

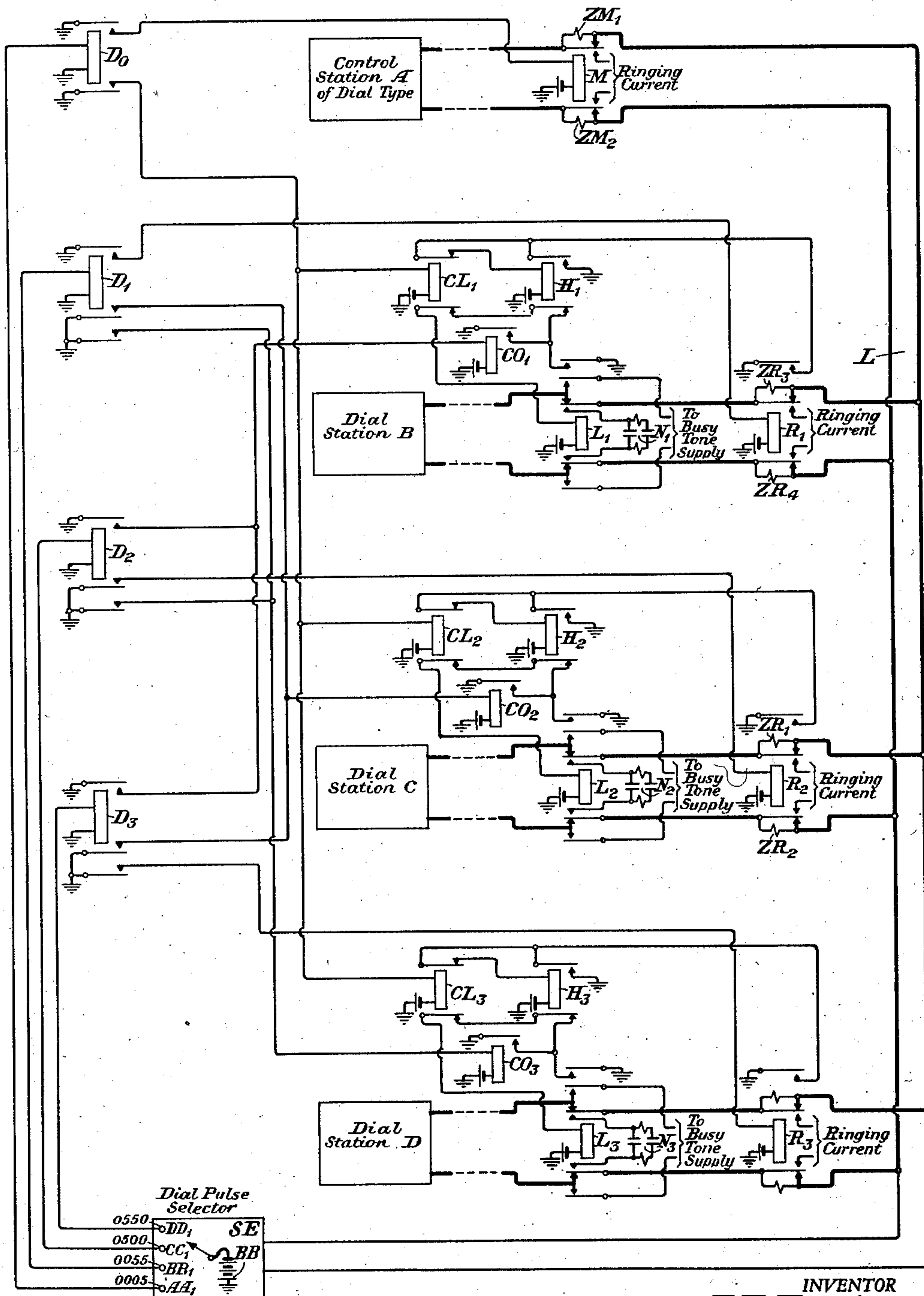
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J. F. TORPIE

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SELECTIVE SIGNALING SYSTEM

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BY

INVENTOR  
J. F. Torpie  
Jefferson Ehrlich  
ATTORNEY



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## SELECTIVE SIGNALING SYSTEM

John Francis Torpie, Floral Park, N. Y., assignor  
to American Telephone and Telegraph Com-  
pany, a corporation of New York

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This invention relates to signaling systems. More particularly, this invention relates to arrangements interconnecting a plurality of stations for selectively signaling any one or more of the various interconnected stations. Still more particularly, this invention relates to arrangements interconnecting a plurality of stations to lock out all stations which are not to partake in the conversation over the interconnected circuit.

