

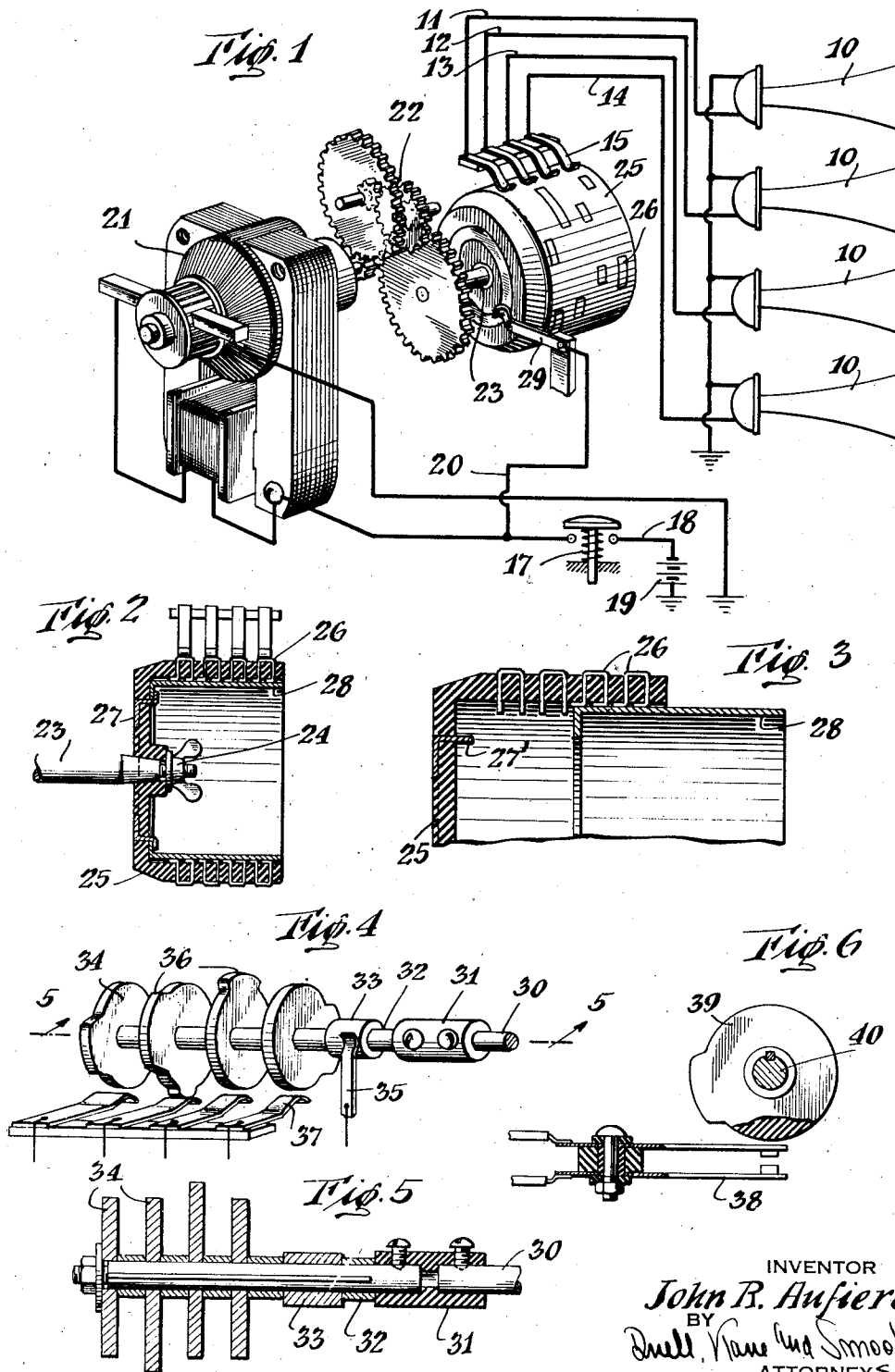
March 31, 1942.

