J. O. GARGAN.

LOCKING DEVICE.

APPLICATION FILED MAY 13, 1918.

1,281,338. Patented Oct. 15, 1918.

Fig. 1.

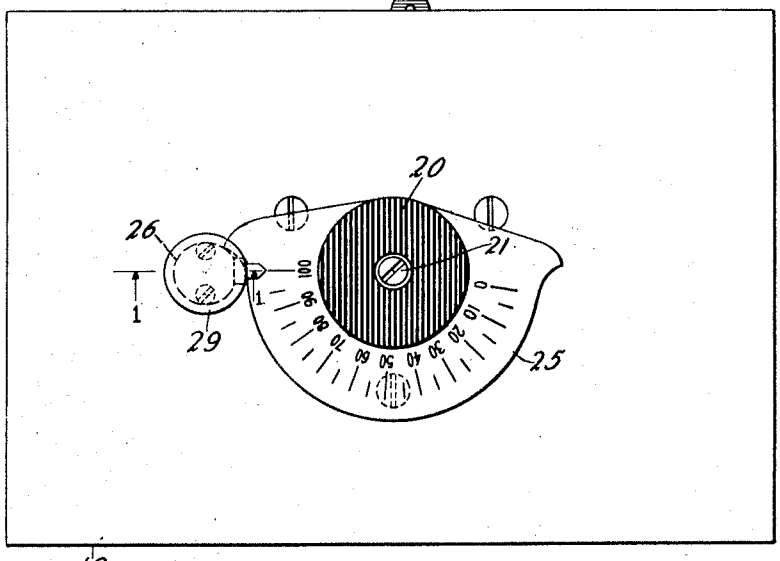


Fig. 2.

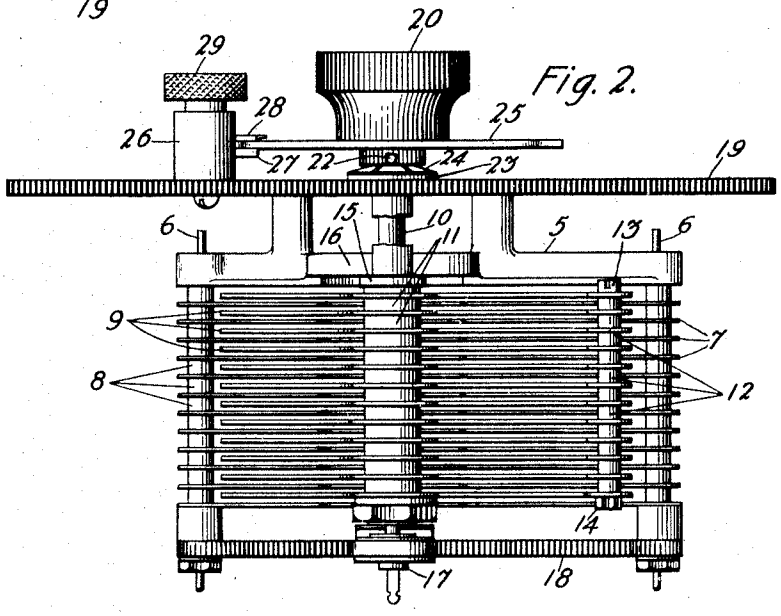
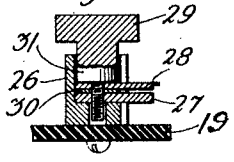


Fig. 3.



Inventor:
John O. Gargan.
by J. E. Roberts Att'y.

UNITED STATES PATENT OFFICE.

JOHN O. GARGAN, OF BROOKLYN, NEW YORK, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

LOCKING DEVICE.

1,281,338. Specification of Letters Patent. Patented Oct. 15, 1918.

Application filed May 13, 1918. Serial No. 234,185.

To all whom it may concern:

Be it known that I, JOHN O. GARGAN, a citizen of the United States, residing at Brooklyn, in the county of Kings, State of New York, have invented certain new and useful Improvements in Locking Devices, of which the following is a full, clear, concise, and exact description.

This invention relates to locking devices and more particularly to a locking device suitable for use in connection with adjustable condensers for the purpose of locking the movable plates of the condenser in a fixed position.

In various types of apparatus there is a demand for a locking device which will hold the apparatus in a fixed adjustment without putting any strain on the various parts. Especially is this true in the case of variable air condensers used on aeroplanes for wireless communication or in other places where the apparatus is subjected to severe jars or vibrations. The movable plates of such a condenser are not balanced with respect to the rotating shaft and a tendency therefore exists for them to work out of position when subjected to vibration. Also during shipment it is desirable to have these plates locked in position to prevent the apparatus from damage due to rough handling. Since there is only a slight separation between the movable plates and the fixed plates it is highly desirable that the locking device employed be so constructed as to prevent any possibility of strains sufficient to change the separation between the two sets of plates.

