

IRI

華

無線電大辭典

ELECTRONICS DICTIONARY



無線電大辭典

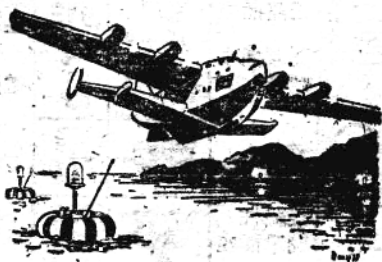
ELECTRONICS DICTIONARY

主 編 者
范 鳳 源

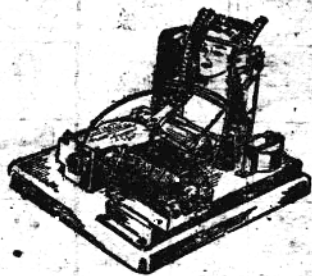
1952 年 1 月

無線電符號

		天線			單路插座 雙路插座			推挽式輸入變壓器
		環狀天線			開關插座 聽筒			電阻
		地線			燈泡			可變電阻
		地網			接線柱 簡單插座			電位器
		固定儲電器			撲落 撲落插座			二線不接 二線相接
		可變儲電器			電表			礦石 石英
		雙連儲電器			三極管			電鎗
		鉄片儲電器			二極管			分線板
		線圈			雙屏二極管			閘刀開關
		線圈交連			交流三極管			保險絲
		可變線圈			交流四極管			電池
		抽頭分線圈			變數管 可放大係數 真空管			電唱頭
		鉄心線圈			高放五極管			揚聲器
		變壓器			低放五極管			話筒



新式海洋面橡皮浮筒上，裝有收音機，專門接收海岸電台發送之訊號，由放大機，摺使浮筒頂部高出之螢光燈，發出同樣閃光訊號，專供飛機船舶遠望而知地點之目標。



無線電傳真機。



鋁條話筒(速率話筒)之結構。



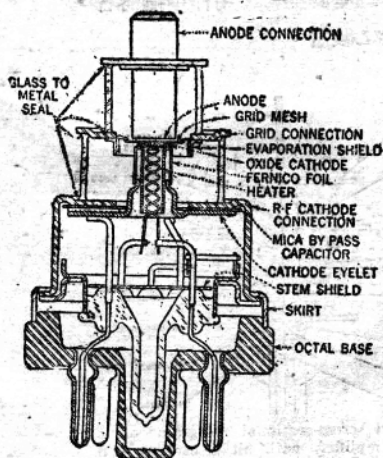
專門稽查金屬之無線電測礦機，可用以測出埋藏地下金銀鉄器與地雷等等。



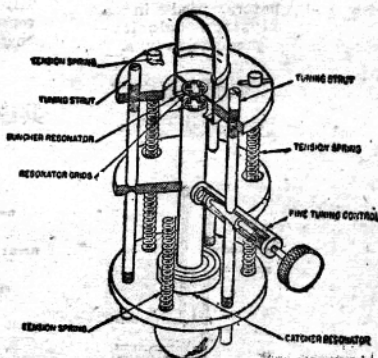
利用微波之直射特性，使現今電話，電視，播音，皆由中繼電台裝於鐵塔上，一一遙傳，以完成通信網。



微波發射用之實塔式真空管。

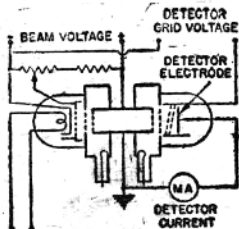


實塔式真空管2C40之內部構造。



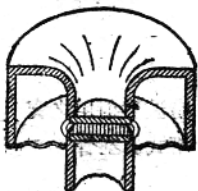
Klystron gang tuner, having three adjusting screws for varying the grid spacing and the angularity of the planes of the grids.

速率調變真空管用之同軸調節器，乃用螺旋校整器，旋出或旋進，而使柵極空間距離（柵極空間距離）變更，同時使柵版平面之角度變更，於是週率變更。



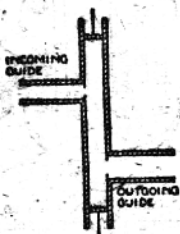
Klystron detector circuit.

