

ATIONALE MAATSCHAPPIJ  
DER  
BELGISCHE SPOORWEGEN

---

Elektrische locomotief  
**Co Co reeks 20**



Voorlopige Brochure

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Directie van het Materieel

BUREAU 24-11

figuren

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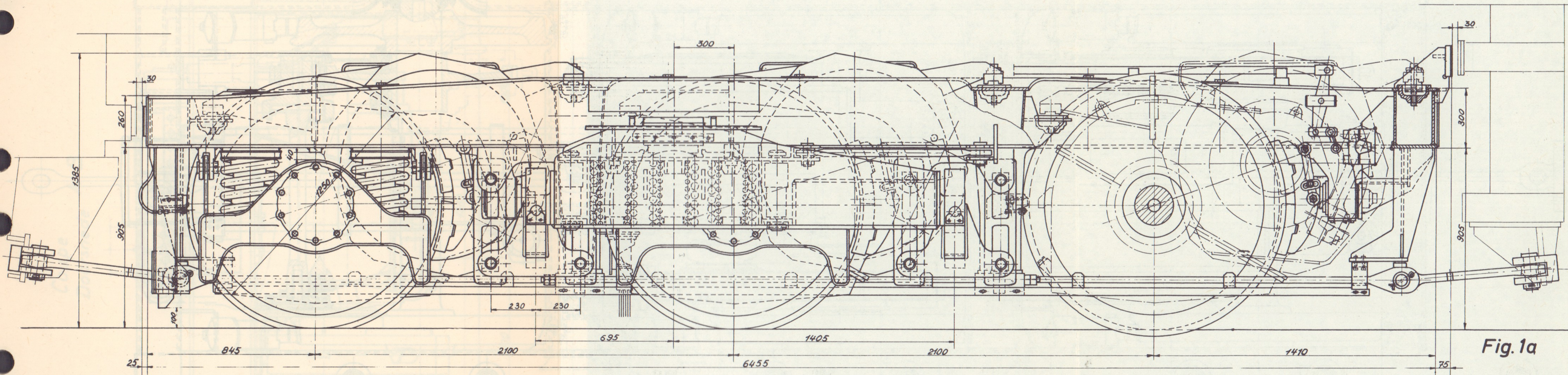


Fig. 1a

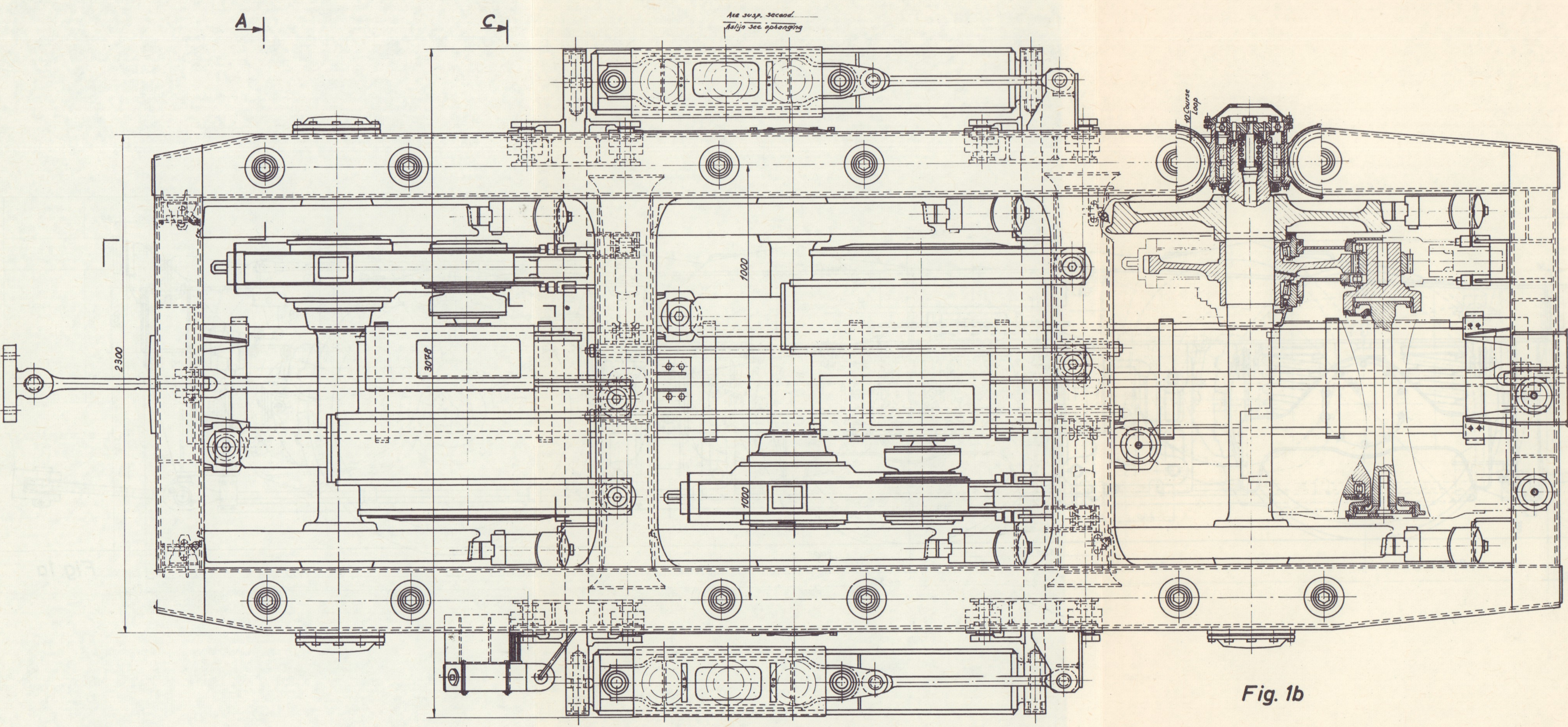


Fig. 1b

Coupe  
Doorsnede A-B

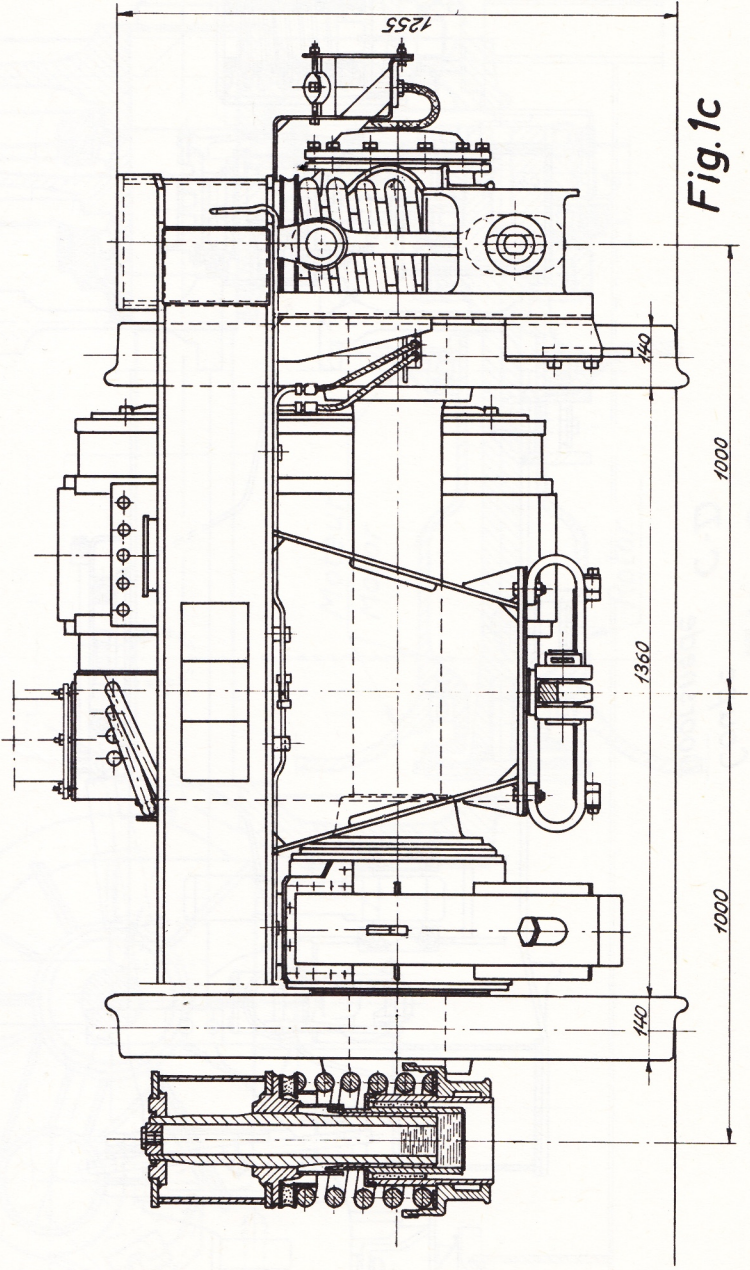
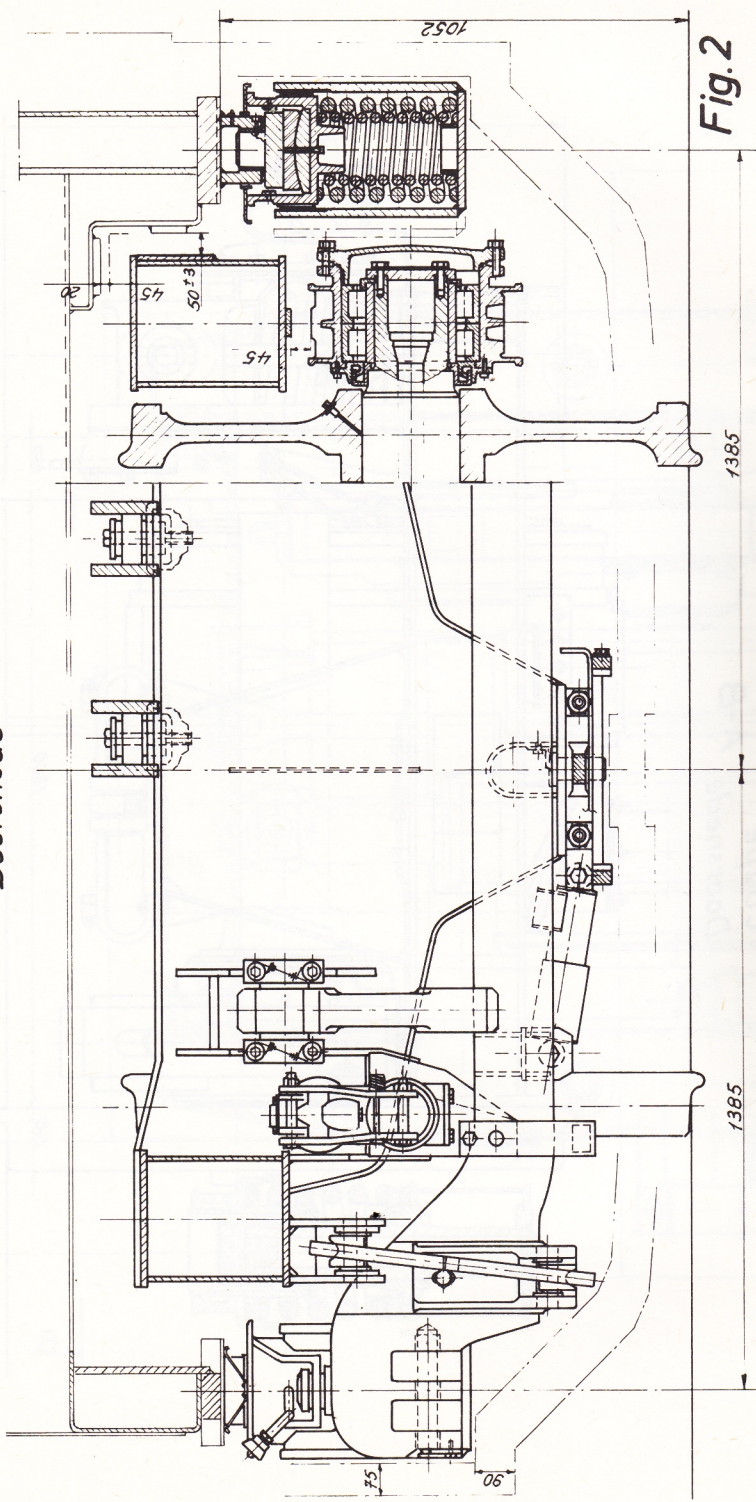


