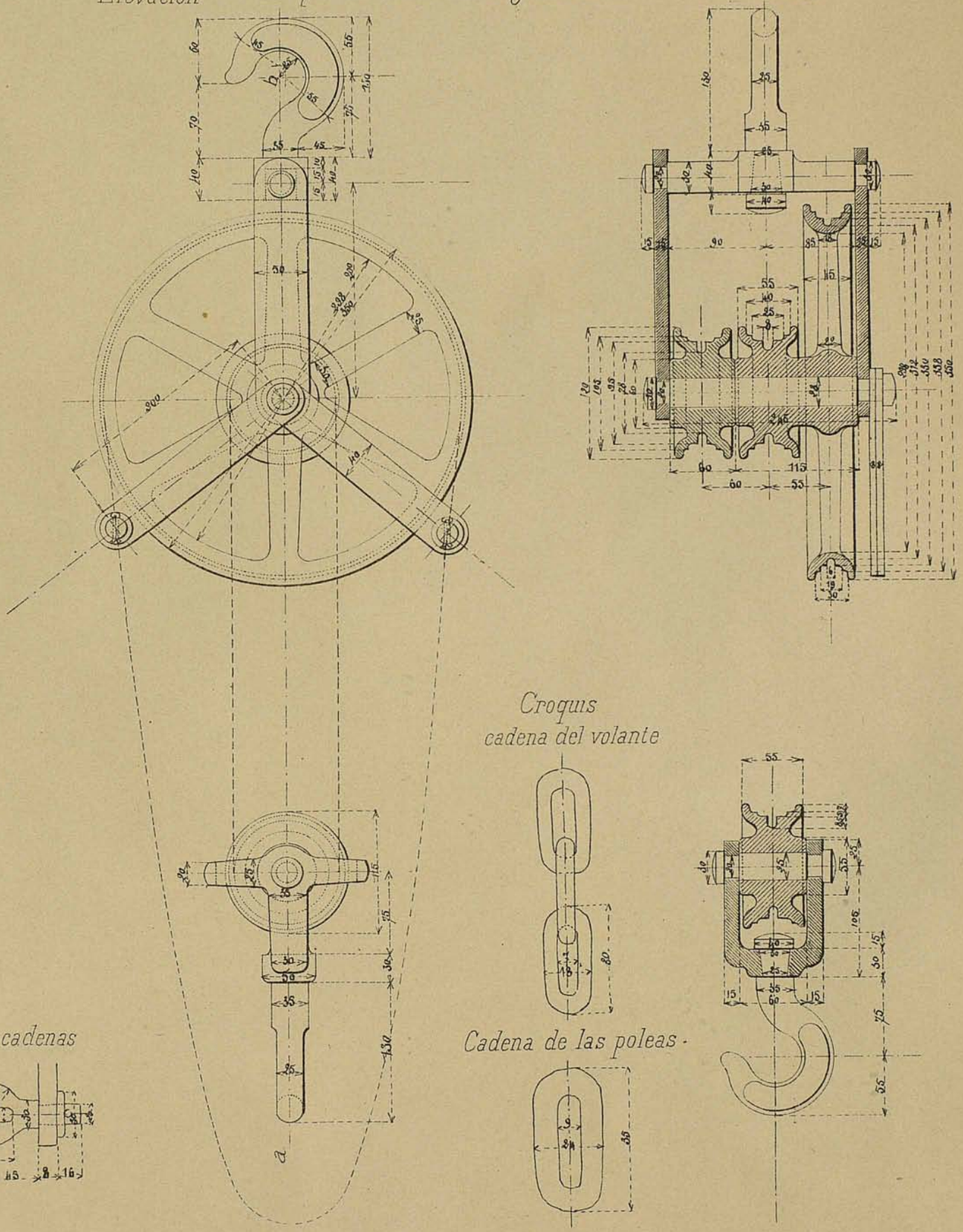
Aparejo de cadenas

Elevación *con poleas diferenciales y volante* *Sección* ***a b***



Escala 0m20 por metro

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