J. R. AUFIERO

2,277,899

CONTROL DEVICE AND SYSTEM

Filed Nov. 5, 1940



UNITED STATES PATENT OFFICE

2,277,899

CONTROL DEVICE AND SYSTEM

John R. Aufiero, Brooklyn, N. Y., assignor to
E. A. Laboratories, Inc., Brooklyn, N. Y., a corporation of New York

Application November 5, 1940, Serial No. 364,355

4 Claims. (Cl. 200—24)

This invention relates to a structurally and functionally improved control device as well as system within which it is embodied, and primarily aims to produce an improved structure over that disclosed in my prior United States Patent 2,200,235 of May 7, 1940.

While the present invention has numerous different applications, it is of primary utility when embodied in a signalling system, and especially an acoustical signalling system such as is commonly associated with motor vehicles and particularly automobiles.

Thus, it is an object of the invention to furnish a structure of this character and by means of which a melodious signal may be produced which, while it will not serve to startle pedestrians and others, will provide an adequate warning assuring safety of operation of the vehicle upon which it is mounted.

A further object is that of constructing a control for a system of this nature, which control will embody relatively few and simple parts, these parts lending themselves readily to quantity production and assemblage, and when so assembled furnishing a unitary and economical apparatus capable of use over long periods of time with freedom from all difficulties.

A still further object is that of providing a unit of this type which will embrace a structure such that the predetermined melody or tone sequence and timing which is embodied in the unit may be changed with minimum effort and expense.

With these and other objects in mind, reference is had to the attached sheet of drawings illustrating practical embodiments of the invention and in which:

Fig. 1 is a somewhat diagrammatic representation of a control member in conjunction with the system;

Fig. 2 is a sectional side view of the "record" or circuit making and breaking portion of the apparatus;

Fig. 3 is an enlarged fragmentary section taken through such portion and illustrating the parts while in process of manufacture;

Fig. 4 is a perspective view of an alternative form of this portion of the apparatus;

Fig. 5 is a sectional view taken along the lines 5—5 and in the direction of the arrows as indicated in Fig. 4; and,

Fig. 6 is a transverse sectional view taken through still another form of circuit making and breaking mechanism.

Referring primarily to Fig. 1, the numerals 10

indicate a battery or series of acoustical signalling units such as magnetic horns of the type commonly associated with automobiles. One side of each of these units may be grounded, and extending from the opposite side of the same are leads 11, 12, 13 and 14 which are coupled to fingers or brush elements 15.

Within easy access of the operator is a control button in the nature of a spring-pressed switch 17 which, when operated, bridges a gap in line 18. The latter is coupled to a source of current supply 19, one side of which may be grounded. Extending from the line 18 at a point beyond the switch, is a line 20 which will hereinafter be again referred to. The line 18 continues to a motor 21 of any desirable type and the far side of which—as shown—grounded. Thus, when switch 17 is closed, current will be supplied to the motor as well as to line 20, and such motor will operate.

Conveniently coupled to the drive shaft of the motor are a series of gears 22 which provide a reduction train and by means of which a shaft 23 may be rotated.

This drives what may be termed a "record" unit which, as shown in Fig. 2, may be removably coupled to the shaft by, for example, a wing nut 24. As illustrated, the unit comprises a cup-shaped body 25 formed of dielectric material the wall of which is pierced to allow contact strips 26 being mounted upon its periphery with their ends extending inwardly and beyond the interior face of the body 25. Certain of these strips may be relatively long, while others may be short; and if four units such as those indicated by the reference numeral 10, are employed, these contact strips are arranged in four rows. Each of the rows is traversed by one of the brushes or fingers 15 as the body of the unit rotates with respect to the latter.

It is obvious that by having these contact strips of proper length, in correct sequence, and suitably spaced with respect to each other, any desired combination or arrangement of tones which the units 10 are capable of melodiously producing, will be rendered by the system as the body 25 is rotated; it being assumed that current will be supplied from the strips 26 through the fingers 15 to the leads 11 to 14, inclusive.

Such a supply of current may be assured in numerous different manners. It is preferred, however, as shown in Figs. 2 and 3, that the end face of the body 25 be provided with a contact ring 27, portions of which extend inwardly through the end face of the body and into en-

gagement with a metallic cylinder 28. As suggested in Fig. 3, economy of manufacture may be assured by simply having the ends of the strips 26 project through and beyond the body 25. Thereupon, if cylinder 28 is pushed into position, the ends of the strips will be bent over, as especially shown at 27' in Fig. 3, and these strips will be locked in position. With the cylinder in its final position, the inwardly extending end portions 27' of the ring may be caused to engage that cylinder. Consequently, if the end of lead 20 is coupled to a brush or resilient finger 29 which continuously engages the surface of ring 27, it follows that cylinder 28, and consequently all the contact elements or strips 26, will be energized when switch 17 is closed.