Fig. 1c

Coupe  
Doorsnede C-D



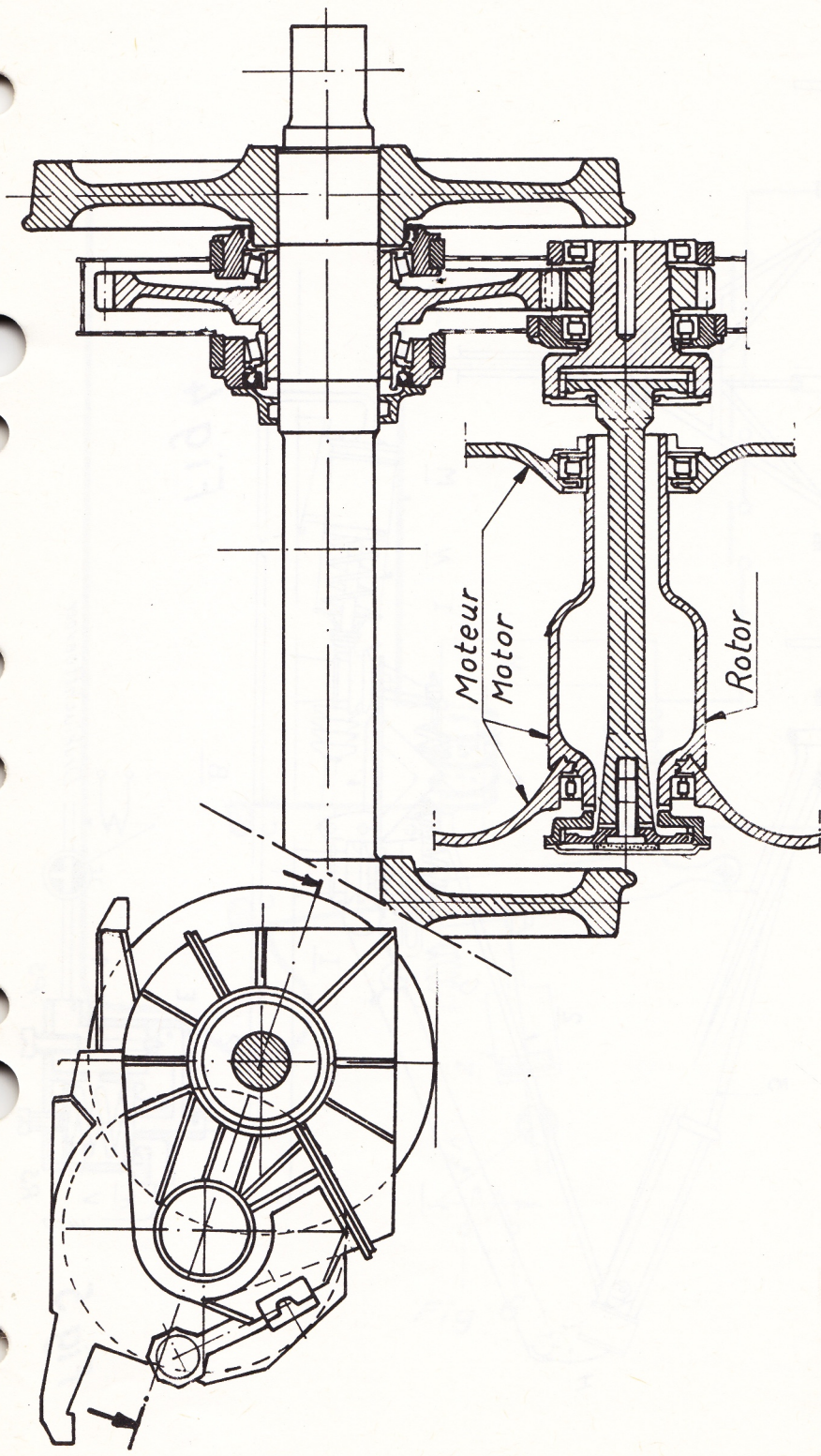


Fig 3

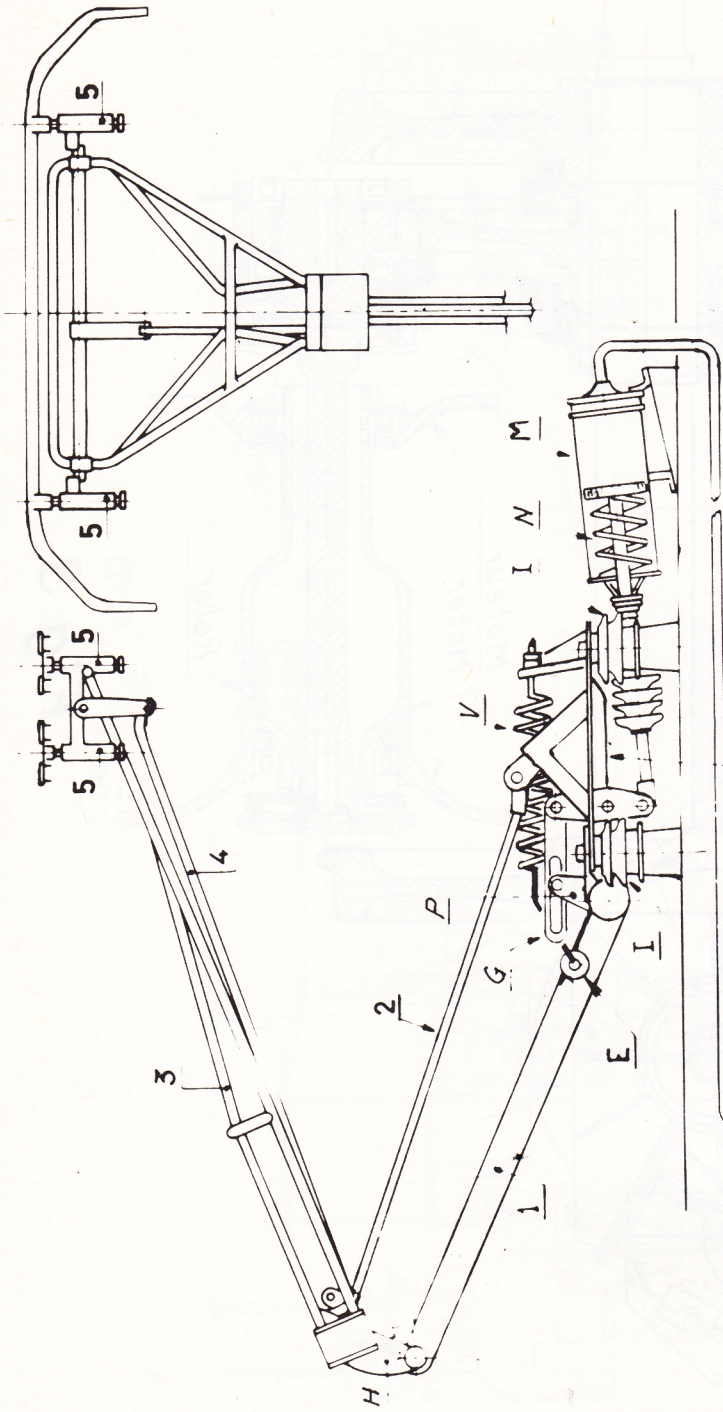


Fig 4

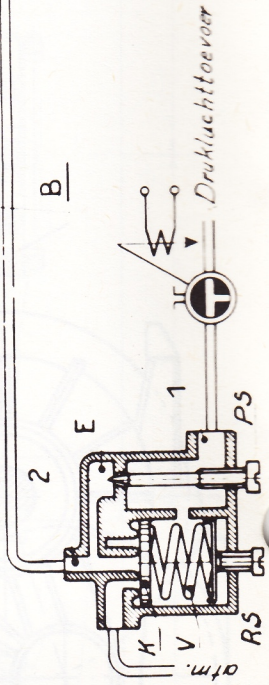
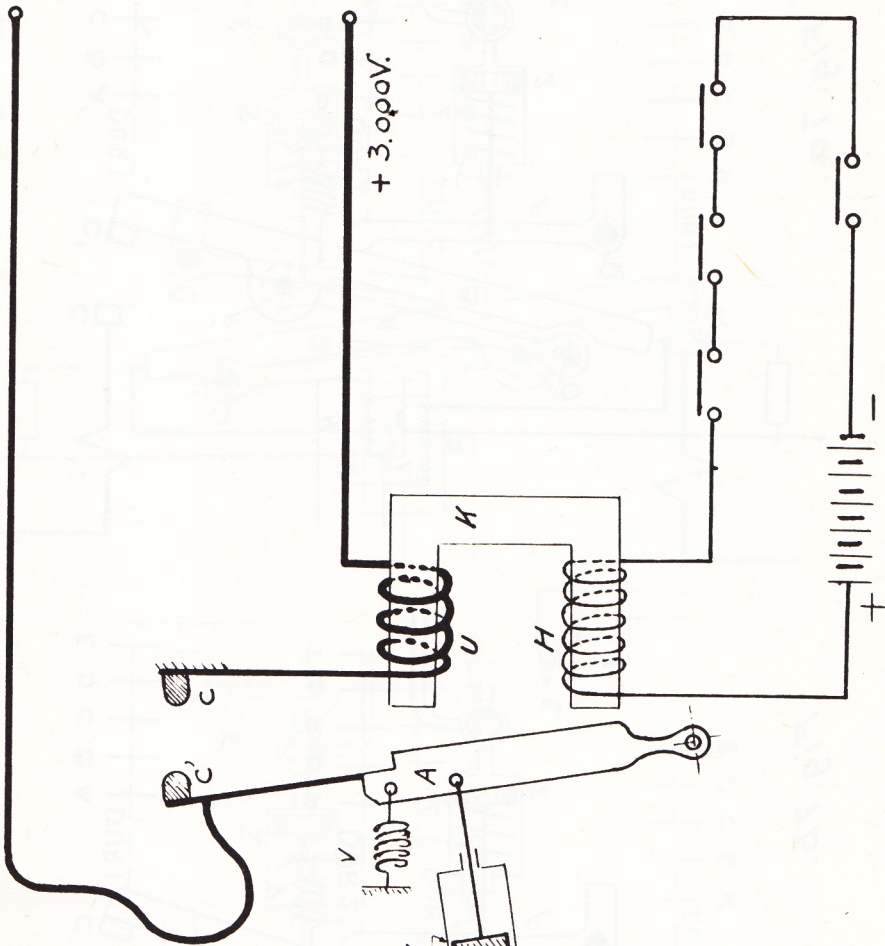


Fig. 5



+ 3.0pV.

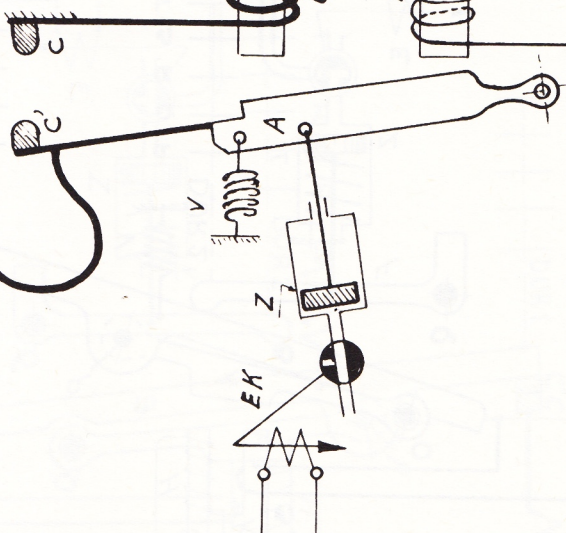


Fig 6



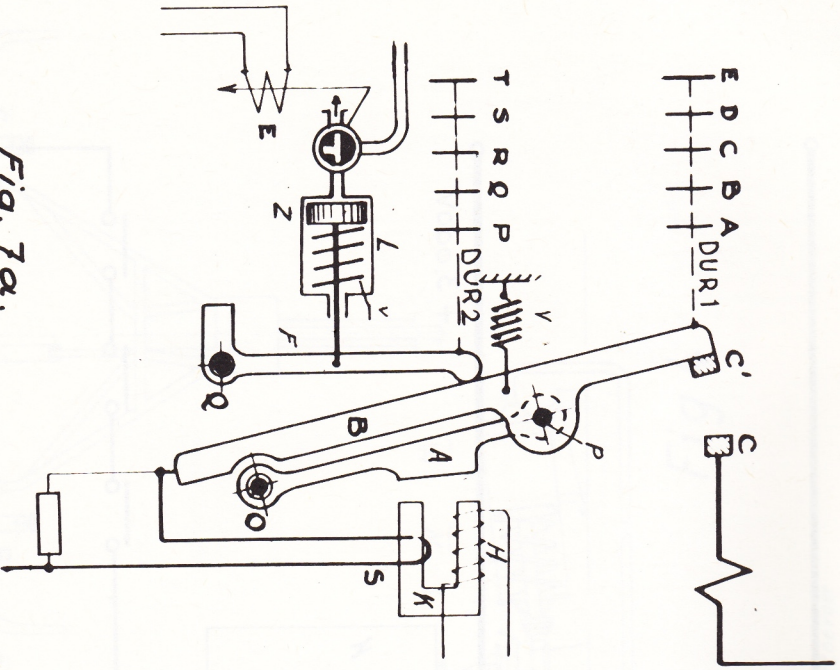


Fig. 7a.

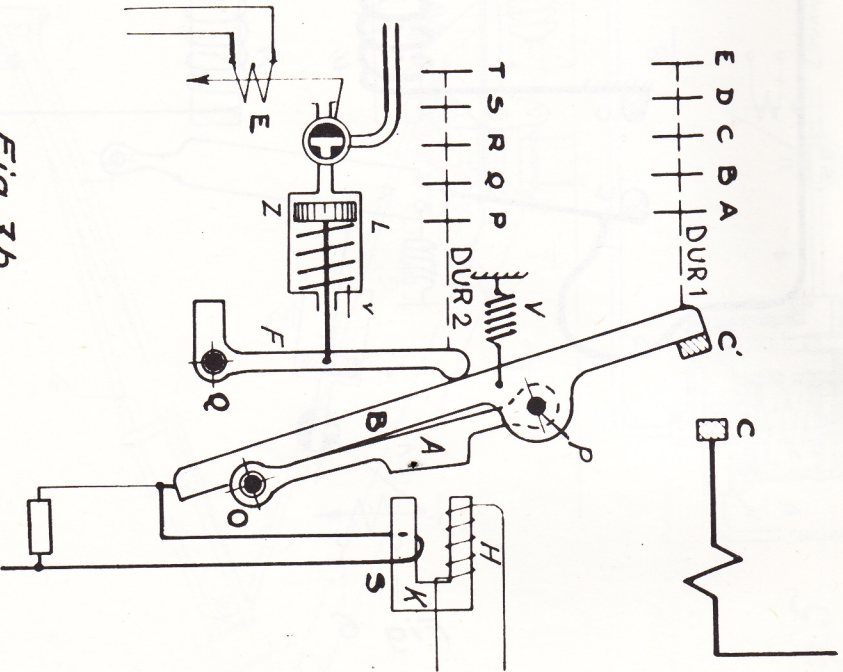


Fig. 7b.

Fig. 7c.

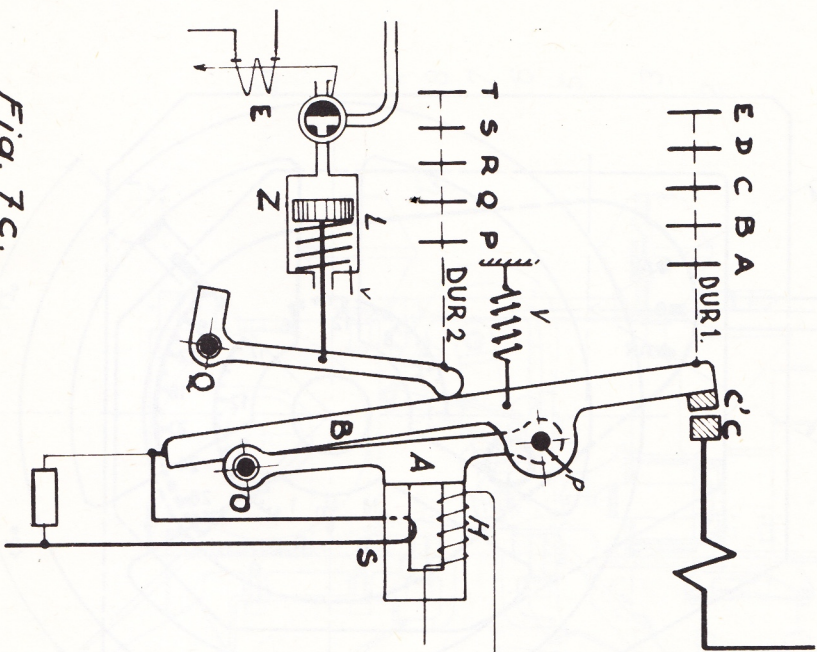
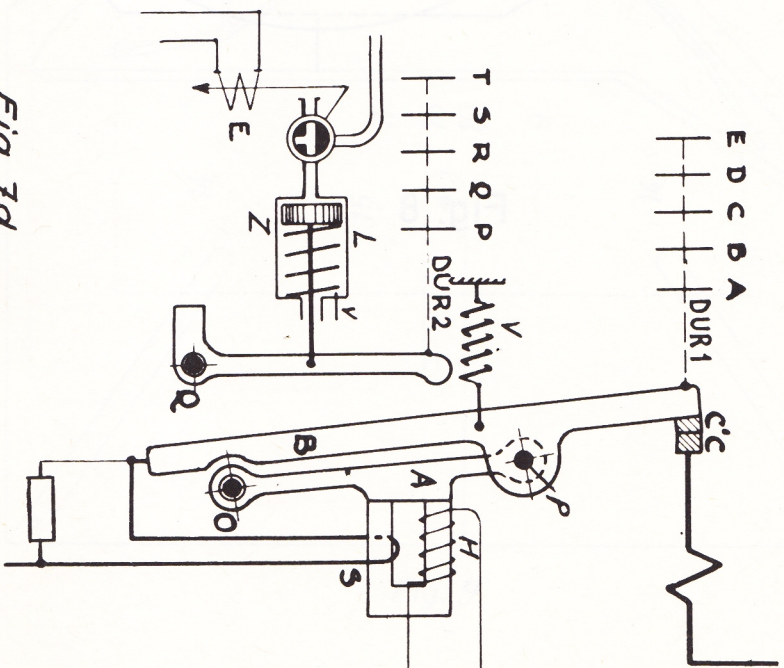


Fig. 7d.