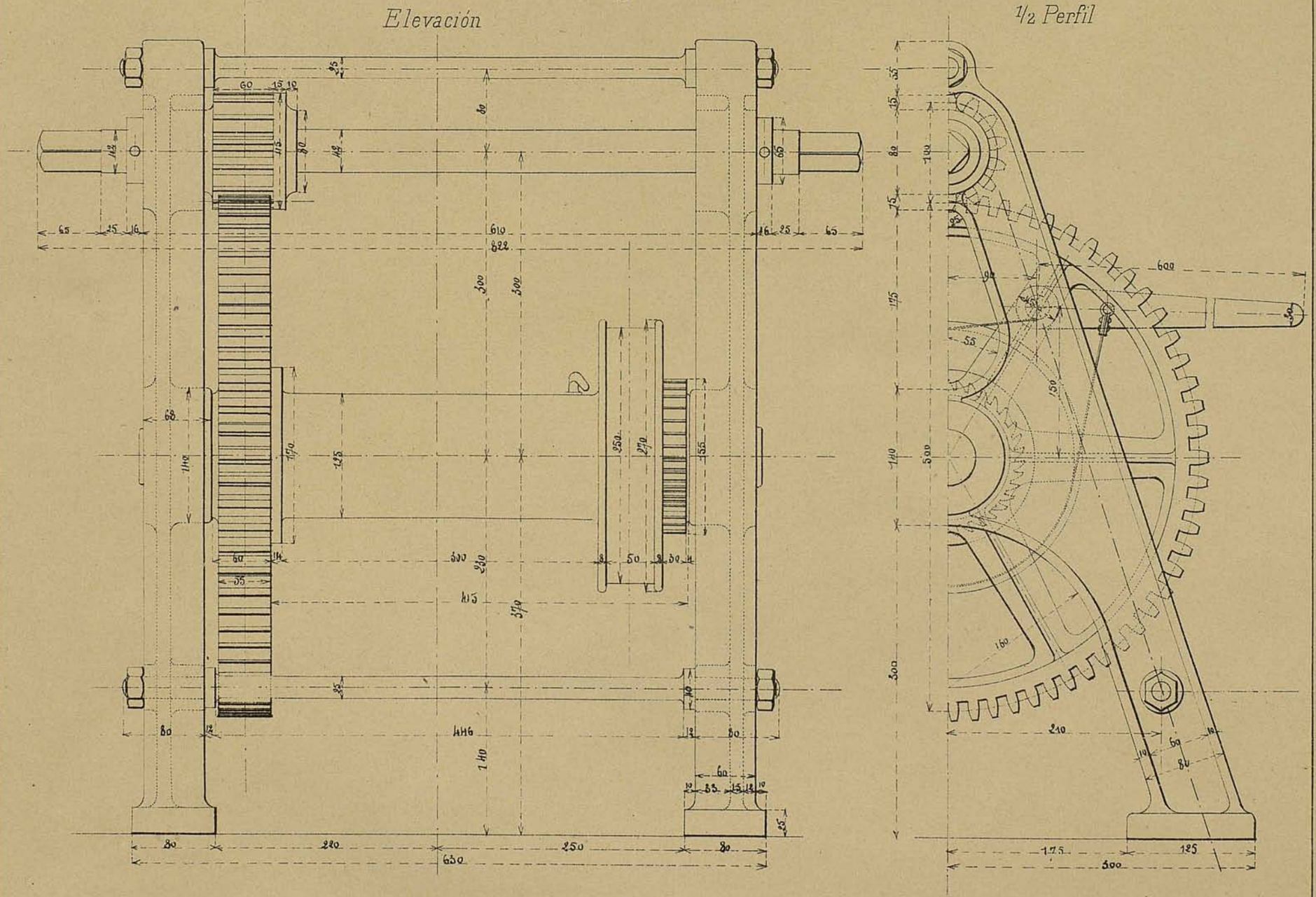
Torno de engranaje sencillo



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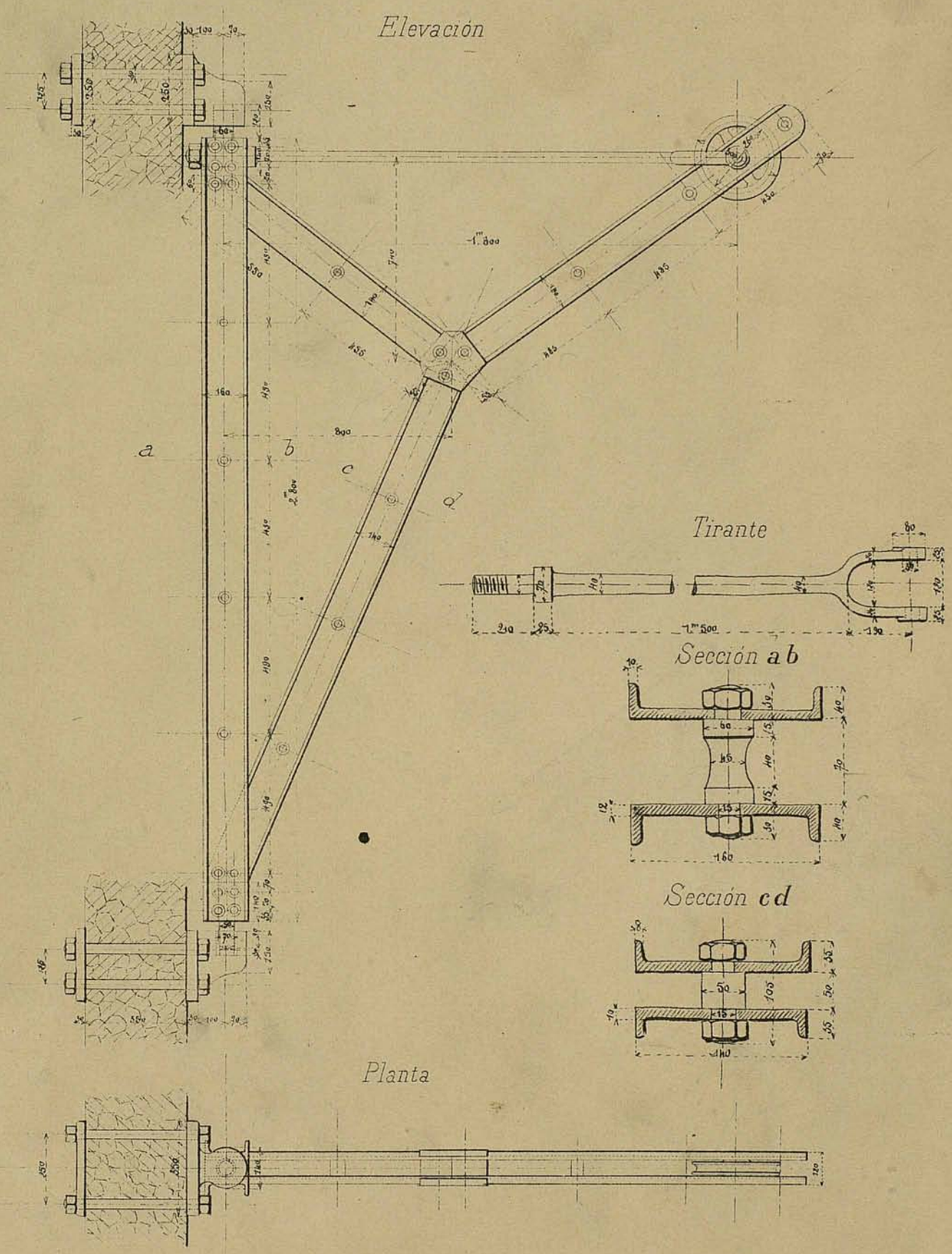
Grúa mural