速率調變檢波管



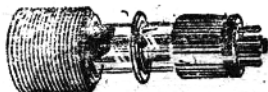
Cross-section of a typical cavity resonator, used in a klystron velocity-modulation tube.

速率調變真空管之空洞諧振器。



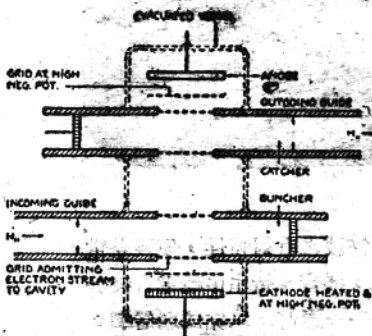
Resonating cavity used as a coupling between incoming and outgoing guides having different diameters.

諧振空洞管，以作為二導波器中之交連者



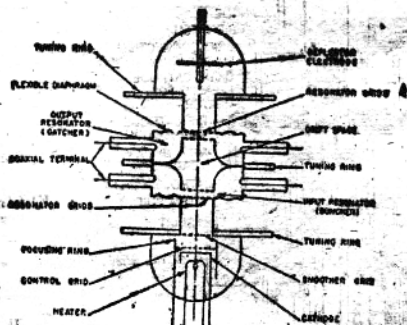
Disk-seal tube.

疊片式真空管



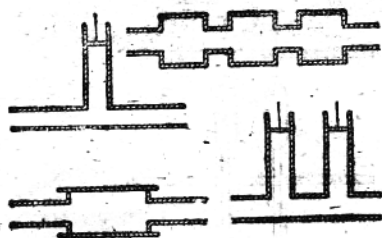
Klystron tube adapted for operation as a repeater in a wave guide, to build up the energy of a wave passing through the guide.

速率調變真空管之用作中繼器者，其導波器之裝置。



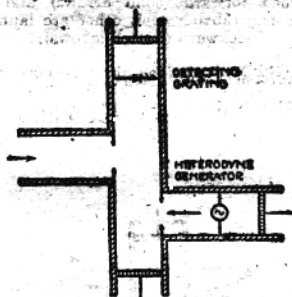
Generalized cross-sectional diagram of a klystron amplifier, with all electrodes and elements identified.

速率調變放大管之直截剖面，以示各極裝置狀。



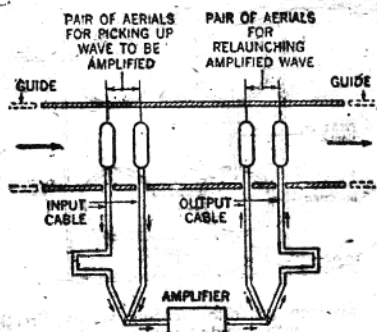
A resonating cavity can be inserted in wave guides to serve as a filter, giving either a sharp or blunt-peaked response as desired.

一種諧振空洞管，可用以插入導波器中，作成濾波器。



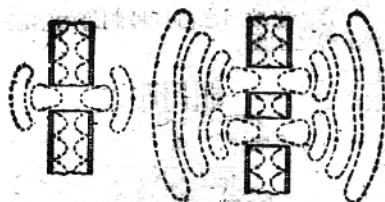
Heterodyne-detector circuit used with tuned resonating cavity at the end of a wave guide for receiving and detecting waves. The crystal detector in the detecting grating feeds the signal in useful form to a sound, television, or other receiver.