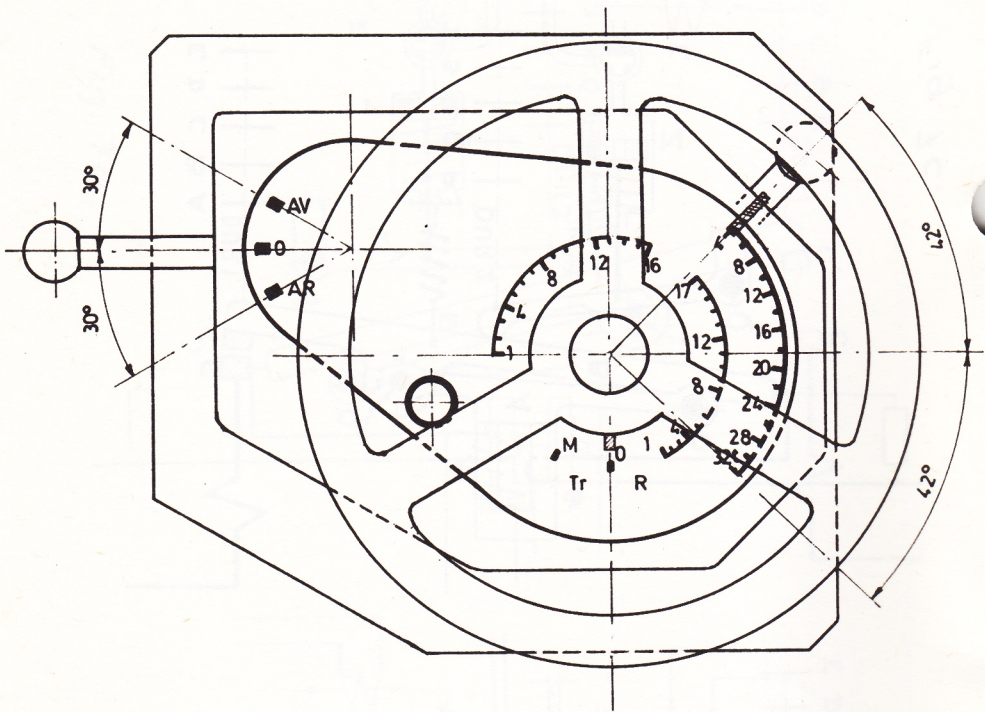


Fig. 8

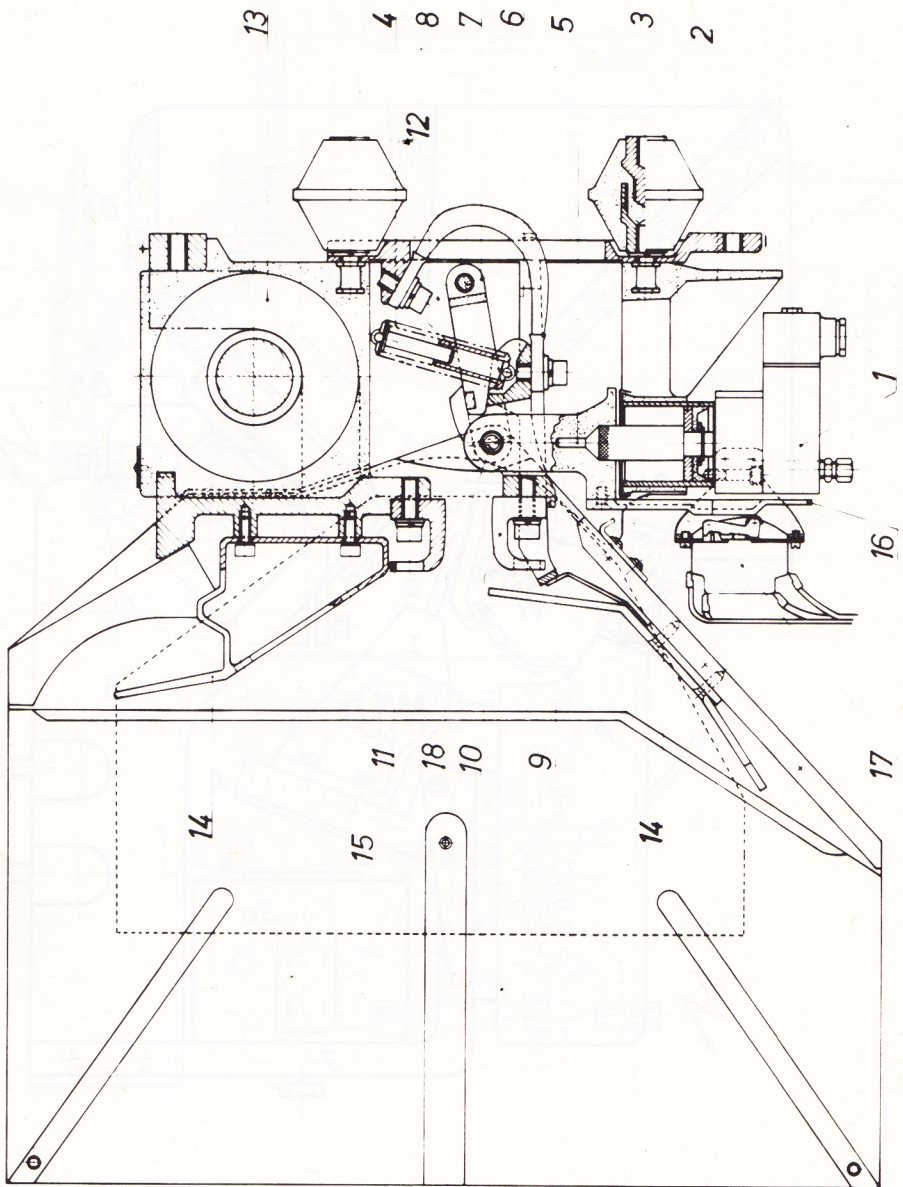


Fig. 9

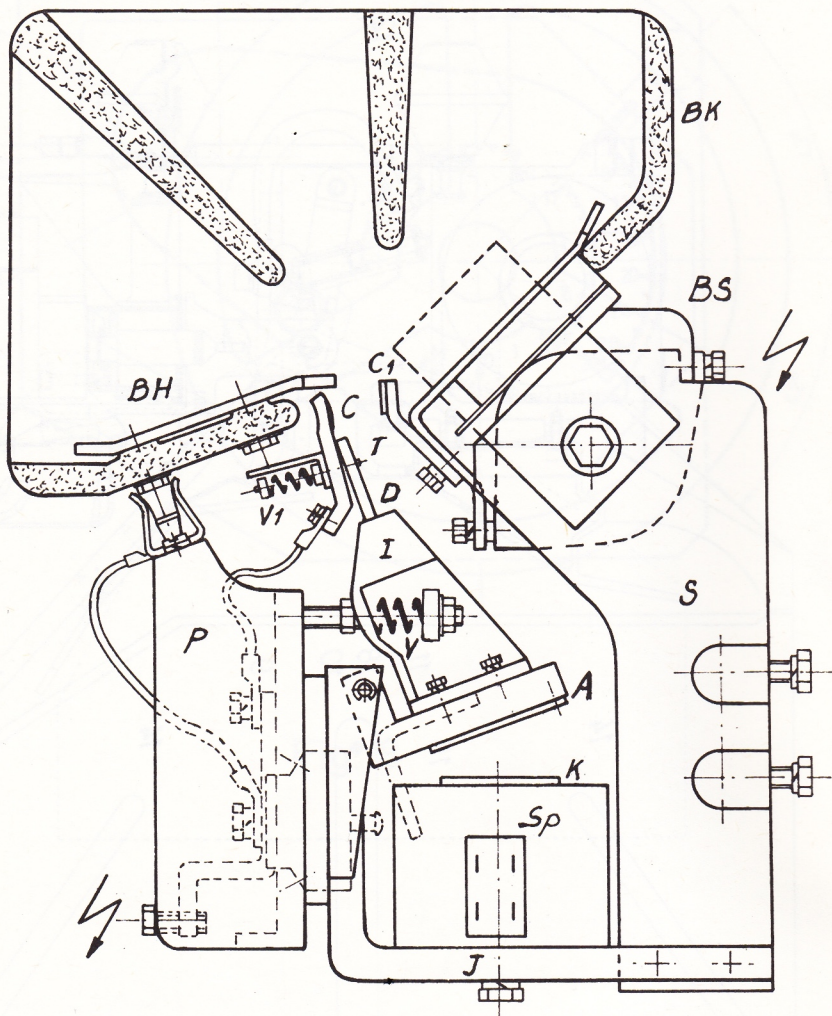
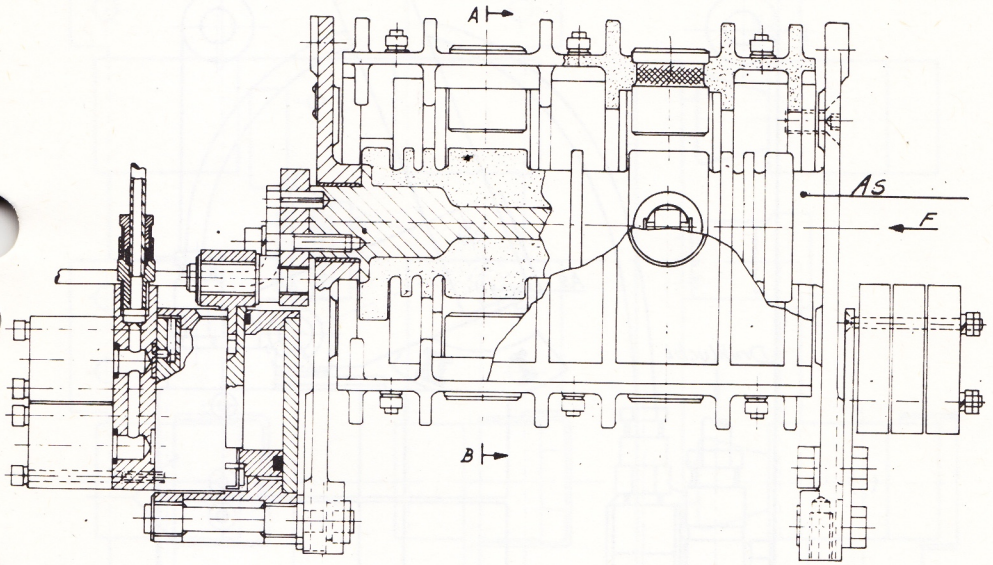
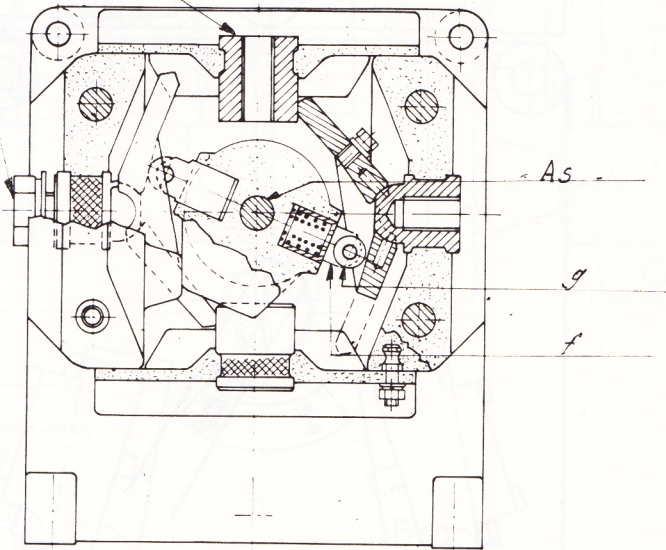


Fig. 10



*Aansluitingen.*



*Fig. 11*

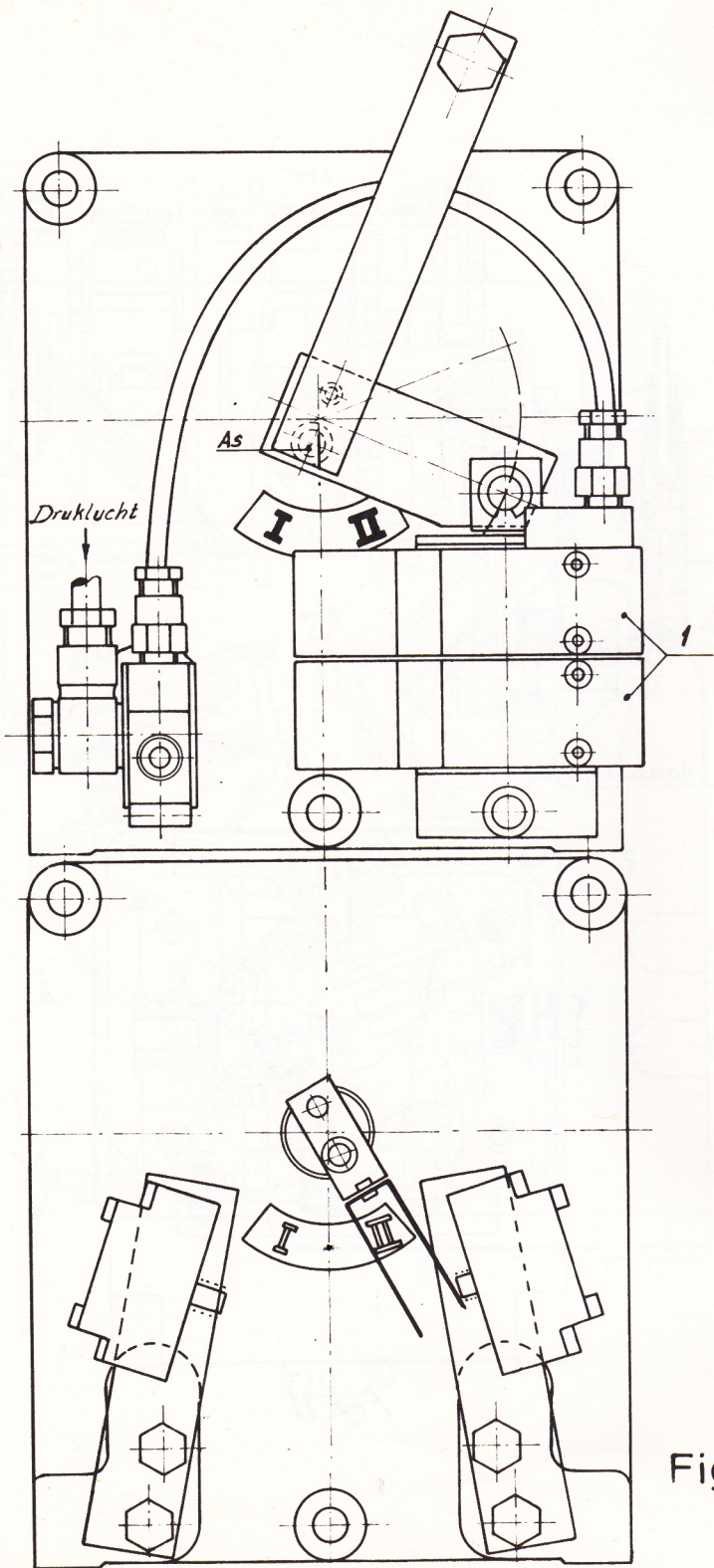


Fig.11a

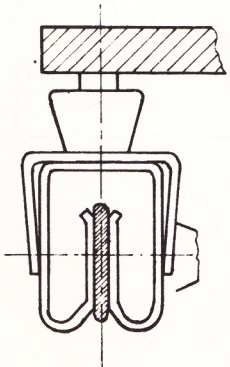
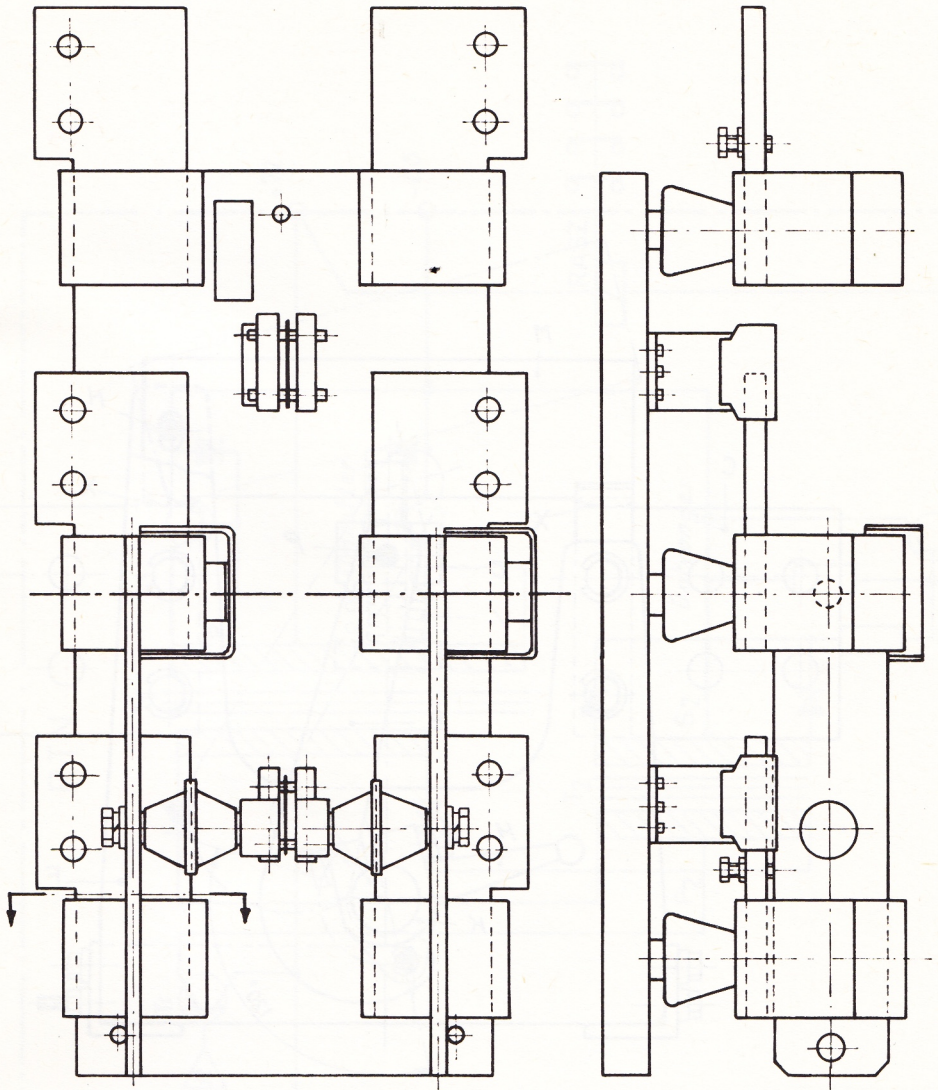


