

# SERVICE MANUAL



## KY 5461 KY 5471

Receiver for A.C.-supply



KY 5471 Suitable for connection to a 6 or 12 volts car battery, with the aid of a vibrator-unit



ERRES RADIO

### I. GENERAL DATA

- a. Waveranges: SW I 11.5 - 24 m  
SW II 23.5 - 51 m  
SW III 51 - 175 m  
MW 185 - 585 m
- b. Valves: B 1 ECH 81 B 4 EL 84  
B 2 EF 41 B 5 EM 80  
B 3 EABC 80 B 6 EZ 80
- c. Circuits: Tuned HF circuits: 1 + 1  
Tuned IF circuits: 2 + 2
- d. Intermediate frequency: Nominal AM 452 kc/s
- e. Sensitivity: Better than 10  $\mu$ V on SW I, SW II  
" " 10  $\mu$ V on MW
- f. Output: 3.2 W at 10% distortion, measured at 400 c/s
- g. Selectivity: 452 kc/s at a 10 fold attenuation  
11 kc/s
- h. Mains voltages: Adjustable to mains voltages of 110 V, 125 V, 150 V, 200 V and 250 V.
- i. Controls: Volume control  
Bass control  
Pushbuttons for mains switch, gram. and 4 waveranges  
Treble control  
Tuning
- j. Dimensions cabinet: 563 x 216 x 361 mm (KY 5461)  
560 x 219 x 363 mm (KY 5471)
- k. Weight: Gross 12.7 kgs; Net 9.8 kgs (KY 5461)  
Gross 13 kgs; Net 10.2 kgs (KY 5471)
- l. Direct current: The set KY 5471 can be connected to a vibrator-unit of 6 or 12 volts.

## II. VOLTAGES AND CURRENTS

	B 1 ECH 81	B 2 EF 41	B 3 EABC 80	B 4 EL 84	B 5 EM 80	
Va	245	235	70	255	240	Volts
Vg screen	110	95		240	35	Volts
Va triode	93					Volts
Vk	2.25	1.9		7.4		Volts
Ia	3.5	4	0.55	40		mA
Ig screen	4.5	1.4		6		mA
Ig	250					μA
Ia triode	4					mA
Ik	12	5.5		46		mA

$$V_{C17} = 275V \quad V_{C18} = 255V \quad V_{C21} = 240V$$

Measured at a mains tension of 220 V  $\sim$

## III. TRIMMING INSTRUCTIONS

Signal generator:                   Modulate 30% at 400 kc/s

Pointer adjustment:               Turn variable condenser fully out  
Set pointer at the beginning of the stroke

Trimming points:                   On the dial are marks for  $0^{\circ}$  -  $62.5^{\circ}$  -  $65^{\circ}$  -  
 $75.5^{\circ}$  -  $92^{\circ}$  -  $380^{\circ}$  -  $445.5^{\circ}$  -  $470^{\circ}$  -  $482^{\circ}$  -  
turning in the variable condenser

Adjusting:                           Final adjustment coil in medium position  
Volume control on maximum  
Treble and bass controls on maximum

Range	Frequency	Position of condenser	Connection	Sequence of adjustment	
				osc. circ.	aer. circ.
IF	452 kc/s	$517.5^{\circ}$ MW	via 22000 pF to $g_1$ B <sub>1</sub>	Damp IF I S26-S25/S24-S23	
IF filter	452 kc/s	$517.5^{\circ}$ MW	via 22000 pF to switch A1	S20-S21-S20	
SW I	13 Mc/s	$445.5^{\circ}$	via artificial aerial	S 11	S 2
	24 Mc/s	$92^{\circ}$		C 25	C 4
SW II	6.5 Mc/s	$380^{\circ}$	ditto	S 13	S 4
	12 Mc/s	$62.5^{\circ}$		C 26	C 5
SW III	1.8 Mc/s	$482^{\circ}$	ditto	S 15	S 6
	5.5 Mc/s	$65^{\circ}$		C 27	C 6
MW	550 kc/s	$470^{\circ}$	ditto	S 17	S 8
	1500 kc/s	$75.5^{\circ}$		C 28	C 7