Escala 0^m05 por metro

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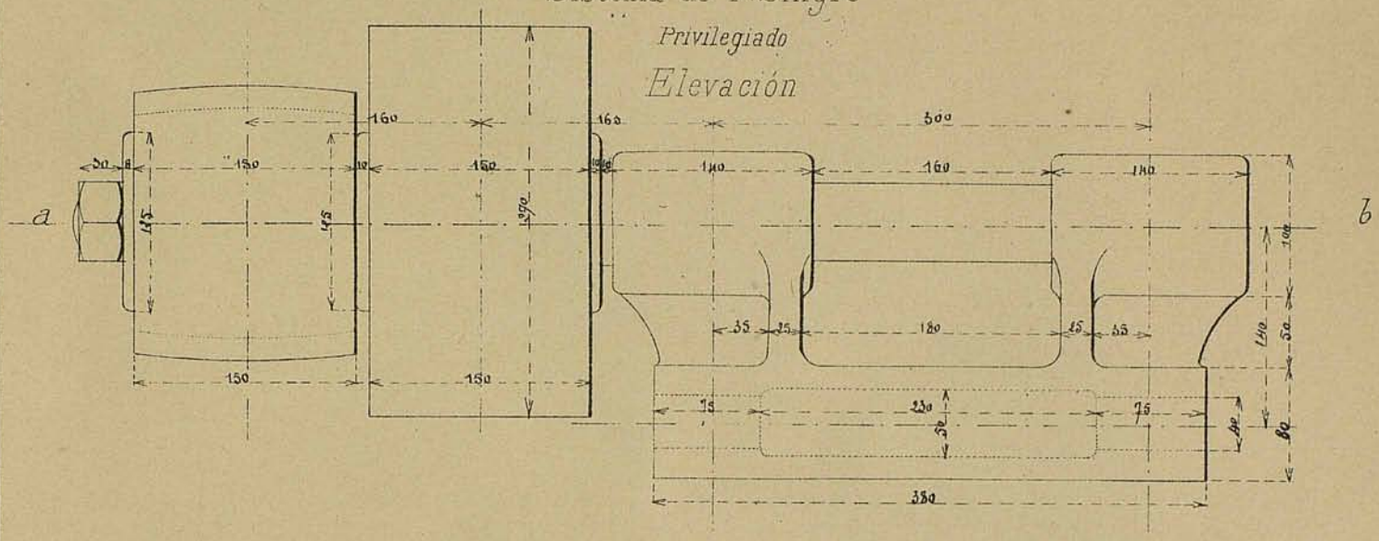
Embrague por fricción