在導波器之末端，裝有調整諧振空洞管，成外差式檢波器，可接收微波訊號，用礦石檢波器，檢波後，由收音機或電視接收機，放出聲音，或影像。



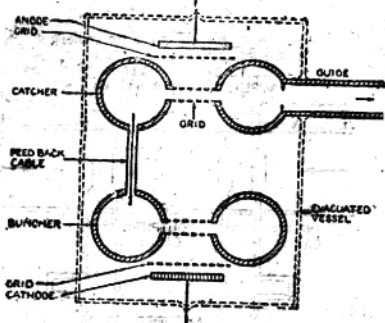
Repeater for wave guide. One pair of antennas projects into the guide to pick up the incoming wave and to convert its energy into a signal that can be amplified. The amplifier feeds its output to another pair of antennas that send the strengthened waves on through the guide.

二只天線，一只採取射入波，變成訊號，用真空管放大器放大後，再由另一天線射出。二天線皆在導波範圍內，是謂中繼器。



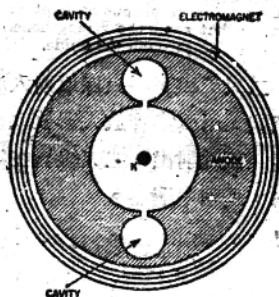
Radiating guides. By cutting away part of the guide at one or more points, loops of electric force (shown dotted) emerge through the gap, break away from the guide, and spread into free space as radiated energy.

放射電波之導波器。圖示電波放射出之情狀。



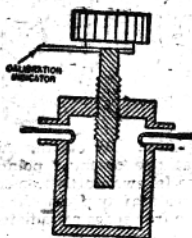
Klystron generator feeding waves directly into a guide from the catcher.

速率調變管之微波產生後，傳遞至導波器裝置。



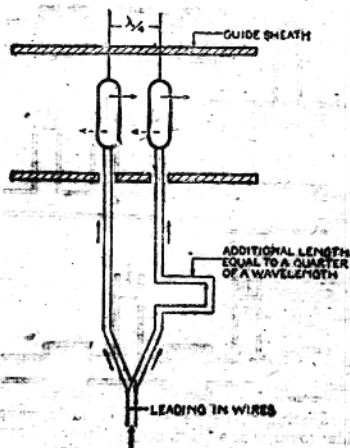
Cross-section of a cavity-resonator magnetron

發射微波用之磁極控制管內空洞諧振器之剖面



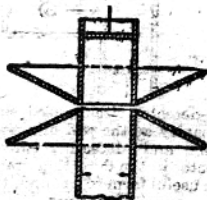
Cross-section view of resonator wavemeter.

利用空洞諧振，測量微波之波長剖面圖。



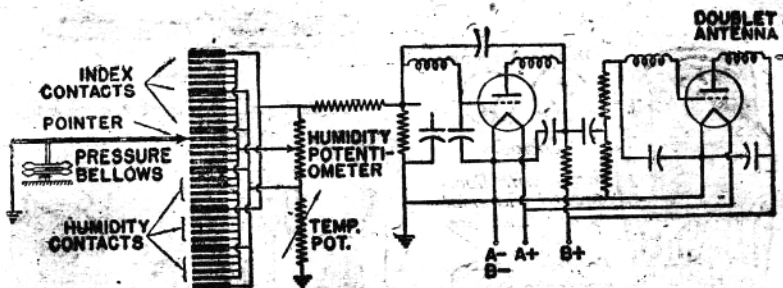
Launching device for feeding waves into or picking waves out of a waveguide in one direction only without the use of a reflecting piston. Similar antennas spaced one-quarter wavelength apart in the guide are fed by leads differing a quarter wavelength in length so that two waves enhancing one another are launched forward (solid arrows) and two waves neutralizing each other are launched backward (dotted arrows).

導波器上投出微波之天線裝置，與定向天線中反射天線裝置相同。



Flared radiating guide. When vertically mounted, it radiates energy uniformly in all directions in a horizontal plane, as usually required for broadcasting.

利用微波四面放射以播音之導波器裝置。

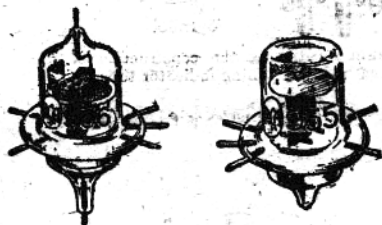


Basic circuit of a typical radiometeorograph.