C o n d e n s e r s

C 1			C28	1.5-12.5 pF	82754/12E5
2			29	300 pF	E 360 02/300E
3	3000 pF	E 360 05/3K	30	100 pF	E 360 02/100E
4	3-30 pF	7864/01	31	220 pF	E 360 02/220E
5	6-25 pF	82754/25E	32	50000 pF	E 220 10/50K
6	1.5-12.5 pF	82754/12E5	33	10000 pF	E 112 50/10K
7	1.5-12.5 pF	82754/12E5	34	10000 pF	E 112 50/10K
8	470 pF	E 103 10/470E	35	10000 pF	E 112 50/10K
9	300 pF	E 360 02/300E	36	100 pF	E 360 02/100E
10	10-540 pF)	GK 210 55	37	220 pF	E 360 02/220E
11	9-524 pF)		38	5.6 pF	E 101 10/5E6
12	270 pF	E 360 05/270E	39	2200 pF	E 201 10/2K2
13	12 pF	E 101 10/12E	40	10000 pF	E 201 10/10K
14	10000 pF	E 112 50/10K	41	4700 pF	E 201 10/4K7
15	220 pF	E 103 10/220E	42	10000 pF	E 112 50/10K
16	10000 pF	E 112 50/10K	43	22000 pF	E 200 10/22K
17	50 $\mu$ F)	GK 180 12	44	0.1 $\mu$ F	E 201 10/100K
18	50 $\mu$ F)		45	220 pF	E 103 10/220E
19	560 pF	E 361 10/560E	46	100 pF	E 103 10/100E
20	47 pF	E 103 10/47E	47	10000 pF	E 201 10/10K
21	16 $\mu$ F	AC 5108/16	48	100 $\mu$ F	AC 5713/100
22	100 pF	E 103 10/100E	49	2200 pF	E 202 10/2K2
23	2000 pF	E 360 05/2K	50	4700 pF	E 202 10/4K7
24	445 pF	E 360 01/445E	51	47000 pF	E 200 10/47E
25	1.5-12.5 pF	82754/12E5	52	0.1 $\mu$ F	E 200 10/100K
26	6-25 pF	82754/25E	53	10000 pF	E 112 50/10K
27	1.5-12.5 pF	82754/12E5	54	10 pF	E 125 10/10E

