

Jan. 18, 1927.

E. ROSS

1,615,041

MULTIPLE CONDENSER DRIVE

Filed April 20, 1926

Fig. 1.

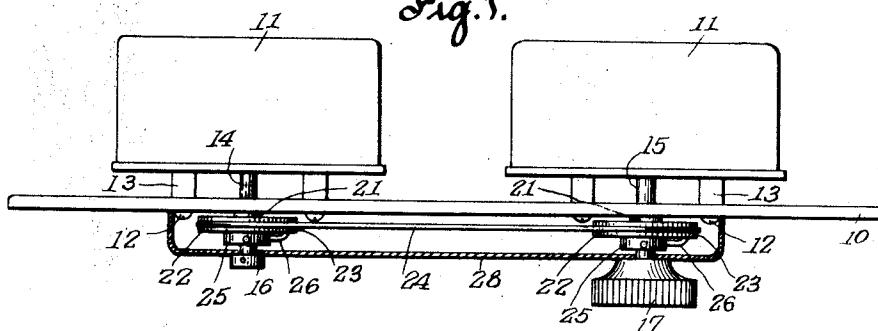


Fig. 2.

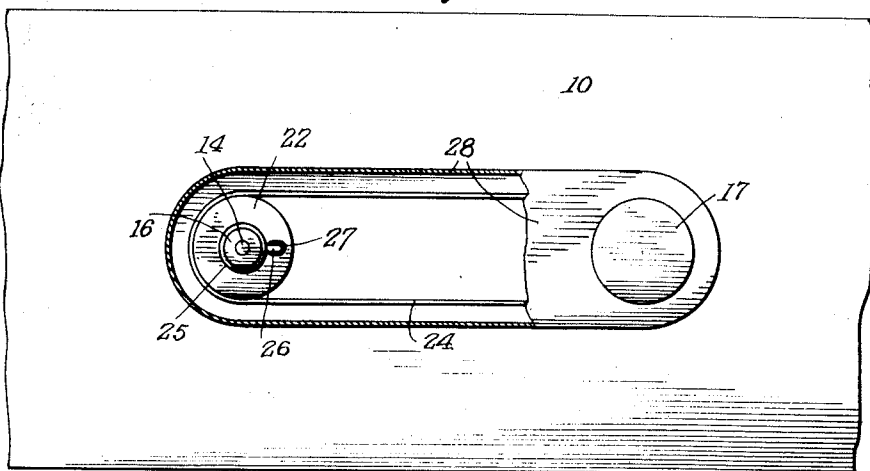
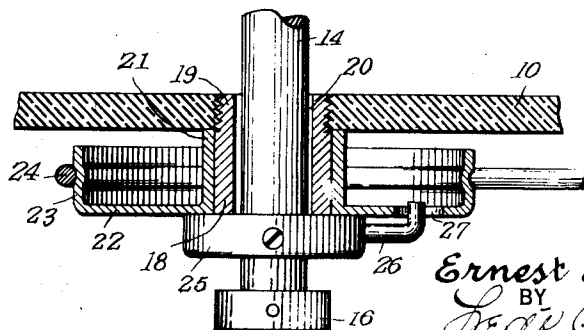


Fig. 3.



INVENTOR

Ernest Ross
BY
Deak C. Fischer
ATTORNEY

UNITED STATES PATENT OFFICE.

ERNEST ROSS, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO U. S. TOOL CO., INC., OF EAST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

MULTIPLE CONDENSER DRIVE.

Application filed April 20, 1926. Serial No. 103,215.

This invention relates to condensers and allied devices as used in radio apparatus and has as one of its objects the provision of means whereby two or more of the condensers may be actuated in synchronism, in either direction, by the operation of a single control knob.

A further feature is to provide a type of floating bearing for the condenser spindle drive means whereby the spindles are relieved from lateral strain.

Another purpose is to simplify the construction of such apparatus by dispensing with one or more of the actuating knobs, such omission tending to improve the appearance of the structure and reduce the expense thereof.

These and kindred objects are accomplished by the novel construction, combination, and arrangement of parts hereinafter described and illustrated in the accompanying drawing, forming a material part of this disclosure, and in which:

Figure 1 is a top plan view of an embodiment of the invention, illustrating its applications, parts being in section to show the construction.

Figure 2 is a front elevational view of the same, the casing being broken partially away.

Figure 3 is a sectional view showing the drive means in detail, and drawn to an enlarged scale.

Throughout the several views the numeral 10 designates a conventional panel, to the inner side of which are rigidly secured two or more condensers of any preferred type and generically indicated by the numeral 11, the same being held to the panel by the usual type of fastenings 12 including spacers 13.