Fig.12



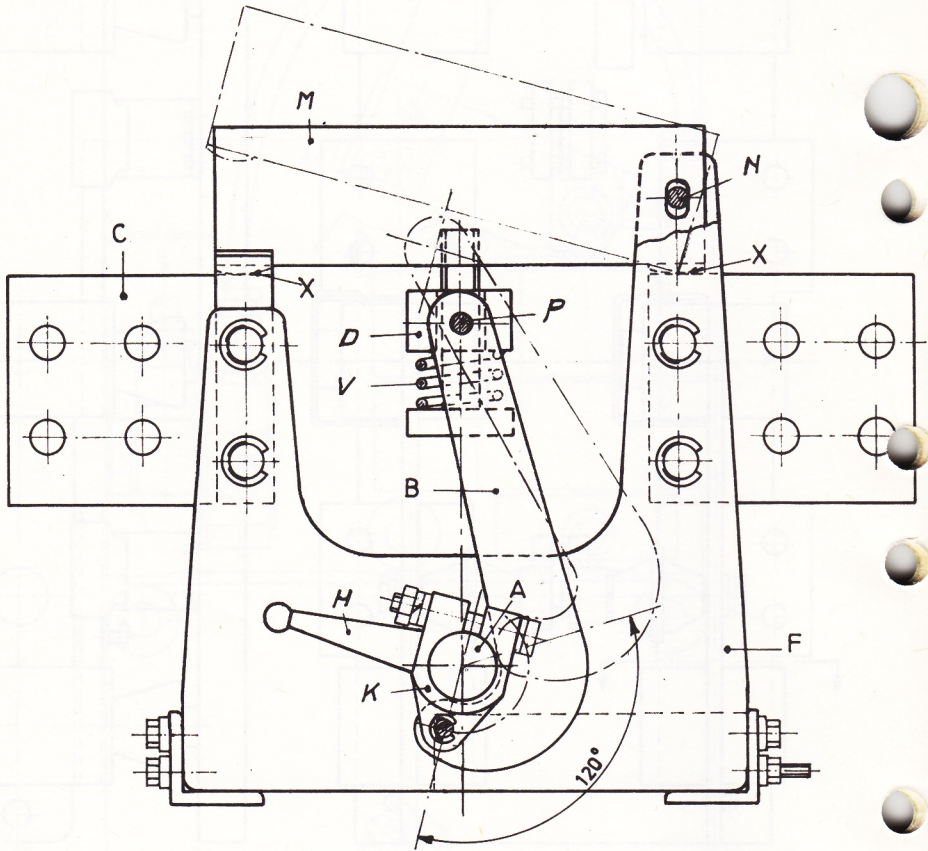


Fig. 13

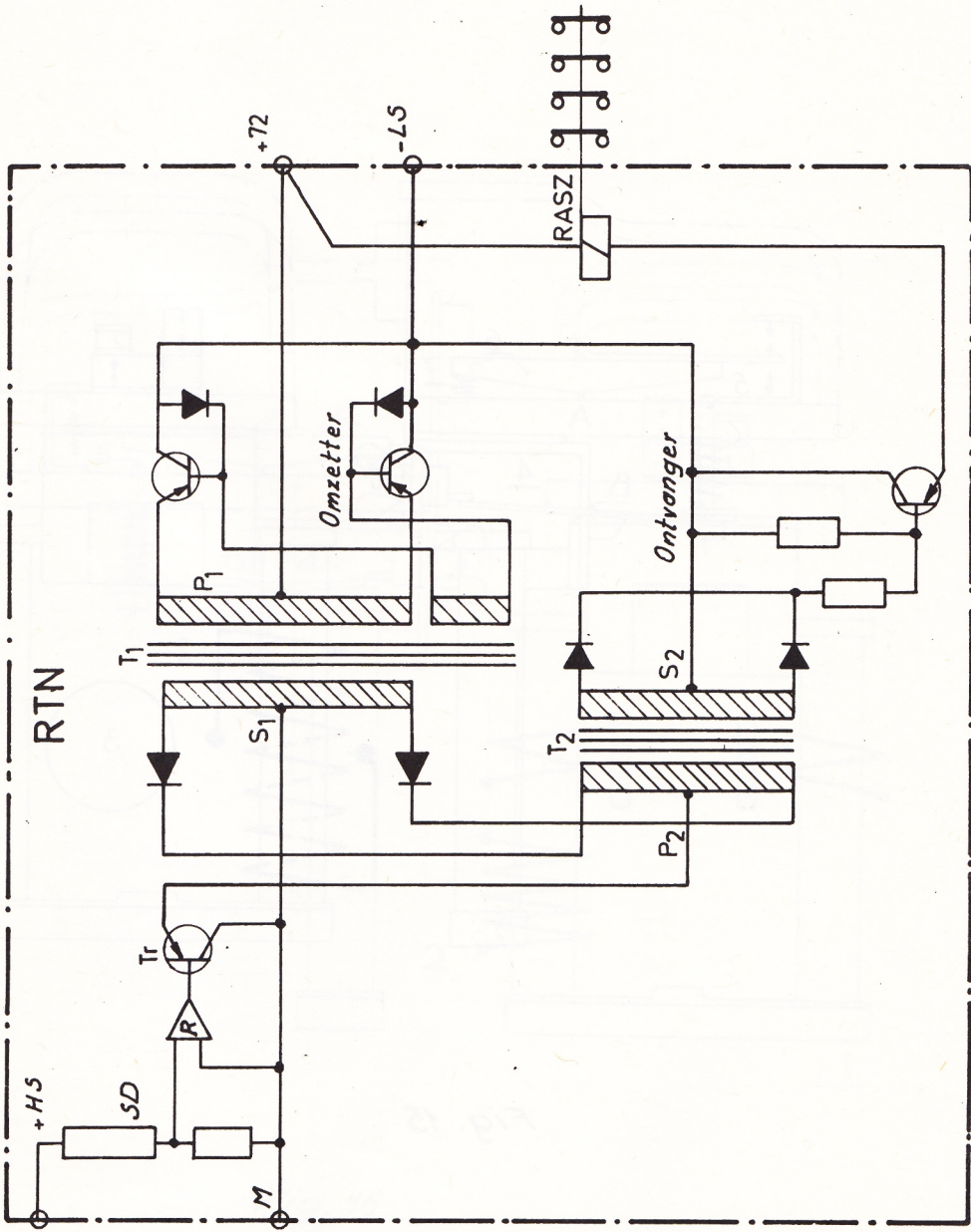


Fig. 14

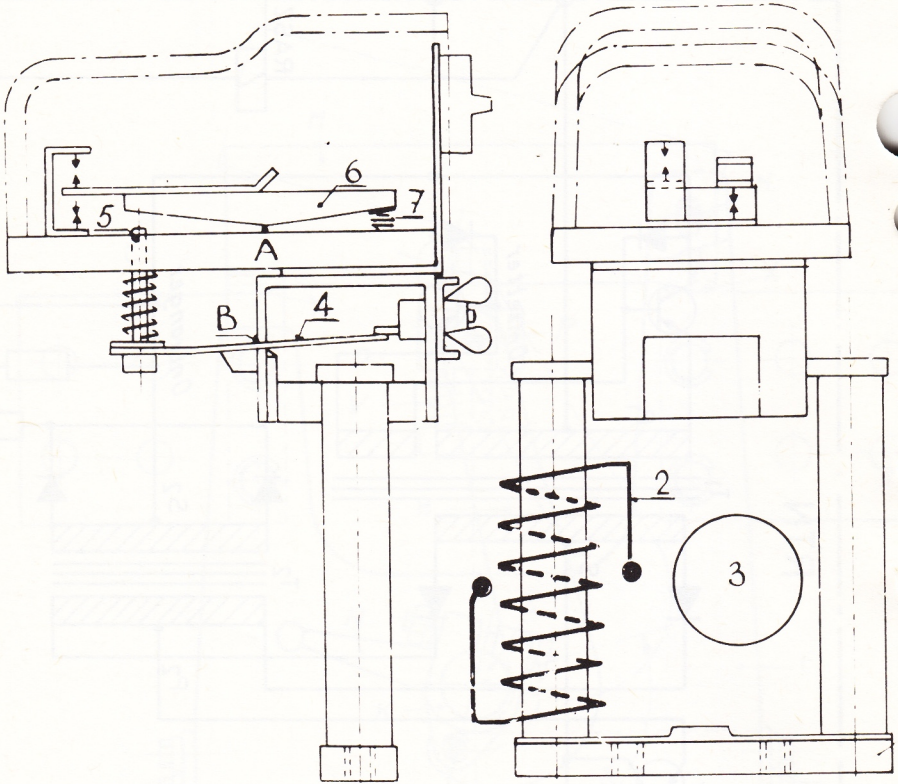


Fig. 15

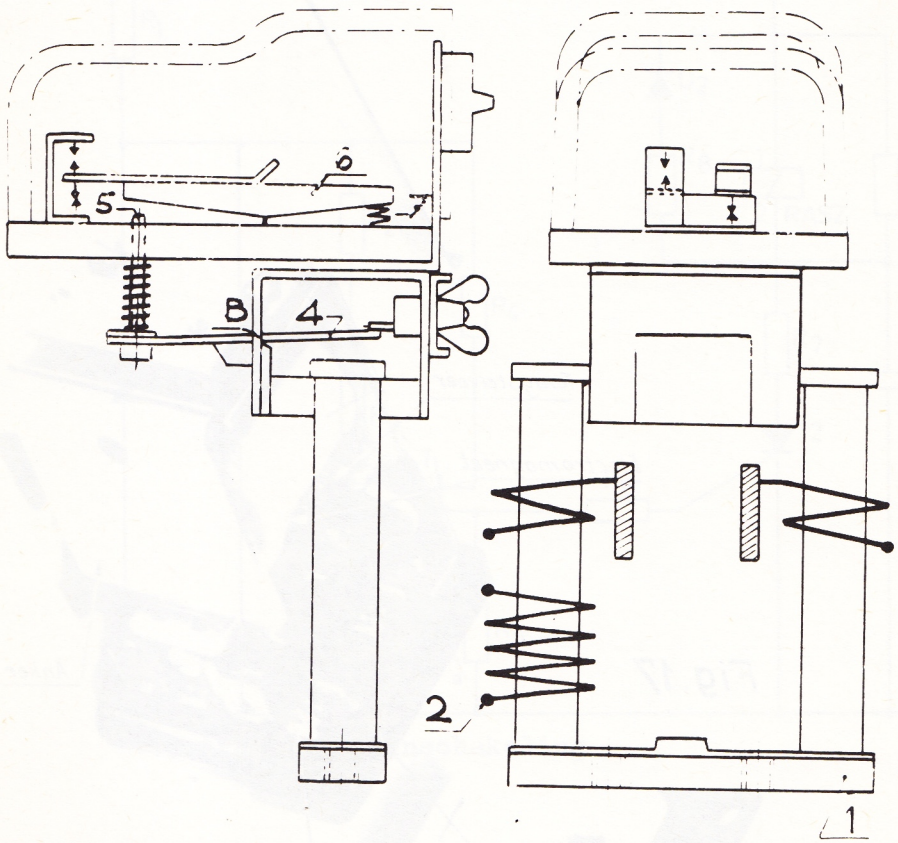


Fig. 16

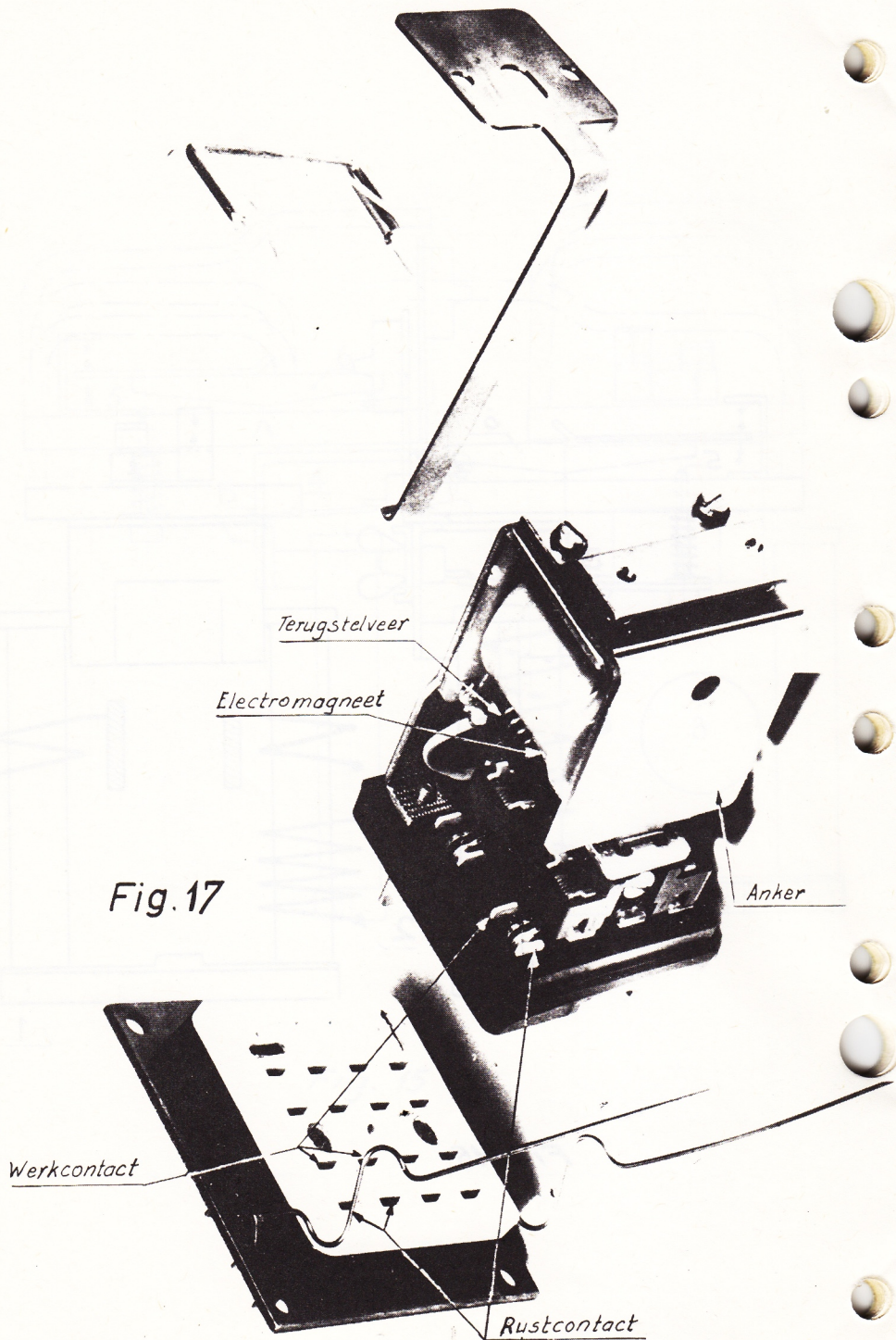


Fig.17

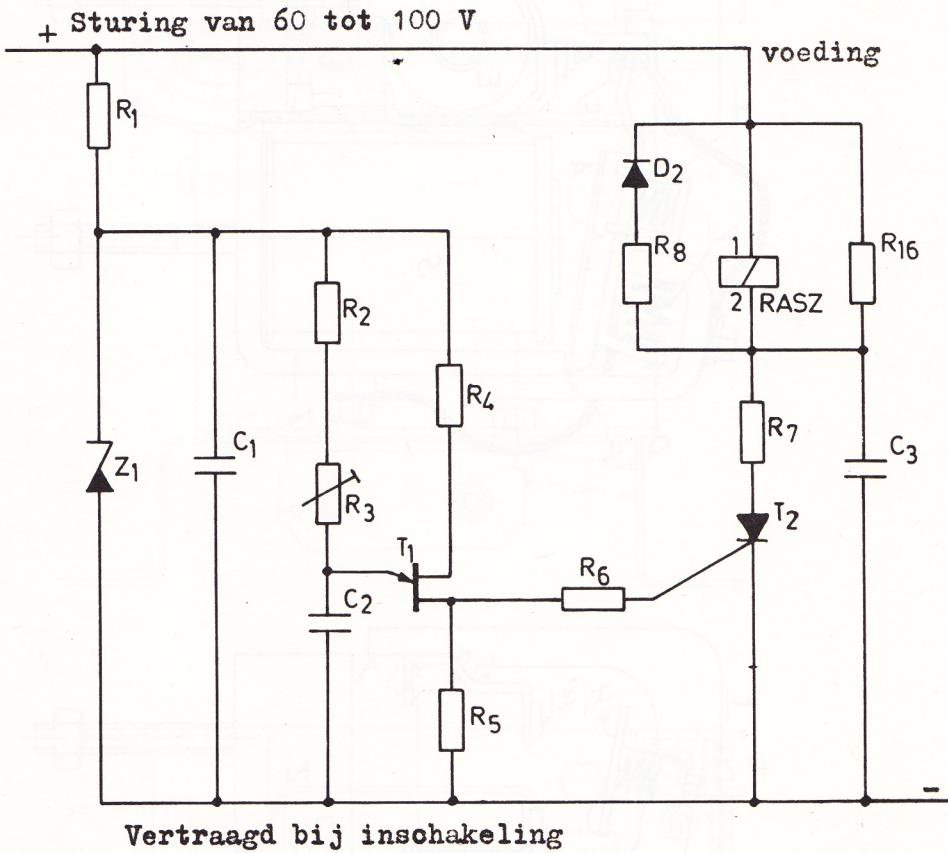


Fig.18

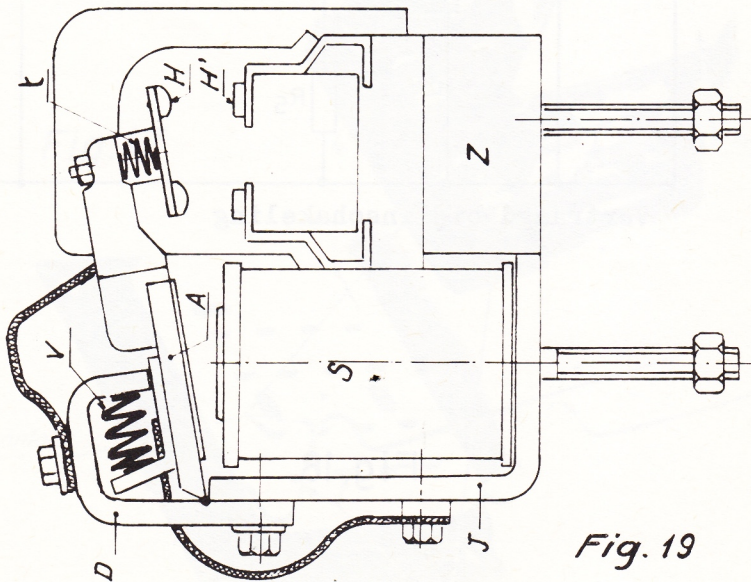
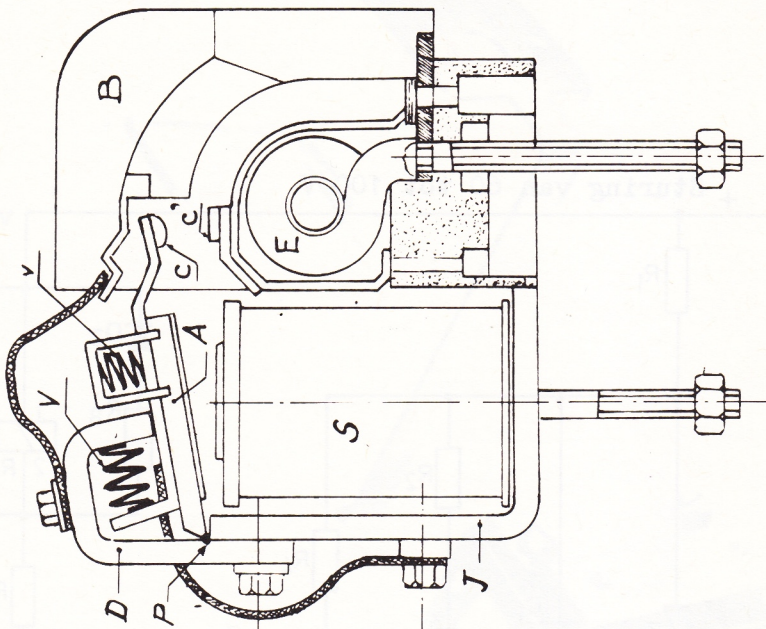


Fig. 19