R e s i s t o r s

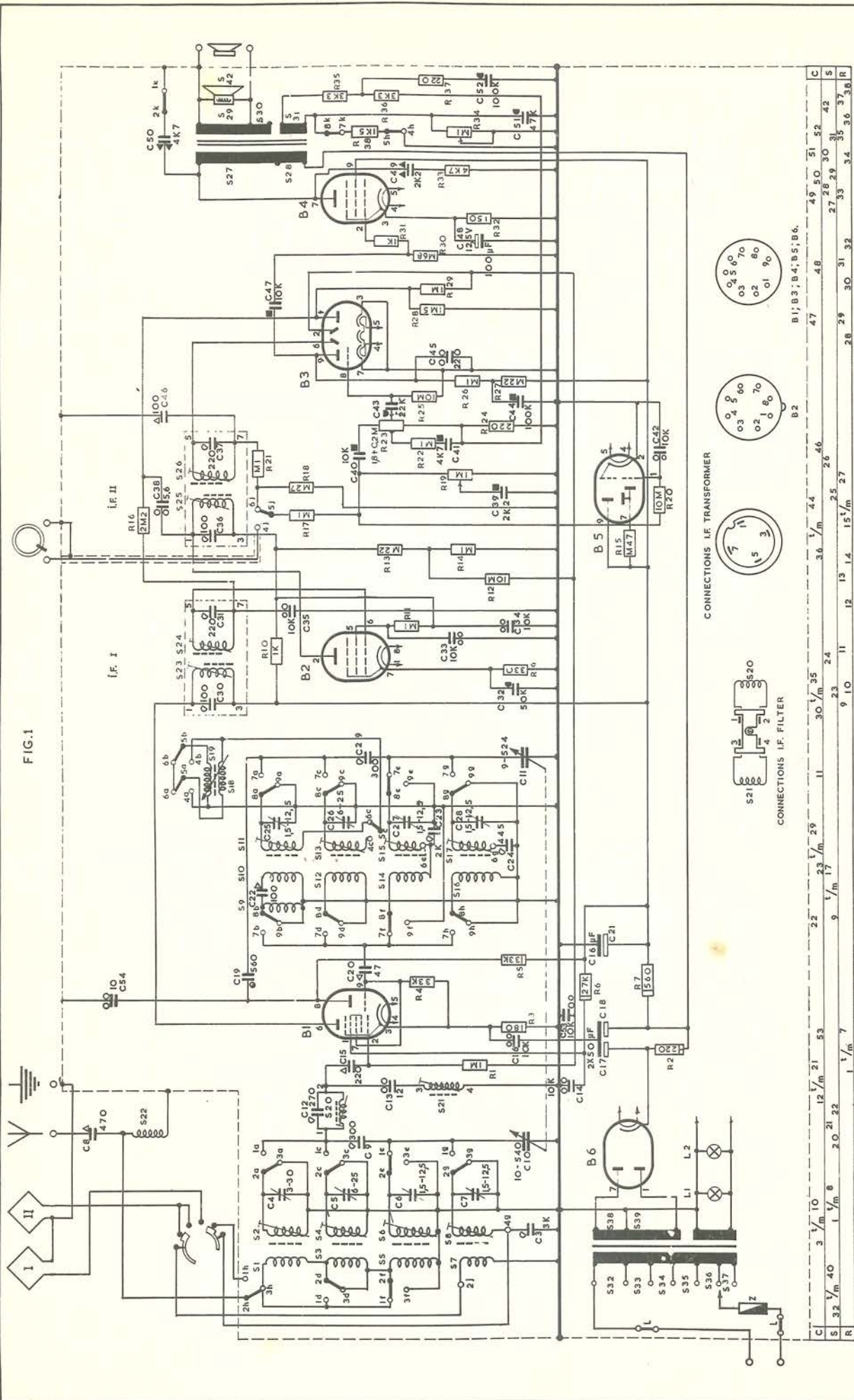
R 1	1 M $\Omega$	GK 776 10/1M	R20	10 M $\Omega$	GK 776 10/10M
2	220 $\Omega$	5496A/220E	21	0.1 M $\Omega$	GK 776 10/100K
3	180 $\Omega$	GK 776 10/180E	22	0.1 M $\Omega$	GK 776 10/100K
4	33000 $\Omega$	GK 776 10/33K	23	1.8+0.2 M $\Omega$	GK 809 26
5	33000 $\Omega$	GK 777 10/33K	24	220 $\Omega$	GK 776 10/220E
6	27000 $\Omega$	GK 777 10/27K	25	10 M $\Omega$	GK 776 10/10M
7	560 $\Omega$	GK 777 10/560E	26	0.1 M $\Omega$	GK 776 10/100K
8	68 $\Omega$	GK 777 10/68E	27	0.22 M $\Omega$	GK 776 10/220K
9	330 $\Omega$	GK 776 10/330E	28	1.5 M $\Omega$	GK 776 10/1M5
10	1000 $\Omega$	GK 776 10/1K	29	1 M $\Omega$	GK 776 10/1M
11	0.1 M $\Omega$	GK 776 10/100K	30	0.68 M $\Omega$	GK 776 10/680K
12	10 M $\Omega$	GK 776 10/10M	31	1000 $\Omega$	GK 776 10/1K
13	0.22 M $\Omega$	GK 776 10/220K	32	150 $\Omega$	GK 776 10/150E
14	0.1 M $\Omega$	GK 776 10/100K	33	4700 $\Omega$	GK 776 10/4K7
15	0.47 M $\Omega$	GK 776 10/470K	34	0.1 M $\Omega$	GK 809 28
16	2.2 M $\Omega$	GK 776 10/2M2	35	3300 $\Omega$	GK 776 10/3K3
17	0.1 M $\Omega$	GK 776 10/100K	36	3300 $\Omega$	GK 776 10/3K3
18	0.27 M $\Omega$	GK 776 10/270K	37	220 $\Omega$	GK 776 10/220E
19	1 M $\Omega$	GK 809 27	38	1500 $\Omega$	GK 776 10/1K5
		potm.log.			