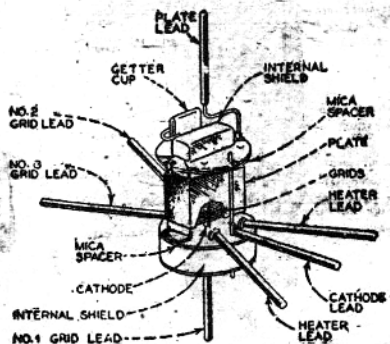
「無線電風」為測量高空氣象之主振式發射機，乃小型盒狀播音機，裝於氣球上，隨風吹飄，高昇上空，同時發出氣壓、溫度、濕度之變化訊號。

	1	2	3	4	5	6	7
A							
B							
C							
D							
E							
F							
G							
H							
I							
J							
K							
L							
M							
N							
O							
P							
Q							
R							
S							
T							
U							
V							
W							
X							
Y							
Z							
SHIFT							
SEND							
BELL							
SPACE							
LINE							
7							

Seven-unit printer telegraph code used in printing-telegraph service.



橡實形真空管



橡實形真空管內部結構。

摩爾斯電碼缺點，即縱有漏點錯誤，收報者亦無從辨出
 • 新式七格電傳打字電碼，任何一電碼，皆佔有三個格子。
 如有漏缺，收報者立即知悉。

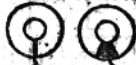


Pirani gage.

測量真空之熱絲電表，氣壓愈低，
燈絲愈熱，絲阻愈大。



In tune Out of tune



Shadows

Target with fluor-
escent material
on inner surface

Control
electrode
Cathode

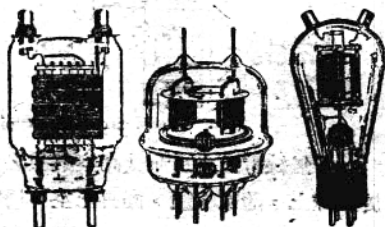


Target
Control
electrode

Symbol

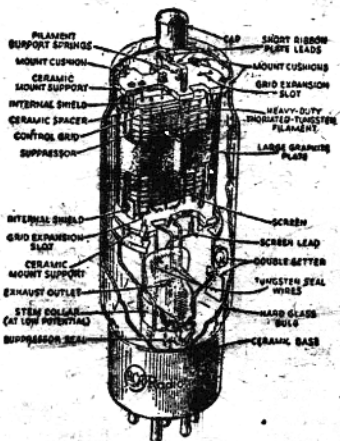
Diagram illustrating the construction of a
cathode-ray tuning indicator tube.

陰極射線電壓真空管內部構造



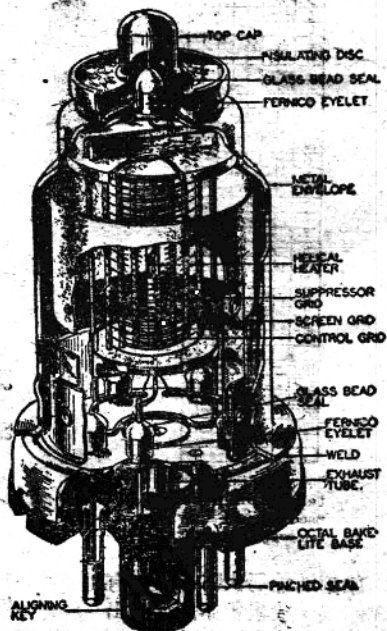
Transmitting tubes.

新式發射真空管



Transmitting pentode tube (type 803).

803 五極發射管內部構造



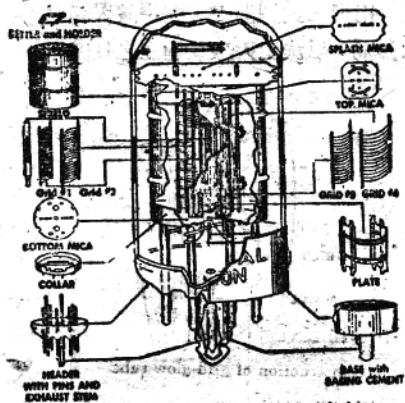
Construction of typical metal receiving tube.

