

United States Patent

[11] 3,564,152

[72] Inventor **Karl F. Kurz**
Portland, Oreg.
 [21] Appl. No. **701,180**
 [22] Filed **Jan. 29, 1968**
 [45] Patented **Feb. 16, 1971**
 [73] Assignee **GAF Corporation**

2,783,313 2/1957 Sargisson..... 179/146
 1,736,794 11/1929 Mac Carthy..... 179/96
 2,844,664 7/1958 Kutik..... 179/100.1
 2,823,268 1/1958 Somers..... 179/100.1

Primary Examiner—Bernard Konick

Assistant Examiner—Raymond F. Cardillo, Jr.

Attorneys—M. Smolowitz, Walter C. Kehm and Samson B. Leavitt

[54] **DICTATING MACHINE WITH MICROPHONE OPERATED CRADLE SWITCH**
2 Claims, 4 Drawing Figs.

[52] U.S. Cl..... 179/100.1;
 200/51.1

[51] Int. Cl..... **G11b 15/18**,
 G11b 19/20, H04r 33/06

[50] Field of Search..... 179/100.1,
 100.1 (DR), 1 (HSO), 1 (C), 146, 179, 96, 6 (R),
 2 (C), 1 (SW); 200/51.1, 51.11

[56] **References Cited**
UNITED STATES PATENTS

3,334,250 8/1967 Gwin Jr. 200/51.1
 2,421,516 6/1947 Mitchell 200/51.1
 3,209,085 9/1965 Farina 179/146

ABSTRACT: The invention relates to a combined dictation machine and detachable microphone cradle. The bottom of the dictation machine has a pair of sockets, one being electrically connected to the power circuit and the other being closed by a leaf switch element completing the circuit. The microphone cradle includes a pair of projecting pins connected to a microphone-operated normally closed switch. Upon insertion of the pins of the microphone cradle into the sockets of the dictation machine the leaf switch breaks the power circuit within the dictation machine and completes the circuit through the normally closed switch in the cradle so that control over the power circuit of the dictation machine is transferred to the microphone-operated cradle switch.

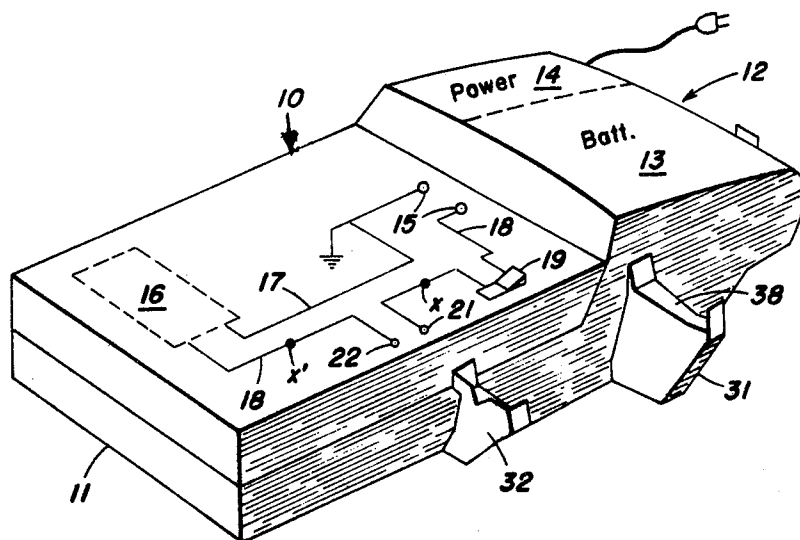


Fig. 1.