C o i l s   a n d   T r a n s f o r m e r s

S 1	30 W	<1 Ω	aer.coil	S27	2400 W	610 Ω	output transf. GK 514 32	
2	9 W	<1 Ω	SW I GK 568 07	28	70 W	18 Ω		
3	31 W	1.8 Ω	aer.coil	29	80 W	1 Ω		
4	20 W	<1 Ω	SW II GK 568 09	30	8 W	1 Ω		
5	161.5 W	11 Ω	aer.coil	31	160 W	39 Ω		
6	38 W	<1 Ω	SW III GK 568 10	32	620 W	16 Ω		supply transf. GK 514 29 (KY 5471) GK 514 09 (KY 5461)
7	11.5 W	<1 Ω	aer.coil	33	107 W	2.6 Ω		
8	98 W		MW GK 568 02	34	143 W	3.3 Ω		
9	15 W	<1 Ω	osc.coil	35	300 W	11.5 Ω		
10	4 W	<1 Ω	SW I	36	120 W	4.5 Ω		
11	6 W	<1 Ω	GK 568 11	37	190 W	6.4 Ω		
12	5 W	<1 Ω	osc.coil	38	1620 W	180 Ω		
13	11 W	<1 Ω	SW II GK 568 13	39	1620 W	195 Ω		
14	8 W	<1 Ω	osc.coil	40	41 W	<1 Ω		
15	27 W	1.7 Ω	SW III GK 568 14	41	41 W	1 Ω		
16	21 W	1.5 Ω	osc.coil	42                      Z= 5 Ω                      loudspeaker			LS 21 12 11T	
17	90 W	5.5 Ω	MW GK 568 15					
18	4 W	<1 Ω	final ad-					
19	4 W	<1 Ω	justment coil GK 568 06					
20	196 W	9 Ω	IF filter					
21	802 W	55 Ω	A3 126 85					
22	645 W	<1 Ω	Hum filter GK 567 79					
23	260 W	7.4 Ω	IF transf.					
24	175 W	4.5 Ω	I GK 567 95					
25	260 W	7.4 Ω	IF transf.					
26	175 W	4.5 Ω	II GK 567 95					



FIG. 1



WAVELENGTHS: SW1-SW2-SW3-NW.  
 DRAWN IN POSITION: SW 3  
 AERIAL SWITCH 3 POSITIONS (G 1)  
 OUTDOOR AERIAL 2 LOOPAERIAL I, 3 LOOPAERIAL II  
 DRAWN IN POSITION OUTDOOR AERIAL