In the copending applications of James T. Neiswinter, Serial No. 424,105, filed December 23, 1941, and Serial No. 468,862, filed December 12, 1942, there is disclosed a signaling or ringing system in which an ordinary telephone dial located at a telephone station may be operated a number of times to produce a corresponding number of groups of clicks or pulses from which harmonic currents of, for example, 1,000 cycles are derived for transmission to a distant switching point. The 1,000 cycle currents so transmitted are interrupted by the dial contacts about twenty times per second, and these interrupted 1,000 cycle currents are utilized at the distant switching point to select any one of the plurality of different lines, each line being connected to a separate station. The telephone dial is thus employed to produce groups of pulses for directly operating switching equipment controlling the connection of the station at which the dial is located to any one of the various distant stations.

It may be desirable to interconnect all of the various stations to each other by a common two-wire circuit so as to permit a telephonic conversation to take place between some or all of the different stations. In such an interconnected system the telephone dial may be employed to selectively ring each one or more of the various stations over the two-wire line so that the station or stations so rung may be held connected over the two-wire circuit for the telephonic conversation. In accordance with the present invention, it is proposed to arrange the system so that those stations that are not rung will be disconnected from the common two-wire circuit and definitely locked out. Such an arrangement may be useful in cases where the communications over the two-wire line are of a confidential character.

Accordingly, it is a primary object of this invention to provide a two-wire system interconnecting a plurality of stations, together with apparatus enabling one of the stations to selectively ring any one or more of the other stations so that a telephonic conversation may take place between the calling station and the telephone stations selectively rung and at the same time to lock out

all of the remaining stations. It is a further object to arrange the system so that any other stations may later be selectively rung so that such stations may be added to the circuit under control of the stations actually connected to the two-wire circuit.

In the arrangement to be described hereinafter, a main or control station will be connected to other stations by a two-wire line. The main or control station operator may operate the dial of his telephone set a number of times for controlling a selector employed for selectively operating equipment associated with the other telephone stations. The dial pulses emanating from the main or control station will be employed to operate equipment serving to apply ringing current to selectively ring the dialed station. The apparatus will include means for returning to the control station a ringing current or tone of reduced amplitude to inform the operator that he has rung one of the various stations. The apparatus will also include means for definitely locking out all of the other stations that are not selectively rung to disconnect the telephone equipment at these other stations from the two-wire circuit. Furthermore, only the station or stations rung will be held connected to the two-wire circuit. Moreover, a source of busy tone will be connected to the stations that are locked out to serve as an indication to the stations locked out that they are disconnected from the common two-wire transmission line. The operator at the control station may again operate his dial a number of times at the conclusion of conversation with the called party or parties for the purpose of returning all of the equipment at all of the stations to its normal condition.

This invention will be better understood from the more detailed description hereinafter following when read in connection with the accompanying drawing showing one embodiment of the invention merely for the purpose of illustration.

Referring to the drawing, there is shown a two-wire telephone line L interconnecting a main or control station A and three of a plurality of distant stations designated B, C and D. The control station A and each of the additional stations B, C and D have dial telephone sets of the type ordinarily used as telephone sub-stations, the dial serving to produce a group of pulses with each operation. The line L is connected to a dial pulse selector SE which is employed for selecting any one of the stations B, C or D as will be described more fully. The dial at control station A may be successively operated four times, for



example, for producing four groups of pulses corresponding to a predetermined four digit code. The 1,000 cycle components of each group of pulses are interrupted about twenty times per second and the successive interrupted currents are employed to connect battery at the selector SE to any one of a plurality of terminals, four of which are shown and designated AA<sub>1</sub>, BB<sub>1</sub>, CC<sub>1</sub> and DD<sub>1</sub>. The apparatus of selector SE is shown and described in the Neiswinter copending applications above noted. Each of the various stations to be selectively signalled will have a pre-assigned code designation, the code designation 0005, for example, being assigned to station A, the code designation 0055 assigned to station B, the code designation 0500 being assigned to station C and the code designation 0550 being assigned to station D.

