

May 20, 1969

F. LOUZIL ET AL

3,445,613

SWITCHING ARRANGEMENT IN DICTATING MACHINES

Filed July 18, 1966

Sheet 2 of 3

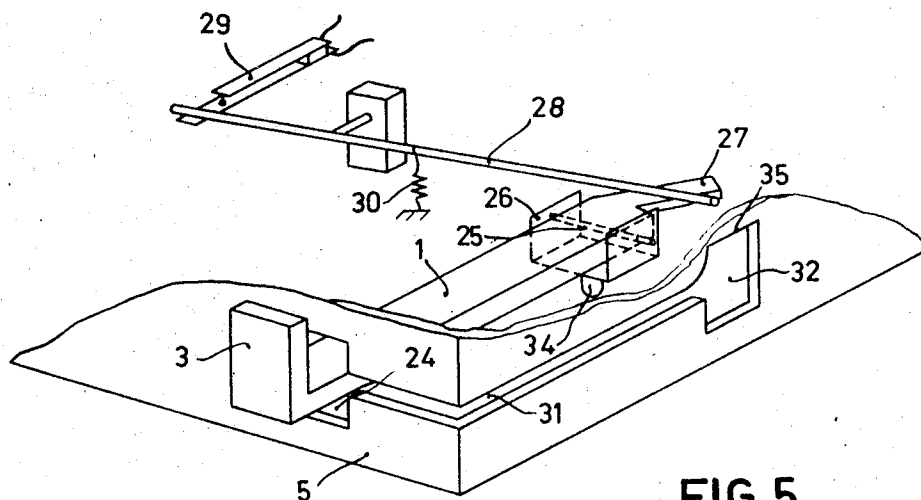


FIG. 5

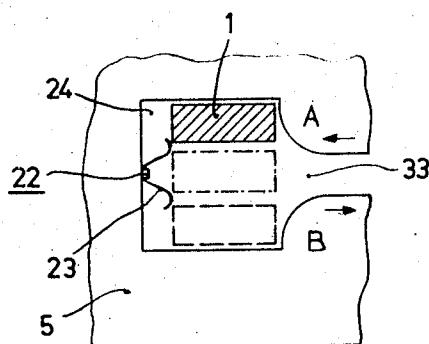


FIG. 6

INVENTOR.
FRIEDRICH LOUZIL
ARNE APPEL
BY GERHARD HABELT

Frank R. Sifert

AGENT

May 20, 1969

F. LOUZIL ET AL

3,445,613

SWITCHING ARRANGEMENT IN DICTATING MACHINES

Filed July 18, 1966

Sheet 3 of 3

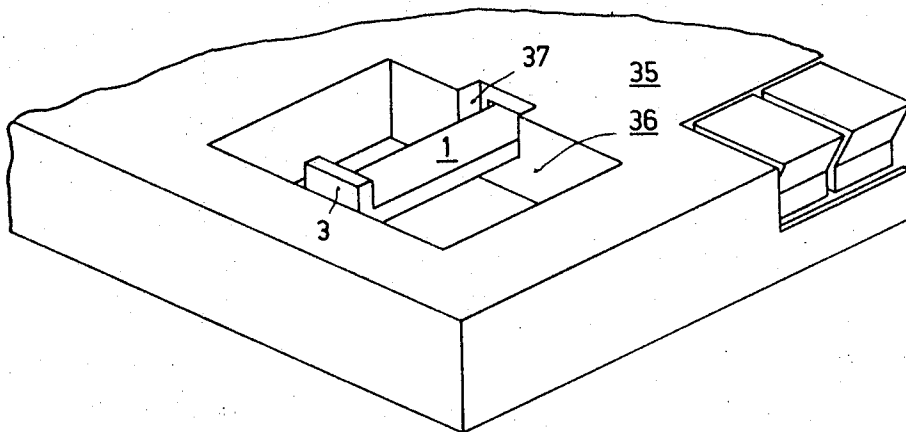


FIG. 7

INVENTOR.
FRIEDRICH LOUZIL
ARNE APPEL
BY GERHARD HABELT
Frank R. Sigani
AGENT

1

3,445,613

SWITCHING ARRANGEMENT IN DICTATING MACHINES

Friedrich Louzil, Vienna, Arne Appel, St. Michael, Lungau, and Gerhard Habelt, Vienna, Austria, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed July 18, 1966, Ser. No. 565,786

