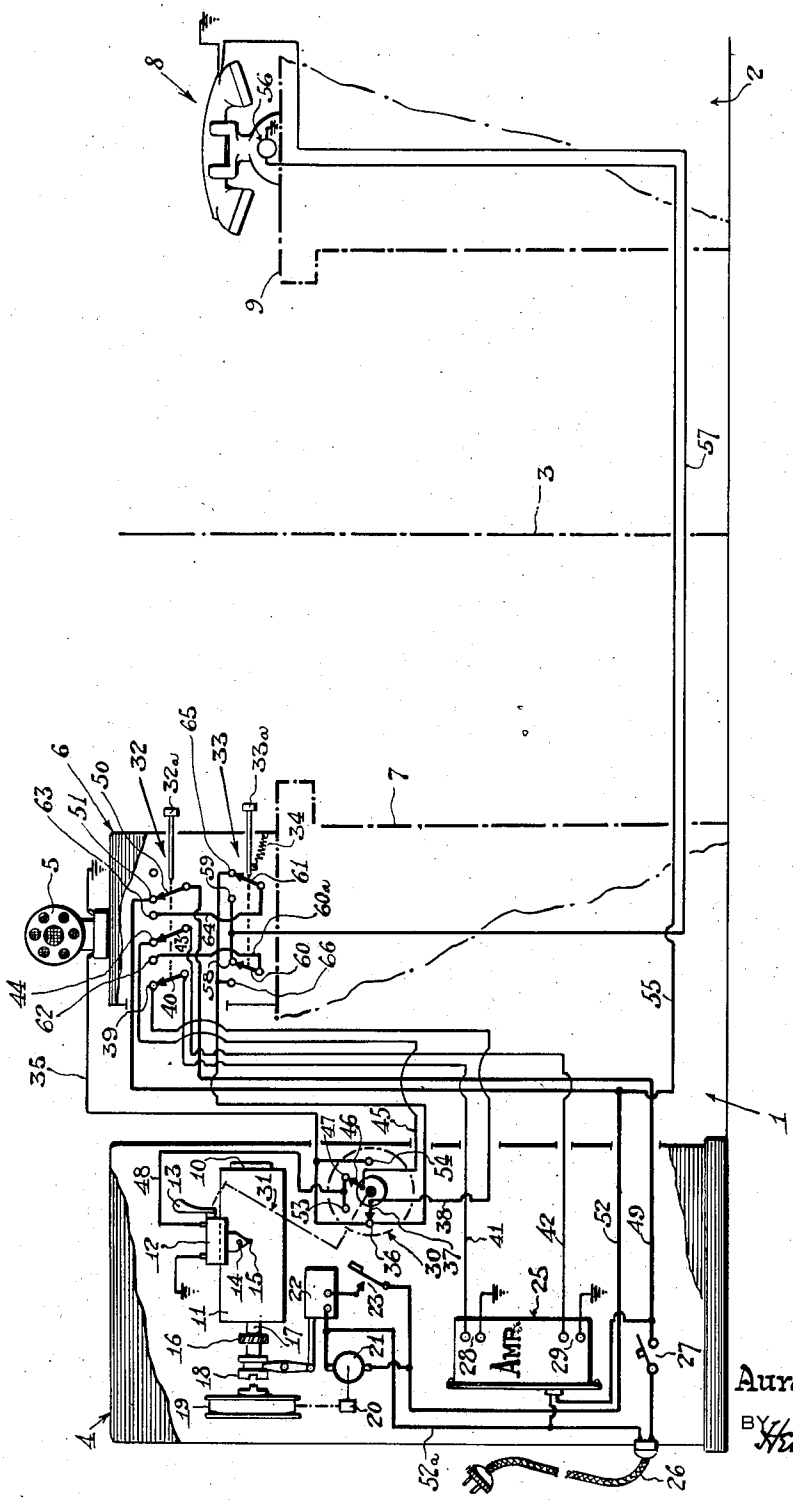
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COMBINATION DICTATING AND INTEROFFICE-COMMUNICATING SYSTEM

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COMBINATION DICTATING AND INTER-OFFICE-COMMUNICATING SYSTEM

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This invention relates to a combination of auxiliary apparatus with an electrical dictating machine to enable the user of the machine to converse at will with persons at a remote station.

It is an object of my invention to provide a combination of apparatus and selective conditioning means whereby certain main components of the apparatus may be connected selectively to function either as a dictating machine (a machine for recording and reproducing dictation) or as an interoffice-communicating system.

It is another object to provide a minimum auxiliary apparatus in combination with a dictating machine and under the control of the user of the dictating machine to enable that user to converse at will through major components of the dictating machine with persons at a remote station.

It is an object to provide a combined executive-secretarial system which is adapted to enable an executive to record dictation, "listen back" on his recorded dictation or to converse with his secretary at a remote station, at will.