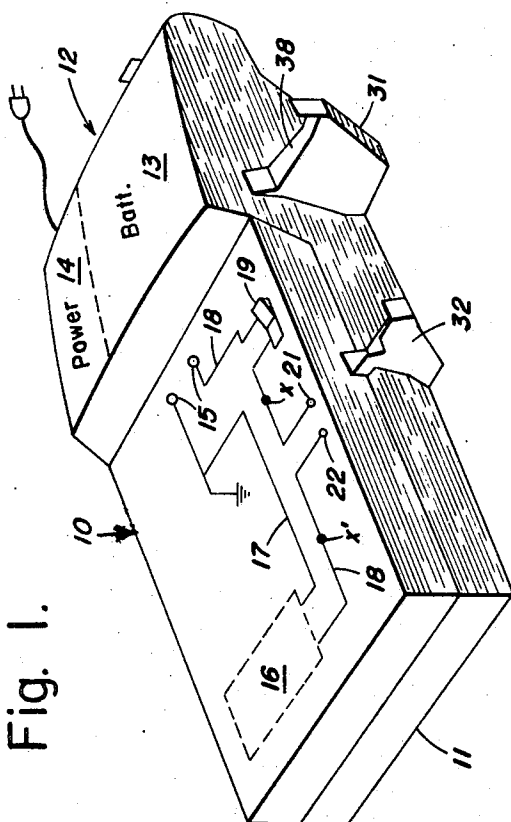


Fig. 3.

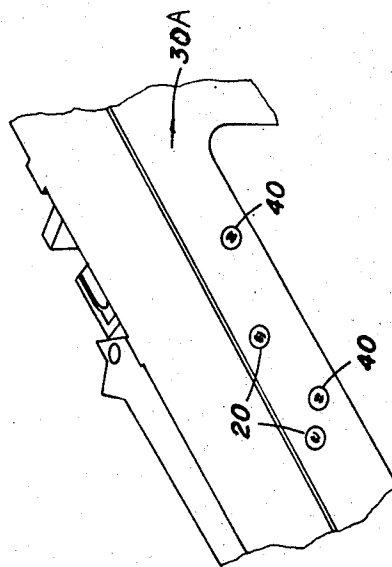
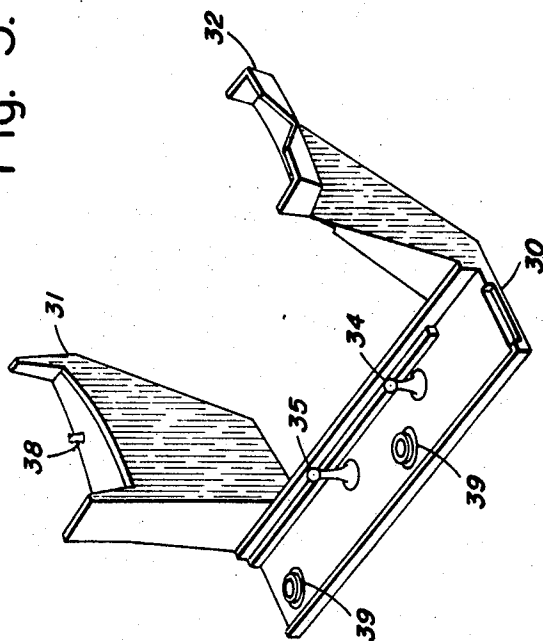


Fig. 2.

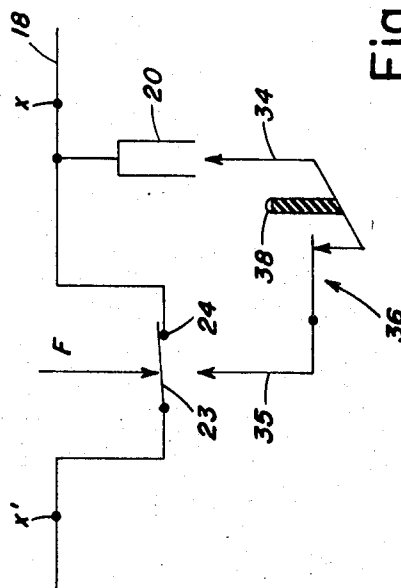


Fig. 4.

BY

INVENTOR.
Karl F. Kurz

Martin Smolensky
ATTORNEY

DICTATING MACHINE WITH MICROPHONE OPERATED CRADLE SWITCH

The present invention relates to dictation machines, and more particularly to portable dictation machines of the type having auxiliary means for turning the dictation machine on and off when a microphone is respectively removed and replaced on a cradle.