If the operator at the control station A desires to ring station C he will dial the number 0500 in the usual way. This will operate the selector SE so as to connect the battery BB to the terminal CC<sub>1</sub> for a period of, for example, three seconds. This in turn will cause the relay D<sub>2</sub> to operate. In response to the operation of relay D<sub>2</sub>, the relay R<sub>2</sub> will be operated, the circuit to the winding of relay R<sub>2</sub> being completed through the lower inner make contact of relay D<sub>2</sub>. The operation of the relay R<sub>2</sub> will connect a source of ringing current to station C, the source of ringing current being connected through the upper inner make contact and armature and the lower make contact and armature of relay R<sub>2</sub> and through the upper and lower inner armatures of relay L<sub>2</sub> and their corresponding back contacts. This will cause the station C to be rung for a period of about three seconds. Thus, the transmission from the control station A of a code corresponding to station C will ring station C to the exclusion of all of the other stations.

In response to the operation of relay R<sub>2</sub> the relay H<sub>2</sub> will become operated, the operating circuit including battery connected to the lower terminal of the winding of relay H<sub>2</sub>, the winding of relay H<sub>2</sub>, the back contact and upper armature of relay CL<sub>2</sub> and upper outer make contact and armature of relay R<sub>2</sub> and ground. The relay H<sub>2</sub> will then be locked in its operated position, the locking circuit including battery, the winding of relay H<sub>2</sub>, the back contact and upper armature of relay CL<sub>2</sub>, the upper armature and make contact of relay H<sub>2</sub> and ground. The operation of relay H<sub>2</sub> will serve to prevent station C from being disconnected from line L in the event that a second station is also dialed by station A.

The operation of relay R<sub>2</sub> will also cause the source of audible ringing current which was connected to the station C, as already noted, to be connected to the control station A. The interconnected circuit will extend from the ringing generator at the upper and lower inner make contacts of relay R<sub>2</sub> and their armatures, the resistors ZR<sub>1</sub> and ZR<sub>2</sub>, the line L, the upper and lower back contacts of relay M and their corresponding armatures to the control station A. This will supply the ringing current in reduced amplitude to the control station A and this "ring-back" current will be audible so as to indicate to the control station operator that he has succeeded in ringing one of the stations. The values of the resistances ZR<sub>1</sub> and ZR<sub>2</sub> are such that the ring-back current is too feeble to operate the ringers at the other telephone stations B and D. It will be observed, therefore, that the source of ringing current is simultaneously ap-

plied to the station to be rung, namely station C, and to the station which initiated the ringing current, namely, control station A, the amplitude of the ringing current transmitted to called station C being of a large magnitude so as to effectively operate the ringer at the called station C while ringing current of smaller amplitude is transmitted to the calling station A and is audible in the receiver of station A to notify the calling operator at station A that the ringing operation has been performed.

