June 17, 1930. H. F. ELLIOTT 1,763,957

ADJUSTABLE CAM

Original Filed Nov. 27, 1926

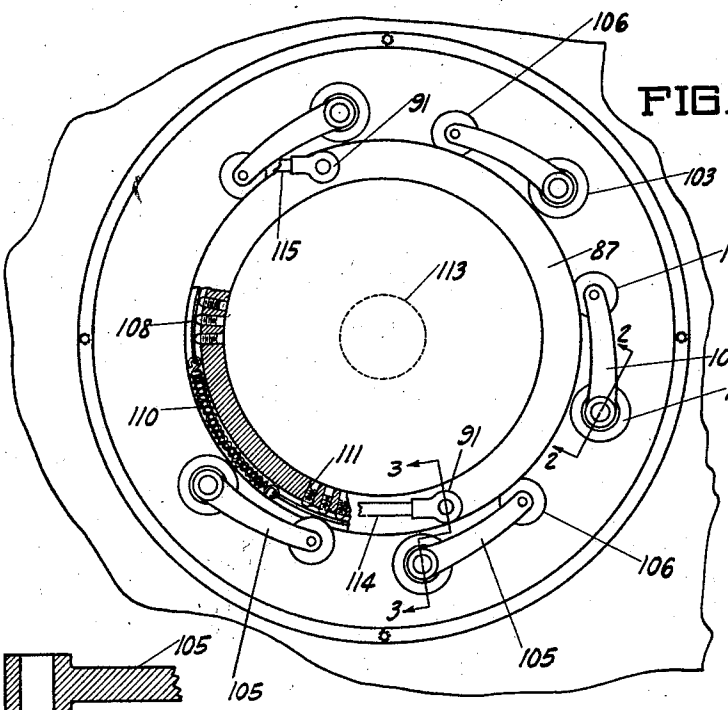


FIG. 1.

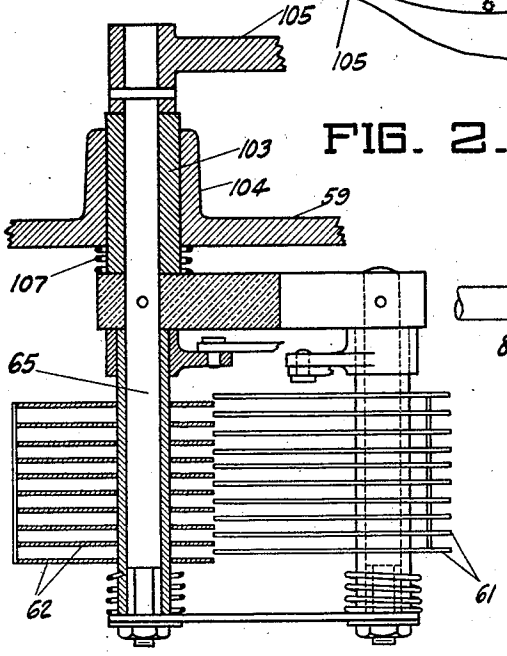
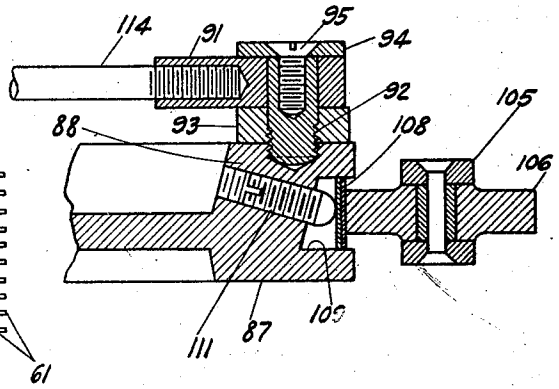


FIG. 2.

FIG. 3.



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UNITED STATES PATENT OFFICE

HAROLD F. ELLIOTT, OF PALO ALTO, CALIFORNIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO VICTOR TALKING MACHINE COMPANY, OF CAMDEN, NEW JERSEY, A CORPORATION OF NEW JERSEY

ADJUSTABLE CAM

Original application filed November 27, 1926, Serial No. 151,134. Divided and this application filed February 1, 1928. Serial No. 251,165.

This invention relates to a cam structure, and particularly to one that can have its active surface smoothly adjusted.

This application is a division of my prior application Serial Number 151,134, filed November 27, 1926, and entitled "Tuning system."

It is one of the objects of my invention to make it possible to adjust a cam surface so that it will conform with any desired predetermined curve within the limits of adjustment.

In adjustable cams, it is known to provide a series of adjustable screws to which isolated parts of the cam are fastened, so that by moving the screws, the positions of these parts can be adjusted. However, it is obvious that such a cam forms a discontinuous surface. It is another object of my invention to make it possible to adjust such a cam surface and yet ensure that it will remain smooth and continuous.