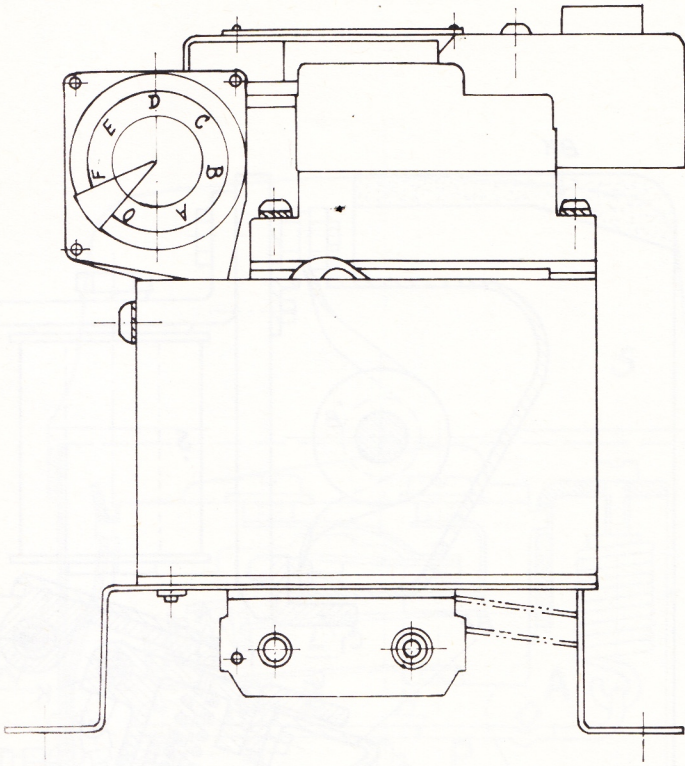
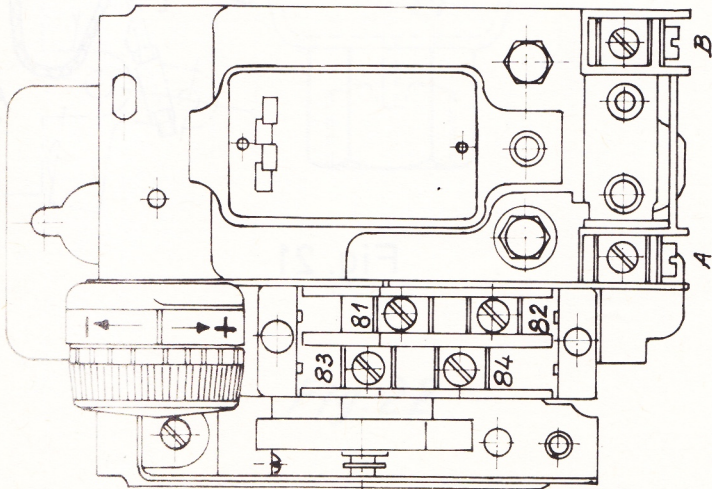


Fig. 20





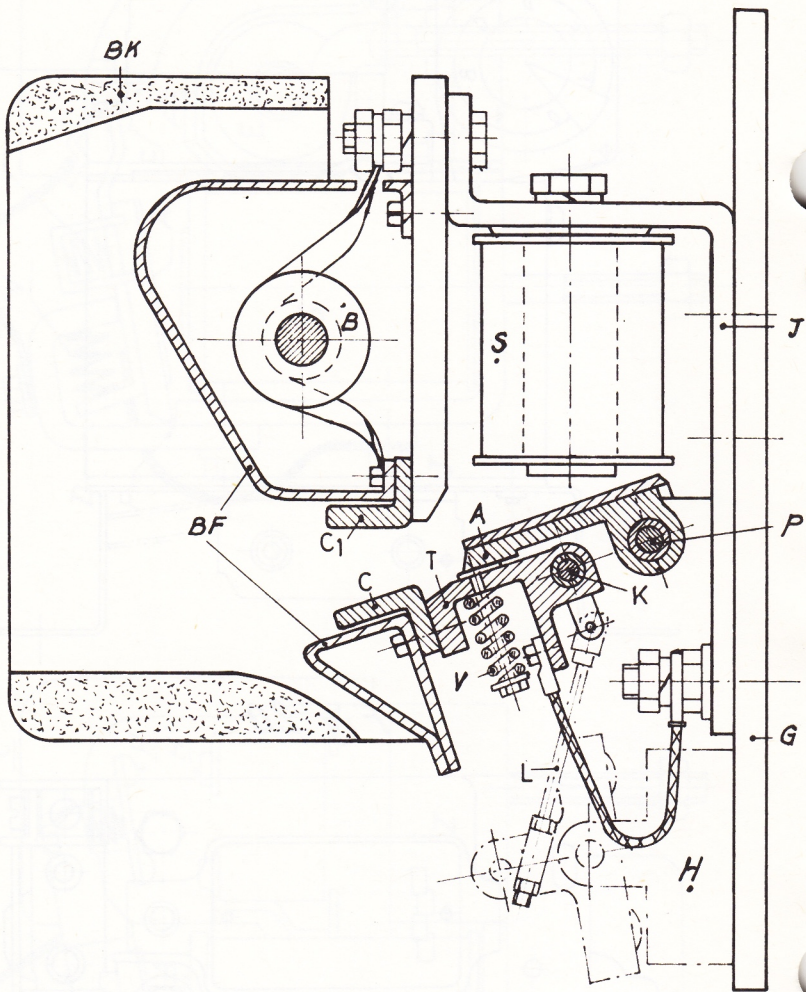


Fig. 21

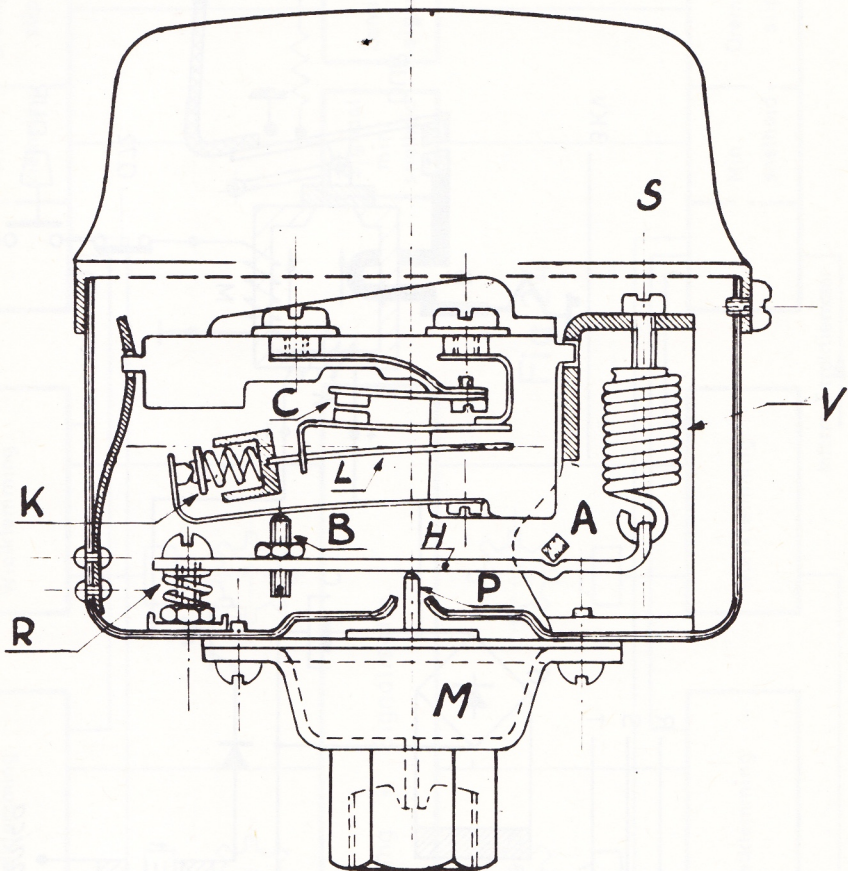


Fig. 22

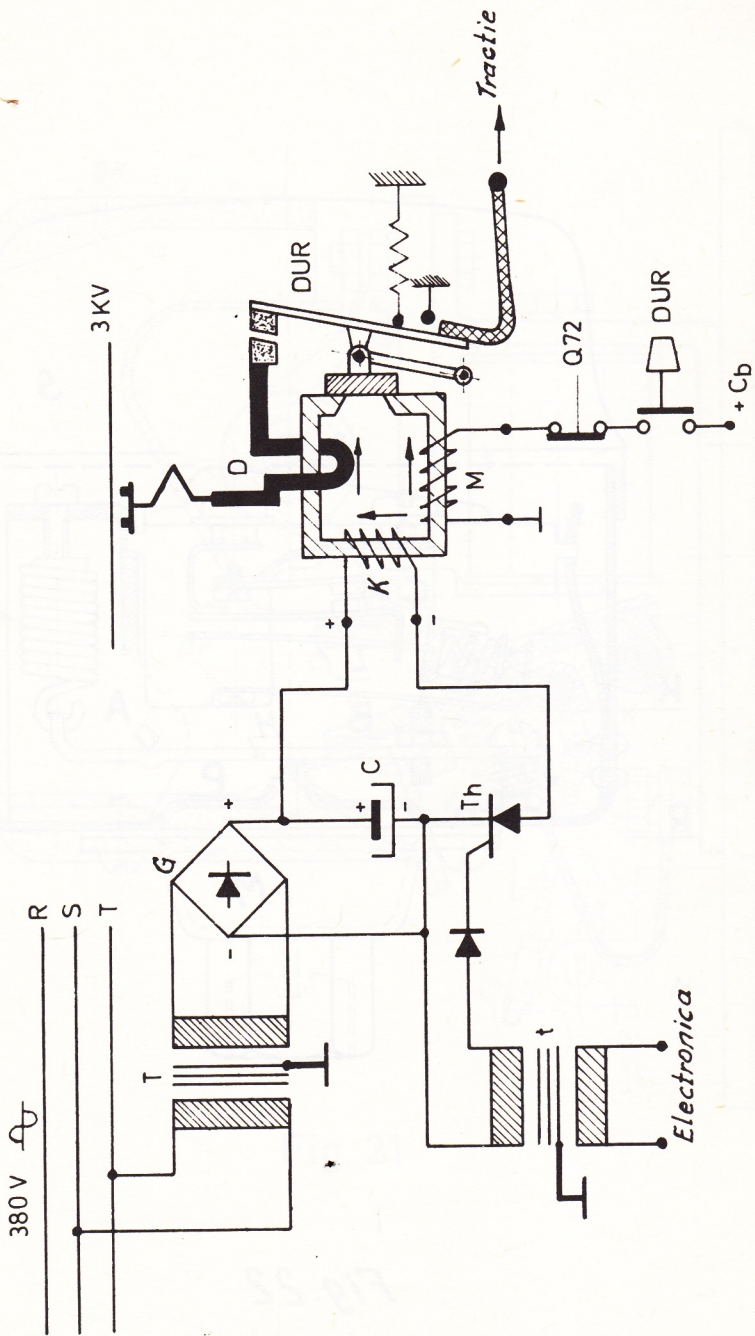
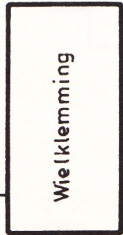
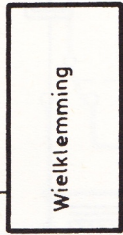
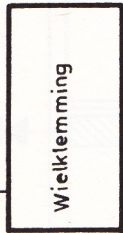
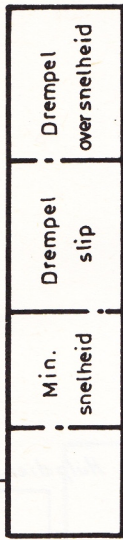