The relay D<sub>2</sub>, previously operated in response to the transmission from the control station A of the code corresponding to station C, also completes circuits to operate the cut-off relays CO<sub>1</sub> and CO<sub>3</sub> which are associated with stations B and D. The cut-off relay CO<sub>1</sub> will be operated over an obvious circuit upon the closure of the upper make contact of relay D<sub>2</sub>, and, likewise, the relay CO<sub>3</sub> will be operated over an obvious circuit upon the closure of the lower outer make contact of relay D<sub>2</sub>. In response to the operation of relay CO<sub>1</sub>, the relay L<sub>1</sub> will become operated, the interconnected circuit including the armature and make contact of relay CO<sub>1</sub>, the back contact and lower armature of relay H<sub>1</sub>, the back contact and lower armature of relay CL<sub>1</sub>, the winding of relay L<sub>1</sub>, battery and ground. The relay L<sub>1</sub> will then be locked in its operated position, the locking circuit including battery, the winding of relay L<sub>1</sub>, the lower armature and back contact of relay CL<sub>1</sub>, the lower armature and back contact of relay H<sub>1</sub>, the upper outer make contact and armature of relay L<sub>1</sub> and ground. The operation of relay L<sub>1</sub> will disconnect the telephone equipment at station B from the line L and from all of the other stations which are connected to line L, the disconnection occurring upon the opening of the inner upper and lower back contacts of relay L<sub>1</sub>. Thus the station B is effectively locked out of the circuit interconnecting the control station A with the control station C. Moreover, the closure of the upper and lower inner make contacts of relay L<sub>1</sub> will connect a terminating network N<sub>1</sub> to the line L, the connection of the terminating network N<sub>1</sub> to line L being completed through the upper inner armature and lower armature of relay R<sub>1</sub> and their make contacts. The network N<sub>1</sub> simulates the line extending to station B and hence maintains the transmission characteristic of the overall circuit of the system substantially unaffected by the lockout of the station B equipment.

The operation of the relay L<sub>1</sub> will also connect a source of audible busy tone to the equipment at station B through the second upper armature and the lower outer armature of relay L<sub>1</sub> and their make contacts. This source of busy tone will remain connected to station B as long as relay L<sub>1</sub> remains operated, and will serve to notify the party at station B that he is locked out of the path of communication. This will prevent unnecessary dialing by the operator at station B to establish a connection with any of the other stations of the system.

The operation of cut-off relay CO<sub>3</sub> in response to the operation of relay D<sub>2</sub> will likewise operate relay L<sub>3</sub> which is associated with the station D. The relay L<sub>3</sub> will lock out station D from line L and at the same time supply a busy tone to station D to indicate the locked out condition of that station. The operation of relay L<sub>3</sub> will likewise terminate the interconnected circuit in a network N<sub>3</sub> which simulates the line extending



to station D during the locked out status. The circuits for locking out station D are similar to those employed to lock out station B and hence need not be further described.

It was explained that the dial pulse selector SE connects battery BB to terminal CC<sub>1</sub> for a period of about three seconds upon the dialing of number 0500, for example, at station A. At the end of this interval, the relay D<sub>2</sub> will release. The release of relay D<sub>2</sub> will release relay R<sub>2</sub> by opening the circuit to the winding of relay R<sub>2</sub> at the lower inner make contact of relay D<sub>2</sub>. This will interrupt the ringing current supplied to station C. Thus, the ringing current will be supplied to station C only for a predetermined interval, i. e., three seconds, during which relays D<sub>2</sub> and R<sub>2</sub> remain operated. The release of relay D<sub>2</sub> at the end of this interval will also be accomplished by the release of the cut-off relays CO<sub>1</sub> and CO<sub>3</sub>, which are controlled respectively by the upper armature of relay D<sub>2</sub> and the lower outer armature of relay D<sub>2</sub>. The release of relays CO<sub>1</sub> and CO<sub>3</sub> will have no effect upon the relays L<sub>1</sub> and L<sub>3</sub> at this time, because these relays are locked in their operated positions, as already pointed out. Relay H<sub>2</sub> will also remain operated by virtue of the locking path provided by its upper armature and make contact. The operation of relay H<sub>2</sub> will prevent relay L<sub>2</sub> from operating to disconnect station C from line L and from station A. The transmission from station A of the code corresponding to station C will hold station C connected to station A over line L while at the same time disconnecting and locking all other stations B and D from the interconnected circuit. Stations B and D are thereby denied access to line L.

The conversation between the operator at station A and the operator at station C will continue under the control of the operators at stations A and C. That is, the circuit between stations A and C will be held closed under the control of the operators at stations A and C. At the end of the conversation, the operator at station A, for example, may return all the apparatus at all of the stations to its normal condition by dialing the code 0005 corresponding to station A. Unless this code is transmitted to selector SE, the apparatus will remain in its former condition even though the parties to the conversation hang up their receivers.