My invention possesses many other advantages, and has other objects which may be made more easily apparent from a consideration of one embodiment of my invention. For this purpose I have shown a form in the drawings accompanying and forming part of the present specification. I shall now proceed to describe this form in detail, which illustrates the general principles of my invention; but it is to be understood that this detailed description is not to be taken in a limiting sense, since the scope of my invention is best defined by the appended claims.

Referring to the drawings:

Figure 1 is a top plan view, partly in section, of a cam and its associated parts constructed in accordance with my invention;

Fig. 2 is an enlarged sectional view, taken along plane 2—2 of Fig. 1; and

Fig. 3 is an enlarged detail section, taken along plane 3—3 of Fig. 1.

To form the active cam surface, I utilize one or more yielding strips 108 that can be readily made to conform with the desired contour. A support for the strip can be arranged across which it is stretched, the support, being formed by a series of adjustable members closely spaced, such as the screws 111. These screws can be carried by a supporting member 87 shown in the present instance as circular in outline. This member has a flange 88 and a peripheral groove 109 in the flange, which is wide enough to permit entry of strip 108.

The adjusting screws 111 are shown as projecting through flange 88 at an angle so as to facilitate adjustment by the aid of a screwdriver. A coiled spring 110 or equivalent means can be used to stretch the cam strip 108 across the closely spaced screw tips, and is anchored as shown in Fig. 1, to the ends of the strip. In this way, tension is applied to the strip, and it conforms closely to the adjustable screw tips.

The wheel 87 is arranged to be rotated so that the cam surface may actuate one or more cam followers, such as the rollers 106 held against the strip 108. For this purpose, the wheel 87 can be provided with a shaft 113 journaled in a support 59. Movement can be imparted to cam wheel 87 as by a pair of links 114, 115 diametrically opposite each other and having clevises 91 which are pivotally mounted on pins 92 fastened to the flange 88. These clevises are accommodated, as shown in Fig. 3, between the upper and lower washers 94 and 93 that are supported on the pins 92.

It is evident that each of the screws 111 can be individually adjusted to vary the height of the cam at that point. The yielding connection 110 permits the strip 108 to slide over the screws so as to form an uninterrupted, continuous surface.

The cam structure is arranged to actuate any form of mechanism. In the present in-

stance it is shown as actuating a series of variable electrical condensers by acting on the followers 106. These followers are rotatably mounted on the free ends of levers 105. These levers are each fixed on the ends of the shafts 65 journaled in bushings 103 in bosses 104. These bosses are shown as integral with support 59. Fixed to the shaft 65 are a series of spaced condenser plates 62; and when this shaft is rotated by the cam structure, these plates interleave to a greater or less extent with another set of plates 61 to form a variable electrical capacity. The particular details of this capacity variation are disclosed and claimed in my parent application, and therefore further elucidation thereof is unnecessary, except to state that a spring 107 is used to hold the follower 106 against the cam surface.

I claim:

1. In a cam structure, a convex supporting member having a peripheral groove, a series of adjusting screws in said member having tips extending into the bottom of the groove, a laminated flexible strip arranged in the groove and unrestrained to move longitudinally with respect to said tips, and a spring joining the ends of said strip for stretching it over the screws.

2. A cam structure comprising a supporting element, a plurality of adjustable abutments on said element and extending radially outward from the periphery thereof, said abutments being adjustable radially inward and outward in said supporting element, a flexible cam strip carried by said element surrounding and in contact with said adjustable abutments, said strip being free to move longitudinally with respect to said abutments, a cam follower bearing on said flexible strip, and resilient means acting endwise of said strip for stretching the latter over the ends of said abutments.

3. A cam structure comprising a supporting element, a plurality of adjustable abutments on said element and extending radially outward from the periphery thereof, said abutments being adjustable radially inward and outward in said supporting element, a flexible cam strip carried by said element surrounding and in contact with said adjustable abutments, said strip being free to move longitudinally with respect to said abutments, a cam follower bearing on said flexible strip, and a spring joining the ends of said strip for stretching the latter over the ends of said abutments.

4. A cam structure comprising a rotatable member having a peripheral groove, a plurality of adjustable abutments on said member and extending radially outward at the periphery thereof, said abutments being adjustable radially inward and outward in said supporting member, and the ends of said abutments being positioned in said groove, a flexible cam strip carried by said member, said cam strip being positioned in said groove in contact with the ends of said abutments and being free to move longitudinally with respect thereto, a cam follower riding in said groove on said flexible strip, and resilient means attached to the end or ends of said strip for stretching the same over the ends of said abutments.

In testimony whereof I have hereunto set my hand.

HAROLD F. ELLIOTT.