Claims priority, application Austria, July 19, 1965, A 6,620/65

Int. Cl. H01h 35/02, 21/54

U.S. Cl. 200—52

7 Claims

ABSTRACT OF THE DISCLOSURE

The invention concerns dictation apparatus including a switch mechanism adapted for temporarily disconnecting the dictator circuits, such as desirable at times between dictation intervals, and for more permanently interrupting the circuits at the culmination of the dictation period. For this purpose a switch lever, serving as the microphone cradle, is movable between two locations and to two positions at each location. At one location the lever is spring biased to one position so that the mere weight of the microphone when placed in the cradle will move the lever to the second position at which the circuits are interrupted. At the second position more positive locking means are provided so that the lever is secured in a desired one of the two positions.

The invention relates to a switching arrangement for an electrically supplied dictating machine employing switching contacts connected in a current circuit which are switched by operating a lever. In dictating machines such arrangements are sometimes constructed so that the lever for operating the switch contacts is switched by laying the microphone on or taking it from said lever. In this case, when the microphone is laid on the operating lever, the switch contacts in the current circuit serve either for switching off the machine entirely, or for interrupting, for example, only the current circuit of the driving motor. For the dictator, these measures provide the possibility of stopping the apparatus or switching it off entirely if he wants to interrupt the dictation for some time by laying the microphone on the said lever. Such machines have in addition another switch with which they can be switched off manually for a long period of time, independent of the microphone, that is to say, be disengaged entirely.

It is the object of the invention to provide a single simple switching arrangement with which all the above mentioned requirements can be fulfilled. For this purpose, according to the invention, the operating lever is rotatable in a given direction and is movable in addition in a second other direction, by which latter movement it can be displaced from a first position into a second position, in the first position said lever being in effective engagement with a holding device which determines two pivoting positions, from which engagement it can be disengaged by moving it in the second direction, while after removing the effective engagement with the holding device it is held in one of the said pivoting positions by means of a spring. By these measures it is reached that one operating lever which is provided for switching the switching contacts connected in a current circuit of the apparatus can perform a function in two different manners, namely in a first position as a normal switch which can be operated manually and has pivoting positions determined by two holding positions, and in a second position as a switch which is under the influence of a spring and thereby assumes a given pivoting position which can be brought in

2

the other pivoting positions, for example, by laying a microphone on it. These two different possibilities of operating the switching arrangement ensure that the machines can be adapted as readily as possible to the operating conditions occurring or to the dictator's habit.

A particularly favourable construction of the switching arrangement is obtained if for its movement in the second direction the operating lever can be displaced in its longitudinal direction. It has further proved of advantage if the operating lever, after having been released from the holding device, projects laterally from the housing of the dictating machine. Other constructions will be apparent from the examples.

In order that the invention may readily be carried into effect, it will now be described in greater detail, by way of example, with reference to the accompanying drawing, in which three embodiments of switching arrangements according to the invention are shown.

FIGURE 1 is a side elevation of a first embodiment in which the operating lever is in the first position and snapped into engagement in the holding device.

FIGURE 2 diagrammatically shows a plan view of the same switching device.

FIGURE 3 is a cross-sectional view of the device shown in FIGURES 1 and 2 taken on the line III—III of FIGURE 2.

FIGURE 4 is a side elevation of the device shown in FIGURES 1 and 2, in which the operating lever is detached from the holding device and is in the second position.

FIGURE 5 shows a perspective view of a second embodiment of the switching arrangement according to the invention.

FIGURE 6 shows the holding device used in the device shown in FIGURE 5 in greater detail.

FIGURE 7 shows a third embodiment in which a microphone can be laid in a recess in the upper side of the housing of a dictating machine.

