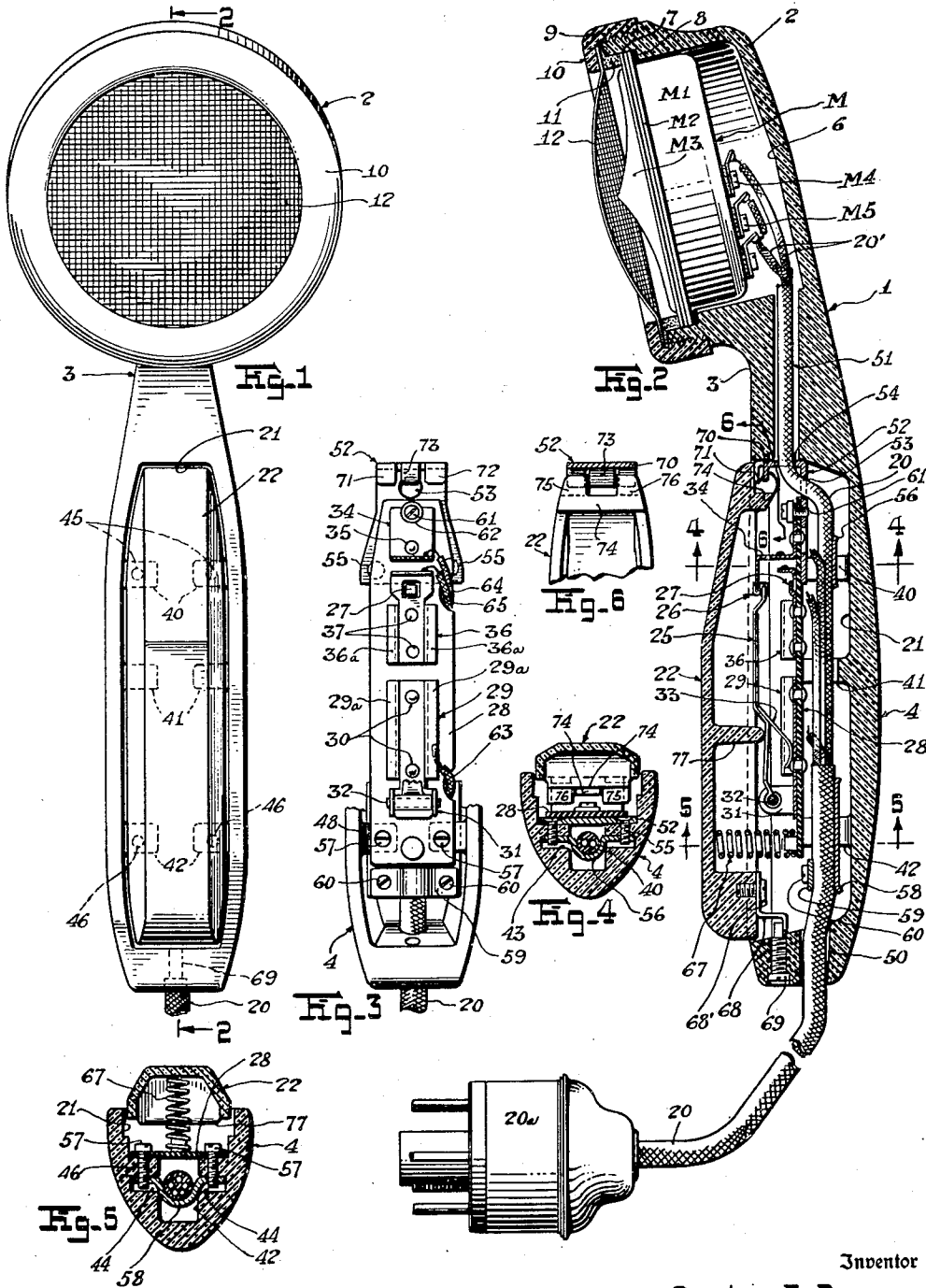


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COMBINATION MICROPHONE AND CONTROL
MEANS FOR DICTATING MACHINES
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COMBINATION MICROPHONE AND CONTROL MEANS FOR DICTATING MACHINES

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This invention relates to a combination microphone and control means for use in connection with a sound recording machine. It relates more particularly to a novel structure for a hand microphone or speaker combined with the control means associated with an electrical sound recording dictating machine.