Fig. 23

Inform. I traktie motor

Informatie rem



Signaalgever

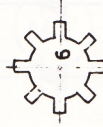
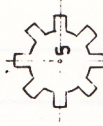
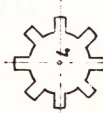
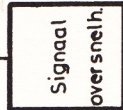
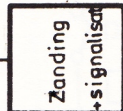
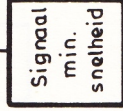
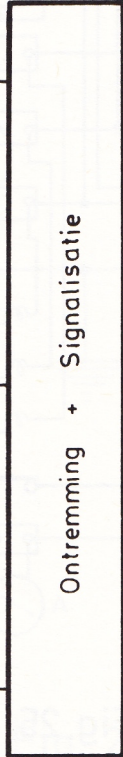
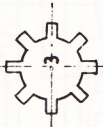
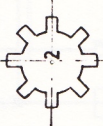
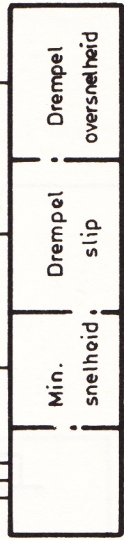
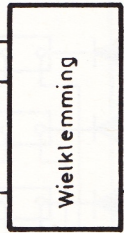
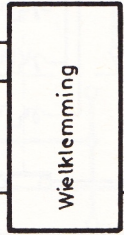
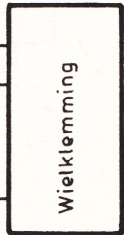


Fig. 24



Informatie rem

Inform. I traktie motor

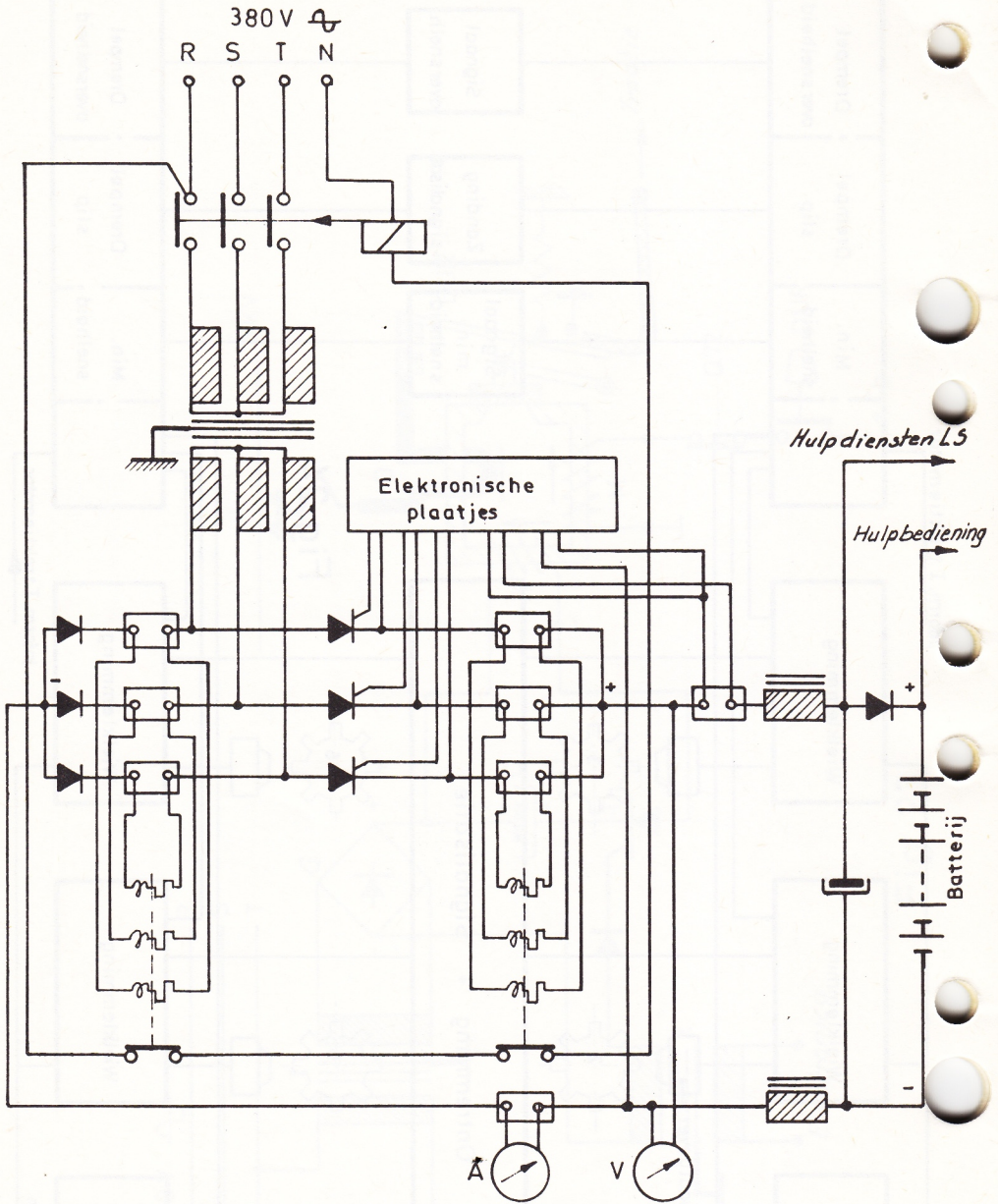


Fig. 25

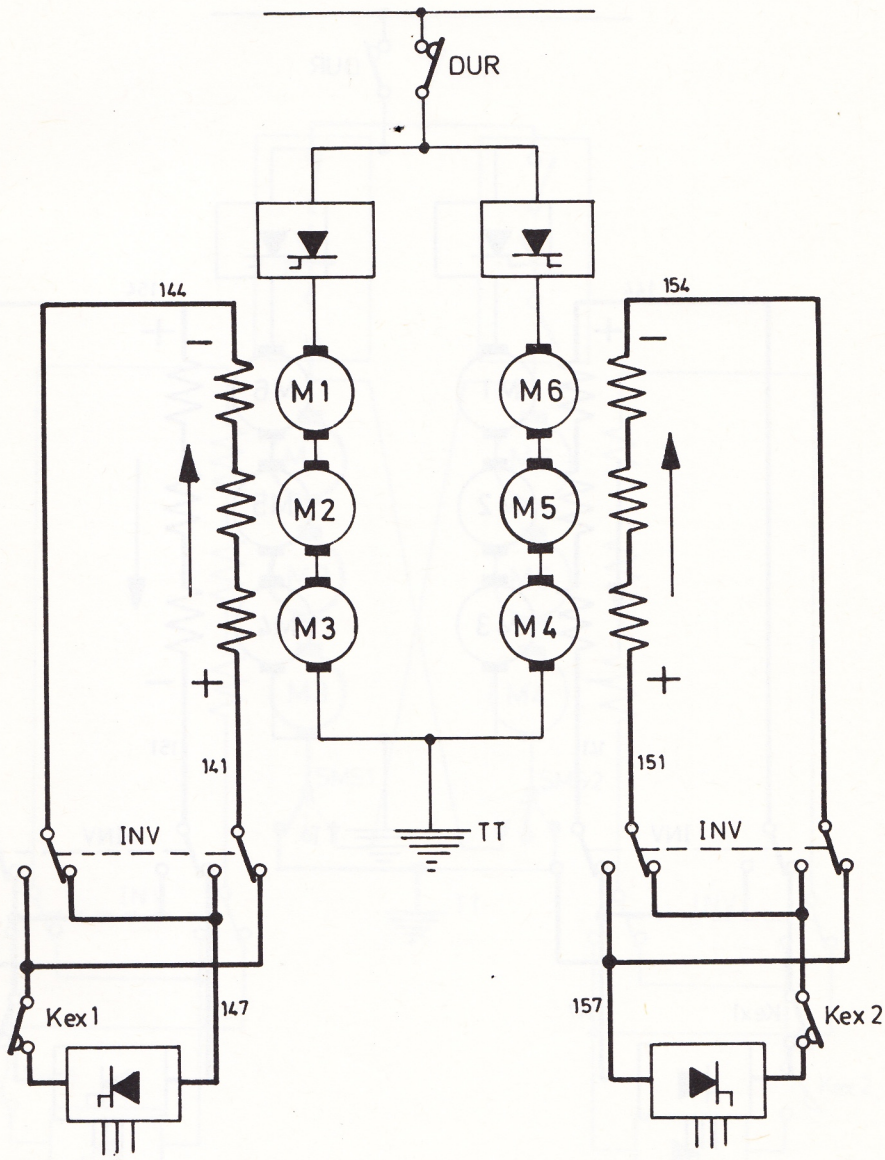


Fig. 26a

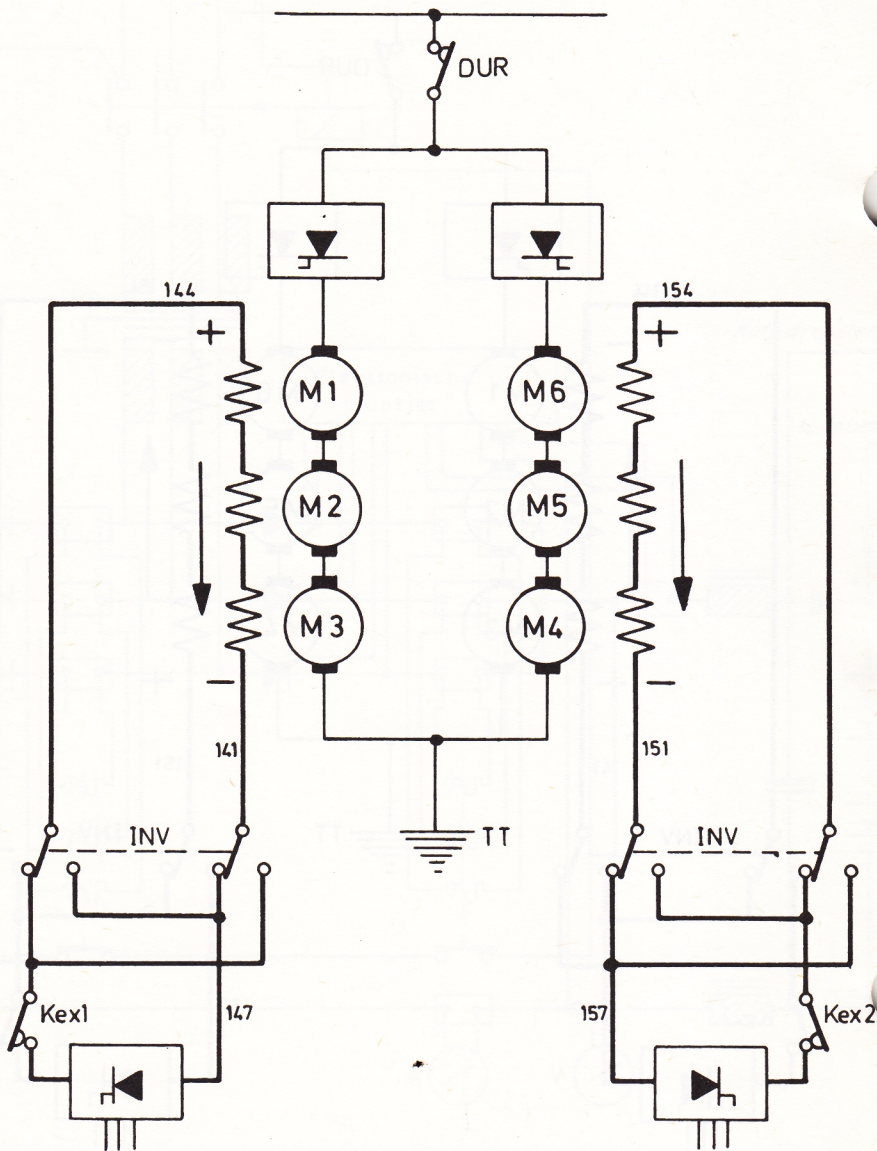


Fig.26b

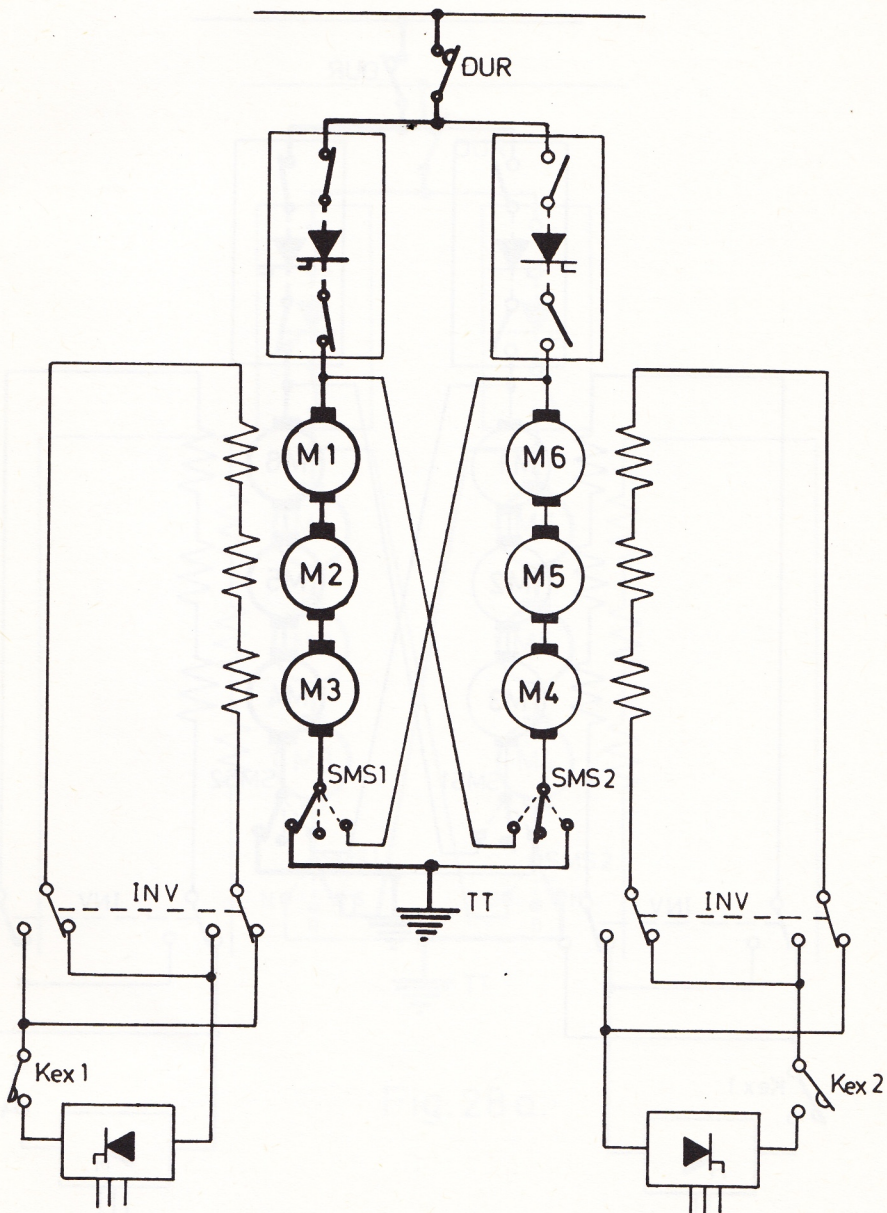


Fig.27a.