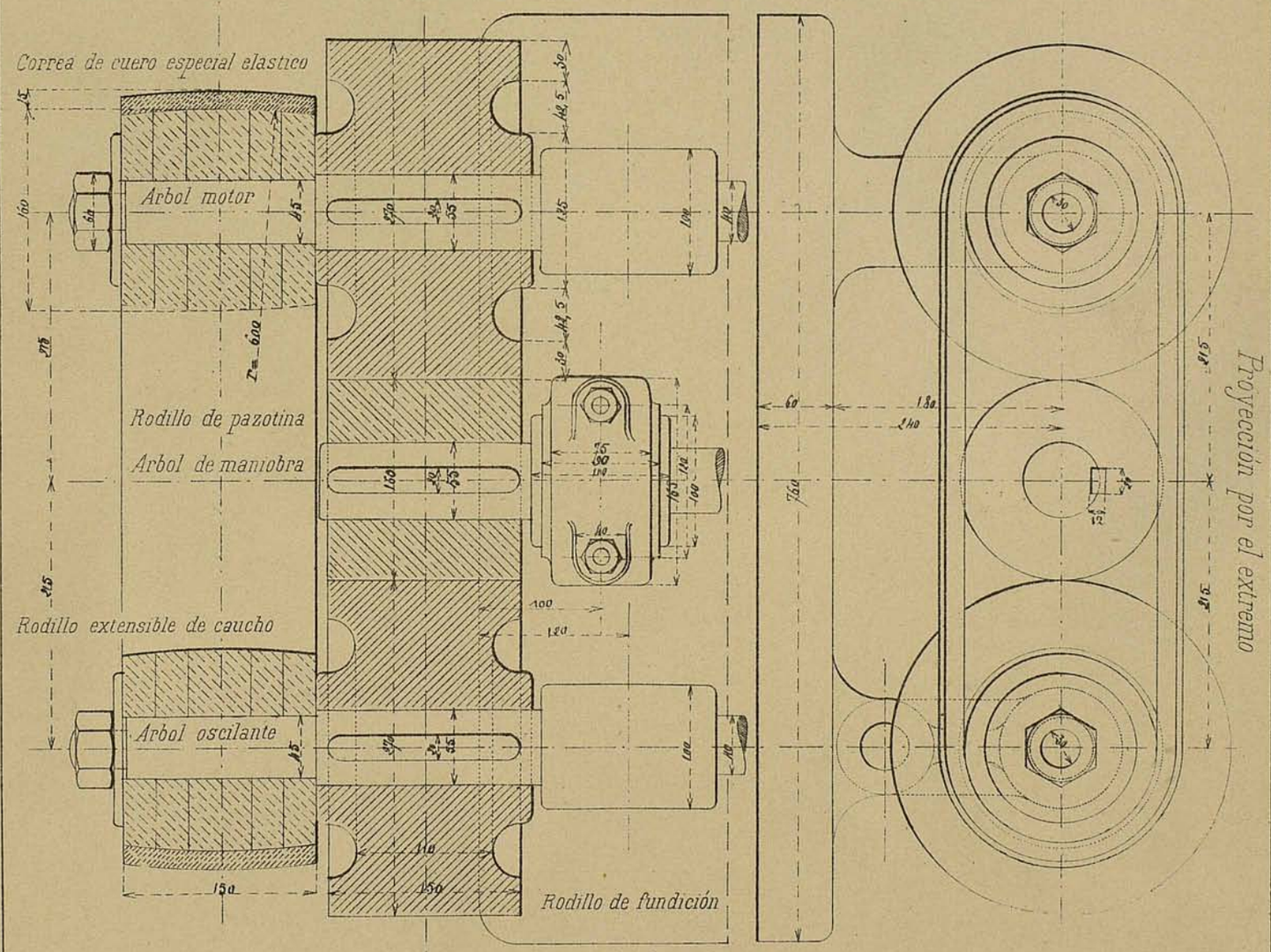
Sistema de F. Singre

Privilegiado

Elevación



Sección a b



Escala 0m20 por metro

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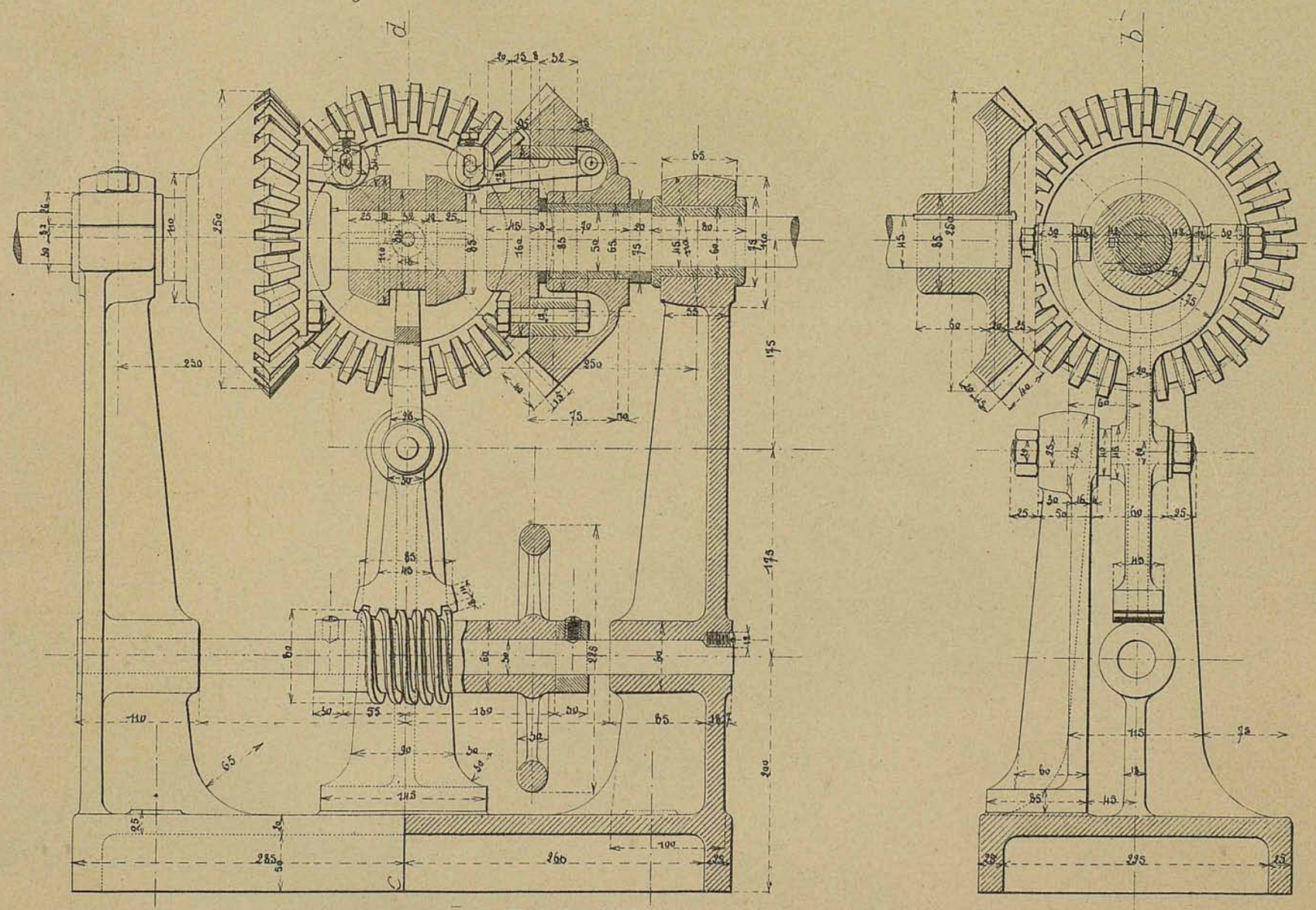
Cambio de marcha

