PHILCO MODEL 1222

GENERAL DESCRIPTION:

The circuit is a dual-wave six tube super-heterodyne of efficient design with semi bandspread on the shortwave band, a high gain I.F. channel and inverse feedback applied to the output stage. A separate switch is provided for change over from Radio to the "Gram" position.

Band Coverage is:-

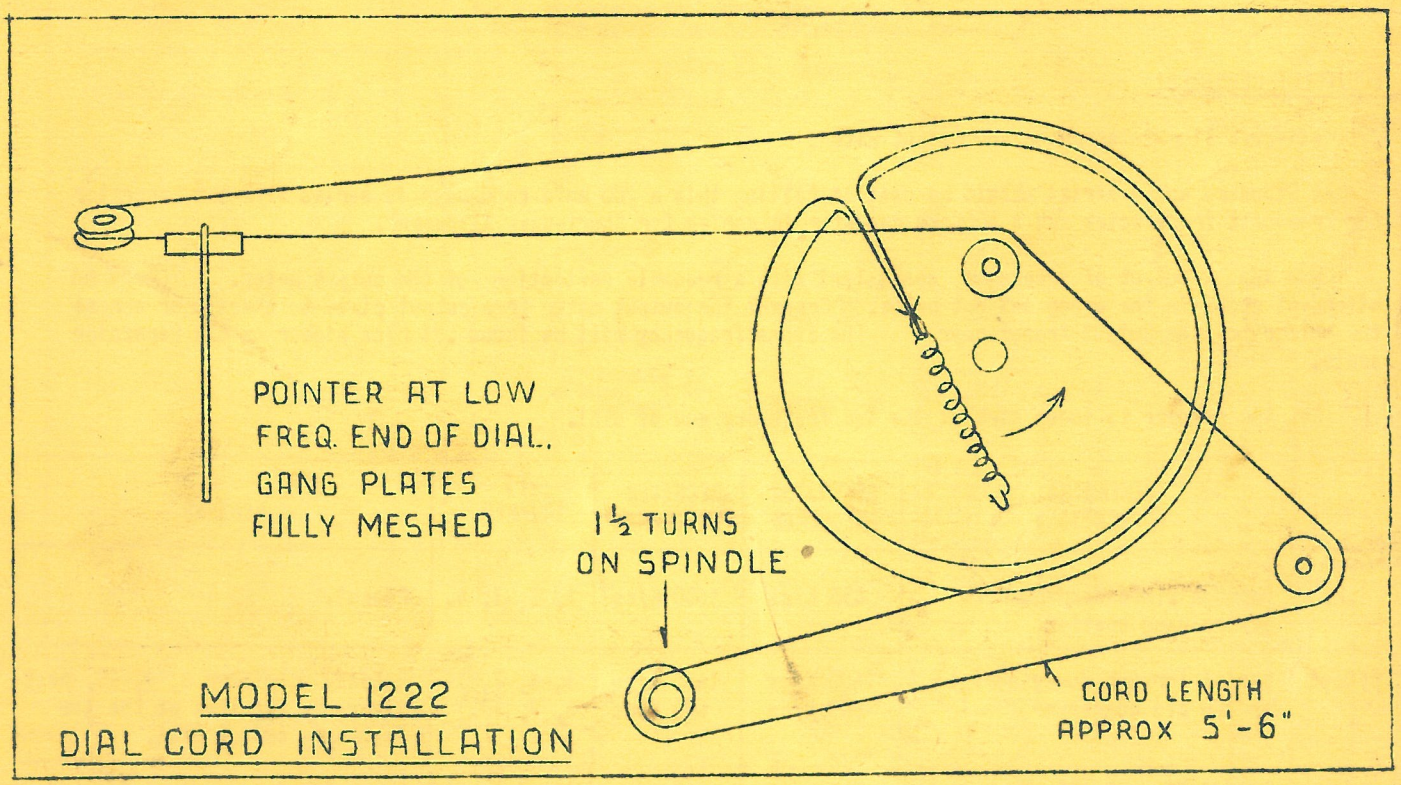
Broadcast	-	1600 - 535 K/cs
Shortwave	-	15.5 - 9.4 M/cs

