

May 9, 1933.

R. M. HEINTZ

1,907,806

INDICATING DIAL ASSEMBLY

Filed April 25, 1932

Fig. 1.

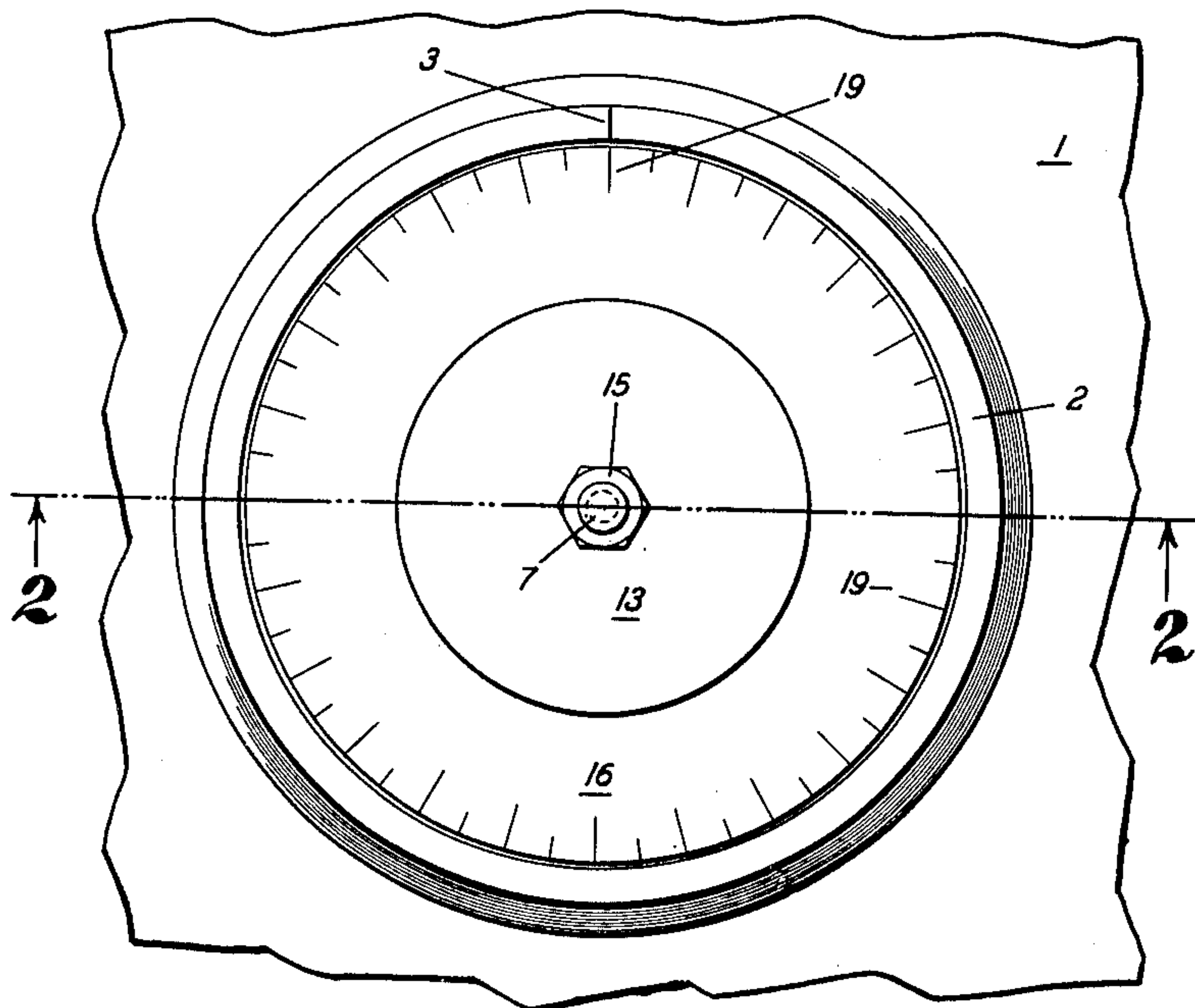


Fig. 2.

