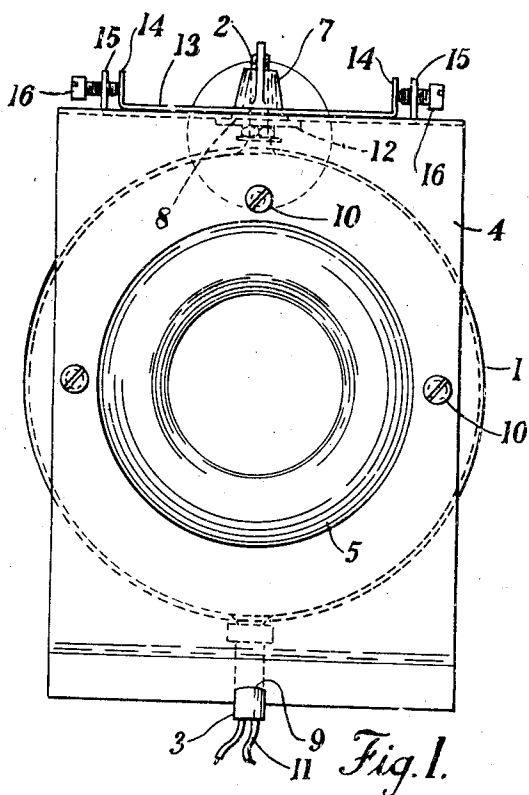
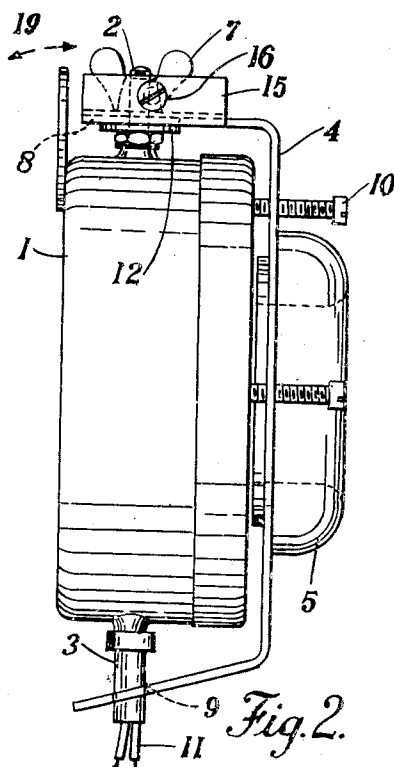
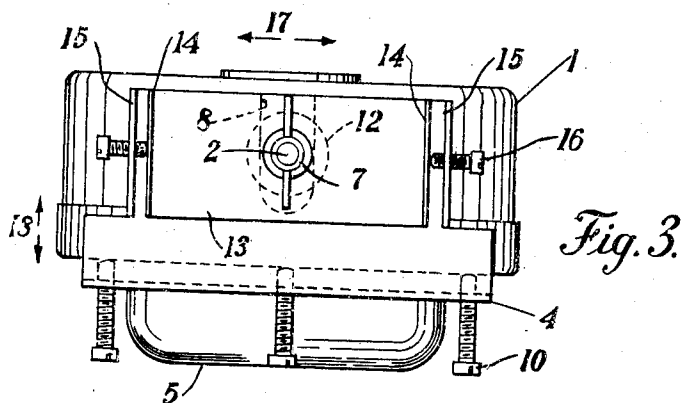
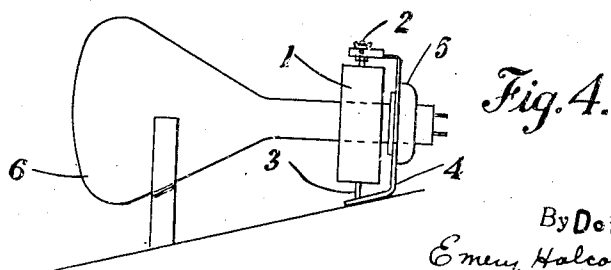


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D. JACKSON
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Inventor

By Donald Jackson
Emory Halcombe & Blair
Attorney

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TELEVISION APPARATUS

Donald Jackson, Cambridge, England, assignor to
Pye Limited, Cambridge, England, a British
company

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The present invention relates to television receivers and more particularly to an improved method of mounting and supporting the focus coil of the cathode ray tube for enabling it to be adjusted so that the raster may assume the correct position.

According to the present invention the focus coil is carried in a gimbal fitting so that it can be turned to the desired inclination whilst, in addition, at least one of the pivots is adjustable longitudinally of the cathode ray tube in the gimbal holder, means being provided for locking it in any desired adjusted position.

An embodiment of the invention will be described with reference to the accompanying drawings wherein

Figs. 1, 2 and 3 are respectively, an end elevation, a side elevation and a plan of a coil mounting, and

Fig. 4 is a diagrammatic side view of the coil mounting with a cathode ray tube in position.

Referring to the drawing the coil is enclosed in a casing 1 which has two trunnions 2 and 3 by which it is supported as a gimbal in a U-shaped cradle 4. The cradle has a rubber bush 5 to receive a cathode ray tube 6, which also passes through an aperture in the coil casing. The trunnion 2 is screw-threaded to receive a wing nut 7 and a washer 12. It passes through an open ended slot 8 in one limb of the cradle and through a hole in a plate 13. The plate 13 and the cradle 4 have respective lugs 14 and 15, the lugs 15 being provided with screws 16 by means of which the plate and the trunnion 2 may be finely adjusted in the lateral direction as is indicated by the double ended arrow 17 in Fig. 3, the slot 8 having sufficient width to permit this movement of the trunnion within it. The other trunnion passes loosely into a hole 9 in the other limb of the cradle. The casing 1 and therefore the enclosed coil can be turned about the axis of the trunnions 2 and 3 in the manner indicated by the double headed arrow 19 in Fig. 3. It can also be tilted, as is shown by the double ended arrow 19 in Fig. 2, by moving the trunnion 2 along its slot 8, a movement which is permitted by the clearance between the trunnion 3 and its bearing hole 9. The wing nut 7 enables the coil to be locked in position after adjustment and clamps the plate 13 to the cradle 4. The screws 16 may also, if desired, serve as additional clamping means for the plate 13. Screws 10, passing through one wall of the cradle and adapted to bear on the coil case 1, may be employed to obtain

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a fine adjustment of the angular position of the coil and to hold it against vibration when adjusted.