Gramophone Unit Collaro R.C. 500 Record changer

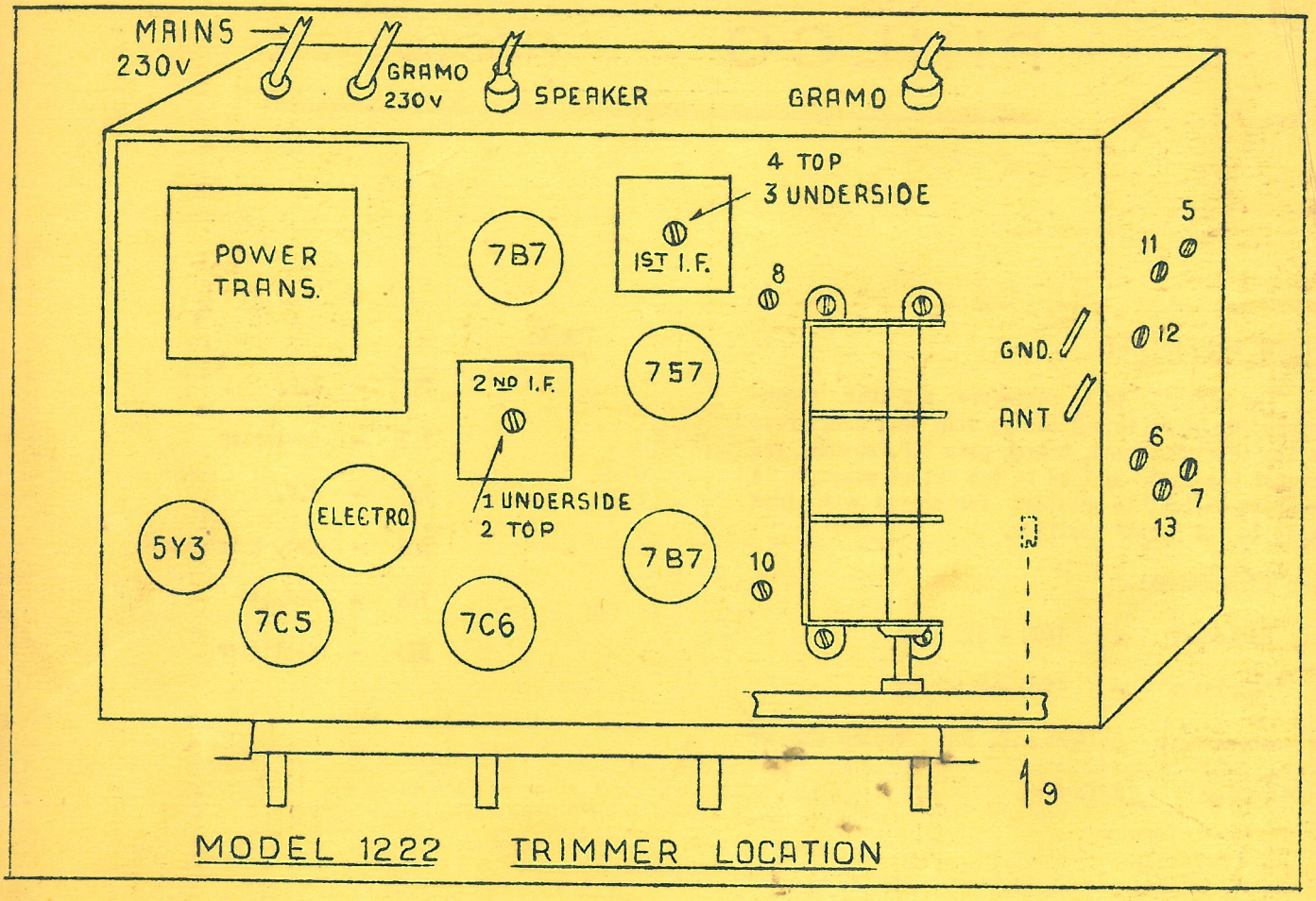
Loudspeaker Rola 8 H.