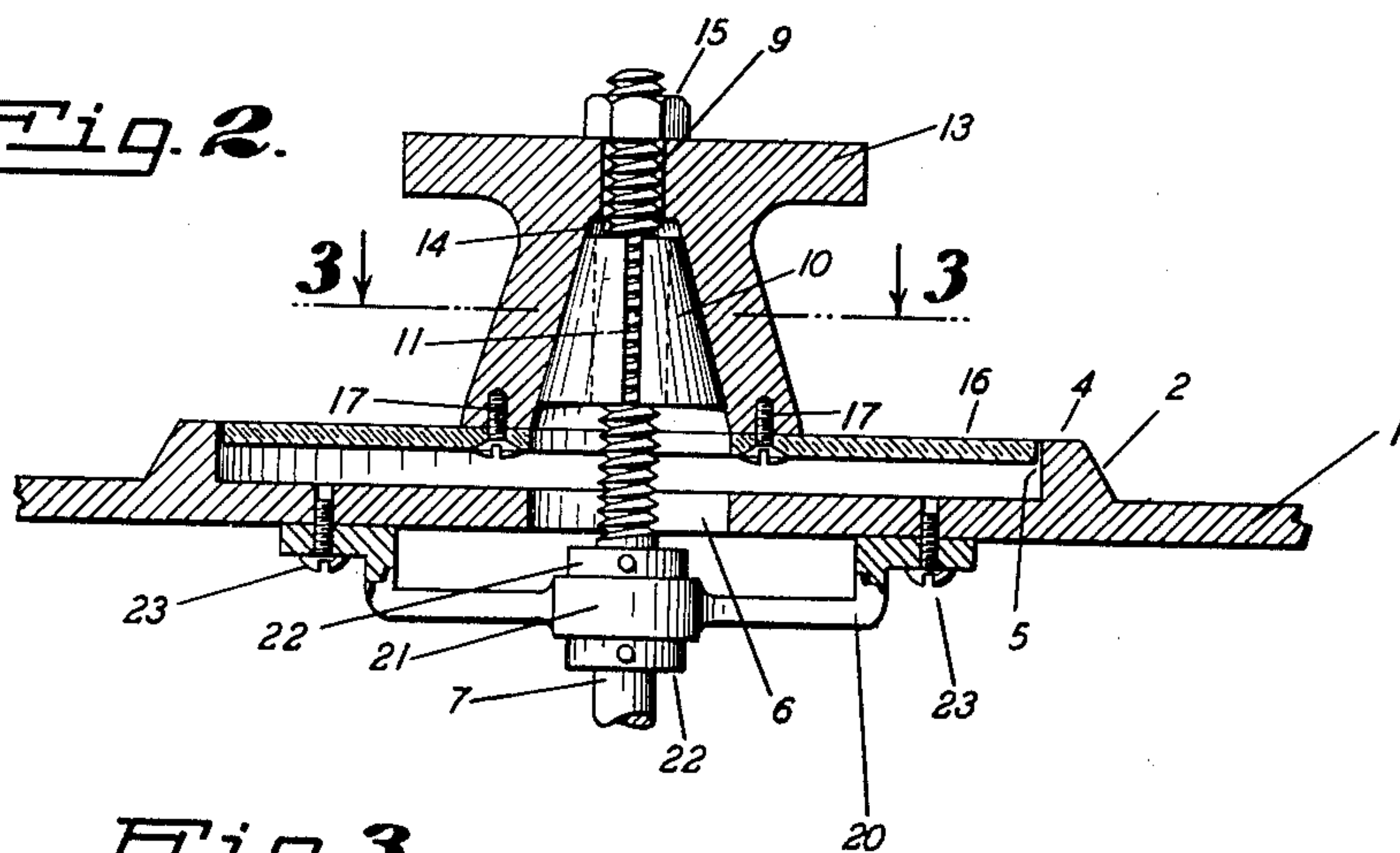