These and other objects and features of my invention will be apparent from the following description and the appended claims.

In the description of my invention reference is had to the accompanying drawing, which is a diagrammatic showing of a combined dictating machine and interoffice-communicating system according to my invention.

In the drawing there are two stations 1 and 2 which are remote from one another, they being for example offices separated by a wall 3. The station 1 includes a dictating machine 4, a microphone-receiver 5 which may be considered as part of the dictating machine, and a control unit 6 which may be mounted on a table 7 fractionally shown by dash-dot lines. The station 2, on the other hand, includes only a microphone-receiver 8, preferably a telephone hand set as shown, which may also be mounted on a table 9 fractionally shown by dash-dot lines.

The microphone-receivers 5 and 8, which may otherwise be referred to as transducers, may each comprise a single component operable as a microphone or a receiver, or two separate components operable respectively as a microphone and receiver. In the specification and claims I herein use these terms to include such transducers of both the single- and double-component types.

As will hereinafter more fully appear, the station 1 is provided with apparatus for recording and reproducing dictation, and for communicating with station 2, but the station 2 has only apparatus for communicating with the station 1

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and then only when the apparatus at the station 1 is properly conditioned. Accordingly, the station 1 is herein referred to as a master or executive station and the station 2 as a subordinate one.

The dictating machine 4 includes a rotatable support 10 for a record 11 shown by way of example as of the cylindrical type. Cooperating with this record is a translating means 12 which may comprise a single unit conditionable selectively as a recorder and reproducer or separate recorder and reproducer units. By way of example, there is herein shown a single unit conditionable by a lever 13 to shift selectively recording and reproducing styli 14 and 15 into engagement with the record and to otherwise condition the unit 12 so that it will operate as a recorder and reproducer respectively. Such combined recorder-reproducer units are well known in the art and need not be herein described in detail. The unit 12 is moved progressively across the record as the record is turned. This is accomplished typically by a suitable feed screw (not shown) which is driven from a gear 16 on the shaft 17 of the record support. As is common in the art, the unit 12 is disengageable from the feed screw, by shifting the lever 13 to a neutral position, so as to permit the unit to be moved forwardly or backwardly by the hand, as desired. The shaft 17 is coupled by a clutch 18 to a pulley 19 which is coupled by a belt to a drive pulley 20 of a motor 21. The clutch is normally disengaged but may be engaged at will by an electrically-energizable unit 22, preferably an "Electrip" according to Langley Patent No. 1,380,486, controlled by a start-stop switch 23.

The dictating machine is of the electrical type wherein, during recording, the microphone-receiver 5, operating as a microphone, produces sound-representing electrical oscillations which are fed into an electrical amplifier 25, there amplified, and then fed into the recorder-reproducer 12 then conditioned as a recorder, and wherein during reproducing the recorder-reproducer, operating as a reproducer, produces sound-representing electrical oscillations which are again amplified by the amplifier and then fed to the microphone-receiver 5 then operating as a receiver. The amplifier 25 is energized from a power source through a power-supply cable 26 and an on-off switch 27. This amplifier has input and output sets of terminals 28 and 29 of which one of each set may be grounded as shown.

The control apparatus for conditioning the circuits of the dictating machine for recording

and reproducing dictation comprises a dictating directional-control switch 30 of a double-pole double-throw type. This switch is connected by a coupling means 31 (diagrammatically shown) to the lever 13 so that the switch is operated automatically as the lever 13 is shifted into "record" and "reproduce" positions to condition the recorder-reproducer 12 for recording and reproducing respectively. Additionally, there is provided a unitary selector service switch 32 which is for conditioning the system for dictating or interoffice-communicating services, as will hereinafter appear, and an interoffice directional-control switch 33 which is for conditioning the system for two-way communication between the stations 1 and 2. The selector switch 32 has "dictating" and "interoffice-communicating" positions, it being shown in dictating position in the drawing, and the switch 33 has so-called "talk" and "listen" positions (as for the station 1) but is normally held in "listen" position by a spring 34.

