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TUNING CONTROL SYSTEM FOR RADIO RECEIVERS

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Fig. 1

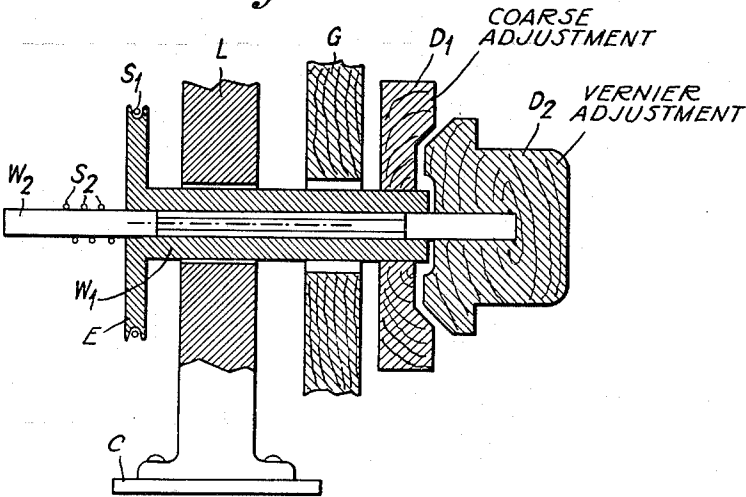


Fig. 2

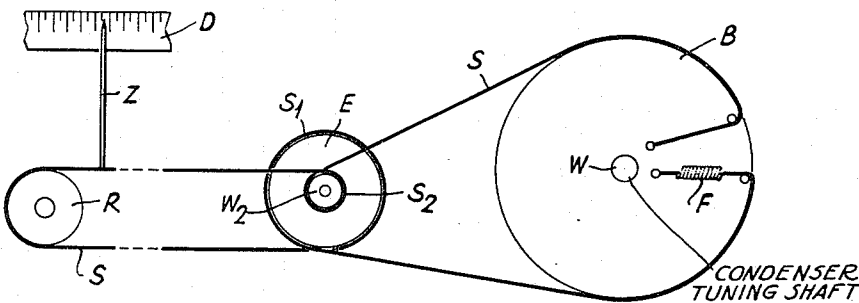
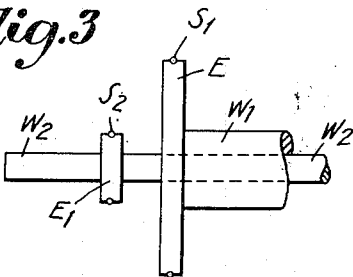


Fig. 3



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TUNING CONTROL SYSTEM FOR RADIO RECEIVERS

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8 Claims. (Cl. 74—10)

Adjusting or setting means for rotary condensers of a receiver apparatus are known in the art which comprise a broad tuning or adjusting shaft and a fine-tuning or vernier shaft. The two shafts may be revolved at will by distinct control knobs. In arrangements of this kind known in the prior art, special step-down gears are provided between the two shafts, mostly of the ball or the friction-disk type.

According to the invention a drive cable or cord in coupling relation with the device to be set, say, the rotary condenser, is laid around a pulley seated upon the broad tuning shaft as well as a pulley seated upon the vernier shaft or directly around the latter in such a way that it will set in motion the device to be adjusted or tuned when one of the two shafts is rotated.

The advantage of the invention resides in the great simplicity of the arrangement for the reason that the cable for transmitting the rotary motion or torque of the broad tuning shaft to the condenser shaft serves at the same time for the drive (far more stepped down) of the condenser shaft by the vernier shaft. The relation of the step-downs for the broad and the fine tuning drive may be varied within wide limits at will and in an easy manner.

An exemplified embodiment of the invention is shown in Figs. 1 and 2, Fig. 3 being a modified form of a detail shown in Fig. 1. Fig. 1 represents a cross-section of the receiver casing. Through the wall of the casing G is brought the broad tuning shaft W1 in the form of a hollow shaft. This shaft supports the broad tuning knob D1 and is journaled in bearing L secured at its base to the chassis C. At the free end of shaft W1 is secured the pulley E. Through the axial bore of the shaft W1 is brought the fine or vernier tuning shaft W2 upon which is seated the vernier knob D2.