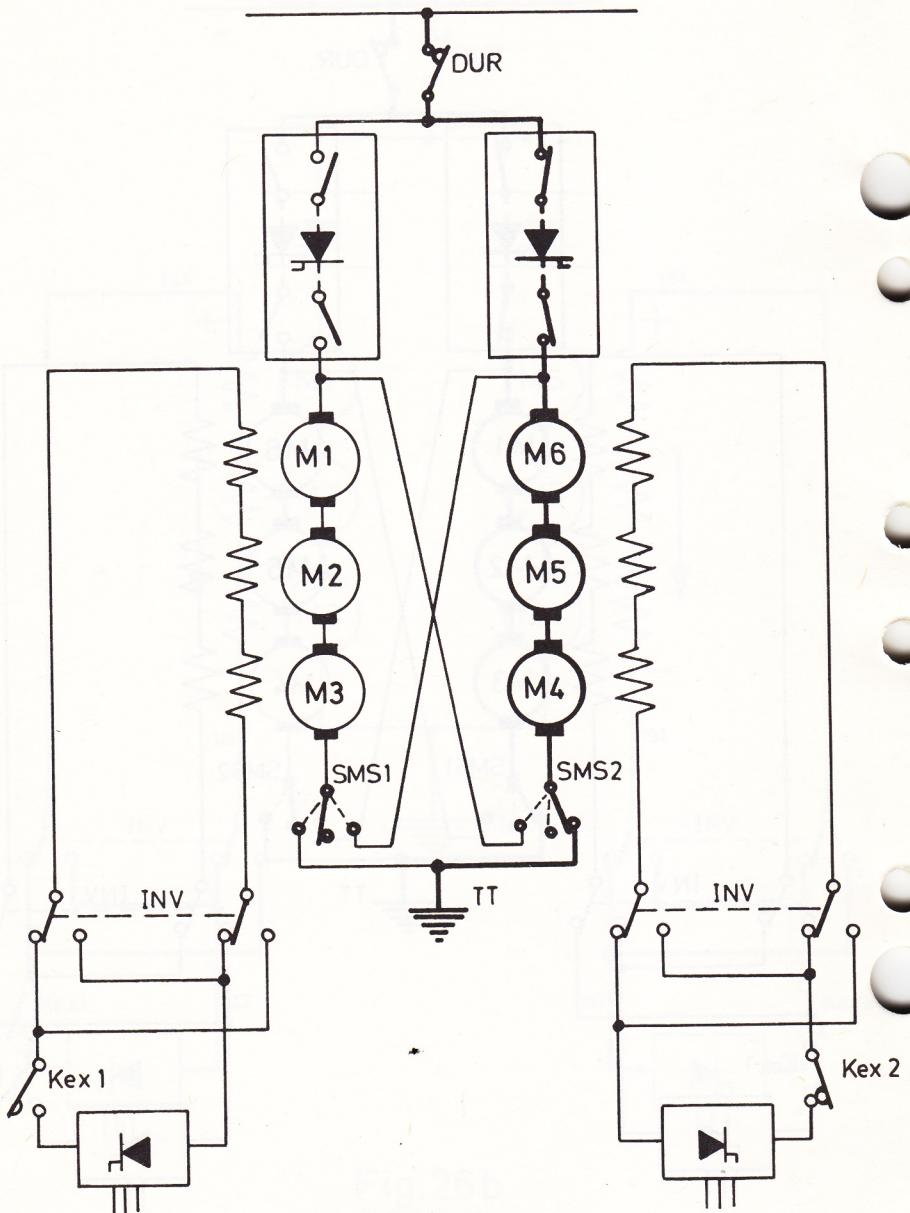


Fig. 27b.

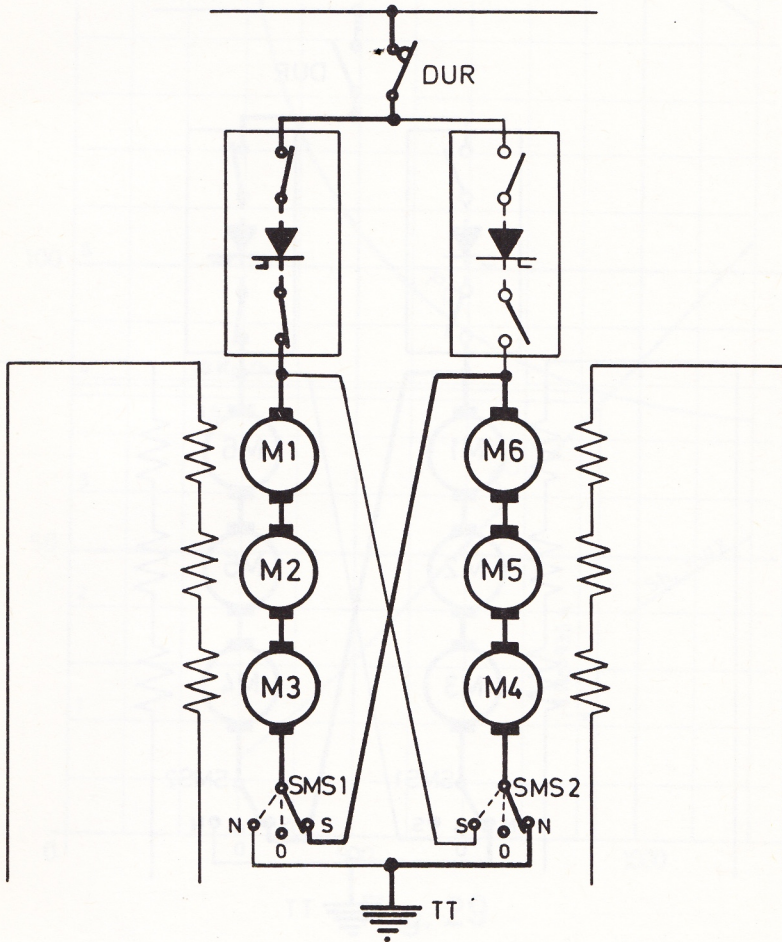


Fig. 28 a.

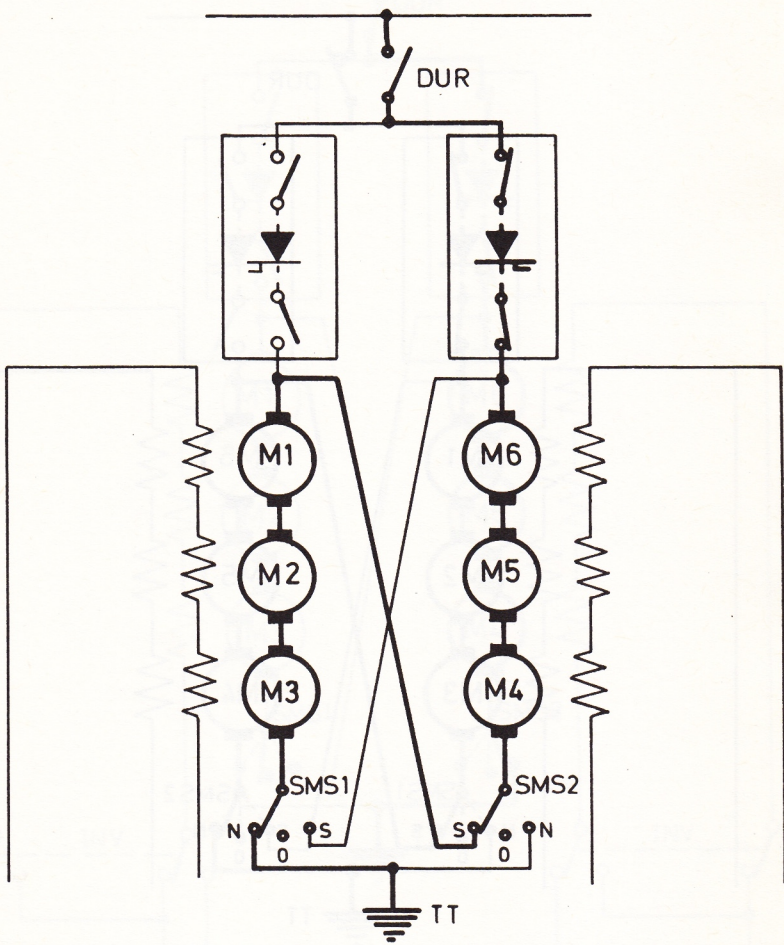


Fig. 28b.

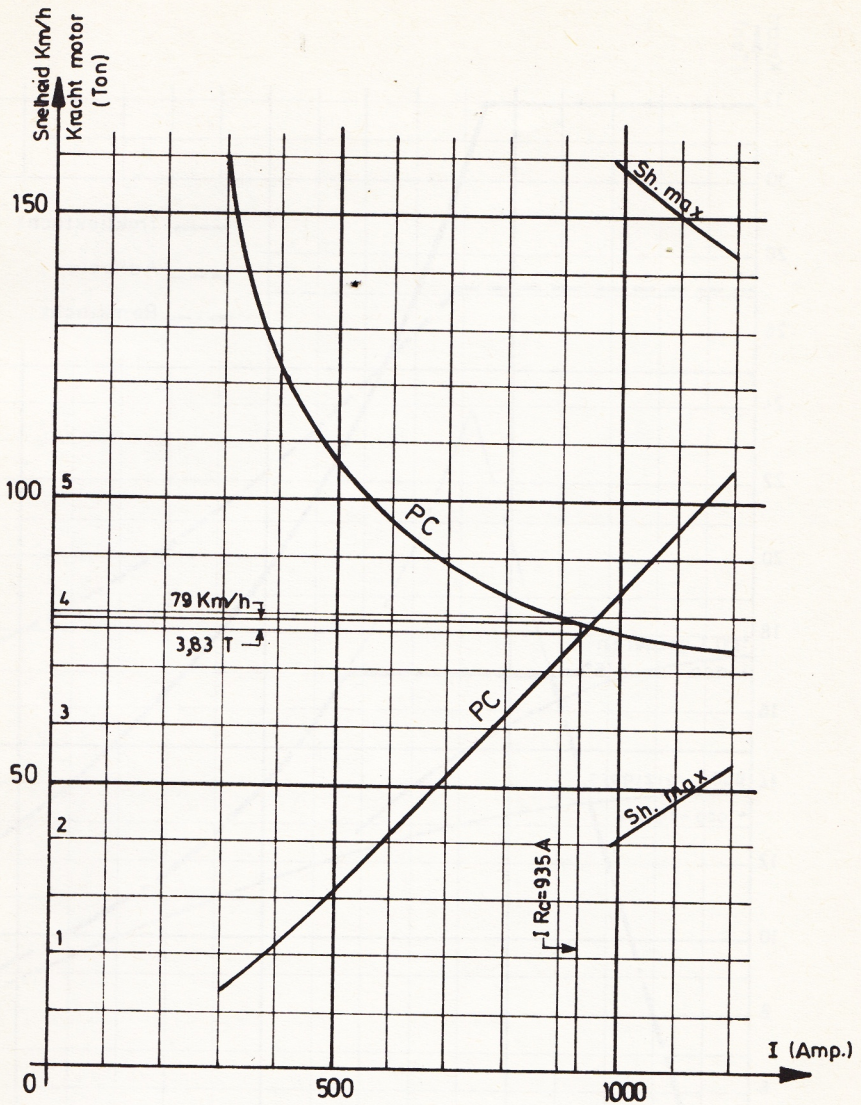


Fig. 29

7000 pk : Gelijkstroom

Motor : LE 772 G

Benaderende karakteristieken :  $U = 950V$

Overbrenging :  $77 / 25 \approx 3,08$

Half versleten wielen : 1210 mm

Doorlopend vermogen :  $950V - 935A - 1060 \text{ tr/min} - 845KW.$

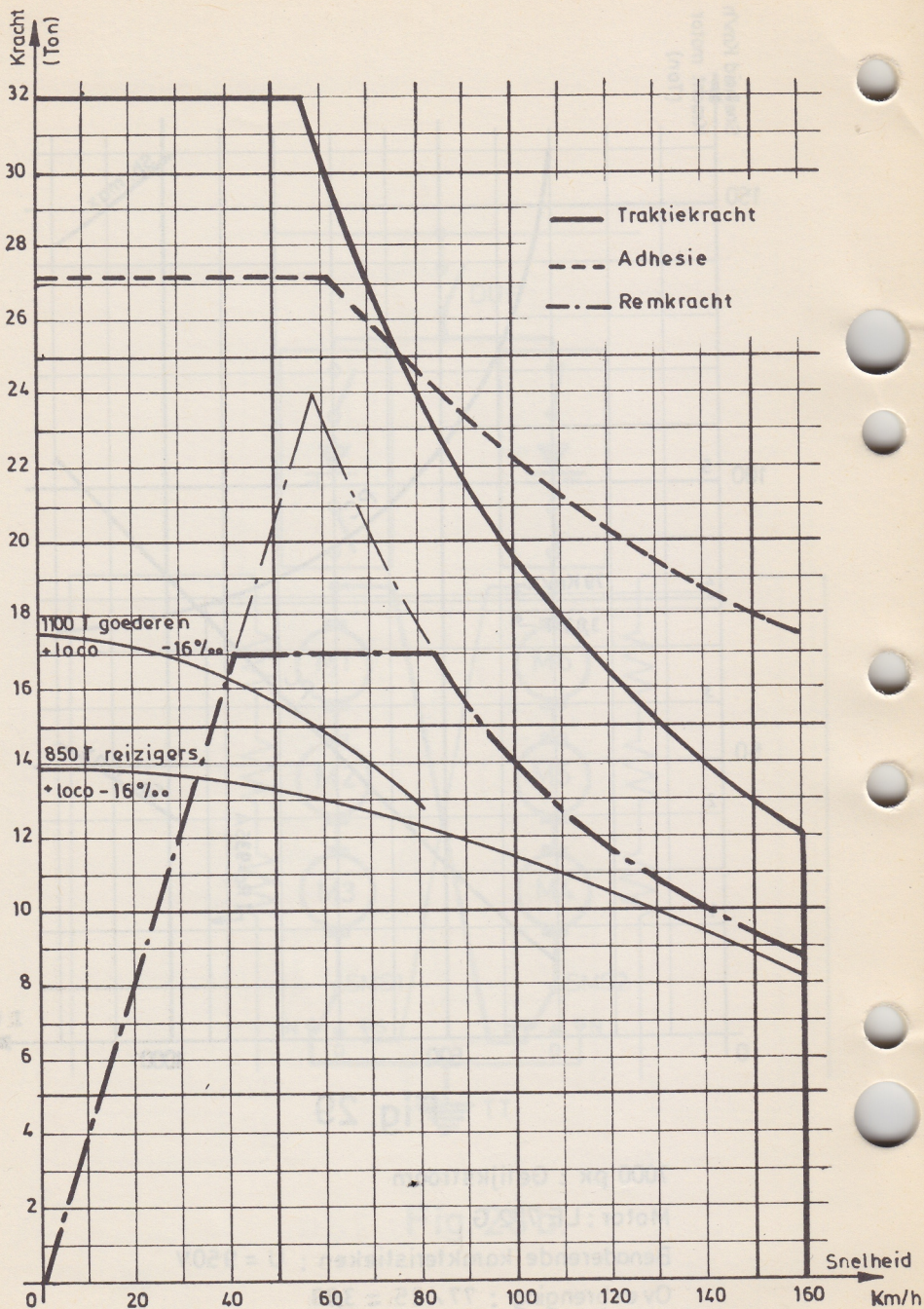
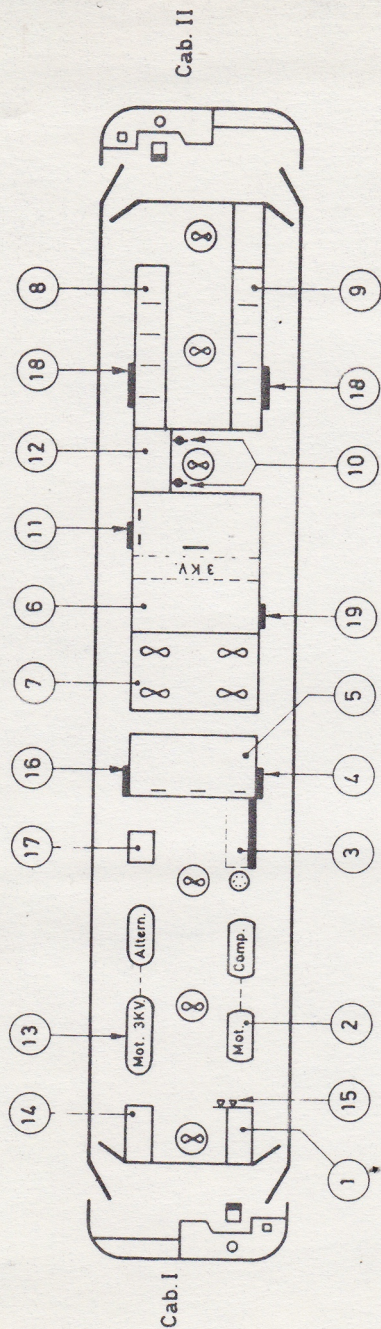