**CONDENSERS**

- CERAMIC: 250V, 350V, 500V
- PAPER: 25V, 125V, 400V, 250V
- STYROFLEX: 250V
- TRIMMER: 1/2W 1W 1 1/2W

**RESISTORS**

- 1/2W 1W 1 1/2W

**CONNECTIONS I.F. TRANSFORMER**

**CONNECTIONS I.F. FILTER**

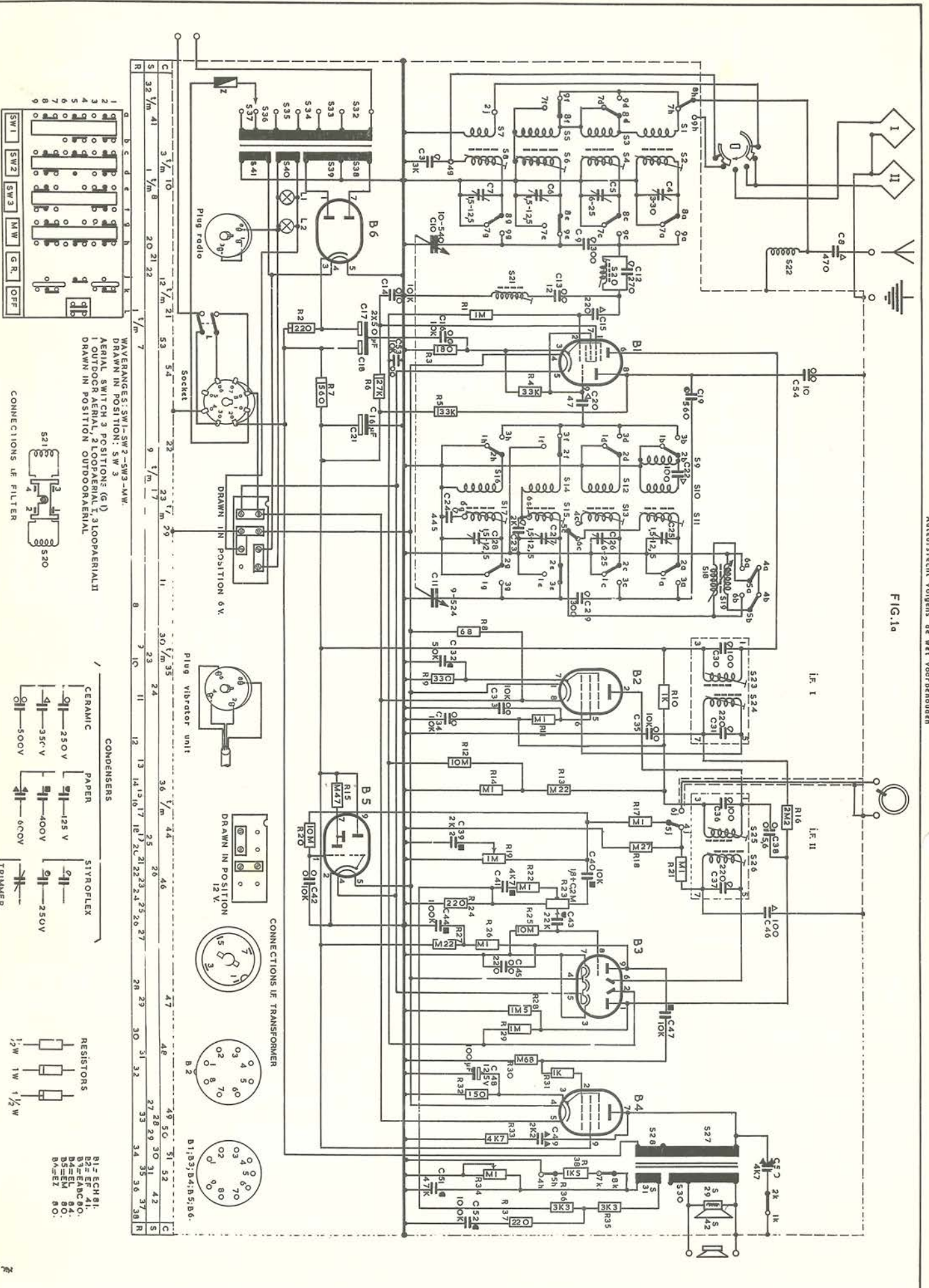
**CONNECTIONS I.F. TRANSFORMER**

B1, B3, B4, B5, B6.

49 50 51 52 42 C  
 27 28 29 30 31 32 S  
 33 34 35 36 37 38 R

B1 = ECH B1  
 B2 = EF 41  
 B3 = EABC B0  
 B4 = EL B0  
 B5 = EL B0  
 B6 = EL B0