金屬真空管之內部構造



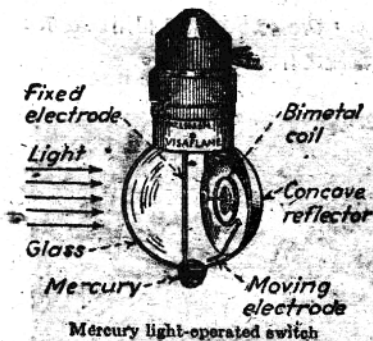
Tungar tubes.

整流用氬氣真空管



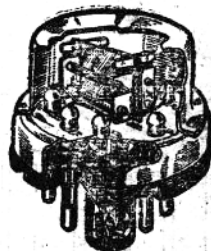
Exploded view of a 6X4 tube, with important parts shown individually.

一只鎖式真空管之內部剖面



Mercury light-operated switch

用光控制之電鈴。當光射至此電鈴之反光鏡，使兩種粘住金屬之伸張力，推動活動電極，使此電極離開水銀潭，故電路中斷。



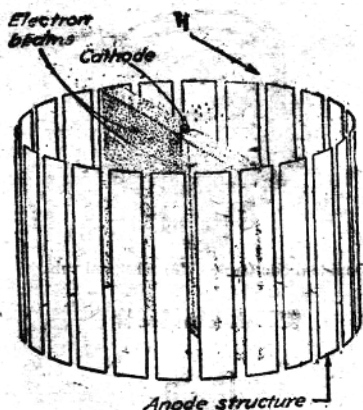
Double-diode (type 6H6) all-metal tube.

雙二極金屬真空管



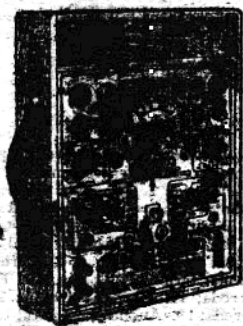
High-power triode, used as power output tube in 50-kilowatt and larger transmitters. Numbered parts are: 1. Filament posts; 2. Exhaust-tube protective cap; 3. Metal exhaust tube; 4. Filament lead seal (metal-to-glass); 5. Grid terminal; 6. Entrant metal header; 7. Grid seal (metal-to-glass); 8. Corona ring; 9. Filament terminal blocks; 10. Filament support rods; 11. Hard-glass bulb; 12. Grid support rods; 13. Anode seal (metal-to-glass); 14. Filament heat shield; 15. Electrostatic shield; 16. Anode flange; 17. Anode (3/4-inch thick copper); 18. Grid welded to supports; 19. Tie wires for self-supporting filament assembly; 20. Filament strands; 21. Filament tie.

發射電工率最大之三極真空管



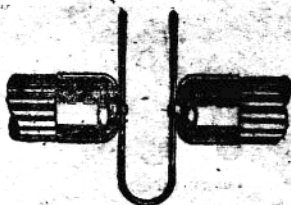
Electrode structure of a 22-anode radial-beam tube. A rotating magnetic field H can focus the double electron beam on any desired pair of opposite anodes.

二十二陽極輻射真空管，利用真空外面迴轉磁場，使真空管內電子依此輻射而成電子整流器(Electronic Commutator)。用此方法，可傳導三十條雙工電報制度。



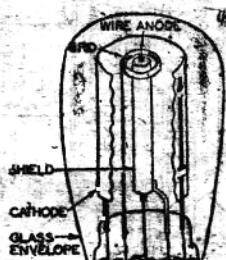
Combination emission-type tube tester and set tester.