por engranajes y embragues de fricción

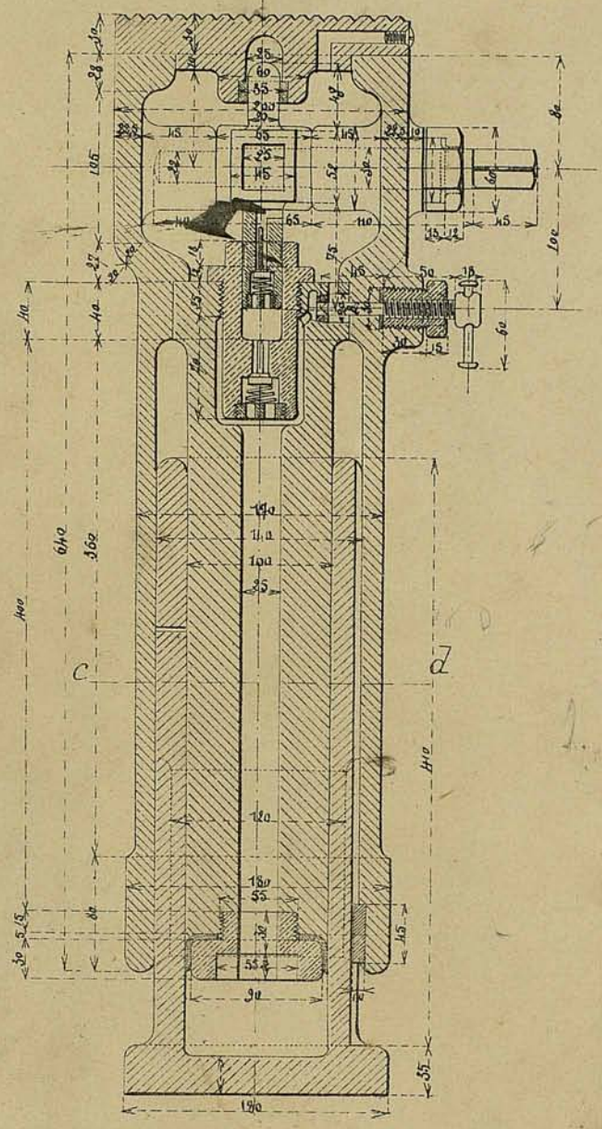
1/2 Elevación y 1/2 Sección **ab**

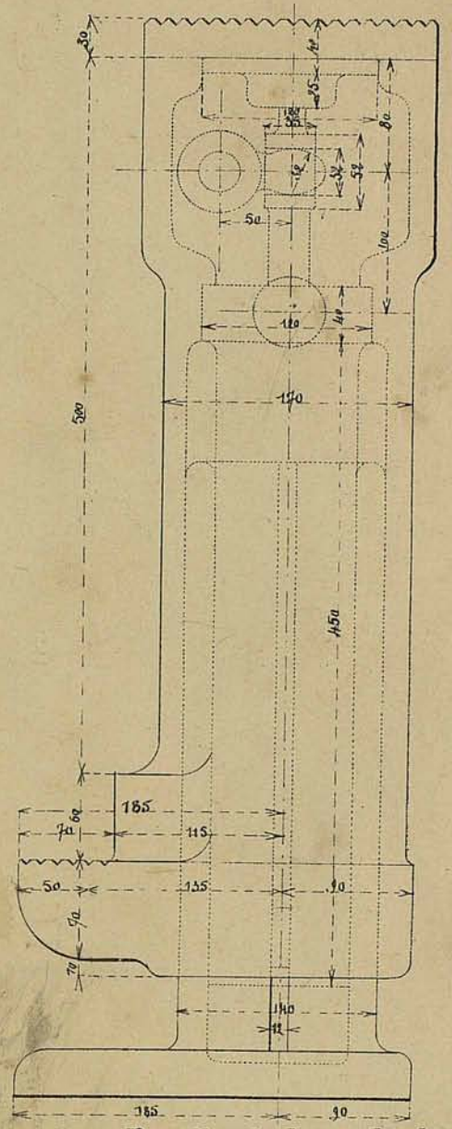
Sección **cd**

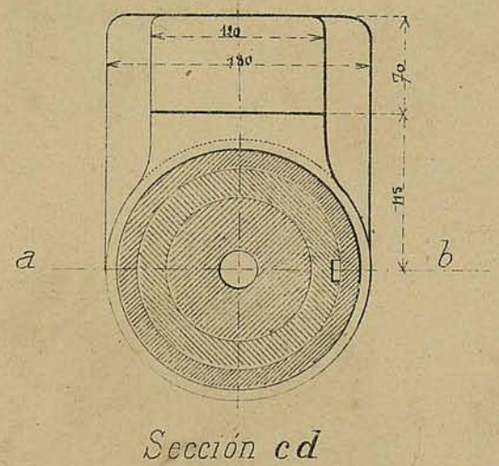


Escala 0m20 por metro

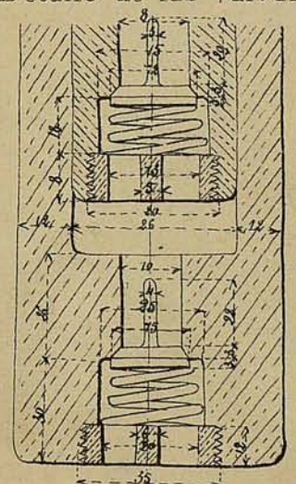
