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R. A. MULL

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RADIO ADJUSTING MECHANISM

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Fig. 1

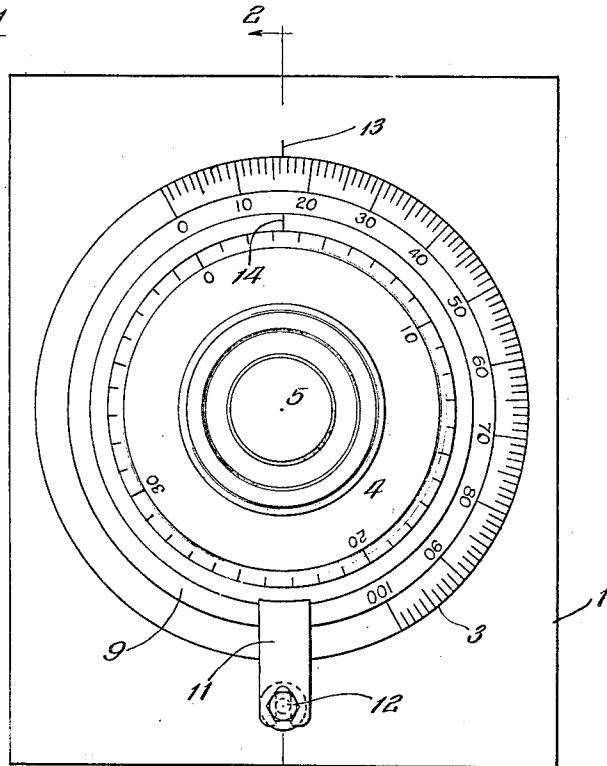


Fig. 3

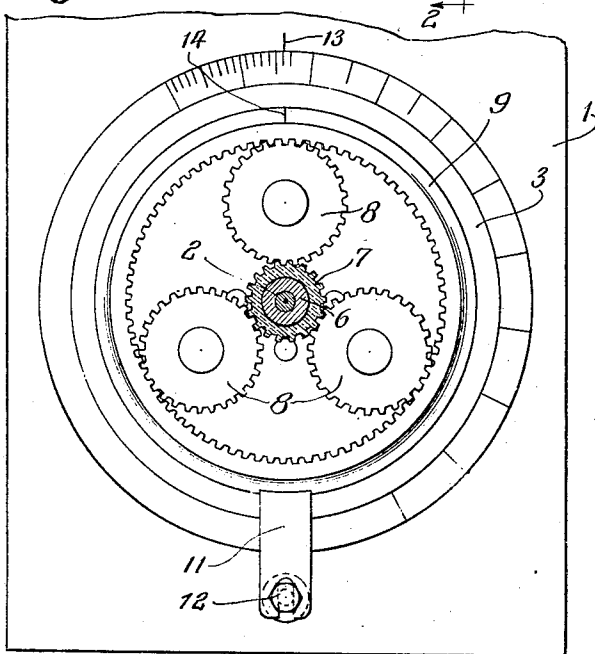
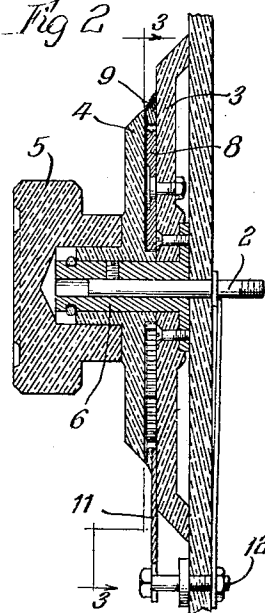


Fig. 2



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RADIO ADJUSTING MECHANISM

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This invention relates to adjusting means for radio apparatus, such as condensers and variometers and other things of like nature, which are employed in tuning the apparatus.

5 Generally stated, the object of the invention is to provide an improved construction and arrangement whereby the knob or handle of the instrument may be turned at a certain speed, in the ordinary manner, and whereby
10 such rotary motion of the knob or handle will produce a much slower motion of the indicating means, thus making it easier to find the exact condition necessary for tuning the apparatus in the desired manner, as will hereinafter more fully appear.

15 It is also an object to provide certain details and features of construction and novel combinations tending to increase the general efficiency and the desirability of a radio or wireless tuning knob or handle of this particular construction and character.

20 To these and other useful ends the invention consists in matters hereinafter set forth and claimed and shown in the accompanying drawings in which—

25 Figure 1 is a front view of an adjusting mechanism embodying the principles of the invention.

30 Figure 2 is a vertical section on line 2—2 in Figure 1.

Figure 3 is a vertical section on line 3—3 in Figure 2.