新式真空管測驗器，包括一切測驗電壓、電流、電阻之用。



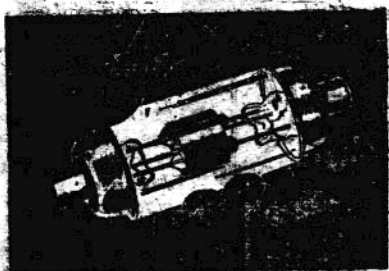
Hairpin tuning bar.

用髮叉式調節桿，在半波天線之上移動，以決定天線最適宜之長度。



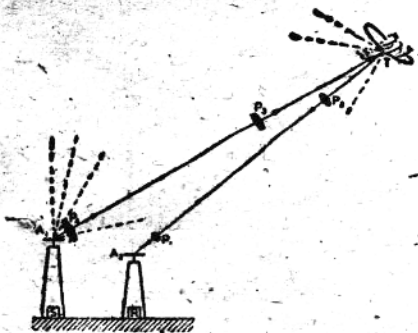
Construction of grid-glow tube.

用以表示單向電流通行之冷陰極式真空管(Cold Cathode Tube)。當直電流通過時，其接連之柵極，即發出電光，彷彿氖氣燈然，但用以表示單向電流之存在與流通者。



Vacuum capacitor used in radio transmitters.

無線電發射機中新式真空儲電器

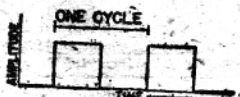
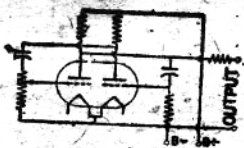


Radar makes use of radio wave pulses P , which are emitted at regular intervals from the sending antenna A_1 . The echo pulses reflected from the target T are picked up by receiving antenna A_2 , and the time of travel is converted electronically into target distance.

雷達之電波，在規定時間內，從 A_1 射出，射至飛機，再反射至 A_2 ，由陰極射線管，指示出其距離。

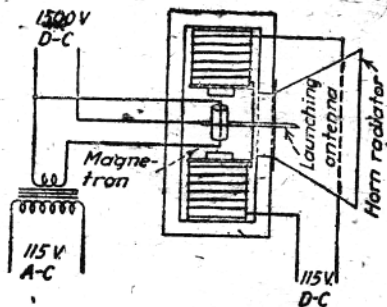


Magnetron 磁極控制振盪管



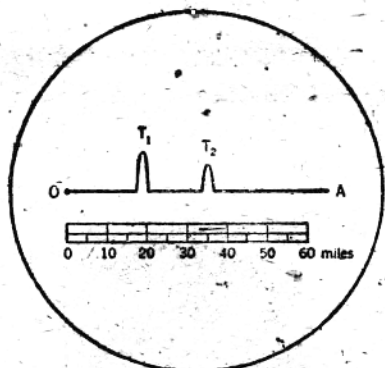
Multivibrator circuit and square-top wave it produces.

利用電阻與儲電器之真空管電路，發出方形斷續電波，乃用以控制雷達之發射與停止之時間者。



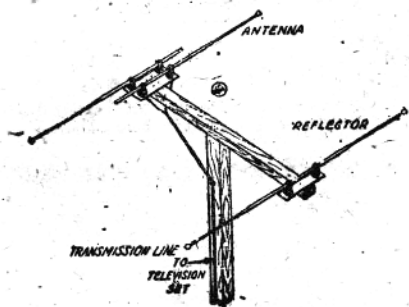
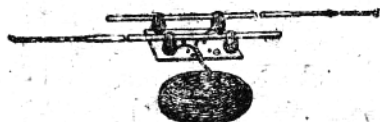
Magnetron-oscillator circuit, with external loop radiator projecting into a horn radiator.

磁極控制振盪器電路，與發出微波裝置。



Example of one type of trace seen on radar screens. The fluorescent spot sweeps along the time base OA in synchronism with the transmitted pulses. The received echoes from two different targets are seen at a distance from O corresponding to the time taken for the pulses to travel to and from the targets T_1 and T_2 . The time base can be provided with a range scale as shown. This trace is known as an A-scope presentation.