Gato hidráulico







Detalle de las válvulas



Croquis

Escala 0m.20 por metro

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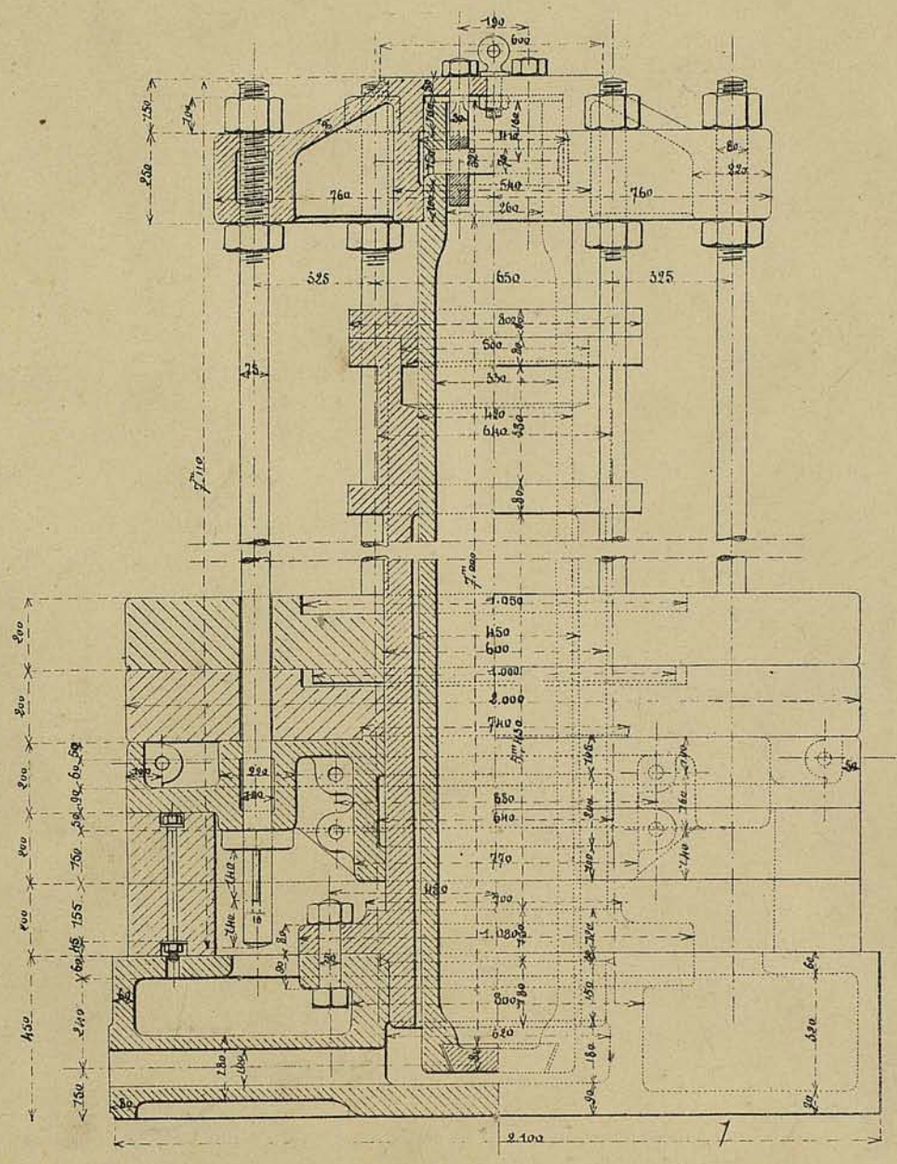
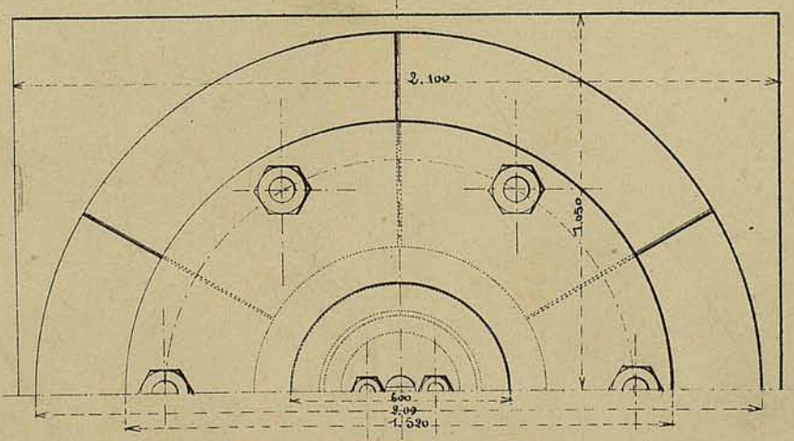
Acumulador hidráulico