In the art of recording sounds electrically, it is customary to provide a microphone for converting the sound vibrations into electrical impulses. These impulses are amplified and are caused to operate a stylus which is in engagement with a progressively moving record to form a sound track on the latter. It is also customary to provide controls for starting and stopping the machine, and particularly for stopping and starting the record.

When a sound recording machine is to be used for business purposes or as a dictating machine, it is very desirable to have the control means convenient to the hands of the user, so that he may quickly stop the record as soon as he stops speaking into the microphone, or during pauses of speaking, so that the record will not contain wasteful blank spaces that would cause loss of time in listening to the reproduction or copying the information therefrom. Both the microphone and the control means of the present invention are readily available to the operator of a dictating machine. With this invention a hand-piece is provided for housing the microphone and the controlling means that are associated with an electrical sound recording dictating machine.

With this invention the mounting and locating of the microphone with respect to the controlling means is such as to make the device very convenient to use; the main housing can be made in one molding operation; and the parts which constitute the controlling means for the dictating machine are conveniently located.

The invention may be understood from the description in connection with the accompanying drawing in which:

Fig. 1 is a front elevational view of a hand-piece made in accord with the invention;

Fig. 2 is a cross-sectional view taken substantially along line 2—2 of Fig. 1;

Fig. 3 is a front view partly broken away showing the arrangement of the principal elements forming the control device for starting and stopping the recording machine;

Figs. 4 and 5 are sectional views taken along the lines 4—4 and 5—5, respectively, of Fig. 2; and

Fig. 6 is a section taken along the line 6—6 of

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Fig. 2, showing one of the details of the hand-piece or cover piece.

In the drawing reference character 1 indicates the casing which encloses the hand-piece. This casing is made of dielectric material such, for instance, as a thermosetting phenolic compound which may be molded in one piece. It has an enlarged circular portion 2 at its upper end for housing the microphone M. The housing 1 is somewhat reduced as indicated at 3 to form a neck, then somewhat enlarged and extended to form the handle 4. The controlling means for stopping and starting the rotation of the record support of the recording machine for which the microphone above is used for translating the sound thereinto, is housed in the portion 4.

As shown in Fig. 2, the circular portion 2 is brought forward and its face is inclined with respect to the longitudinal axis of the handle portion 4. A deep circular cavity 6 is provided in the circular portion 2. This cavity 6 is enlarged as indicated at 7 to provide an annular shoulder 8. The open end of this part is exteriorly threaded as shown at 9 for a threaded bezel 10 which holds the microphone M of a known sort in the desired position in the cavity 6. This microphone may be one of the well-known sorts. It comprises a housing M1 having a flange M2, and a diaphragm M3 which may be connected with a suitable transducer unit (not shown) located inside of the housing M1. Such a unit may, for example, be of the crystal type and be secured to the bottom of the housing M1. The transducer has its terminals M4 and M5 extending outwardly of the housing M1 to provide easy connection with certain leads in the cable 20. This cable is for making connection to a recording machine.

The microphone M is clamped in position by resting the flange M2 of its housing M1 against the shoulder 8 of the cavity 6 and placing a gasket 11 against the flange, then placing a circular screen or guard 12 on the gasket and screwing the bezel 10 on sufficiently to cause compression of the resilient gasket 11. The microphone is thus clamped securely in position.

The controlling means, or the mechanism for starting and stopping rotation of the record in the phonographic machine, is housed in a cavity 21 formed in the handle 4 of the casing 1. The cavity 21 extends substantially along the full length of the handle portion. An elongated depressible cover piece 22 of insulating material is provided for closing this cavity. Movement of this cover piece 22 operates a single-pole double-throw switch in the cavity 21 when pressure is applied

while the operator is grasping the handle 4. The switch in the cavity 21 may, for example, control an electromagnetic clutch-actuating device of the sort described in Langley Patent No. 1,380,486, issued June 7, 1921. The switch structure shown comprises a pole member 25 and contacts 26 and 27, the pole member being mounted so that it can be inserted into and removed from the cavity 21 and connected to and disconnected from certain leads of the cable 20. An elongated base plate 28 of Bakelite or other rigid insulating material carries the metal bracket 29 which supports the pole member 25. This bracket is riveted to the plate 28 by rivets 30 (Fig. 3). It has upstanding ears 31 which support a cross-pin 32. This pin serves as a pivot for the stationary end of the pole member 25 which is in the form of a thin blade normally biased to touch or contact with the contact member 26. A leaf spring 33 is attached to and extends along the member 25 and presses against the face of the supporting bracket 29, which has upstanding side portions 29a for preventing side movement of the end of the spring 33. The contact 26 is the extending portion of a resilient metal bracket 34 that is secured to the base plate 28 as shown at 35. The contact 27 is the extending portion of another metallic bracket 36 that is secured to the base 28 as shown at 37. This bracket 36 has upstanding side portions 36a for guiding the pole member 25 when it is moved onto the contact 27.