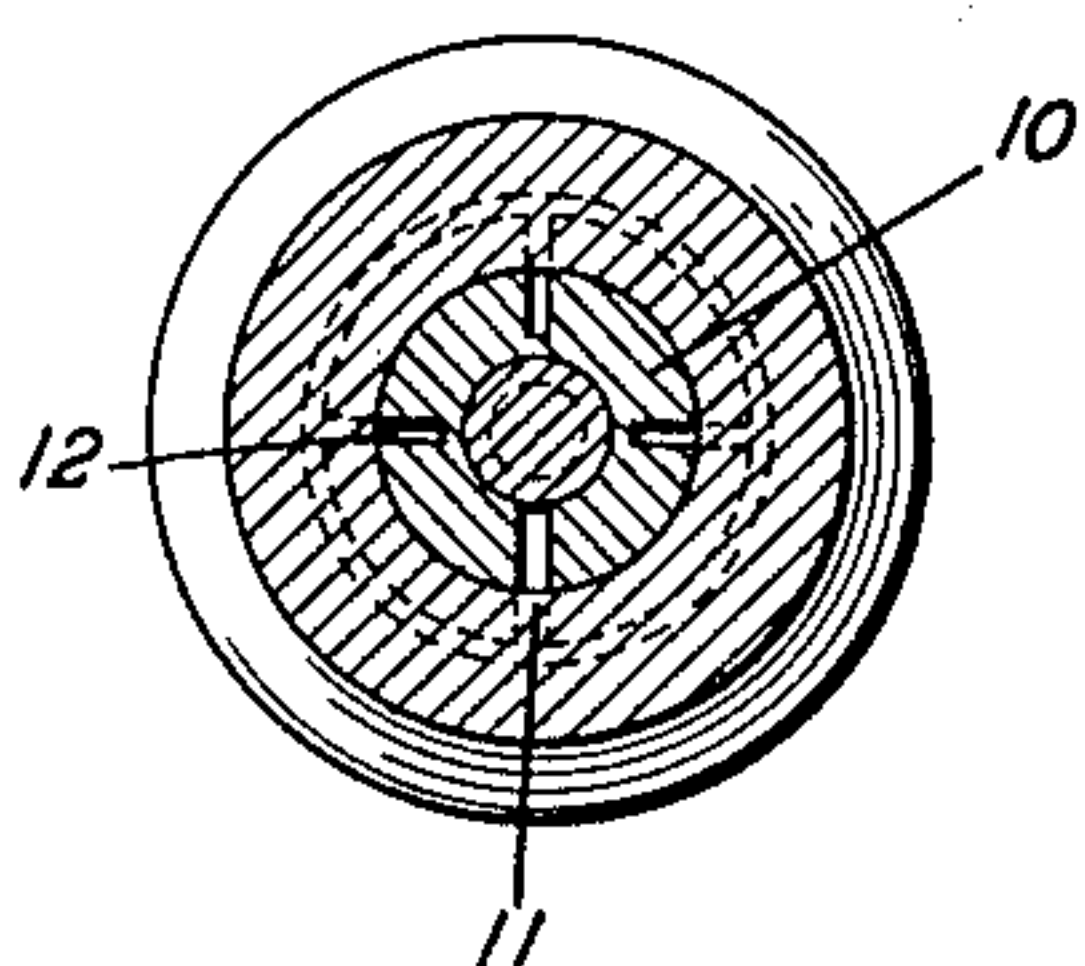