TUBES:

7B7	-	R.F.
7S7	-	Converter
7B7	-	I.F.
7C6	-	Det. & 1st Audio
7C5	-	Output
573	-	Rectifier



MODEL 1222
DIAL CORD INSTALLATION



MODEL 1222 TRIMMER LOCATION

ALIGNMENT PROCEDURE

EQUIPMENT REQUIRED:

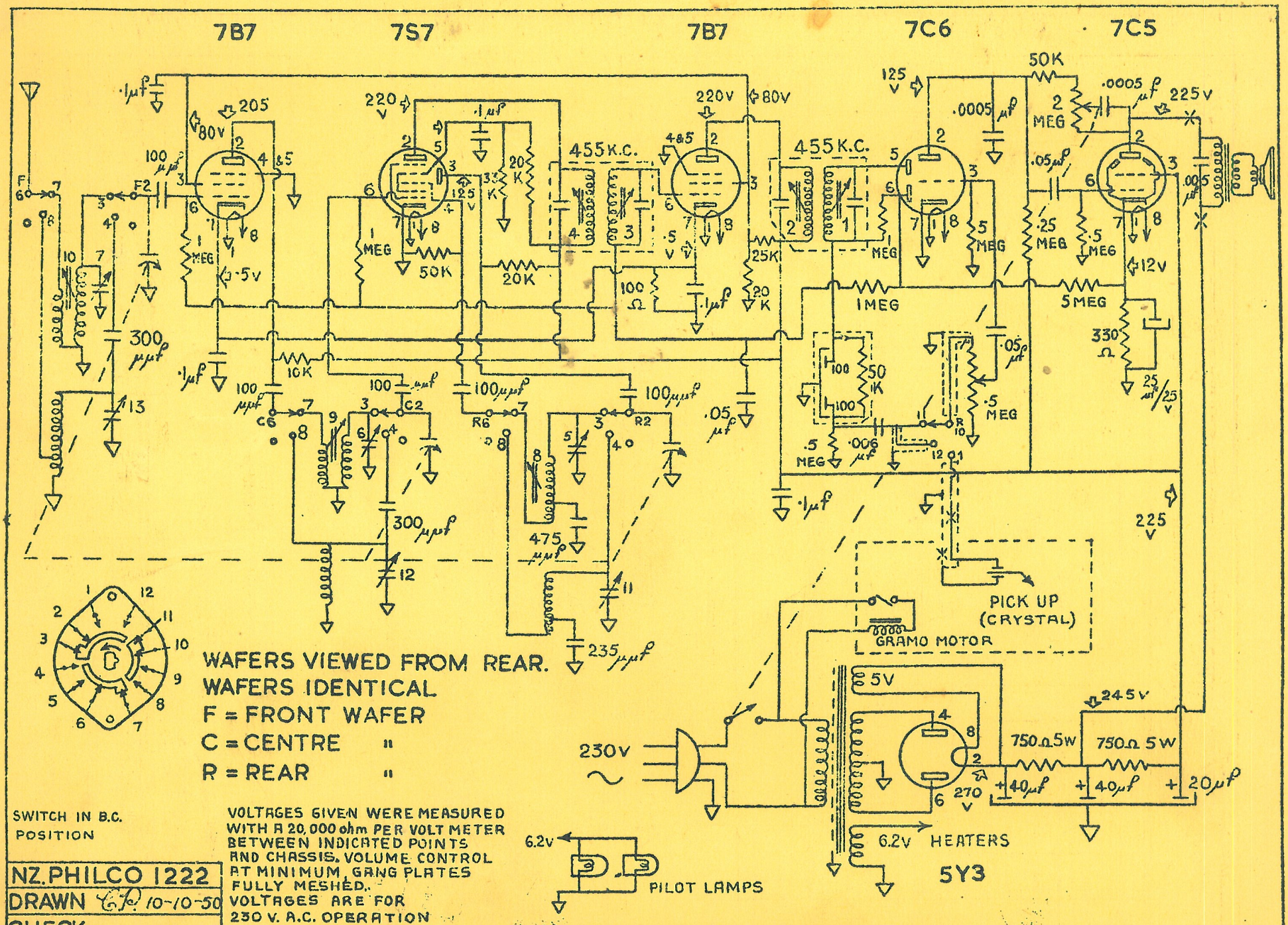
All-wave Signal Generator and output meter.