FIG. 1a



WAVE RANGES: SW1-SW2-SW3-MW.  
 DRAWN IN POSITION: SW 3  
 AERIAL SWITCH 3 POSITION: (G) 1  
 I OUTDOOR AERIAL, 2 LOOP AERIAL I, 3 LOOP AERIAL II  
 DRAWN IN POSITION OUTDOOR AERIAL.

CONDENSERS  
 CERAMIC  
 PAPER  
 STYROFLEX

RESISTORS  
 1/2W  
 1W  
 1 1/2W

TRIMMER

B1: 6B6  
 B2: 6X4  
 B3: 6X4  
 B4: 6X4  
 B5: 9V  
 B6: 12V  
 B7: 6.3V

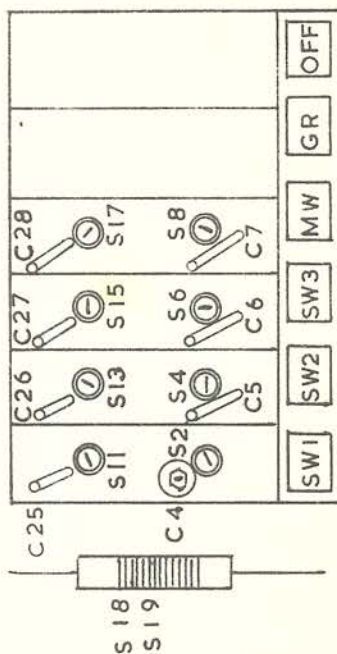
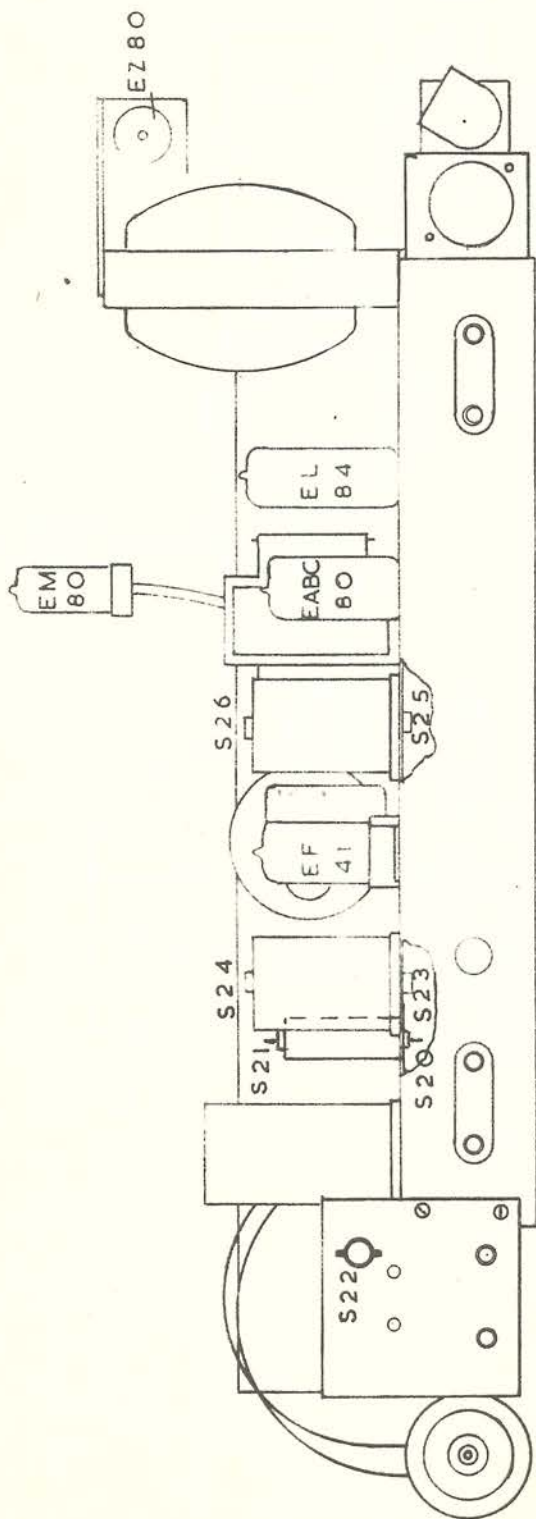
CONNECTIONS IE TRANSFORMER