As thus illustrated, the invention comprises a front wall 1 having a shaft 2 inserted to rotate thereon, as the element to be adjusted, thereby to adjust the condenser or variometer or other apparatus (not shown) in the desired manner. The disk 3 is rigid with said shaft and has graduations or other indicating means along the edge thereof. The disk 4 is rigid with the knob 5 and rotates on the hub sleeve 6 of said disk 3, as shown. Said disk 4 has a pinion 7, and planetary gears 8 are mounted on the disk 3 to engage said pinion. A stationary gear ring 9 has internal

gear teeth 10 to engage said gears. The arm 11 of the ring 9 can be arranged to engage the bolt 12, to hold the ring stationary, this bolt being one that is ordinarily grounded in the use of the apparatus. Rotation of the knob 5 at any speed will rotate the disk 3 at a slower rate of speed.

Now the beveled edge of the disk 4 may also have graduations or indicating means thereon, as shown, to assist the eye of the user in judging the character of the adjustment necessary to obtain the desired result, as in tuning the apparatus in the well known manner. The gearing, it will be seen, is all enclosed in a vertical plane between the two disks 3 and 4, and may be proportioned to give any reduced rate of speed to the shaft 2 by which the apparatus is adjusted or operated. In this way very accurate adjustment can be secured.

65 The front wall 1 can be provided with an indicating point 13, and in line vertical therewith the ring 9 may have an indicating point 14, so that the extent of rotation can be observed and determined, the graduations on the two disks 3 and 4 rotating close to these two stationary points. The disk 4 rotates at the same speed as the handle 5, but the disk 3 rotates at a slower speed, whereby the user may turn the mechanism back and forth and carefully seek the exact position at which the desired tuning effect is obtained for the radio apparatus.

It will be seen that the means for enclosing the planetary gearing comprises the relatively movable dials or disks 4 and 3, and that these disks have their edges graduated to form indicating means, so that these edges are necessarily or desirably exposed to view. Thus the member 3 which supports the planetary gears is a movable indicating means, and is thus given a double function, in the manner described. The shaft 2 of the condenser or variometer or other device is provided with an end portion stopping short

a distance from the handle 5, as shown, so that the handle is not mounted directly on said shaft, but is coupled thereto by the sleeve or coupling device 6 in the manner shown and described, the handle being rotatable on this sleeve or coupling. Thus the coupling 6 forms an end extension of the shaft 2, upon which the handle is rotatably mounted, and with the construction shown and described this coupling member 6 supports the indicating disk 3 upon which the planetary gears are mounted. Thus the planetary gearing is in a plane between the disks 4 and 3, which disks are spaced slightly apart to accommodate said gearing, the disk 4 being rotated faster than the disk 3, when the handle is rotated, because of the action of the planetary gearing in the manner described.

What I claim as my invention is:—

1. In adjusting mechanism for radio apparatus, the combination of an element to be given rotary adjustment, a handle for manually operating said mechanism, axially alined with the said element, gearing between said handle and said element, thereby to cause said element to move at a slower rate of speed than said handle, and means movable by said handle and serving to disclose said gearing back of the handle, said enclosing means comprising relatively movable disks which are rigid with said element and with said handle, respectively, and a stationary spacer ring between the outer exposed edge portions of said disks.

2. In adjusting mechanism for radio apparatus, the combination of a shaft supported for rotation, a coupling member detachably secured to said shaft, extending beyond the end thereof, a handle rotatably supported by said coupling member, a disk rigid with said handle, a disk rigid with said coupling member, said disks spaced a distance apart, and planetary gearing disposed in the space between said disks, forming a slow speed connection from said handle to said shaft.

3. A structure as specified in claim 2, at least one of said disks having a graduated circular edge portion serving as indicating means.

4. A structure as specified in claim 2, said disks having beveled annular edges which are graduated to serve as indicating means.

5. In radio adjusting mechanism, the combination of a metal coupling member to be coupled to a shaft, a disk rigid with said coupling member, a disk rotatable on said coupling member, a handle rigid with said rotatable disk and enclosing the outer end portion of said coupling member, a metal ring forming a spacer between the edges of said disks, teeth on the inner circumference of said ring, means including a binding post to hold said ring against rotation, a pinion rigid with said handle and disposed in the plane of said ring, planetary gears rotatably mounted on

the disk which is rigid with the coupling member, said gears engaging the teeth of said ring and also engaging said pinion, the disk which is rigid with the coupling member being of greater diameter than the other disk, said disks being exposed to view and in conjunction with said ring forming means to enclose said planetary gearing.

6. A structure as specified in claim 5, said disks and said ring having beveled edges provided with indicating means thereon.

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