When the service selector switch is in "dictating" position, the operator at station 1 may record dictation or "listen back" on his recorded dictation as follows: Upon placing the switch 30 into "record" position—which is the position it occupies in the figure—the microphone-receiver 5 is connected by a line 35 to a contact 36 and pole 37 of switch 30, then by a line 38 to contact 39 and pole 40 of the service selector switch 32, and thence by a line 41 to the input 28 of the amplifier. At the same time the output 29 of the amplifier is connected by a line 42 to a pole 43 and contact 44 of the service selector switch 32, then by a line 45 to a pole 46 and contact 47 of the switch 30, and thence by a line 48 to the recorder-reproducer 12, which is now conditioned for recording. Also, one side of the motor 21 is now connected to one side of the power cable 26 by way of a line 49 leading from the on-off switch 27, a pole 50 and contact 51 of the service selector switch 32 and by a line 52, and the other side of the motor is connected to the other side of this power-supply cable by a line 52*a*. It will be noted that the clutch-actuating unit 22 is connected through the start-stop switch 23 across the motor 21, and that therefore this unit is now energizable to engage the clutch. Thus, upon shifting the directional-control switch 30 into "record" position while the service selector switch 32 is in "dictating" position the apparatus is connected to feed the sound-representing oscillations from the microphone-receiver 5 through the amplifier into the recorder-reproducer 12 where they are recorded as corresponding groove modulations on the record. If the operator desires to "listen back" to any part of his recorded dictation, he is required only to backspace the recorder-reproducer 12, and shift the lever 13 into reproducing position. When this is done the switch 30 is thrown to move the poles 37 and 46 clockwise into engagement with the respective contacts 53 and 54. It will now be observed that the recorder-reproducer, now acting as a reproducer, is connected to the input of the amplifier by way of the line 48, contact 53 and pole 37 of switch 30, line 38, contact 39 and pole 40 of switch 32, and line 41. At the same time the output of the amplifier is connected to the microphone-receiver 5 by way of the line 42, pole 43 and contact 44 of the service selector switch 32, line 45, pole 46 and contact 54 of the switch 30 and line 35. The motor 31 is still energized as before. Also, the clutch-operating unit 22 may be energized and deenergized selectively by closing and opening the start-stop switch 23 so as to start and stop rotation of the record as desired.

When the service selector switch is in dictating position the operator at station 2 is signaled so that he will not attempt then to call the operator at station 1. This signaling is effected by leading a line 55 from the power line 52 to a signal light or any other suitable signaling means, generally referred to as 56, and thence to ground. This signal is operative only when the service selector switch is in dictating position because only then is the line 52 energized through the pole and contact 50 and 51 of that switch.

When the service selector switch 32 is thrown to the right as by means of a button or a key 32*a*, the apparatus is conditioned for communication from station 2 to station 1, irrespective of the positioning of the switch 30. Also, the switch elements 50—51 of switch 32 are now open so that the motor is not running, and the signal 56 is now inoperative to indicate to the operator at station 2 that he can call the master operator. The operator at station 2 has a handpiece with a microphone and receiver as is common in telephone hand sets, but these separate units may be connected in parallel from the line 57 to ground. The line 57 leads to non-corresponding contacts 58 and 59 associated respectively with the poles 60 and 61 of the switch 33, the term "non-corresponding" being used to mean that one contact is engaged by its respective pole when the switch is in one position, and that the other contact is engaged by its respective pole when the switch is in its other position. In the normal or "listen" position of this switch, the pole 60 makes with the contact 58. Leading from the pole 60 is a line 60*a* to the contact 62 which is associated with the pole 40 of the selector switch 32. In the interoffice-communicating position of the switch 32 the pole 40 makes with the contact 62 to connect the microphone-receiver 8 by the line 41 to the amplifier input. The pole 43 of the switch 32, which is connected to the amplifier output 29, now makes with the contact 63 connected by a line 64 to the pole 61 of the switch 33. This pole now makes with the contact 65 which is connected to the line 35 leading to the microphone-receiver 5. Thus, one-way communication from the operator at station 2 to the master operator is enabled whenever the master operator places the service selector switch into dictating position, which he will normally do when not using the apparatus for dictating purposes.

When the master operator wishes to talk to the operator at station 2 he depresses the key 33*a* to close the switch 33 into its "talk" position. When the switch 33 is in this position the pole 61 makes with the contact 59 and the pole 60 with the contact 66 that is connected to the non-corresponding contact 65 aforementioned. Now the microphone-receiver 5 is connected to the input 28 of the amplifier by way of the line 35, the contact 66 and pole 60 of the switch 33, the line 61, the contact 62 and pole 40 of the switch 32 and the line 41. At the same time the output 29 of the amplifier is connected to the microphone-receiver 8 by way of the line 42, pole 43 and contact 63 of the switch 32, the line 64, the pole 61 and contact 59 of the switch 33, and the line 57. Thus two-way communication between the offices is enabled by depressing the key 33*a* of the switch 33 as whenever the operator at station 1 desires to speak to the operator at station 2 and

by releasing the key as whenever he desires to listen to any communication from station 2.

It will be understood that the audio circuit connections may be made through all or part of the amplifier, depending upon the gain requirements for the recording and reproducing operations and for interoffice-communication from respective stations. For example, were one of the microphones to be of the carbon-button type then the gain requirements for that microphone would be very much reduced. However, by way of illustration, all audio circuit connections are shown as being made through the whole amplifier, but it is intended that in the claims the expressions "through" or "by way of" said amplifier are to be construed as meaning through all or part of the amplifier.