Recording machines are widely used in business and some of them are constructed small enough through the use of transistors and other solid state components to be useful as both a desk instrument, as well as a portable unit. It is desirable that this type of dictation machine have controls readily accessible and usually the microphones associated with these machines have a control which determines the direction the recording medium is to be transported, i.e., forward for recording, reverse for playback. Generally, the remaining controls which include a power switch and a switch for controlling the volume are usually placed on the machine itself. Therefore, since the volume control adjustment usually does not change if the dictation machine is used in one environment, the only control, then, which is to be operated by the user in addition to the normal microphone controls described above is the power on-off switch of the dictation machine. This power switch is usually located on the machine itself, and may not be as conveniently accessible as is often desirable.

Dictation machines which are to be used as portable equipment, in addition to being used as desk instruments, should be as compact as possible, and any unnecessary projections from the equipment itself should be avoided. It is therefore advantageous that attachments, such as cradles for the microphone be made detachable so that the equipment may have a compact shape without any projections when used in a portable form.

Briefly, in accordance with the present invention, the dictation machine utilizes a microphone cradle which can be easily attached and detached from the machine. The microphone cradle contains a built-in switch which is placed in the power circuit of the machine so that when the microphone is placed on the cradle, the machine power circuit is interrupted. The microphone cradle is both electrically as well as mechanically connected to the machine in such a manner that, when the microphone cradle is not used with the equipment, full control over the machine is obtained by the power on-off switch forming part of the dictation machine itself. However, upon attachment of the microphone cradle to the dictation machine, control is automatically switched over to the microphone switch on the microphone cradle, thus eliminating any further manipulation of the dictation machine power switch when it is desired to start, or to stop dictation. Merely lifting the microphone from the cradle turns the machine on and replacing the microphone on the cradle turns it off. The time taken to pick up the microphone and bring it to the ordinary dictation position is usually sufficient to permit the mechanical components of the dictation machine to come up to speed, since modern, solid state electronic driving equipment does not require any warmup time.

Accordingly, it is a primary object of the present invention to provide an improved dictation machine-microphone cradle combination, which permits use of the microphone cradle as an automatic electrical control element without requiring any manual switchover on the part of a user to effect takeover of a control function by the cradle.

It is another object of the present invention to provide a novel and unique selectively usable dictation machine, which can be made in compact form for portable use, or equipped with a microphone cradle for desk use.

It is a further object of the present invention to provide a versatile dictation machine requiring a minimum of manipulation on part of the users.

These and other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, in which:

FIG. 1 is a partly perspective view, and partly schematic diagram of the dictation equipment;

FIG. 2 is a schematic, partly perspective bottom view of the dictation machine illustrating the region of attachment of the microphone cradle;

FIG. 3 is a perspective view of a microphone cradle for use in the combination; and

FIG. 4 is a schematic partial circuit diagram of the dictation equipment power circuit.

Referring now in particular to the drawings, wherein like reference characters designate like or corresponding parts throughout the several views, FIG. 1 illustrates a dictation machine generally designated as reference numeral 10. The dictation machine 10 has a recording section 11 and a power supply section generally designates as reference numeral 12. Power supply section 12 may be in two parts, one to receive power from a battery source as seen at 13, and one to receive power from ordinary power supply outlets, as seen at 14. The power supply unit 12 is internally connectable at a pair of terminals 15 with the motors and the amplifier elements, schematically illustrated at 16, necessary to operate the dictation machine. Terminals 15 are connected to the internal elements 16 of the dictation machine 10 by one continuous bus 17 and an active line 18. Line 18 is connected to a power on-off switch 19, which may be part of a volume control. Switch 19 connects to a metallic sleeve 21 of a first socket 20, externally accessible and formed at the bottom of the apparatus 10, as best seen in FIG. 2. A second socket 22 is likewise formed at the bottom of the equipment. From the region of socket 22, the main line 18 continues and supplies power through the elements 16.

As far as the electrical aspects of the equipment are concerned, the present invention is primarily concerned with that portion of the circuit lying between points X—X', as indicated in FIGS. 1 and 4. The socket 22 includes at its open inner end a leaf spring 23 biased, as indicated schematically by arrow F in FIG. 4, to close off the inner end of socket 22 and at the same time contact a terminal 24 connected to the sleeve 21. Thus, under normal operation, a closed circuit will be established over line 18 through switch 19, terminal 24 and spring 23.