In response to the dialing of the code 0005 corresponding to station A by the operator at either station A or station C, the selector SE will connect battery BB to the terminal AA<sub>1</sub> to operate relay D<sub>0</sub>. The relay M will be operated in response to the operation of relay D<sub>0</sub>, the circuit to relay M being completed by the upper armature and make contact of relay D<sub>0</sub>. The operation of relay M connects the source of ringing current to the equipment of station A, and serves to indicate to the operator at station A that the selector SE has operated to clear the circuit and restore all of the equipment to its normal condition. Moreover, the operation of D<sub>0</sub> will supply ground at its low armature and make contact to operate the relays CL<sub>1</sub>, CL<sub>2</sub> and CL<sub>3</sub>. However, as relay D<sub>0</sub> is operated only for a predetermined interval of, for example, three seconds, relays CL<sub>1</sub> and CL<sub>2</sub> and CL<sub>3</sub> will be operated only for a like interval. The operation of relay CL<sub>1</sub> will open the locking circuit for relay L<sub>1</sub> at the back contact of the lower armature of relay CL<sub>1</sub>, whereupon relay L<sub>1</sub> will release to reconnect the station B equipment to the line L.

Similarly, the operation of relay CL<sub>3</sub> will open the locking circuit for relay L<sub>3</sub> at the back contact of the lower armature of relay CL<sub>3</sub> to reconnect station D to the line L. The release of relays L<sub>1</sub> and L<sub>3</sub> will also serve to disconnect the source of busy tone from the equipment of stations B and D respectively, and at the same time disconnect the terminating networks N<sub>1</sub> and N<sub>3</sub> corresponding to these stations from line L. The operation of relay CL<sub>2</sub> in response to the operation of relay D<sub>0</sub> will open the locking circuit for relay H<sub>2</sub> at the back contact of the upper armature of relay CL<sub>2</sub> and thereby restore relay H<sub>2</sub> to its normal condition.

The operator at the control station A may also establish a talking path to, for example, two of the other stations, such as B and C to hold a three-way conference between all three stations A, B and C whenever desired. The operator at station A may first dial the code 0500 corresponding to station C, in which event a talking path will be established between stations A and C while the other stations will be simultaneously locked out. This has already been described hereinabove, and need not be repeated.

The operator at station A may then dial the code 0055 assigned to station B. The selector SE will then connect the battery BB to terminal BB<sub>1</sub> and therefore operate relay D<sub>1</sub>. Upon the closure of the upper make contact of relay D<sub>1</sub>, relay R<sub>1</sub> will operate to connect the source of ringing current to the equipment at station B through the contacts of relays R<sub>1</sub> and L<sub>1</sub>. The operation of relay R<sub>1</sub> will complete a circuit for operating relay H<sub>1</sub>, the operating circuit including the upper outer armature and make contact of relay R<sub>1</sub>, the upper armature and back contact of relay CL<sub>1</sub>, the winding of relay H<sub>1</sub>, battery and ground. The relay H<sub>1</sub> will then be locked in its operated position, the locking circuit including battery, the winding of relay H<sub>1</sub>, the back contact and upper armature of relay CL<sub>1</sub>, the upper armature and make contact of relay H<sub>1</sub> and ground. The operation of relay H<sub>1</sub> will open the circuit of relay L<sub>1</sub> at the lower back contact of relay H<sub>1</sub> and cause relay L<sub>1</sub> to release. The simultaneous operation of relay R<sub>1</sub> and the release of relay L<sub>1</sub> will permit ringing current to be transmitted to the equipment at station B, the path from the ringing current source to station B including the upper inner armature and the lower armature of relay R<sub>1</sub> and their respective make contacts, the upper and lower inner armatures of relay L<sub>1</sub> and their back contacts and then over the circuit extending to station B. The operation of relay R<sub>1</sub> will also connect the ringing current source to the control station A through the upper inner armature and lower armature of relay R<sub>1</sub> and their make contacts and resistors ZR<sub>3</sub> and ZR<sub>4</sub>, respectively. This "ring back" current informs the operator in the control station that he has signaled another one of the stations.