A Standard dummy aerial should be used or failing this a 200 mmfd condenser in series with the Generator for Broadcast frequencies and a 400 ohm resistor in series for Short-wave Alignment.

Use lowest output of generator consistent with a readable deflection of the output meter. Carry out alignment steps in the order set out below. Connect the output meter from output plate to chassis or across the primary of the Output transformer. The image frequency will be found .91 M/cs higher on the Generator scale.

Set the pointer to index mark at the low frequency end of dial.

BAND	GENERATOR CONNECTION:	GENERATOR FREQUENCY	RECEIVER FREQUENCY	TRIMMER	REMARKS
I.F.	Through .1mfd condenser to centre gang section	455 K/cs	1600 K/cs	1, 2, 3, 4.	Repeat.
B/Cast	Aerial through dummy aerial or 200 mfd condenser	1400 K/cs 600 K/cs	1400 K/cs 600 K/cs	5, 6, 7,) 8, 9, 10.)	Repeat. Trimmer 8, 9, 10, must always be adjusted at the low frequency end of dial.
S/W	Aerial through 400 ohm resistor or dummy aerial	15 M/cs 12 M/cs	15 M/cs 12 M/cs	11 12, 13.	Check for image adjust for maximum signal.


7B7
7S7
7B7
7C6
7C5
455 K.C.
455 K.C.
WAFERS VIEWED FROM REAR.
WAFERS IDENTICAL
F = FRONT WAFER
C = CENTRE "
R = REAR "
PICK UP (CRYSTAL)
GRAMO MOTOR
230V
5V
245V
750Ω 5W
750Ω 5W
270 V
6.2v HEATERS
5Y3
6.2v
PILOT LAMPS
SWITCH IN B.C. POSITION
VOLTAGES GIVEN WERE MEASURED WITH A 20,000 ohm PER VOLT METER BETWEEN INDICATED POINTS AND CHASSIS. VOLUME CONTROL AT MINIMUM, GANG PLATES FULLY MESHED. VOLTAGES ARE FOR 230 V. A.C. OPERATION
NZ. PHILCO 1222
DRAWN C.P. 10-10-50
CHECK
DWG. No 2493
DOMINION RADIO & ELECTRICAL CORP. LTD.

PHILCO Models 1222/736 - Collaro Gramophone Units

Type RC500.

TO REMOVE THE SPINDLE AND TURNTABLE:

First lift the Record Dropping Lever (1) out of the slotted brass end of the Spindle (2). Unscrew the spindle by gripping firmly near the base with pliers or spanner, protecting the spindle from damage (when using pliers) with cloth. The turntable may then be removed.

When replacing, be sure that the ball thrust race and washer together with any shim washers found under the ball race, are in position under the turntable, and that the turntable retaining washer is replaced under the shoulder of the record spindle before this is screwed home. The Turntable Spigot (3) is set during manufacture so that when the record spindle is screwed home with the turntable retaining washer in position the step of the Spindle (4) faces directly into the end of the Balancing Arm (5). If the record spindle is at any time replaced it will usually be necessary to reset the Turntable Spigot by loosening the large Hexagon Locknut (6) and retightening after rotating the spigot to set the spindle in the correct position.

RECORD DROPPING:

An unduly enlarged or otherwise damaged centre hole in a record may be the cause of that record failing to drop or dropping out of turn.

If more than one record falls at a time and the fault cannot be attributed to the foregoing, check that the Record Retaining Slide (7) is working freely up and down in the spindle. It is important that this slide work freely. If it jams up in its slot, several records may fall together.