CONNECTIONS IE FILTER

SW1 SW2 SW3 MW GR OFF

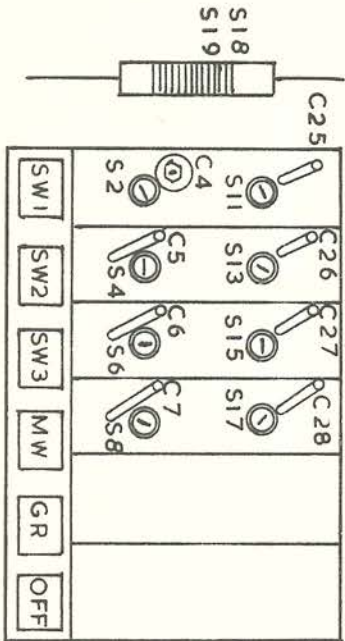
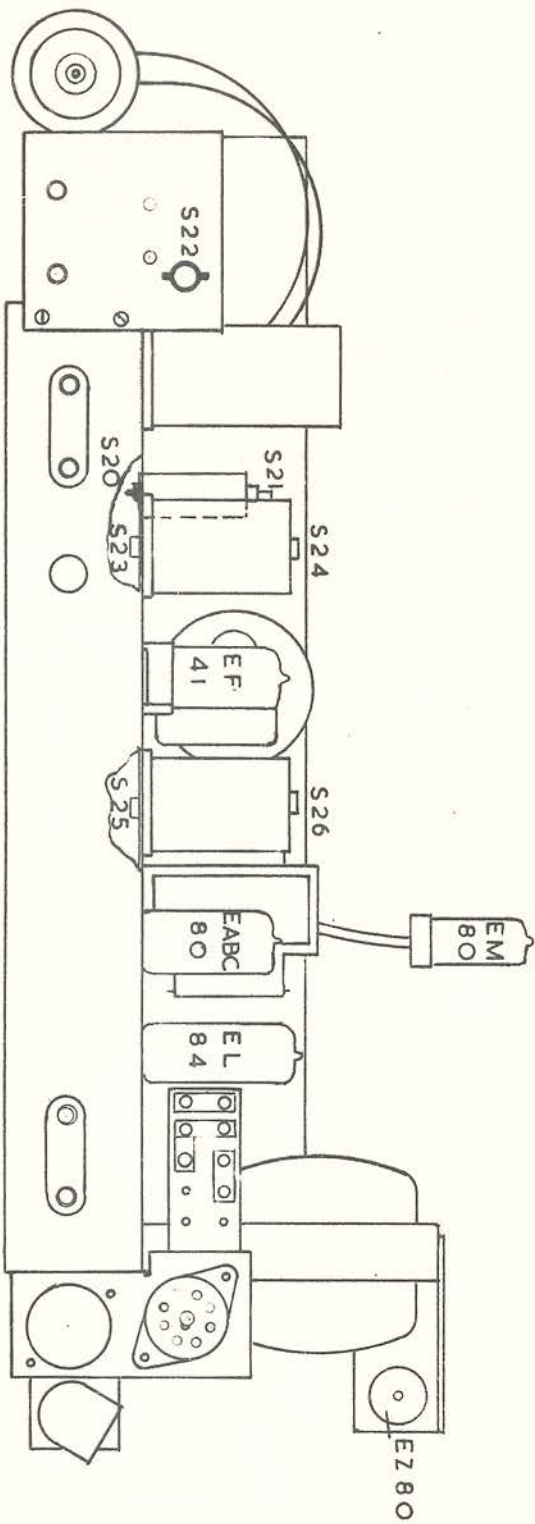