The relay D<sub>1</sub>—which was selectively operated in response to a predetermined code received from station A to selectively ring the station B—also completes circuits at its lower two make contacts to operate relays CO<sub>2</sub> and CO<sub>3</sub>, respectively. However, the operation of relay CO<sub>2</sub> will fail to operate relay L<sub>2</sub> because relay H<sub>2</sub>—which has its lower armature and back contact in the circuit of winding of relay L<sub>2</sub>—has previously been operated and locked in its operated position. Thus, the equipment at station C will remain connected to line L and to the control



station A. The operation of relay CO<sub>3</sub> will have no effect because relay L<sub>3</sub> has already been operated when station C was dialed. Relay L<sub>3</sub> remains operated to lock out and supply busy tone to station D. It will be clear, therefore, that by dialing the codes corresponding to stations C and B consecutively, the control station operator may hold both of these stations connected to his own station A for a three-party conference while also locking the station D out of the interconnected circuit.

At the end of the conversation between the parties of stations A, B and C the operator at any one of the stations A, B or C may restore all of the equipment to its normal condition by dialing the code corresponding to station A. This will connect battery BB to terminal AA<sub>1</sub> and hence operate relay D<sub>0</sub>. The lower make contact of relay D<sub>0</sub> will complete a path to operate relays CL<sub>1</sub>, CL<sub>2</sub> and CL<sub>3</sub>. Relay CL<sub>1</sub> will then cause relay H<sub>1</sub> to be released. Similarly, relay CL<sub>2</sub> will cause relay H<sub>2</sub> to be released. Relay CL<sub>3</sub> will cause the relay L<sub>3</sub> to be released. The line L will now be connected to all of the stations of the system for subsequent switching functions.

It has been shown that the operator at the control station A may selectively signal one or more of the other stations of the system by dialing codes assigned to these other stations and simultaneously lock all other stations out of the interconnected circuit. When a station is locked out it is impossible for that station to make any calls over line L to any other station. This insures the privacy of the system for any of the parties connected to line L.

The operator at any one of the other stations may also call the operator at the control station A whenever desired. Assume, for example, that the operator at station C desires to call the operator at control station A. The dial at station C will be operated according to the code 0005, causing selector SE to connect battery BB to the terminal AA<sub>1</sub>. Relay D<sub>0</sub> will then be operated and this relay in turn will cause relay M to be operated. Relay M will connect the source of ringing current to the equipment at station A and this connection will be established for a predetermined interval of time, namely, three seconds, during which relay D<sub>0</sub> remains operated by the selector SE. The ringing current generator associated with relay M will also supply a "ring-back" indication to the operator at station C in the manner already described hereinabove.

It is to be noted also that the operation of relay D<sub>0</sub> in response to the dialing of the code assigned to station A, will operate relays CL<sub>1</sub>, CL<sub>2</sub> and CL<sub>3</sub> corresponding to stations B, C and D. The operation of these relays will have no effect at this time. All stations will remain connected to line L.

If it is also desired to lock out stations B and D thereafter, then the code corresponding to station C will be dialed by either of the operators of stations A or C. When this happens, battery BB will be connected at the selector SE to the terminal CC<sub>1</sub> to cause relay D<sub>2</sub> to operate. The operation of relay D<sub>2</sub> will establish circuits at its upper and lower outer make contacts to operate relays CO<sub>1</sub> and CO<sub>3</sub>, respectively. The operation of relays CO<sub>1</sub> and CO<sub>3</sub> in turn will cause relays L<sub>1</sub> and L<sub>3</sub> to operate in the manner already described. The operation of relays L<sub>1</sub> and L<sub>3</sub> will then remove the equipment of stations B and D

from the line L and connect the source of busy tone to these stations. Thus, the stations A and C may be connected to each other for telephonic conversation, and it will also be impossible for the operators at stations B and D to listen to the conversation. It will be obvious, therefore, that two or more stations may be connected to each other and the remaining stations may or may not be locked out as may be desired. If these other stations are not locked out, they may be rung over the common circuit by the operator of any one of the various stations merely by dialing the codes assigned to these other stations.