Pairs of supporting bosses 40, 41 and 42 (Figs. 1 and 2) are provided in the cavity 21. Each pair comprises two complementary bosses projecting from the bottom of the cavity and extending upwardly to a predetermined level. The pairs of bosses 40 and 42 are respectively undercut or transversely slotted at 43 and 44, as shown in Fig. 4 for the bosses 40 and in Fig. 5 for the bosses 42. These pairs of bosses are also provided respectively with smooth holes 45 and 46 (Fig. 1) which extend from the faces of these bosses down to the respective undercut portions 43 and 44. The controlling switch device is mounted upon the faces of these bosses. The construction is such that the device can be quickly and easily assembled and disassembled. Also, single parts are adapted to perform double functions in the assembly of the device, as will now be described.

The cable 20 is introduced into the casing 1 by passing the end thereof through an aperture 50 at the lower end of the handle 4, then between the pairs of bosses 40, 41 and 42. Two of the leads 20' of this cable are passed through an elongated hole 51 in the neck 3 and into the cavity 6 to make connection with the terminals M4 and M5 of the microphone or speaker M. Before this cable is introduced, an apertured right-angularly bent bracket 52 (Fig. 2), having apertures 53 (Fig. 3) and 54 near one end thereof is passed or threaded over the forward portion of the cable. This bracket 52 is placed in the position shown in Figs. 2 and 6, where it is firmly secured in place upon the faces of the bosses 40 by means of screws 55 which pass freely through the holes 45 of the bosses and are screwed into a retaining channelled plate 56. This plate not only holds the bracket 52 in place, but it also centralizes and holds the cable 20 to prevent it from being jerked and producing sounds which would be communicated to the nearby microphone M. When this bracket 52 is secured in place, its face is aligned with the faces of the bosses 41 and 42 so that the switch plate 28 is then positioned in the cavity 21 and secured therein by the screws 57 which pass free-

ly through the holes 46 of the lower bosses 42 and thread into a retaining channelled plate 58. The operation and purpose of plate 58 is similar to that of plate 56, but it is made longer so as to extend downwardly to provide a facing thereof upon which a clamping member 59 (Fig. 2) may be screwed as by means of the screws 60 to clamp the cable 20 firmly to the plate 58, thus forming a highly efficient strain relief.

After the switch is installed as described above, it may be further secured in place by means of a screw 61 passing through the upper end of the plate 28 and screwed into a threaded hole in the bracket 52, as shown in Fig. 2. This screw passes through a notch in the bracket 34 and is insulated therefrom by means of a hard rubber washer 62 (Fig. 3). When the switch is finally secured in place, the leads 63, 64 and 65 of the cable 20 are brought to the positions shown in Fig. 3 and are soldered respectively to the brackets 29, 34 and 36, respectively, (Fig. 3). Electrical connections may thus be established, through the cable 20 and plug 20a thereof, with clutch-actuating mechanisms such as that described in the Langley patent mentioned above.

The depressible member 22 is adapted to be quickly attached to and detached from the portion 4. For this purpose it is held by being connected to the bracket 52, and urged outwardly by a stiff spring 67 (Fig. 2). It is retained at its free end by a flat piece 68 secured thereto by a screw 68' and adapted to abut against a stop-screw 69 located in the lower end of the handle 4. The hinge connection is formed by the upstanding portion 70 of the bracket 52, which has the two horizontal fingers 71 and 72 and the single horizontal finger 73 spaced below these two fingers. The cover piece 22 has an end boss 74 (Fig. 6) with spaced-apart projections 75 and 76 which are undercut to form two recesses in the end wall of the cover piece. The fingers 71 and 72 engage these recesses of the projections 75 and 76, and the finger 73 lies between the projections 75 and 76 so that side movement of the cover 22 is prevented. But the free end of this cover 22 can swing in and out about the hinge fingers 71 and 72 to a certain extent, as limited by the stop elements 68 and 69, against or under the action of the spring 67. The cover piece 22 can be removed for access to the inside of the cavity 21 by backing off the screw 69 to release stop piece 68 so that the spring 67 will press the cover piece 22 outwardly whereupon the latter may be moved downwardly to disengage the projections 75 and 76 from the fingers 71 and 72.