陰極射線指示管之螢光幕上，指出二個脈動波。 T_1 與 T_2 間，即此地與目的物間之距離。

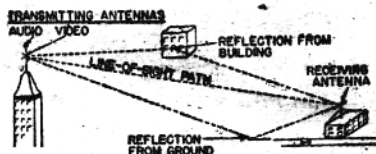


發射電視之定向天線，一為發射天線，一為反射天線。



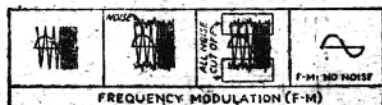
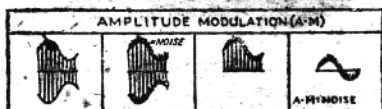
Short-wave doublet antenna installed on the roof of a house for an all-wave broadcast receiver, and doublet antenna made from rigid metal pipes for television and frequency-modulation reception.

屋頂裝三種天線，一為短波半波式天線，接收播音電波，一為雙桿式天線，用金屬管製成，接收電視電波。

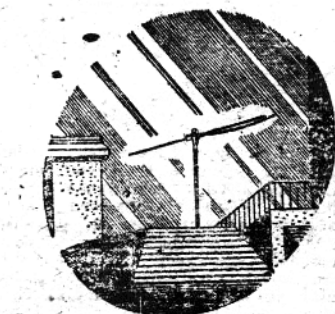


Reflection paths in a television system

電視電波反射情形



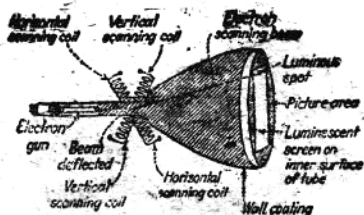
Frequency modulation compared with amplitude modulation.



Dipole antenna for television and frequency-modulation reception.

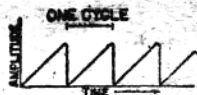
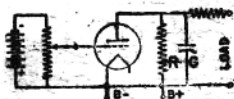
接收電視與調頻電波之天線。

調幅電波與調頻電波之不同，1. 為發射天線上發出波形。2. 為接收天線上接得波形。3. 為檢波後之波形。4. 為揚聲器中振動聲波。



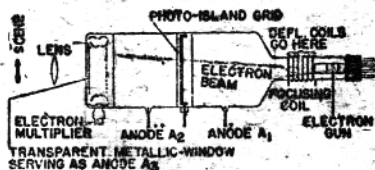
Picture tube used in a television receiver to reproduce the image point by point on a luminescent screen. This tube employs electro-magnetic deflecting coils.

用電磁線圈控制之陰極射線管，
乃電視接收機中放映器。



Relaxation oscillator circuit and saw-tooth wave form it produces.

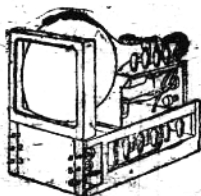
產生鋸齒形電波之振盪電路



Farnsworth storage-type disector tube for television cameras.

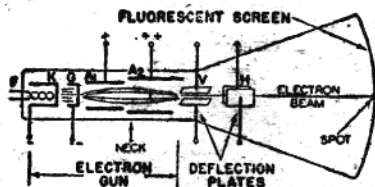
電視吸收鏡頭之真空管，乃 P.

F. Farnsworth 所發明。



Picture receiver with cabinet removed.

電視與電傳照相接收機

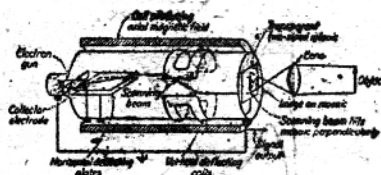


F--FILAMENT--Pins 1 & 2
K--CATHODE--Pin 11
G--CONTROL GRID--Pin 10
A1--FIRST ANODE--Pin 4
A2--SECOND ANODE--Pin 7
V--VERT. DEFL. PLATES--Pins 6 & 5
H--HORIZ. DEFL. PLATES--Pins 3 & 8



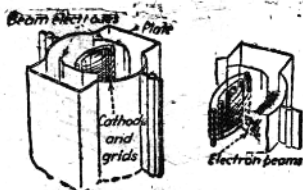
Construction and schematic symbols for a cathode-ray tube employing electrostatic deflection.