The line L may be used as a path of communication between two of the stations, such as B and C, whenever desired. In such a situation the operator of the station B, for example, may signal the control operator at station A by dialing 0005 and then request a connection to station C. The operator at station A may then dial the numbers 0055 and 0500 assigned to stations B and C and hence ring those stations while locking station D out of the interconnected circuit.

In the system described it is assumed that one of the stations, such as A, is the control station, that it has permanent access to the common circuit L, and also that it has the responsibility for clearing the circuit after each call. A control station of this type is not required to practice the invention; for if desired the circuit may be arranged so that any one of the operators may select any desired station or stations and may thereafter clear the circuit after the conversation is completed. This would necessitate adding another call number, such as 0000 and having the selector SE respond to that number for operating an additional relay to perform the functions now performed by relay D<sub>0</sub> and to restore the equipment to normal. This additional relay will release all of the various L relays and thereby reconnect all of the stations to line L. This modification will be obvious to those skilled in the art and therefore need not be described further.

The system described hereinabove is not to be considered as limited to a group of but four stations, for it will be obvious that any number of stations may be added to the system if so desired. The time constants and the code numbers have been given merely for illustrative purposes, and other code numbers may be employed if desired.

The stations A, B, C and D may be located at widely distant points or cities all connected to the same line L. All of the other equipment may be grouped together at a common point or central office, located perhaps adjacent to station A.

Although this invention has been shown and described in certain particular embodiments merely for illustrative purposes, it will be understood that the invention is readily applicable to many other and varied organizations without departing from the spirit of the invention and the scope of the appended claims.

What is claimed is:

1. In a signaling system, the combination of a main station, a plurality of additional stations, a line interconnecting said main station and said additional stations so that all of said stations are effectively connected to each other for telephone conversation, and means responsive to a predetermined signal corresponding to one of said additional stations and emanating from said main station to disconnect all but the latter additional station from said line and at the same time to



hold said excepted additional station connected to said main station by said line.

2. In a signaling system, the combination of a main station, a plurality of additional stations, a line interconnecting said main station and said additional stations so that all of said stations are effectively connected to each other for telephone conversation, means responsive to a predetermined signal from said main station to disconnect all but one of said additional stations from said line and at the same time to hold the excepted station connected to said main station by said line, and means to continuously apply busy tone to all of the disconnected stations.

3. In a telephone privacy system, the combination of a main station, a plurality of auxiliary stations connected to said main station by a common line, and means responsive to a predetermined signal corresponding to one of said auxiliary stations to ring said auxiliary station while holding said auxiliary station connected to said main station over said line, said means including means to lock all other auxiliary stations out of connection with said line so that no calls may be made by any of said auxiliary stations that are locked out.

4. In a telephone system, the combination of a main station, a plurality of auxiliary stations connected to said main station by a common line, means responsive to a predetermined signal corresponding to one of said auxiliary stations to ring said auxiliary station while holding said auxiliary station connected to said main station over said line, said means including means to lock all other auxiliary stations out of connection with said line to prevent any calls from being made from the locked out stations, and means to continuously apply busy tone to all of the auxiliary stations locked out.

5. In a signaling system, the combination of a main station, a plurality of additional stations, a line interconnecting said main station and said additional stations so that all of said stations are effectively connected to each other for telephone conversation, means responsive to a predetermined signal from said main station to disconnect all but one of said additional stations from said line and at the same time to hold the excepted station connected to said main station by said line, and means responsive to another predetermined signal to return all of said additional stations to their normal connection to said line.

6. In a telephone privacy system, the combination of a main station, a plurality of auxiliary stations connected to said main station by a common line, means responsive to a predetermined signal corresponding to one of said auxiliary stations to ring said auxiliary station while holding said auxiliary station connected to said main station over said line, said means including means to lock all other auxiliary stations out of connection with said line to prevent any calls from being made from the locked out stations, and means responsive to another predetermined signal to reconnect to said line all of the stations previously locked out.