The microphone cradle, as best seen in FIG. 3, has a foot member 30, from which extends a pair of cradle arms 31, 32 adapted to hold the usual microphones (which may, at the same time, be a playback element) customarily supplied with dictation equipment. Formed on foot 30 of the microphone bracket are a pair of pins 34, 35 which fit into the bushings or sockets 20, 22. The pins are also indicated schematically in FIG. 4. One of them, in the illustration, pin 35, which is intended to fit into socket 22 is of such length that when the foot member 30 of the microphone cradle is pushed up against the bottom of the equipment 10, the pin 35 will engage the spring 23 and push it upwards against force F, thus breaking connection with terminal 24. Bushing 20, of conductive material, will make contact with pin 34 and the circuit established will then go from point X (line 18) through pin 34 in the foot of bracket 30 over a normally closed switch 36 to the pin 35 which will contact leaf spring 23, which is connected to the terminal X'.

The normally closed switch 36 is connected to pin 34 and mounted in the cradle arm 31. Switch 36 has an operating pin 38 extending beyond the cradle arm and adapted to be engaged by the microphone, when the microphone is at rest in the cradle. The switch may be of the microswitch type, requiring only a very small amount of travel and a very small weight to cause it to open. As will be seen, if pin 38 is depressed by the weight of the microphone, the circuit through pins 34, 35 opens and the power circuit to the elements 16 is thus interrupted when the microphone is placed on the cradle. Upon removal of the microphone, pin 38 rises to its normally closed position and establishes the contact, thus starting the dictation machine if power switch 19 is turned to ON. Thus, manipulation of the power switch is unnecessary and complete control of the machine is had by merely placing the microphone in its ordinary rest position.

Preferably, the bottom of the dictation machine 10 is slightly recessed, so that the foot portion 30A of the microphone cradle can fit into the recess. In addition, the pins 34, 35, which serve simultaneously as attachment elements, locating elements and electrical contacts, may be desired in certain applications to provide further snap-type fasteners to locate and securely attach the microphone bracket to the dictation machine. This type of fastener is indicated at 39, 40 on the foot of bracket 30 and on the bottom of the dictation machine 10, respectively.

The microphone cradle unit is preferably an integral plastic molding, with the switch pins 34, 35 as well as the retaining snap 39 set or molded therein. The wiring may be a printed circuit, or concealed in the foot portion 30. The switch 36 can be a microswitch or a small leaf spring-type operated switch with a pin 38 exposed to the microphone.

From the foregoing it becomes readily apparent that the dictation machine of the present invention permits ready removal of the microphone cradle and return of control of the power circuit to the power switch; and, upon attachment of the cradle, automatic operation of the recording equipment, solely from the microphone, with no further manipulation of controls on the dictation machine being necessary other than initially turning "on" the power switch.

It should also be understood that the foregoing relates to only a preferred embodiment of the invention, and that it is intended to cover all changes and modifications of the example of the invention herein chosen for the purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

I claim:

1. In combination with a dictation machine of the type having a microphone and a power supply circuit the improvement comprising:

a detachable microphone cradle adapted to be detachably fastened to said dictation machine, said cradle comprising, switch means adapted to be operated by the placement and removal of said microphone in said cradle, and a pair of projecting plug members responsive to the fastening of said cradle to said dictation machine to be received in dictation machine sockets, including first and second sockets, the outer walls of said first sockets are connected to said power supply circuit and the second socket is connected to said power supply circuit and to said first socket through a switch means, and switch means adapted to be opened by one of said projecting plug members on said cradle when said cradle is fastened to said dictation machine;

a recess formed in said bottom of said dictation machine in the region of said sockets; and

said cradle having a foot member of a thickness not exceeding the depth of said recess whereby upon fastening of said cradle to said dictation machine said plug members fit into said sockets and said foot member fits into said recess.

2. A combination as defined in claim 1 further including fastening elements formed on said foot member and in said recess of said bottom of said dictation machine respectively, to secure said cradle against accidental removal.