1/2 Elevación y 1/2 Sección por a b



18 Roldanas



Escala 0m05 por metro

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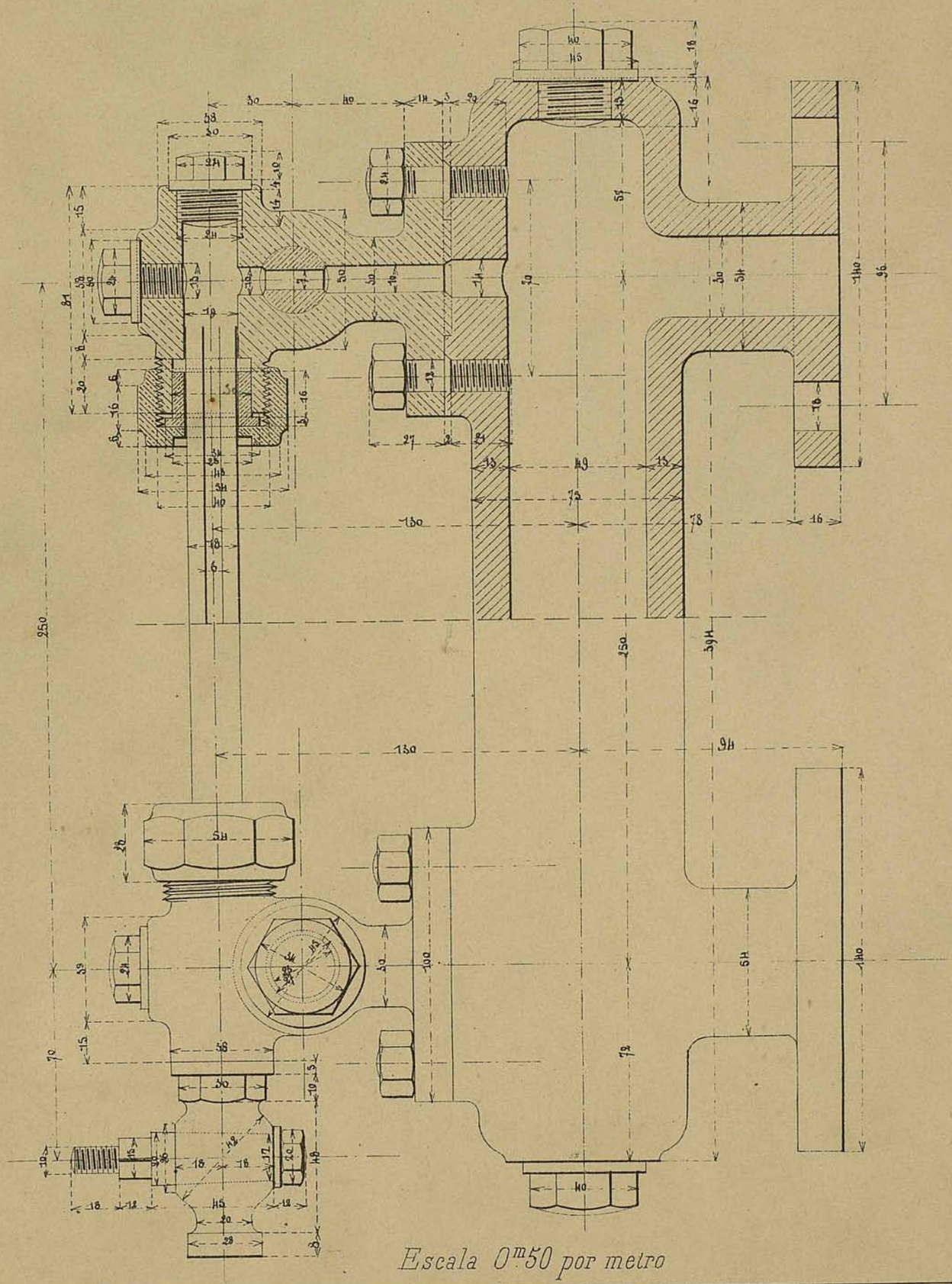
Nivel de agua de botella

para fuertes presiones



Escala 0m50 por metro

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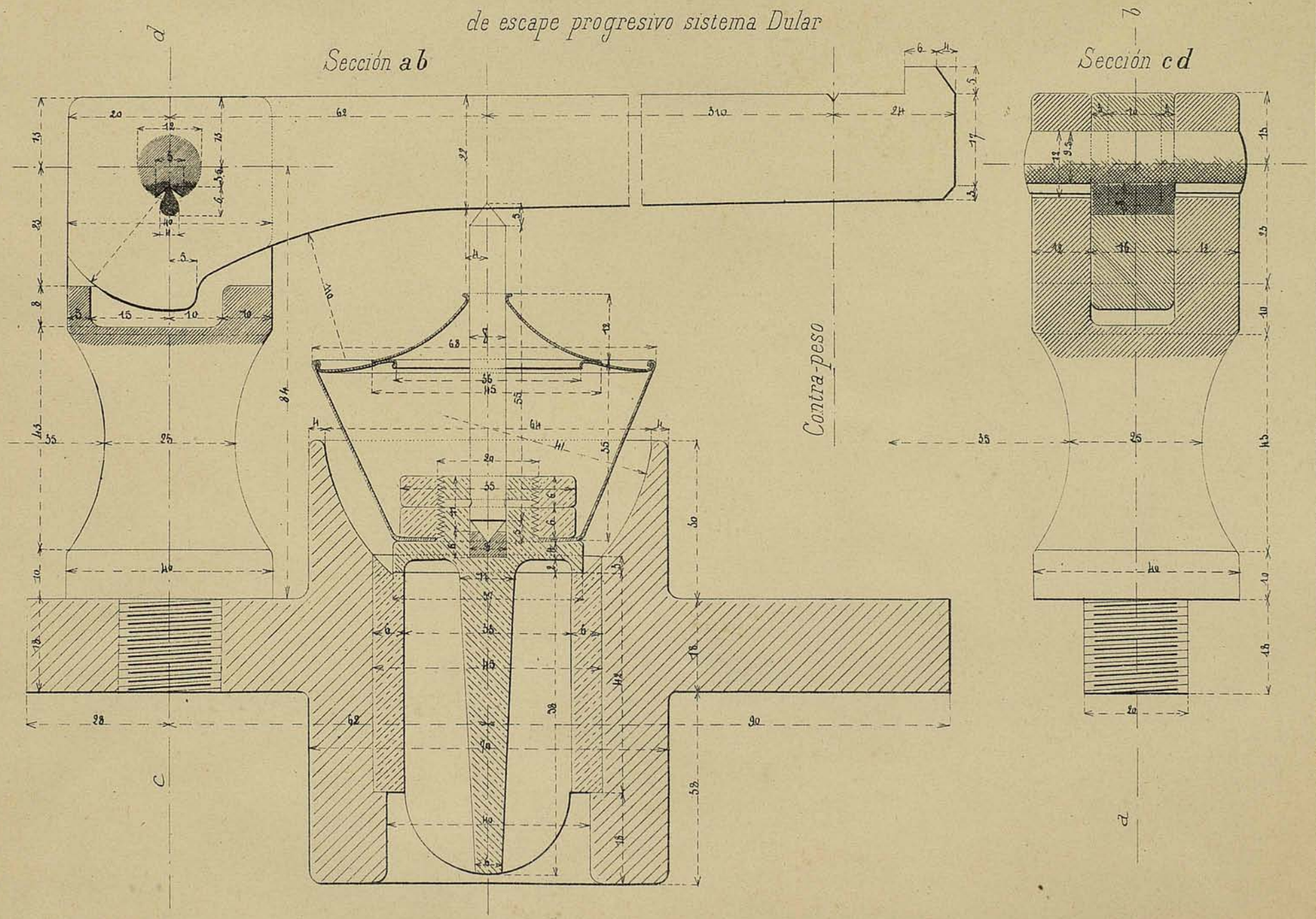
Monrocq. fr. Edit. Imp. 3, rue Suger. Paris