It is, therefore, the object of the present invention to provide a locking device which may be used to lock a moving member in position without causing any strain on that member and moreover, one which will be simple in operation and cheap to manufacture.

To accomplish this object, a feature of the invention resides in providing a locking device in which a pair of floating jaws are arranged to grip a movable member and hold it in a fixed position.

This and other features of the invention may be more clearly understood by referring to the accompanying drawing in which Figure 1 is a plan view of a variable condenser fitted with the locking device embodying this invention; Fig. 2 is a side view of the condenser shown in Fig. 1; and Fig. 3 is a sectional view of the locking device taken along the line 1—1 of Fig. 1 and looking in the direction of the small arrows.

Referring to this drawing, the condenser illustrated consists of a frame piece 5 supporting a number of spindles 6—6, upon which are mounted the fixed condenser plates 7—7, spacers 8—8 being provided to insure a given accurate spacing. The movable plates 9—9 are mounted on the shaft 10 which is also provided with spacers 11—11. The unsupported ends of the movable plates are prevented from being displaced by means of spacers 12—12 held in place by the screw 13 and the nut 14. The shaft 10 is supported at the upper end by the bearing 15 secured to an insulating member located within the inverted cup portion 16 of frame 5 and at the lower end by the bearing 17 located in a plate 18 of micarta or similar insulating material. This plate not only serves as a retainer for the lower bearing but also serves to add rigidity to the fixed plates. The upper portion of shaft 10 extends through an opening in the mounting plate 19 to which the frame 5 is fastened and is provided with a knob or handle 20 secured to the shaft by the screw 21 and prevented from turning by a slot which engages the pin 22. A collar 23 and spring washer 24 are provided to prevent end play of shaft 10. Rigidly secured to the underside of handle 20 is an indicating plate 25 having a scale graduated thereon to indicate the position of the movable plates.

The locking device embodying the present invention is arranged to hold the movable plates in a fixed position by clamping against the indicating plate 25. This locking device consists of a hollow post 26 rigidly secured to the mounting plate 19 and provided with a longitudinal slot through which extends a pair of floating jaws 27 and 28. The jaw 27 is assembled to lie in a plane below that of the indicating plate 25 and its inner end is provided with a threaded opening adapted to engage corresponding threads in the knurled head screw 29. The inner end of jaw 28 is provided with an opening through which the threaded portion of screw 29 passes freely and its outer end is pointed to serve as a pointer for the indicating plate 25. Between the jaws 27 and 28 within the post 26 is located a washer 30 of a thickness somewhat less than that of the

plate 25. Since the jaws are prevented from turning upon rotation of the screw 29, by the edges of the slot in the post 26, the lower jaw is drawn upward until it bears against the plate 25. Upon further turning of the screw 29, the shoulder portion 31 of the screw engages jaw 28, thereby clamping the indicating plate 25 firmly in position without causing any strain which would tend to change the separation between the movable plates and the fixed plates. The function of the washer 31 is to cause the jaws to lie in a position approaching parallelism when gripping the indicating plate, and equally good results may be obtained by employing a small helical spring in place of the washer.

What is claimed is:

1. The combination with a movable member to be locked in position, of a locking device comprising a pair of floating jaws, means for preventing the rotation of said jaws, and additional means for drawing said jaws against the movable member with equal pressure.

2. The combination with a movable member to be locked in position, of a locking device comprising a pair of floating jaws, a slotted member in which said jaws are positioned, and means for drawing said jaws against the movable member with equal pressure.

3. The combination with a movable member to be locked in position, of a locking device comprising a hollow member having a longitudinal slot therein, a pair of floating jaws extending through said slot, and means for causing said jaws to bear against the movable member with equal pressure.

4. The combination with a movable member to be locked in position, of a locking device comprising a hollow member having a longitudinal slot therein, a pair of floating jaws extending through said slot and located on either side of the movable member, means for raising the lower jaw to bear against the movable member, and means for pressing the upper jaw downward to bear against the movable member with equal pressure.

5. The combination with a movable member to be locked in position, of a locking device comprising a hollow member having a slot therein, a pair of floating jaws extending through said slot and having their outer ends located on either side of the movable member, a screw adapted to engage threads in the inner portion of one of said jaws and having a shouldered portion adapted to engage the inner portion of the other of said jaws to cause said jaws to bear against the movable member with equal pressures.

In witness whereof, I hereunto subscribe my name this 8th day of May, A. D. 1918.

JOHN O. GARGAN.