The trunnion 3 is preferably tubular and serves as a convenient lead-in for the conducting wires 11 of the coil. The inclination of the bottom limb of the cradle and the open ended form of the slot 8 enable the coil to be easily inserted in the cradle when the trunnions are permanently secured to the coil case.

In an arrangement in which lateral adjustment of the coil is not required, the plate 13 may be omitted and the slot 8 then made narrow enough to afford guidance for the trunnion 2.

It will be understood that various modifications may be made without departing from the scope of the invention as defined by the appended claims.

The cradle may be arranged so that the trunnion axis is vertical, horizontal or inclined at any desired angle. When the arrangement is such that the axis is vertical the bearing for one trunnion may be provided in the chassis. The cradle may be stamped up from the metal of which the chassis is made. Instead of the trunnion 3 being journaled in a hole it may have a hemispherical or other shaped end located in a depression in the cradle, or chassis, or its end may be hollow and supported on a cone or other centre. Instead of mounting the coil in the casing 1 it may be mounted in a ring to which the trunnions 2 and 3 are secured or the coil may be provided with pivots in any other manner so that it may be adjusted as hereinbefore described. In this case the screws 10, if provided, would bear on the coil itself.

If desired the trunnion 2 may be movable longitudinally of the tube in a closely fitting slot in a plate which is mounted on the cradle so as to be adjustable transversely of the tube.

I claim:

1. Apparatus comprising a magnetic focussing device having a central aperture for surrounding a cathode ray tube, two supporting trunnions extending in diametrically opposite directions from the focussing device, supporting members cooperating with each of said trunnions and permitting the trunnions to turn therein, means for adjusting at least one of said trunnions relative to its supporting member in a direction substantially parallel to the axis of the aperture in the focussing device, and means for locking the focussing device in any desired adjusted position.

2. Apparatus as claimed in claim 1, wherein

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one trunnion is pivoted in an aperture in one of the supporting members and the other trunnion is slidable in a slot in the other supporting member, said slot extending substantially parallel to the axis of the focussing device.

3. Apparatus comprising a magnetic focussing device having a central aperture for surrounding a cathode ray tube, two supporting trunnions extending in diametrically opposite directions from the focussing device, supporting members cooperating with each of said trunnions and permitting the trunnions to turn therein, means for adjusting one of said trunnions relative to its supporting member both laterally and longitudinally with respect to the axis of the focussing device, and a single locking means for securing the focussing device in its adjusted position to hold the focussing device against turning and longitudinal and lateral movement.

4. Apparatus comprising a magnetic focussing device having a central aperture for surrounding a cathode ray tube, two supporting trunnions extending in diametrically opposite directions from the focussing device, a first supporting member having an aperture into which fits one of the trunnions, a second supporting member having a slot within which the second trunnion is slidably mounted, the width of said slot being greater than the diameter of said second trunnion, a plate having an aperture through which said second trunnion passes, said plate being laterally movable relative to the second supporting member, and means for locking the plate and focussing device in an adjusted position.

5. Apparatus comprising a magnetic focussing device having a central aperture for surrounding a cathode ray tube, two supporting trunnions extending in diametrically opposite directions from the focussing device, a U-shaped cradle member having an aperture in one of its limbs into which fits one of the trunnions and the slot in the other of its limbs within which the second trunnion is slidably mounted, the width of said slot being greater than the diameter of said second trunnion, a plate having an aperture through which said second trunnion passes, said plate being laterally movable relative to the slotted limb, a screw thread on said second trunnion and a nut on said screw thread which is adapted to lock the plate and trunnion in the adjusted position on the slotted limb when it is tightened.

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6. Apparatus comprising a magnetic focussing device having a central aperture for surrounding a cathode ray tube, two supporting trunnions extending in diametrically opposite directions from the focussing device, a first supporting member having a bearing into which fits one of the trunnions, a second supporting member having a slot within which the second trunnion is slidably mounted, a screw thread on said second trunnion, and a nut on said screw thread which is adapted to lock the focussing device in the adjusted position when it is tightened.

7. Apparatus comprising a magnetic focussing device having a central aperture for surrounding a cathode ray tube, two supporting trunnions extending in diametrically opposite directions from the focussing device, a first supporting member having a bearing into which fits one of the trunnions, a second supporting member carrying a plate having an aperture through which the second trunnion passes, said plate being movable both laterally and longitudinally relative to said second supporting member, and means for locking the plate and trunnions in an adjusted position.

8. Apparatus as claimed in claim 7, wherein screw means are provided which act between the plate and the second supporting member for adjusting their relative positions.

9. Apparatus comprising a magnetic focussing device having a central aperture for surrounding a cathode ray tube, two supporting trunnions extending in diametrically opposite directions from the focusing device, a first supporting member having a bearing into which fits one of the trunnions, a second supporting member having a slot within which the second trunnion is slidably mounted, screws engaging with the focussing device for adjusting its position relative to the supporting members, and means for locking the focussing device in an adjusted position.

DONALD JACKSON.

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The following references are of record in the file of this patent:

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