Válvula

de escape progresivo sistema Dular



Escala Tamaño natural

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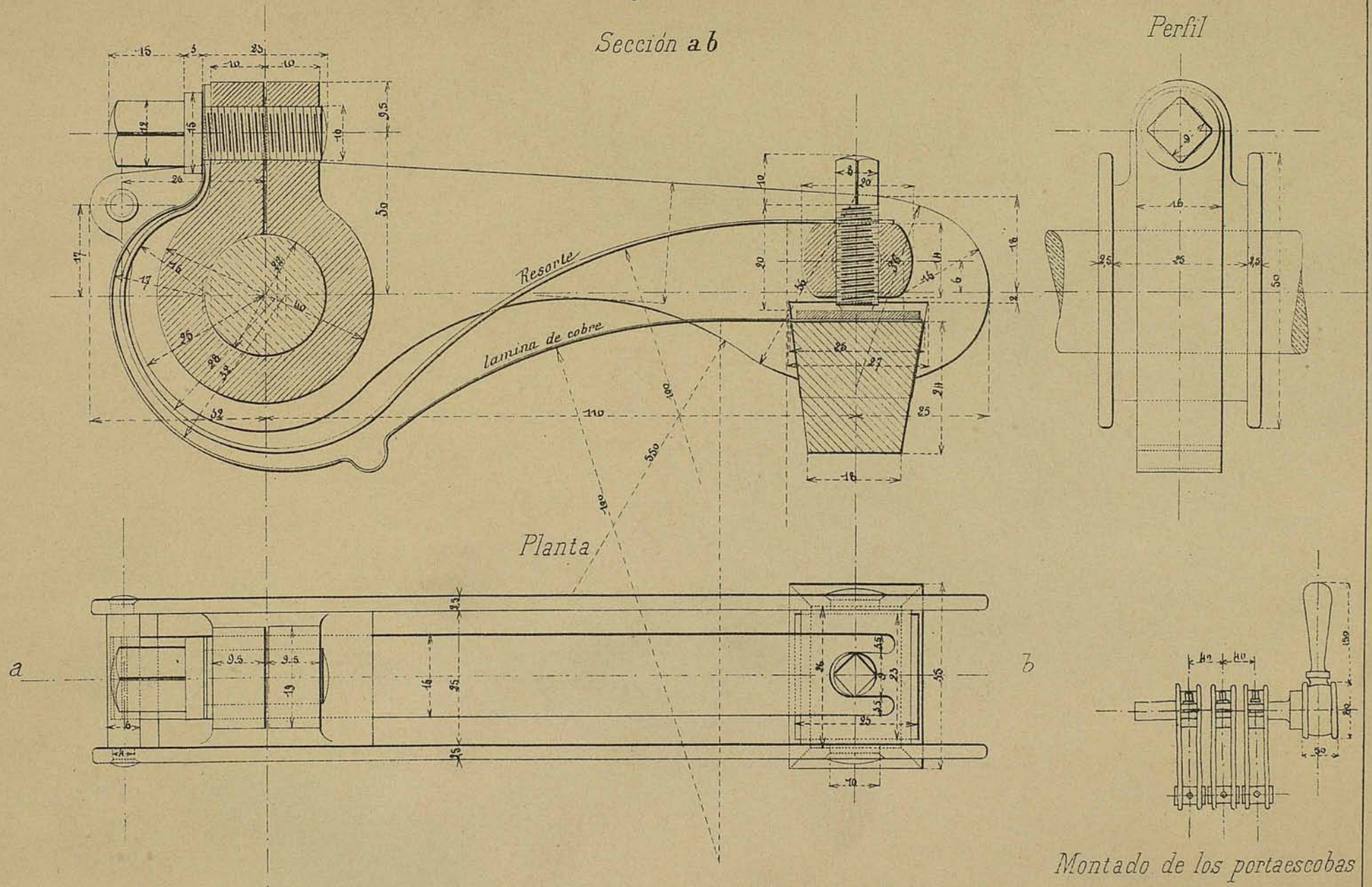
Portaescoba para dinamo

con escoba gráfica cobreada