I have hereinabove particularly described my invention in terms of a specific embodiment, but it will be understood that this embodiment is illustrative and not limitative of my invention, as the same is subject to changes and modfications without departure from the scope of my invention, which I endeavor to express according to the following claims.

I claim:

1. In a combined dictating and interoffice-communicating system including a dictating machine having a support for a record, a record-cooperable recorder-reproducer means, an electrical amplifier and a microphone-receiver means: the combination of a first station including said dictating machine; a second station including a microphone-receiver means; a unitary service selector switch comprising pole members connected respectively to the input and output of said amplifier; pairs of contacts associated with said pole members respectively; a unitary dictating direction-control switch comprising two pole members and respective pairs of associated contacts, said last-mentioned pole members being connected to corresponding contacts of the contact pairs of said service selector switch; circuit means connecting non-corresponding contacts of said dictating direction-control switch to said recorder-reproducer means; circuit means connecting the other non-corresponding contacts of said dictating direction-control switch to the microphone-receiver means associated with said dictating machine; a unitary interoffice-communicating direction-control switch comprising two pole means and respective pairs of associated contacts, said last-mentioned pole members being connected to the other corresponding contacts of said contact pairs of said service selector switch; circuit means connecting non-corresponding contacts of said interoffice-communicating direction-control switch to the microphone-receiver associated with said dictating machine; and other circuit means connecting the other non-corresponding contacts of said interoffice-communicating direction-control switch to the microphone-receiver of said second station.

2. In a combined dictating and interoffice-communicating system comprising a dictating machine having a support for a record, a record-cooperating translating means, a drive motor, a normally-disengaged clutch for coupling said motor to said record support and an electrical amplifier: the combination of first and second transducer means each operable as a microphone or receiver; a service selector switch having a "dictating" position wherein the same connects the input and output of said amplifier to said first transducer means and said translating means

respectively, and said selector switch having an "interoffice-communicating" position wherein the same connects one of said transducer means to the input of said amplifier and the other of said transducer means to the output of said amplifier; means coupled to said selector switch and operated as the selector switch is moved to "dictating" position for starting said motor; and an electrically-actuatable start-stop control operative only when said selector switch is in "dictating" position for engaging and disengaging said clutch.

3. In a combined dictating and interoffice-communicating system comprising a dictating machine having a support for a record, a record-cooperating translating means, a drive motor, a normally-disengaged clutch for coupling said motor to said record support and an electrical amplifier: the combination of first and second transducer means each operable as a microphone or receiver; a service selector switch having a "dictating" position wherein the same connects the input and output of said amplifier to said first transducer means and said translating means respectively, and having an "interoffice-communicating" position wherein the same connects one of said transducer means to the input of said amplifier and the other of said transducer means to the output of said amplifier; an electrically-actuatable start-stop control for operating said clutch; and circuit means controlled by said selector switch and operable to supply energizing current to said start-stop control only when said selector switch is in "dictating" position.

4. In a combined dictating and interstation-communicating system including a dictating machine having a support for a record, record-cooperating translating means, means for selectively conditioning said translating means for recording or reproducing, and an electrical amplifier: the combination of first and second transducers at first and second stations respectively each selectively operable to function as a microphone or as a receiver; circuit means including a service selector switch at said first station having a "dictating" position wherein it renders said dictating machine operable to record from and reproduce into said first transducer and wherein it simultaneously disables said system for interstation communication between said transducers, and said service selector switch being movable into an interstation-communicating position for disabling said dictating machine and concurrently rendering said system operative for interstation communication between said transducers; a dictating directional-control switch included in said circuit means and rendered operative by said service selector switch only as the same is moved into dictating position, said directional-control switch being coupled to said conditioning means and being moved into a "record" position as said translating means is conditioned foor recording for connecting said first transducer to said translating means by way of said amplifier, and said directional-control switch being moved into a "reproduce" position as said translating means is conditioned for reproducing for connecting said translating meas to said first transducer by way of said amlifier; and an interstation - communicating directional - control switch also included in said circuit means and rendered operative by said service selector switch only as the same is moved into "interstation-communicating" position, said latter directional-control switch having a "talk" position wherein it interconnects said transducers by way of said amplifier with said first transducer functioning

as a microphone and said second transducer functioning as a receiver, and said latter directional-control switch being movable into a "listen" position wherein it interconnects said transducer by way of said amplifier with said second transducer functioning as a microphone and said first transducer functioning as a receiver.

5. The combination set forth in claim 4 wherein said interstation directional-control switch is biased into "listen" position normally to render said system effective for one-way communication

only from said second station to said first station while said selector switch is in "interstation-communicating" position.

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