Auteursrecht volgens de wet voorbehouden



ADJUST DIAGRAM

FIG. 2



ADJUST DIAGRAM

FIG. 2a



Auteursrecht volgens de wet voorbehouden

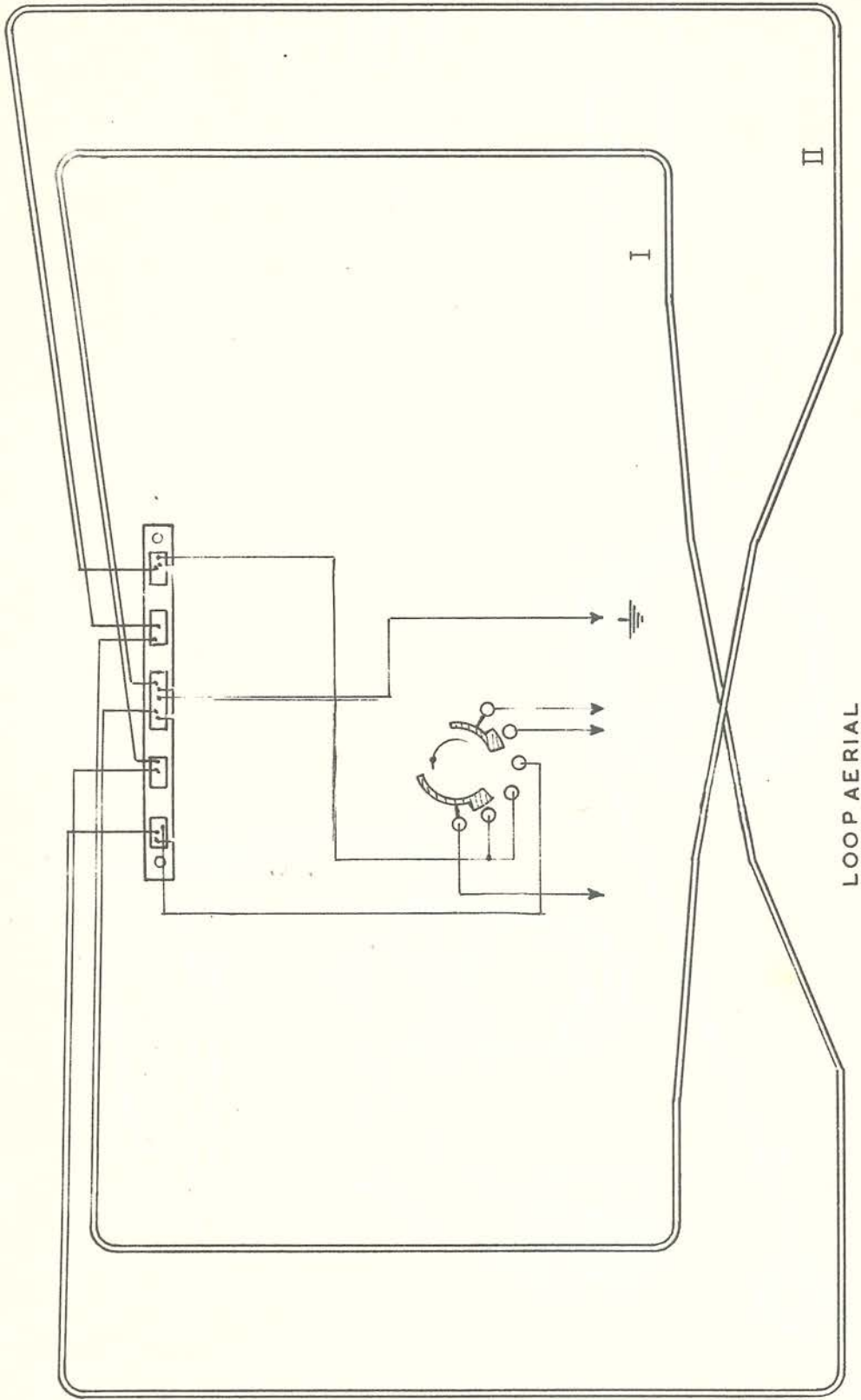


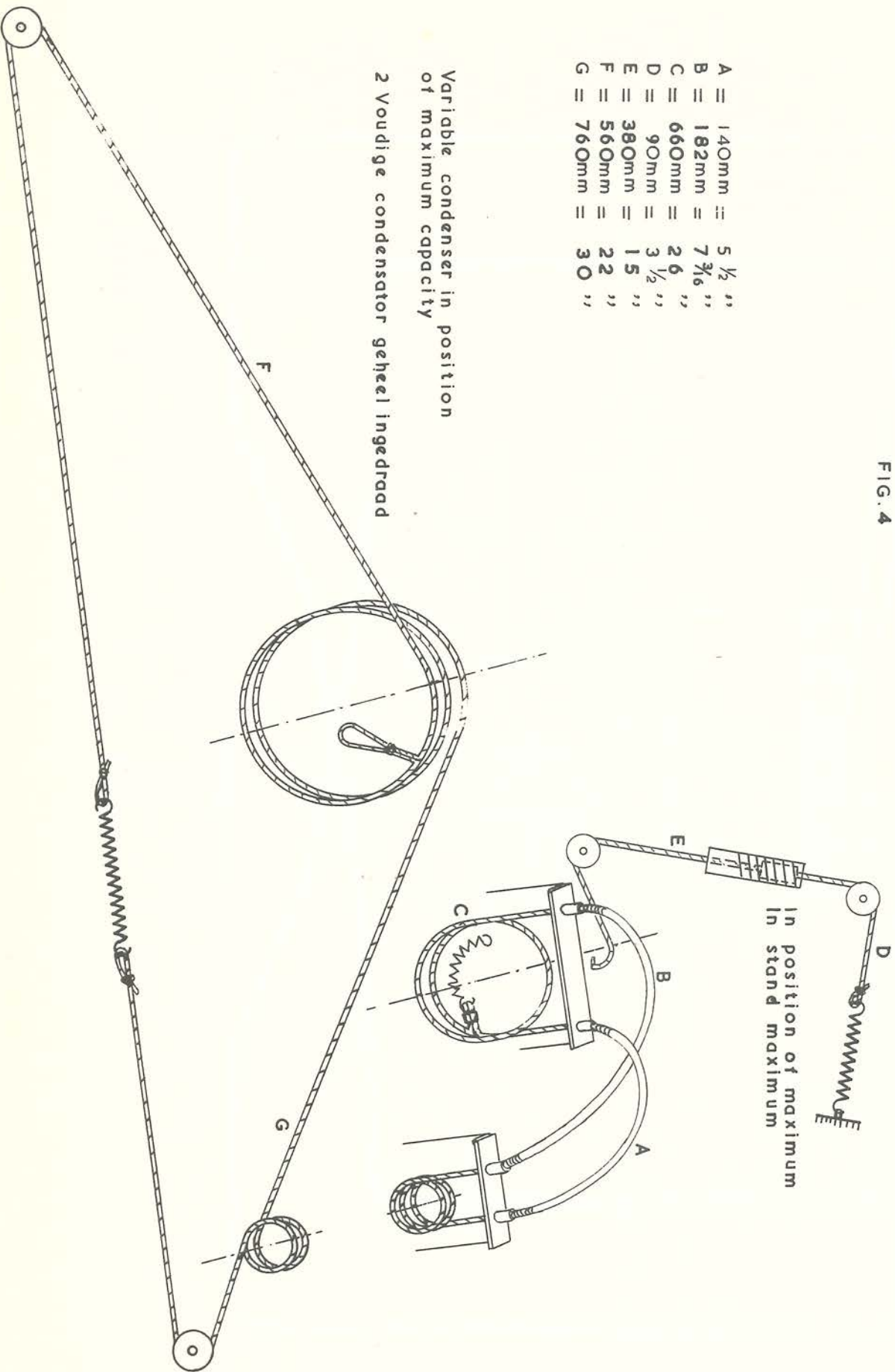
FIG. 3

FIG. 4

A =	140mm =	5 1/2 "
B =	182mm =	7 3/6 "
C =	660mm =	2 6 "
D =	90mm =	3 1/2 "
E =	380mm =	1 5 "
F =	560mm =	2 2 "
G =	760mm =	3 0 "

Variable condenser in position of maximum capacity

2 Voudige condensator geheel ingedraad



In position of maximum in stand maximum