TENSION ON SELECTOR PAWL (8):

It is advisable to test for record dropping with the maximum load on the spindle, that is nine 12" recordings of standard weight. (It should be noted that there are a number of variations in the weight, thickness and diameter of recordings). The pressure which the Selector Pawl exerts is controlled by the length of the Push Rod (9) working against spring (10). The spring (10) returns the Push Rod (9) and Selector Pawl (8) to the normal position. The tension is adjusted by removing the Record Dropping Lever (1) from the slotted end of the push rod. Shortening the push rod by screwing up the slotted brass pad will reduce the tension, and lengthening the push rod by unscrewing the brass pad will increase the tension. This adjustment should be made a half turn at a time from underneath, with the spindle screwed down into position.

It is advisable to aim at maximum tension consistent with the selector pawl returning and clearing the record retaining slide at the end of the change cycle. In this position it should be possible to push the selector pawl into the spindle from the side and for it to return unaided. If the tip of the pawl jams against the inside of the retaining slide the tension should be reduced.

PAWL JUMPING OUT:

Remove the selector pawl and examine it for any slight burr on the edges. These should be removed by rubbing with fine emery paper. Examine the push rod, which should be perfectly straight. It may be found to have a slight bend at point (x) in the direction of the arrow. In this event the rod should be straightened. Replace the pawl and adjust the tension.

REMOVING AND REPLACING SELECTOR PAWL - RC49 and RC500:

This is a simple operation once the knack is mastered. Hold the spindle between the thumb and forefinger near the lower end of the selector pawl, the brass end against the palm of the hand. Hold the spindle so that the step faces the body. Compress the springs by pushing the spindle into the palm, this will bring the selector pawl through the slot. Then by holding the selector pawl with the finger nail and relaxing the tension on the springs slightly, it will be possible to depress the selector pawl spring so that the tip of the selector pawl can be brought through the spindle. Next compress and relax the tension on the springs while continuing to gently pull the pawl out. Care must be taken not to damage the lip on the selector pawl spring.

To replace the pawl, hold the spindle in the same manner and push up the push rod until the lip on the spring catches on the pin across the slot and the gap in the push rod appears above the pin. Place the end of the pawl in the gap and alternately compress and relax the push rod, at the same time gently pushing the end of the pawl under the pin against the pawl spring. With a little further gentle juggling the pawl will drop into position.