The drive cord or cable S which is coupled with the rotary condenser, is wrapped, on the one hand, with part S1 around the pulley E and, on the other hand, with a part S2 directly around the free end of the shaft W2 in such a way that when one of the two tuning knobs is turned it drives the rotary condenser with a large or a smaller step-down ratio.

The path of the said cord or cable S can be seen more clearly from Fig. 2. In this illustration, B denotes the large pulley seated upon the shaft W of the rotary condenser of the receiver, to which both ends of the cable S are attached. The spring F, as known in the art, pulls the cable constantly so that it is taut. From the pulley B

the cable is run first to the pulley E seated upon the coarse tuning shaft, thence by way of an idler or guide roller R to the vernier drive shaft W2 and from the latter, finally back to pulley B. To the long stretched portion of the cable S which is located between the roller R and the shaft W2 is attached the pointer Z which moves to and fro in front of the dial D of the receiver as tuning of the set proceeds. It will thus be seen that in this instance a single cable serves to transmit the torque or drive from the knobs to the condenser, to result in two couplings of dissimilar step-down ratios between the condenser shaft and either of the knobs as well as for coupling the rotary condenser with the dial hand.

The relation of the step-down in broad or coarse tuning drive and in vernier or fine tuning drive is given by the relationship of the diameter of shaft W2 and the diameter of pulley E. It will be seen as shown in Fig. 3 that the cable, of course, could be guided onto a small pulley E1 seated on the shaft W2 rather than directly on the latter. In this case, of course, it would be the diameter of this pulley that would be decisive for the step-down ratio.

I claim:

1. Tuning control mechanism for radio apparatus comprising in combination a variable tuning device, independently operable means adapted to provide selective coarse and fine adjustments of said tuning device, and common actuating means cooperatively engaging the tuning device and the independently operable means.

2. Tuning control mechanism for radio apparatus comprising in combination a variable tuning device, independently operable means adapted to provide selective coarse and fine adjustments of said tuning device, common actuating means cooperatively engaging the tuning device and the independently operable means, and an indicator carried by the actuating means for indicating the setting of the tuning device.

3. Tuning control mechanism for radio apparatus comprising in combination a variable tuning device, independently operable means including a shaft provided with a center bore and a second shaft extending through said bore adapted to provide selective coarse and fine adjustments of said tuning device, and common actuating means cooperatively engaging the tuning device and the independently operable means.

4. Tuning control mechanism for radio apparatus comprising in combination a variable tuning device provided with driving means, a

- fine adjustment driving shaft and a coarse adjustment driving shaft, means carried by each of said shafts about which a cable is adapted to be entrained, and a cable successively entrained about said means carried by each of said shafts and said tuning driving means whereby independent adjustment of said driving shafts results in the fine and coarse adjustments of the tuning device.
5. Tuning control mechanism for radio apparatus comprising in combination a variable tuning device provided with driving means, a fine adjustment driving shaft and a coarse adjustment driving shaft, the latter having a center bore through which the former extends, a pulley carried by the fine adjustment shaft and a larger pulley carried by the coarse adjustment shaft, and a cable successively entrained about each of said pulleys and said tuning driving means whereby independent adjustment of said driving shafts results in the fine and coarse adjustments of the tuning device.
6. Tuning control mechanism according to the invention defined in claim 5 wherein an idler

pulley is provided about which the cable is also entrained, and an indicator pointer carried by that portion of the cable adjacent the idler pulley for indicating the setting of the tuning device.

7. Tuning control mechanism for radio apparatus comprising in combination a variable tuning device provided with driving means, a fine adjustment driving shaft and a coarse adjustment driving shaft, the latter having a center bore through which the former extends, a pulley carried by the coarse adjustment shaft and a cable successively entrained about said pulley, the extended portion of the fine adjustment shaft and said tuning driving means whereby independent adjustment of said driving shafts results in the fine and coarse adjustments of the tuning device.

8. Tuning control mechanism according to the invention defined in claim 7 wherein an idler pulley is provided about which the cable is also entrained, and an indicator pointer carried by that portion of the cable adjacent the idler pulley for indicating the setting of the tuning device.

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