陰極射線指示管之內部構造

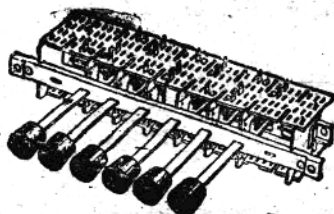


Simplified diagram showing the construction of one type of orthiconoscope (also called orthicon) for television cameras.

目前電視鏡頭用效率最高之低速
率電子分像吸收管。



電子注功率真空管，又稱
束射強放管之內部構造。

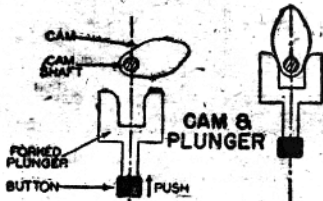
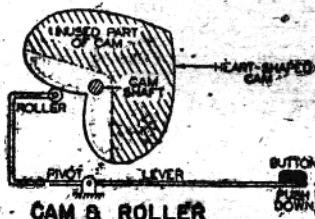
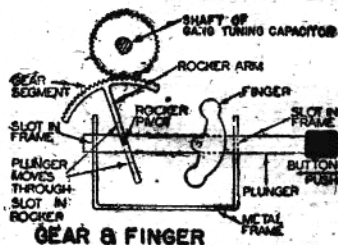


Pushbutton switch.
撥鈕式調換電台機構



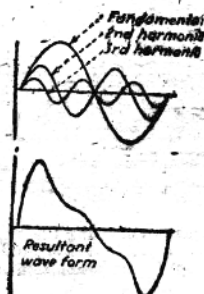
Spacing of grid wires
in variable-mu tube.

可變放大係數真空管之機
極畸形繞絲狀。



Examples of mechanical automatic tuning
systems.

自動機械調節制度



Harmonics

副波



VERTICAL SINGLE-WIRE ANTENNA



GUYED VERTICAL ANTENNA



SELF-SUPPORTING TOWER

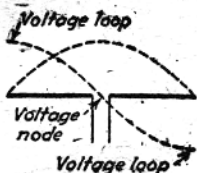


T ANTENNA

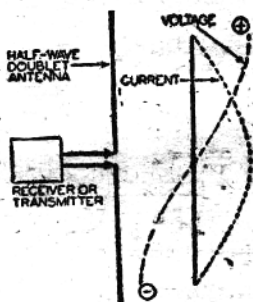


TOWER WITH TOP HAT

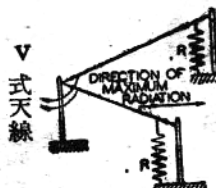
播音台各式天線



Voltage node and loops on a half-wave antenna.



短波用赫志式天線



V 式天線



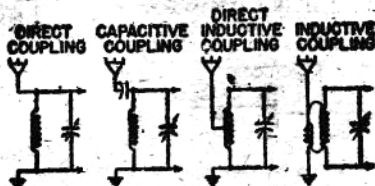
Rhombic antenna.

金剛鑽式天線

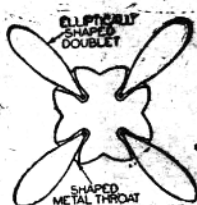


Transposition blocks.

短波用二饋送線間之絕緣版



天線交連



Horizontal Cross-section of a type of turnstile antenna used on Empire State Building.

超短波之天線，係用半波式雙金屬桿天線二只，垂直裝置，一只天線中電流與其鄰近天線之電流，相差九十度相角。此種天線放射電波，成水平線的四散出去。



Single half-wave antenna



2-element antenna



6-element antenna

半波天線之發射電波狀

1. 為一個半波長度之天線
2. 為二個半波長度之天線
3. 為五個半波長度之天線