7. In a telephone privacy system, the combination of a main station, a plurality of auxiliary stations connected to said main station by a common line, means responsive to a predetermined signal corresponding to one of said auxiliary stations to transmit ringing current to said auxiliary station and to hold said auxiliary station connected to said line, said means including means to lock all other auxiliary stations out to

prevent their connection to said line, and means to simultaneously return ringing current to said main station in reduced amplitude.

8. In a telephone privacy system, the combination of a main station, a plurality of auxiliary stations connected to said main station by a common line, means responsive to a predetermined signal corresponding to one of said auxiliary stations to apply ringing current to said auxiliary station and to hold said auxiliary station connected to said main station over said line, said means including means to disconnect all of the other auxiliary stations from said line and to continuously apply busy tone to said disconnected auxiliary stations, and means to simultaneously send ringing current in reduced amplitude to said main station.

9. In a telephone privacy system, the combination of a main station, a plurality of auxiliary stations connected to said main station by a common line, means responsive to a predetermined signal corresponding to one of said auxiliary stations to apply ringing current to said auxiliary station and to hold said auxiliary station connected to said main station over said line, said means including means to disconnect all of the other auxiliary stations from said line and to continuously apply busy tone to said disconnected auxiliary stations, means to simultaneously send ringing current in reduced amplitude to said main station, and means responsive to another predetermined signal to reconnect all of the previously disconnected auxiliary stations to said line.

10. In a telephone privacy system, the combination of a plurality of telephone stations connected to each other over a common line, and means responsive to a predetermined signal transmitted from one of said stations to hold the latter station connected to another of said stations which corresponds to said predetermined signal, said means including means to disconnect all other stations from said line to prevent any calls from being made from the disconnected stations.

11. In a telephone system, the combination of a central station, a plurality of auxiliary stations, a line interconnecting said central station to all of said auxiliary stations, so that a telephone conversation may take place over said line between all of said stations, and means responsive to predetermined signals each corresponding to but one of said auxiliary stations to hold the auxiliary stations corresponding to said signals connected to said central station over said line and to disconnect all other auxiliary stations from said line.

12. The combination of a central station, a plurality of auxiliary stations, a line interconnecting said central station to all of said auxiliary stations so that a telephone conversation may take place over said line between all of said stations, means responsive to predetermined signals each corresponding to but one of said auxiliary stations to hold the auxiliary stations corresponding to said signals connected to said central station over said line and to disconnect all other auxiliary stations from said line, and means responsive to another predetermined signal to reconnect all of the previously disconnected auxiliary stations to said line.

13. The combination of a dial telephone set, a plurality of auxiliary telephone sets connected by a common line to said dial set, means responsive to a dial code corresponding to one of said aux-



iliary sets to ring the latter auxiliary telephone set and hold said latter auxiliary set connected to said dial telephone set, said means including means to lock out all other auxiliary telephone sets from said common line, and means responsive to another dial code to reconnect all of the locked out auxiliary sets to said common line.

14. The combination of a dial telephone set, a plurality of auxiliary sets connected by a common line to said dial set, and means for establishing telephone privacy for selected auxiliary sets over said common line, said means comprising means responsive to predetermined dial codes corresponding to the selected auxiliary sets to ring said selected auxiliary sets while holding said selected auxiliary sets connected to said dial set over said common line, said means including means to lock all other auxiliary sets out of the common line.

15. In a telephone privacy system, the combination of a main dial telephone set, a plurality of auxiliary dial telephone sets connected to the main dial telephone set by a common line, means responsive to a dial code corresponding to one of said auxiliary dial telephone sets to ring said dialed auxiliary set while holding said dialed auxiliary set connected to said main telephone set over said line, said means including means to lock out all other auxiliary sets from said line, means responsive to the dial code corresponding to another of said auxiliary sets to add said other dialed auxiliary set to said line while holding all non-dialed auxiliary sets locked out from said line, and means responsive to another dial code to reconnect all locked out auxiliary sets to said line.

JOHN FRANCIS TORPIE.