In FIGURES 1 to 4, the operating lever for a switch 2 is denoted by reference numeral 1. This switch 2 serves for switching a current circuit of the machine. A current circuit is to be understood to mean herein in general any current circuit in the apparatus which is switched for varying the operation of the machine. Said current circuit may be, for example, the whole current circuit or only the motor current circuit of the current circuit in the amplifier, in the oscillator or in the control circuit of the machine. For example, if only the motor current circuit is switched on and off, the remaining part of the electric circuit remains actuated and only the driving device for transporting the record carrier is influenced. This is of advantage, for example, with comparatively short pauses of the dictation. However, in this respect a great diversity of variations is possible and the requirements desired for each individual case which are imposed upon such a dictating machine in relation to the operation are first of all taken into account.

The lever 1 for operating the switch 2 projects from an aperture 4 in a side wall 5 of the apparatus with its one end 3 constructed as a grip and is pivotable about the shaft 6. The lever is shown in its first position in which the pivoting positions of the lever 1 are determined by a holding device 7 which is arranged at the other end 8 of the lever. Such a holding device may be constructed in several manners.

In the embodiment shown, the holding device consists of recesses 9 provided at the end 8 of the lever 1, two on either side of the lever, which cooperate with hook-like ends 10 of a U spring 11. The spring 11 is secured to the base plate 12 of the apparatus by means of a lug 13 provided on said plate; the ends 10 of the spring are journaled in arms 14, provided each on one side of the

lever 1. FIGURE 3 is a detailed cross-sectional view of said holding device. In accordance with the pivoting position of the lever 1, the hook-line ends 10 of the spring snap into engagement in the upper or lower recess 9. In the embodiment shown the switch 2 is constructed as a separate structural unit secured to the bottom plate 11 and cooperating immediately with the operating lever 1 in that a pin 16 which operates switching contacts 15 is in constant effective engagement with the lever 1.

The lever 1 further comprises an elongated slot 17 through which the shaft 6 passes for pivoting the lever. In this manner the lever 1 can be moved in the longitudinal direction so that it can be pulled laterally out of the housing 5 of the apparatus and thus reaches its second position. Such a movement in the longitudinal direction simultaneously effects the detaching of the lever 1 from the holding device 9. A spring 18 together with a stop member consisting of the upper edge 19 of the aperture 4 in the side wall 5 of the apparatus ensures an accurately determined pivoting position of the operating lever 1.

FIGURE 4 shows the lever 1 in the position in which it projects from the housing. If in this position the end 20 of the lever projecting from the housing 5 is loaded, for example, by laying a microphone on it, as is denoted by the arrow 21 in FIGURE 4, the lever 1 is again pivoted about the shaft 6. Since the switch 2 is in constant effective engagement with the lever 1, the switch is operated also in this projecting position of the lever on rotation thereof.

In this manner the switching device can be effective in two different manners, namely first in the manner shown in FIGURE 1, as a manually operated switching arrangement which can be held in either of two pivoting positions, and, secondly as shown in FIGURE 4, as a switching arrangement which can be held in a given pivoting position by a spring and can be operated by a load.

If the switching contacts in the current circuit of the machine are provided so that they are closed in the pivoted position of the operating lever, which is determined by the spring 18, said current circuit is effective as soon as the lever is pulled out of the apparatus and is unloaded. If the lever 1 is pushed in the other pivoted position, the current circuit is interrupted. If this current circuit is the whole current circuit of the machine, the switching arrangement according to the invention with the lever 1 pushed inside the machine operates as a normal apparatus switch and, with the lever 1 pulled out of the machine, it operates as a special switch for short pauses during a dictation. This latter is very easy for the dictator since, on interrupting the dictation, he need lay only the microphone on the arm 20 of the lever projecting from the machine to deactivate the machine. If the microphone is taken from said lever again, the apparatus is again ready for use. However, at the end of a dictation when the apparatus is to be switched off for a comparatively long period of time, that is to say to be deactivated entirely, the lever is simply pushed into the machine so that it again engages the holding device and is then positioned manually in the desired pivoted position.