Fig. 30



# PLAATS DER TOESTELLEN.



1. Kleer-kast - teloc - gereedschap.

2. Compressor.

3. Pneumatisch bord. (fig. 3)

4. L.S. bord en seintampen defecten hakker I.

5. Afdeling 380 V. 60 Hz.

6. Afdeling 3.000 V.

7. Remweerstanden.

8. Hakker II.

9. Hakker I.

10. Afzonderingskraan panto 2 en wielkrans smeedsters draaistel 2

11. Sleuteldoos.

12. Batterij 72 V.

13. Groep mot. - altern. M. G. A.

14. Kast met snelheidsregelaar M. G. A. herbewapeningsdrukknop + de 1 (in de kast).

15. Eindlantaarns.

16. Seintampen defecten hakker II.

17. Kast: regelbare lading batterij, schak. autom.-handbediening + regelweerstand.

18. ELH 1 - ELH 2.

19. Drukknop " herbew. excit. "

# PNEUMATISCH BORD.

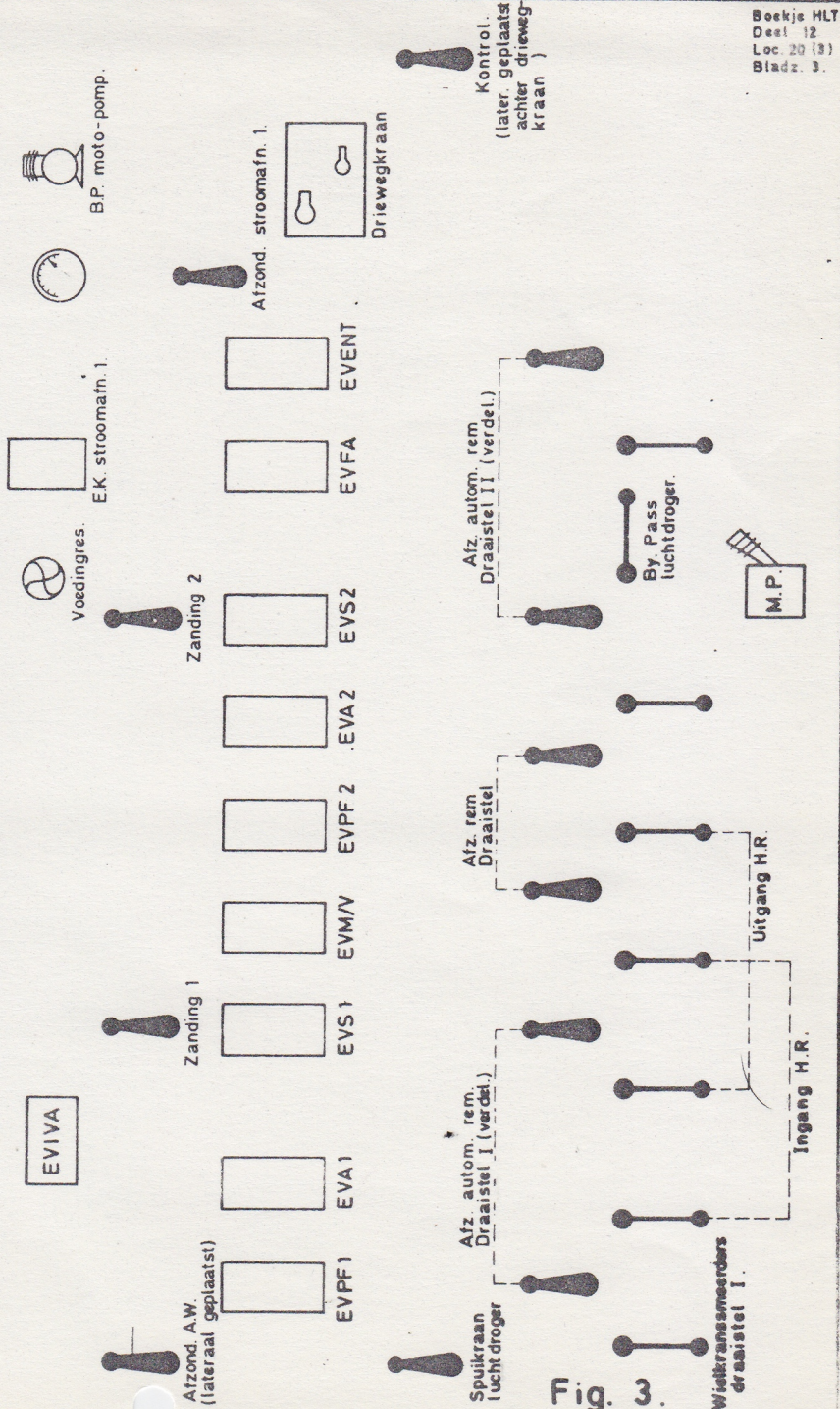


Fig. 3.

Beekjs HLT  
Deel 12  
Loc 20 (3)  
Bladz. 3.



# Signalisatie defecten hakker 1. (hakker 2 : idem).



LSMC 1  
(maxi str.)



LDE 1  
excitatiebrug  
tractie mot.



LFH 1  
(H.S. zeker.  
thyr.)



LVH 1  
(ventil.  
hakker)



LMAE 1  
(maxi  
electron.)



LMT 1  
(maxi U)

## BEDIENINGSBORD.



I 13-RTN

d5  
Volt.

d6  
moto-pomp

d7  
defecten  
hakker I + II  
instandh. electron.  
defect.

d8  
pneumat.  
slipdemping

d9  
functies  
ritwissel.  
H.S.



I 15-dAW



I 12  
Ventil. M.1.2.3.  
+Ha. 1.

d10  
contact remming  
+ luiken.

d11  
spuien  
zanding  
anti-slip  
rem.

d12  
WA disp.  
vergrend.  
aarding.

d13  
verlichting  
gang.

d14  
verwarm.  
stuurcab.



I 13  
Ventil. M. 4, 5, 6.  
+Ha. 2



I 14  
Ventil. spoelen.

dc 1  
verlichting  
stuurcab. I.

dc 2  
verlichting  
stuurcab. 2.

dS1  
seinlampen  
stuurcab.

dS2  
seinlampen  
op hakkers

dP1  
koplichten  
stuurcab. I



I EDP1  
slipopsparing



I 15  
Drukregelaar

DVS 1  
mémor  
stuurcab. I.

dE3  
electronische  
voeding.

dE4  
opsparing  
slipping +  
wielklem.

dE5  
electre-  
pneumat.  
rem.

dP2  
koplichten  
stuurcab. II.



I EDP2  
slipopsparing



EE  
Afzonder.  
electron. sturing.

dA3  
RT 20  
RMS 1-2.

dA4  
stroomafn. I

dA5  
stroomafn. 2

dA6  
koppelings-  
relais RTN.

dA7  
omschak. +  
contact.  
groep.



CF  
(G.-R.)

dA8  
hulprelais  
ritwissel.

dA9  
hulprelais  
steuteldoos.

dA15  
algemene  
bediening  
D.U.R.

dA152  
instandhoud.  
D.U.R.

dA153  
compress.

dA154  
treinverwarm.

dA155  
ventil. :  
hakkers  
tractiemot.  
self-filter.  
compress.

DTHB 1      DTHB 2  
thermo - box.

dch.  
ventil. verwarm.



I SWC

dT  
téléc +  
mémor +  
wieltrans-  
smeeders.

dPh 11  
koplicht  
links  
stuurcab. I.

dPh 12  
koplicht  
rechts  
stuurcab. I.

dPh 21  
koplicht  
links  
stuurcab. II.

dPh 22  
koplicht  
rechts  
stuurcab. II.

dT1  
wieltrans-  
smeeders.

da  
wasem-  
weerder.

DVS 2  
mémor  
stuurcab. II.

dA  
algemene  
bediening.

dA2  
controle relais  
electron. + Ha.

DDEC  
snelle uitschakel.  
D.U.R.

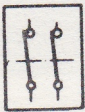

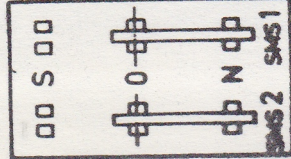
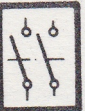
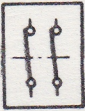
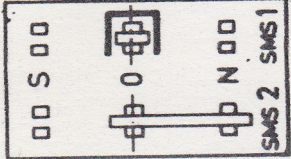
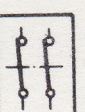
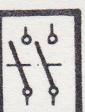
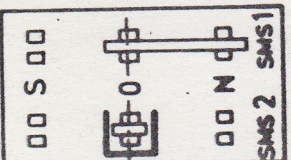


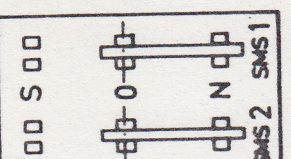


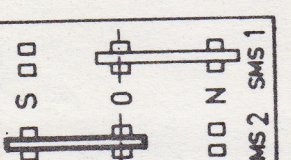

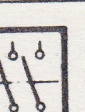
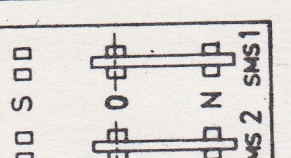
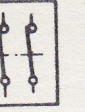
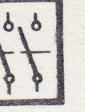
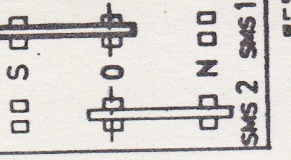
dB  
batt.

dLEC  
verlichting  
meettoest.

d6V  
telefoon.

Fig. 4.

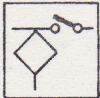
# Afzondering van de hakkers en de tractiemotoren.

<p>① Alles in dienst.</p>	 <p>Ha 1</p>	 <p>Ha 2</p>	 <p>SMS 2 SMS 1</p>
<p>② Mot.1-2-3 afgezonderd.</p>	 <p>Ha 1</p>	 <p>Ha 2</p>	 <p>SMS 2 SMS 1</p>
<p>③ Mot.4-5-6 afgezonderd.</p>	 <p>Ha 1</p>	 <p>Ha 2</p>	 <p>SMS 2 SMS 1</p>
<p>④ Hakker 1 afgezonderd.</p>	 <p>Ha 1</p>	 <p>Ha 2</p>	 <p>SMS 2 SMS 1</p>
<p>⑤ Hakker 1 afgezonderd en Mot.1.2.3.4.5.6 op hakker 2.</p>	 <p>Ha 1</p>	 <p>Ha 2</p>	 <p>SMS 2 SMS 1</p>
<p>⑥ Hakker 2 afgezonderd.</p>	 <p>Ha 1</p>	 <p>Ha 2</p>	 <p>SMS 2 SMS 1</p>
<p>⑦ Hakker 2 afgezonderd en Mot.1.2.3.4.5.6 op hakker 1.</p>	 <p>Ha 1</p>	 <p>Ha 2</p>	 <p>SMS 2 SMS 1</p>

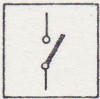
Boekje HLT  
Deel 12  
Loc. 20 (3)  
Bladz. 5.

3. Test van de signalisatielampen (in elke stuurcabine).

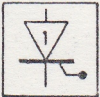
- ss "Nood" sluiten (dA-dA2-dA3-dA8-dSI)  
volgende signalisatielampen moeten branden (uitgezonderd  
**LDH 1 - 2**):



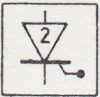
LTN  
Signalisatie RTN, gebrek aan H.S.



LSD  
Signalisatie DUR uitgeschakeld.



LDH 1  
Signalisatie fout hakker 1



LDH 2  
Signalisatie fout hakker 2

}  
getest na inschakelen  
DUR door sluiten SS  
ventilatoren



LSV  
Signalisatie ventilatiegebrek van een van de 6 tractie-  
motoren, van de afvlakspoelen, van de ingangsfiler of  
van de remrheostaat.

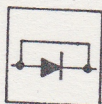


Deze lamp LSWC wordt getest terzelfder-  
tijd als de werking van de automatische  
rem.

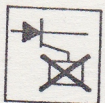


Brandt bestendig wanneer schakelaars IEDP 1-2  
in de normale stand staan en de 2 hakkers  
in dienst zijn.

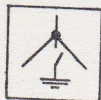
- ss "test" sluiten  
volgende signalisatielampen moeten branden :



LSDEC  
Thyristoren in kortsluiting of  
uitschakeling DDEC.



LMAE  
Fout in de gestabiliseerde voeding van de elektronische  
stuurkringen (totalisatie van LMAE 1 en LMAE 2 op het  
bedieningsbord in de gang).  
Batterijspaning < 60 V.



LSNI  
Sterpunt van de alternator afgezonderd  
door bewerking SNT.



LCHT  
Maximarelais treinverwarming; het scheidingsmes  
van de treinverwarming of de ss niet in dienst.



LTCS  
Continuïteitstest van de statische signaalgevers.  
Brandt zodra de snelheid van 5 km/u overschreden wordt:  
opsporing oversnelheid in dienst op alle motorassen.



LSP  
Slipopsparing.



LTAE  
Ontremming.



LDS  
Opsporing oversnelheid.



LIFF  
Lekaanduider van de leiding van de auto-  
matische rem (geluidssignaal werkt).



LDEF (motor-alternator).  
Bericht nr. 1 M - Januari 1977

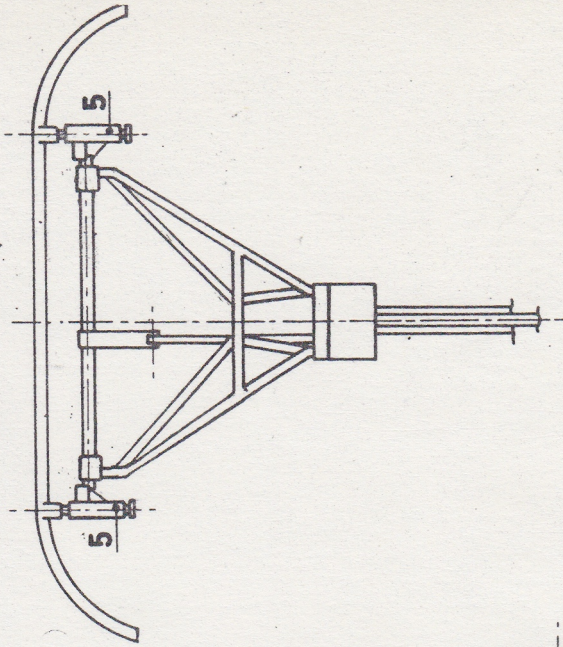


Fig. 2

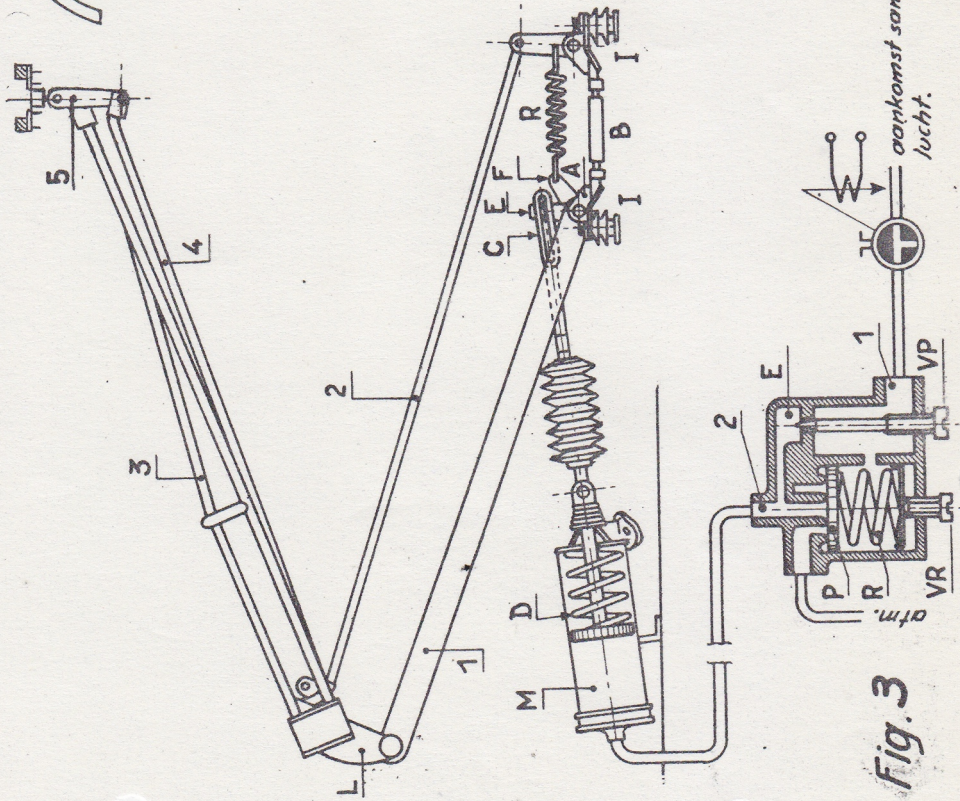


Fig. 3

aankomst samengeperste  
lucht.