Fig. 3.



INVENTOR,
RALPH M. HEINTZ.
BY *Donald K. Hippincott*
ATTORNEY

UNITED STATES PATENT OFFICE

RALPH M. HEINTZ, OF PALO ALTO, CALIFORNIA, ASSIGNOR TO HEINTZ & KAUFMAN, LTD., OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF NEVADA

INDICATING DIAL ASSEMBLY

Application filed April 25, 1932. Serial No. 607,296.

My invention relates to an indicating dial assembly and more particularly to a dial assembly for use in controlling apparatus used in radio communication.

5 Among the objects of my invention are: To provide a dial assembly for use on variable apparatus used in radio communication; to provide an indicating dial easily adjusted; to provide an indicating dial adjustable to cooperate with a panel; to provide an indicating dial which can be easily adjusted in reference to an index mark on a panel; and to provide a dial which can be locked in a predetermined position.

15 Other objects of my invention will be apparent or will be specifically pointed out in the description forming a part of this specification, but I do not limit myself to the embodiment of my invention herein described, as various forms may be adopted within the scope of the claims.

Referring to the drawing:

Figure 1 is a face view of a dial embodying my invention.

25 Figure 2 is a sectional view taken through the line 2—2 of Figure 1.

Figure 3 is a sectional view taken through line 3—3 of Figure 2.

In assembling the various parts of a radio transmitter on a panel, many of the pieces of apparatus, such as condensers, inductances and resistances, must be variably controlled, and are usually rotary-variable. It is customary in the art to use an indexing dial to control their rotation. Such variables are also commonly mounted on the rear of the panel with their shafts projecting to the front, and the control knob and dial are mounted on the end of the projecting shaft. The removal of such variables from the rear of the panel necessitates the dismounting of the dial. A quick and easy method of replacing such dials, which must be adjustable to the panel and index, is greatly to be desired.

50 Broadly speaking my invention comprises a dial which can be precisely adjusted to a panel of the type carrying a raised index ring. The shaft from a variable is extended through the panel in the

center of the index ring and is threaded. A cone shaped nut, split and grooved to promote flexibility, is screwed on the end of the shaft, and a taper bored knob carrying a dial is placed over the cone. Pressure against the knob is applied by a small nut, forcing the inner taper of the knob over the cone. This action squeezes the split cone, the cone binds on the shaft and the entire assembly is locked.

A preferred embodiment of my invention is shown in the drawing. A panel 1, preferably of metal, is provided with a raised index ring 2. On this ring is an index mark 3, and the top 4 and inside wall 5 are preferably machined to a smooth finish.

Projecting through an aperture 6 in the panel, concentric with the index ring, is the end of a shaft 7, part of any variable which it is desired to rotate. The end of the shaft is provided with threads 9, and it is desirable that all shafts be threaded alike.

A split cone 10 is screwed on the threads on this shaft. At least one cut 11 should be made entirely through the cone, and several other partial cuts 12 are desirable to promote flexibility. A knob 13, preferably of metal, is given a taper bore 14 which is complementary to the cone, i. e., of the same angle as the taper of the split cone. The knob is placed over the cone, and is held against it by nut 15, screwed on the end of the shaft threads.

Attached to the knob is a dial 16 held in place by screws 17. This dial is preferably formed of bakelite or similar material easily engraved, and carries reference marks 19 on its periphery. The type and spacing of the reference marks used will, of course, be dictated by the type of variable to which the knob is attached.

In operation the variables are assembled on the back of the panel. Bracket 20 carrying bearing 21, represents the fixation of the shaft. This arrangement is schematic, the actual arrangement being dependent on the construction of the variable element, which, since it forms no part of this invention, is not shown. Screws 25 locate the shaft concentric with the index ring 2.

The split cone is next threaded onto the shaft, and the knob with its attached dial is placed over the shaft and cone. By trial the position on the shaft of the cone is found where the plane of the dial is even with the finished top face of the index ring. The knob and dial are then rotated without rotating the cone until the index mark 3 on the panel ring coincides with the desired reference mark on the dial. Nut 15 is then tightened. This action forces the taper of the knob to apply a squeezing pressure on the cone, and the split allows the cone to contract and grip the shaft tightly. At the same time friction of the complementary surfaces hold the knob tightly on the cone. In this manner the dial assembly is solidly locked to the shaft of the variable, adjusted properly longitudinally and in azimuth with respect to the panel.

I claim:

1. An indicating dial assembly comprising the combination with a panel, of an index ring raised from the plane of the panel, a threaded shaft to be controlled concentric with said ring, a split cone threaded on said shaft, a knob having a taper bore complementary to said cone, an indicating dial carried by said knob, and a nut for forcing the bore of said knob over said cone to seize said shaft whereby said indicating dial may be adjusted angularly and longitudinally with respect to said index ring.

2. An indicating dial assembly comprising the combination with a panel, of an index ring raised from the plane of said panel, a threaded shaft to be controlled, concentric with said ring, a split cone threaded on said shaft, a knob having a taper bore complementary to said cone, an indicating dial including a peripheral scale carried by said knob, said dial being positioned inside of said index ring, and a nut for forcing the bore of said knob over said cone to seize said shaft whereby said indicating dial may be adjusted angularly and also longitudinally to maintain said peripheral scale flush with the top of said index ring irrespective of the angular adjustment.

In testimony whereof, I have hereunto set my hand.

RALPH M. HEINTZ.

55

60

65