In order to ensure that, if the lever 1 is pushed into the apparatus, the recesses 9 can be brought in effective engagement without difficulty with the ends 10 of the spring 11, the end 8 of the lever, as shown in FIGURE 2, is constructed in the form of a wedge. It is of further advantage to ensure, by suitably guiding the lever during the insertion, that it always snaps into engagement in one of the pivoted positions and can never snap into engagement in an intermediate position. In the embodiment shown this is automatically obtained in that the spring 18 always forces the lever 1 against the upper edge 19 of the aperture 4 in the side wall 5 of the apparatus.

However, it is also possible to provide a separate guide

for the end 8 of the lever, for example, in that in front of the arms 14 a lug is bent out of the base plate 12, on which the lever bears during the inserting movement and on which it slides.

The switch 2 itself may be constructed in many different manners. For example, it is not necessary to use a switch which forms a separate structural unit, but the operating lever 1 may cooperate immediately with the resilient contact elements. Alternatively, a number of switching contacts may be used, for example, a set of contacts which is connected to the lever only in the position in which the operating lever is in effective engagement with the holding device and a set of contacts which can be actuated in the projecting position of the lever or in both positions of the lever. It may be achieved in this manner, for example, that the switching arrangement operates as a normal mains switch in the first-mentioned effective position, while in the other effective position only the motor current is interrupted but the electric amplifier device remains switched on.

The slot 17 in the lever 1 is advantageously constructed so that the lever, on being moved in the longitudinal direction, perceptibly snaps into engagement when reaching one of the extreme positions. For this purpose the slot 17 is somewhat widened at its two ends, so that at these points, the shaft 6 passes through the slot with a slight amount of play but in the region between the ends accurately fits the shaft.

FIGURE 5 shows another embodiment of the switching arrangement according to the invention, in which the operating lever 1 is not movable in the longitudinal direction but is pivotable laterally. In the first position of the lever 1 shown in FIGURE 5, said lever cooperates with a holding device which is shown in greater detail on an enlarged scale in FIGURE 6. Said locking device 22 consists of an undulatorily bent leaf spring 23 which is provided beside the lever in the aperture 4 of the housing 5 of the apparatus through which the lever 1 projects. In this embodiment the lever 1 is pivotable about the shaft 25 which is journaled in a U brace 26 which will not be further described.

FIGURE 6 shows the two pivoting positions in which the lever snaps into engagement, namely one in solid lines and the other in broken lines. The end of the lever projecting from the apparatus is constructed as a grip 3 in this embodiment also. The other end 27 of the lever firmly engages a second lever 28 which operates the switching contacts 29 and is under the influence of a pull spring 30 which ensures that the lever 28 always engages the lever 1. The switching device can be operated by simply pushing the lever 3 downwards and upwards, the lever snapping into engagement in the two pivoting positions, which correspond, for example, to the positions "on" and "off" of the apparatus, which are denoted by A and B in FIGURE 6.

The housing of the apparatus further comprises a slot 31 which at one end opens into the aperture 24 and at the other end into a corresponding aperture 32 in the adjacent shorter side of the machine. The slot 31 is provided so that the funnel-like end 33 opens into the aperture 24 between the two locked positions of the operating lever 1. Thus the lever 1, as soon as it is moved in the intermediate position denoted in FIGURE 6 by a dot-and-dash line between the two pivoting positions in which it snaps into engagement, can be swung in the slot 31. For this purpose, the U brace 26 in which the lever 1 is pivoted is rotatable about the shaft 34. As soon as the lever 1 has reached the other aperture 32, and consequently is moved in the second position, it can again freely rotate within this aperture upwards and downwards. Since the end 27 of the lever 1 is bent so that also after rotation it remains in effective engagement with the lever 28, and since in the aperture 32 no holding device is present, the rest position of the lever 1 in the aperture 32 is determined by the action of the spring 30. So the lever en-

gages the upper side 35 of the aperture 32. The shaft 34 about which the U brace 26 can pivot is provided so that the lever 1 when it engages the aperture 32 further projects from the apparatus than when it is in the aperture 24. As a result of this sufficient space is formed to lay a microphone on the lever 1 without difficulty. When a microphone is laid on the lever 1, said lever is pushed downwards by the weight of the microphone, so that the switching contacts 29 are operated through the lever 28.