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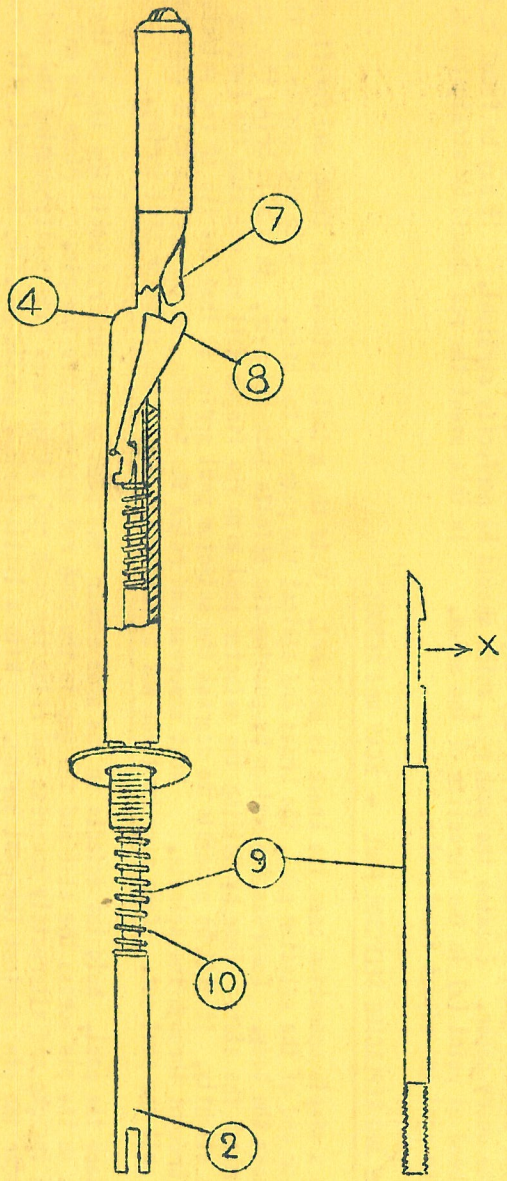
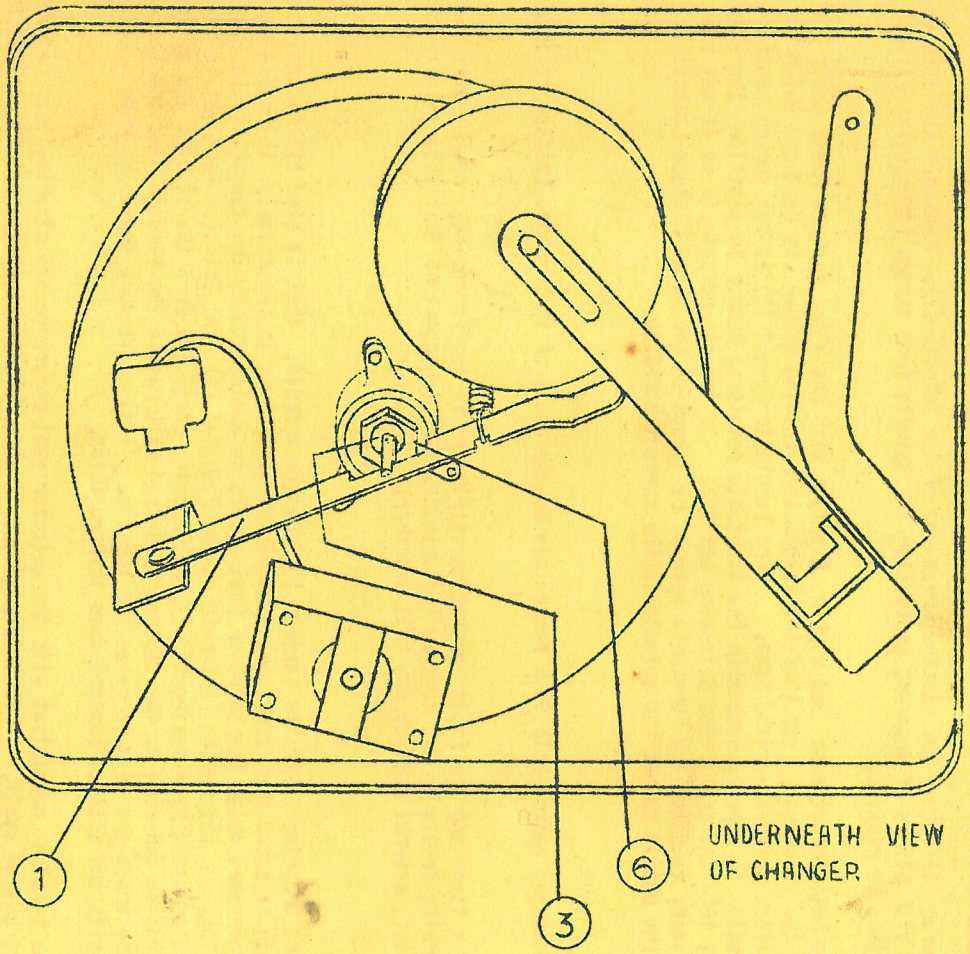
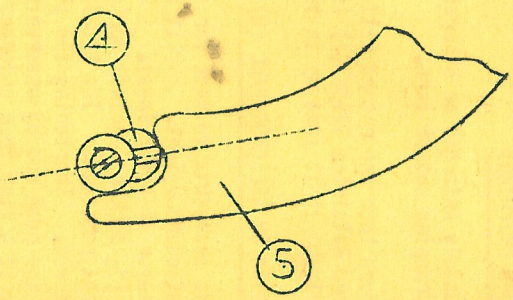




UNDERNEATH VIEW OF CHANGER



WHEN THE SPINDLE IS SCREWED HOME THE SHOULDER SHOULD POINT INTO THE END OF THE BALANCING ARM IN DIRECTION OF DOTTED-LINE