Accordingly, as switch 17 is closed, current will be supplied not only to the motor 21 to rotate the shaft 23, but current will also be distributed through the strips 26 and the brushes or fingers 15 to the sounding units 10, which will render an arrangement of tones predetermined by the record 25 as to sequence, duration, spacing, recurrent, and superposition of tones. When it is desired to change the "record" unit, this may readily be achieved by simply loosening the nut 24 and replacing such unit with a new unit. It is preferred that the periphery of body 25 merely present in aggregate one desired combination or arrangement of tones and without repetition of such combination or arrangement. Obviously, as the switch 17 is opened, the current supplied through lead 20 will be interrupted and thus, simultaneously with the cessation of operation of the motor, the contacts 26 will no longer be energized.

In the form of unit shown in Fig. 4, all unnecessary and surplus illustration has been eliminated. In this view the numeral 30 corresponds to the numeral 23 in the preceding views; and it is to be assumed that a motor (not shown) rotates this shaft. By means of a coupling 31 formed of dielectric material, a shaft 32 may be rotated. This shaft may be metallic and may mount or be formed with a contact portion 33. Metallic cam elements 34 are mounted on this shaft and correspond in number to the number of units or signal elements which are employed. A brush or spring finger 35 engages the contact portion 33 and corresponds to the brush 29 in the preceding views.

Thus, it is obvious that as shaft 32 rotates, current will be supplied by the individual cams 34 through their operating portions 36 to spring fingers or brushes 37 mounted adjacent the same. The latter elements are connected to the units to be controlled which latter, of course, may take numerous different forms. Again, when it is desired to change the "record" unit, this may readily be accomplished by simply loosening the coupling 31 and replacing the cam element with a new element which will provide the desired new record.

As has been shown, the fingers 37 are mounted upon an insulating strip, and as afore described, the cams as a group are energized or charged

with electric current. Where it is desired not to employ such a structure, a pair of spring arms 38 may be employed for each of the cam elements 39, as shown in Fig. 6. In such instance, the bodies of these elements are formed of insulating material, it being understood that the shaft 40 may be formed of any desirable material. Obviously, as the latter rotates, the cams will be correspondingly moved to cooperate with the switches and thus provide the distribution of current to the sounding units which will produce the arrangement and combination of tones determined by the shape of the cam elements 39.

Thus, among others, the several objects of the invention are achieved. Obviously, numerous changes in construction might be resorted to without departing from the spirit of the invention as defined by the claims.

I claim:

1. A control member including a rotatable shaft, means for driving the same, a record unit comprising a tubular body open at one end and closed by an end plate at the other end, a shaft retaining opening in said end plate, means accessible through the open end of said tubular body for securing said shaft to said tubular body through said shaft opening, spaced contact strips on said tubular body, a contact ring on said end plate, means for energizing said ring, and means for electrically connecting said ring to said contact strips.

2. A control member including a rotatable shaft, means for driving the same, a record unit comprising a tubular body open at one end and closed by an end plate at the other end, means for connecting said tubular body to said shaft, contact strips spaced on the surface of said tubular body and extending through to the interior thereof, a contact ring on said end plate, a tubular contact insert adapted to be inserted inside of said tubular body to make electrical contact with said contact strips and said contact ring, whereby upon said contact ring being electrically energized, said contact strips are electrically connected thereto.

3. A device as claimed in claim 1, wherein the means for electrically connecting the contact ring to the contact strips comprises a tubular contact insert adapted to be inserted inside of said tubular body and adapted to contact said contact elements and said contact ring.

4. A control member including a rotatable shaft, means for driving the same, a record unit coupled to said shaft, said record unit comprising a tubular body of dielectric material, a plurality of spaced contact members disposed on the outside of said tubular body and extending inwardly through the same to extend beyond the inner face of such body, a body of conducting material disposed within said tubular body and in electrical contact with the ends of said contact elements and a contact ring mounted on one end of said tubular body and in electrical connection with said body of conducting material.

JOHN R. AUFTERO.