As shown in Fig. 2, an integral lug 77 on the member 22 projects into close proximity to the pole member 25, so that when the operator presses the member 22 sufficiently to compress the spring 67 this pole member 25 is moved from its normal position where it contacts with the contact member 26, to a new position where it contacts with the contact member 27. The known clutch-actuating mechanism which is provided to start and stop the movement of the phonograph record is thus controlled by the movements of the pole member 25 to engage the contacts 26 and 27.

What is claimed is:

1. A control device for dictating machines comprising an elongated handpiece having a cavity therein open at the side of the handpiece along substantially the entire length thereof; an outwardly-urged cover loosely fitting the outer portion of said cavity and projecting beyond the handpiece so that the cover is pressed inwardly

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as the handpiece is gripped by the hand; a switch in said cavity operated by said cover as the cover is pressed inwardly; and a separable hinge connection between said cover and said handpiece comprising an end portion of said cover having two spaced-apart projections provided with grooves in the end faces thereof extending laterally of the cover, and three cooperating tongues on said handpiece spaced laterally of said cavity from one another and projecting into the cavity longitudinally thereof, the central one of said tongues being inset inwardly of the cavity with respect to the other two tongues and lying between said projections of the cover and the two outer tongues being in pivotal engagement with the grooves of said projections respectively.

2. A control device for dictating machines comprising an elongated handpiece having a cavity therein open at the side of the handpiece along substantially the entire length thereof; an outwardly urged cover loosely fitting the outer portion of said cavity and projecting beyond the handpiece so that the cover is pressed inwardly as the handpiece is gripped by the hand; a switch in said cavity operated by said cover as the cover is pressed inwardly; an internal hinge connection between one end of said cover and said handpiece comprising separable parts adapted to permit the cover to be detached only when it is opened beyond its normal range of pivotal movement; and stop means defining the limit of pivotal movement of said cover relative to said handpiece comprising a stop member threaded in a wall of said handpiece and having a position wherein the inner end thereof projects into said cavity and forms an abutment for the cover to define the innermost position thereof, and a bracket mounted on said cover and having a portion spaced from the cover for impingement against the inner side of said stop member to define the outermost position of the cover, the outer end of said stop member being accessible from the outside of the handpiece to enable the stop member to be threaded outwardly to release it from said bracket and permit detachment of the cover from the handpiece.

3. A control device for dictating machines comprising an elongated handpiece having a cavity therein open at the side of the handpiece and extending longitudinally thereof, a movable cover fitting the outer portion of said cavity and adapted to be pressed inwardly of the cavity by the grip of the hand on the handpiece, a switch mounted in said cavity comprising a pole mem-

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ber spring-urged outwardly relative to the cavity and movable inwardly by said cover to operate the switch, said cover having a recess extending lengthwise of the cover from one end wall thereof, a member secured to said handpiece and projecting from the wall of said cavity into said recess to provide a hinge for one end of the cover, a stop member projecting into said cavity at the end thereof opposite said hinge, and means on said cover cooperating with said stop member to define the outermost position of the cover relative to the handpiece, said stop member being accessible from the outside of said handpiece and being movable into a non-projecting position to permit detachment of the cover from the handpiece.

4. A control device for dictating machines comprising an elongated handpiece having a cavity therein open at the side of the handpiece along substantially the entire length thereof; an outwardly urged movable cover loosely fitting the outer portion of said cavity and projecting beyond the handpiece so that the cover is pressed inwardly as the handpiece is gripped by the hand; a switch in said cavity operated by said cover as the cover is pressed inwardly, said cover having a recess in one end wall thereof; a right-angle member in said cavity having a tongue engaging said recess to provide a hinge connection between one end of the cover and the handpiece, said right-angle member having a pair of apertures therein and said handpiece having an aperture leading from said cavity through one end of the handpiece; and an electrical cable leading through said aperture of said handpiece and through both said apertures of said right-angle member into said cavity, said apertures of said right-angle member being adjacent to one another whereby said cable receives a bend at said member.

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