The condensers are provided with spindles 14 and 15, the former projecting slightly beyond the outer face of the panel 10, where it is provided with a plain collar 16, the other spindle 15 having fixed on its outer end a twirling knob 17.

The panel 10 contains screw-threaded openings through which the spindles pass concentrically and fixed in these openings

are sleeves 18 held by their reduced threaded extensions 19, there being a clear annular space 20 between the spindles and bore of the sleeves.

Mounted to freely rotate on the exterior of the sleeves 18 are hubs 21 flanged outwardly at their outer ends to present discs or webs 22 for bands 23 extending concentrically with the hubs 21 and forming in effect the rims of wheels, which may or may not be grooved as shown, provided with teeth or analogous means to engage an endless belt 24 chain, perforated tape or other corresponding means to communicate rotary motion from one to the other.

Fixed on the spindles 14 and 15, immediately adjacent the discs 22, are collars 25 carrying pins 26, in their peripheries, bent at right angles towards the panels and adapted to engage in slots 27 formed in the discs to act as drivers.

A casing 28 comprising a plate having flanged edges to seat against the panel, is provided with openings through which the spindles freely pass and may be held in position by the collar 16 and knob 17 respectively.

In operation, the parts having been assembled as indicated, it will be apparent that when the knob 17 is rotated, motion will be given the spindle 15 on which one of the collars 25 is secured; the pin 26 in the collar engaging in the slot 27, transmits motion to the wheel and through the belt to the other wheel.

The pin engaged in the slot in the last named wheel disc actuates the corresponding collar and causes rotation of the spindle 14.

From the foregoing it will be seen that the spindles are actuated in synchronism and may be rotated in either direction; also that more than two spindles may be driven in the same manner.

As all the friction and torque of the wheels is taken in the sleeves fixed in the panel, it will be clear that the spindles are not bound by the device, and may even be eccentric to the sleeves without affecting the results, the pin-and-slot driving connections compensating for inaccuracies, and it is to

be understood that any of the usual devices for transmitting motion between wheels may be used in place of the belt shown.

From the foregoing it will be seen that
5 a simple device for this purpose has been disclosed in the preferred form of its embodiment, but it is not desired to restrict the details to the exact construction shown, it being obvious that changes, not involving
10 the exercise of invention, may be made without conflicting with the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A multiple spindle drive comprising a plate through which the spindles extend, sleeves fixed in the plate openings through which the spindles pass, collars on the spindles at the ends of said sleeves, wheels revoluble on said sleeves, driving connections
20 operatively engaging said wheels, means for rotating one of said spindles, and self adjusting driving connections between each collar and its corresponding wheel.

2. A manually operable multiple spindle drive comprising a support plate, sleeves set in said plate through which the spindles spacedly pass, wheels revoluble on said
30 sleeves, collars fixed on said spindles to retain said wheels in place, means to communicate rotary motion from one wheel to another, and means co-operative between each of said wheels and its corresponding collar
35 to transmit motion one to the other, said means permitting relative eccentricity.

3. A manually operable multiple spindle drive comprising a support plate, sleeves set in said plate through which the spindles
40 spacedly pass, wheels revoluble on said sleeves, collars fixed on said spindles to retain said wheels in place, said collars having

driving connections with the adjacent wheels, means trained over said wheels to communicate rotary motion one to another,
45 a manually operated knob on one of said spindles, collars fixed on the extremities of the other spindles, and a casing having flanges seated on said plate to enclose said transmission elements, said casing being held
50 in position by the last named collars and said knob.

4. A multiple condenser drive comprising in combination with two or more condenser spindles, a support plate through which the
55 spindles extend and means for rotating one of said spindles, of sleeves fixed in said plate through which said spindles spacedly pass, wheels rotatable on said spindles, said wheels having slotted webs, collars fixed on said
60 spindles, pins set in said collars, said pins having a part to engage in the slots of the webs, and driving connections between said pulleys.

5. A device of the kind comprising in
65 combination with the panel of a radio apparatus, two or more condensers attached to the panel, said condensers having spindles projecting through openings in the panel, sleeves fixed in the mentioned openings to
70 extend outwardly opposite the condensers, said sleeves having a bore exceeding the diameter of the spindles, an actuating knob fixed on one of said spindles, collars fixed on all the spindles, wheels revoluble on said
75 sleeves between the panel and said collars, means for communicating rotary motion between said wheels, and driving connections between said collars and the adjacent wheels, said connections being operative irrespective
80 of eccentricity therebetween.

This specification signed this sixth day of April, 1926.

ERNEST ROSS.