The operation of the switching arrangement is analogous to that of FIGURE 1. As soon as the lever 1 is in the aperture 24 and consequently in its first position, it can be adjusted in two pivoting positions in which it snaps into engagement. By rotating the lever 1 it can be brought in the aperture 32 and consequently in its second position in which, as compared with the first position, it projects further from the apparatus, so that, as already stated, a microphone can be laid on it. When the lever 1 has been moved in the aperture 32 its rest position is determined by the spring 30. When the lever is loaded, it is pivoted. In order to return the lever 1 without difficulty in the aperture 24, the slot 31 also has the shape of a funnel at the orifice in the aperture 32.

By using a second lever 28, the effective engagement of the lever 1 with the switching contacts 29 can be obtained in a simple manner in any operating condition, without a special place for the contacts in the apparatus being required.

FIGURE 7 shows a switching arrangement in which a recess 36 for laying on a microphone is provided in the upper side 35 of the housing of the dictating machine. The operating lever 1 is again movable in its longitudinal direction in which it traverses the recess 36 as is shown in FIGURE 7 in the operating position, in which position it can be rotated without snapping into engagement. If the lever is to be moved into the position in which it is again in effective engagement with a holding device not shown, it is pushed into the niche 37. In this position it can then be moved upwards and downwards again in which it can be held in either of the two pivoting positions. The operation of the switching arrangement is again analogous to that of the embodiment already described.

The end of the operating lever 1 projecting out of the apparatus is preferably given a suitable shape, so that it cannot serve only as a grip but also as a place for receiving the microphone. In the latter case the shape of the microphone used must naturally be taken into account. The embodiments shown in FIGURES 1 and 5 are substantially destined for stem microphones, ribs provided at the end of the lever preventing the microphone from sliding off, while the embodiment shown in FIGURE 1 may advantageously be used for small hand microphones. In this respect a variety of constructions of the operating lever may be used.

The idea according to the invention with respect to such switching arrangements may be varied in many different manners without leaving the scope of this invention. This holds good, for example, with respect to the cooperation

of the lever with the switching contacts, the arrangement of the lever in the apparatus, and the like. It also holds good, as already explained, for the provision of the switching contact in the current circuit, for the choice of the current circuit itself and for the pivoted position of the lever determined by the force of one or more springs when said lever is detached from the locking device. In all these variations the requirements are taken into account which such a switching arrangement according to the invention must fulfil to give the dictator using such a device the simplest and most efficacious operation possible.

What is claimed is:

1. Dictation apparatus comprising a housing and electrical switching apparatus within said housing and comprising, switch contacts, an operating lever member coupled to said switch contacts, said lever member being movable between first and second locations, said lever member at each of said locations being movable between first and second positions for activating said contacts to open and closed conditions, means operative at the first location of said lever member for biasing said lever member to one of the said lever positions, and means operative at the second location of said lever member for holding said lever member selectively at one or the other of said lever positions.

2. Dictation apparatus as claimed in claim 1 wherein said lever member is displaceable in its longitudinal direction when movable between said first and second locations.

3. Dictation apparatus as claimed in claim 1 wherein said lever member projects laterally from said housing.

4. Dictation apparatus as claimed in claim 1 wherein said biasing means comprises a spring member for biasing said lever member to a position closing said switch contacts.

5. Dictation apparatus as claimed in claim 1 wherein said lever member comprises a first portion rotatable about a vertical axis between the said first and second locations, a second portion coupled to said switch contacts, and spring means biasing one end of said second portion in contact with an adjacent end of said first portion.

6. Dictation apparatus as claimed in claim 1 wherein said housing comprises a recess adapted to receive a microphone, and said lever is movable between first and second locations within said recess.

7. Dictation apparatus as claimed in claim 1, wherein said lever member comprises a grip portion at one end thereof adapted to support a microphone.

References Cited

UNITED STATES PATENTS

3,333,079 7/1967 Michaelson.
3,348,010 10/1967 Johnson.

ROBERT K. SCHAEFER, *Primary Examiner*.

H. O. JONES, *Assistant Examiner*.