

Phone lock

by Jules H. Gilder

To prevent unauthorized people from using the telephone, people often go out and buy a telephone lock to keep the dial from operating. If you're one of the many people who has done that you probably know that just when you want to put the lock on, you can't find it. It's rather small and easy to lose. So is the key. Ever put the lock on and then lose the key? Try to use the phone then!

You can eliminate these problems by building and attaching an electrical phone lock to your telephone. While preventing unauthorized persons from

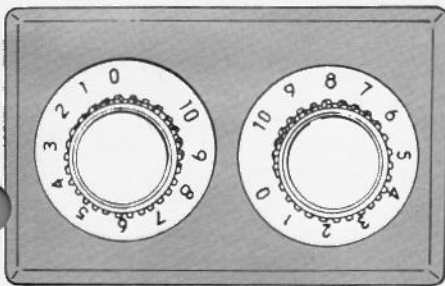


Figure 1

making phone calls, the phone lock will not in any way affect incoming calls. The best part about the lock is that there is no key to lose. To use the phone, dial the phone lock in the proper combination and the phone is unlocked. If you want to make the combination more difficult, all you have to do is add additional switches.

The phone lock is one of the few projects in this book that requires a direct electrical connection to the telephone. The connections you make however will in no way damage the phone and cannot be detected by the phone company. In certain areas of the country, the attachment of foreign objects to the phone line is prohibited by tariffs of the local operating companies. However, recent pressure from telephone accessory manufacturers has caused the phone companies to ease up on these tariffs in many instances and to allow some devices to be connected to the line. To be sure, you

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If you're worried about people running up your phone bill with long distance calls made while you're out, you'll really like this super-simple combination phone lock. It's easy to build, costs only a few dollars for parts, and doesn't have any keys to lose.

should contact your phone company.

About the circuit

The circuit for the electrical phone lock is a very simple parallel circuit of three rotary switches. The connection of the switches is designed so that unless the proper combination is dialed in, a short circuit will appear across wires A and B. But, when the correct combination is set on the three rotary switches, an open circuit appears across A and B.

To understand how this helps lock the phone, let's take a look at the dialing action of a telephone. Look at the back of a telephone dial. You will see that there is a set of normally-closed switch contacts that open and close as a number is dialed. The number of times they open and close depends on the number dialed. For example, the number 3 would cause the contacts to open and close three times.

This opening and closing of the contacts is what enables you to dial different numbers. When the phone is not in use and waiting to receive a call, these contacts are normally closed. So if you contact a shorting wire across the terminals of these contacts you have caused no change in the circuit.

Construction

If you try to dial the telephone while the terminals are shorted nothing will happen. Although the moving dial is

This in essence is what the phone lock does. Wires A and B are connected to the normally-closed dialing switch. When the correct combination is set on the rotary switches, the circuit between A and B is an open circuit and calls can be made. But, if the rotary switches are set to anything but the proper combination, a short circuit will appear across A and B. This short circuit will prevent the dialing switch in the telephone from pulsing the phone line and dialing a number.

Installation and operation

Fabricating the phone lock is very simple. Purchase three (or as many as you wish) rotary switches. They should have about ten or twelve individual positions. Such a switch is designated as a single pole ten throw (SP10T) or single pole twelve throw (SP12T) switch. Mount the switches in a small bakelite case or any other convenient enclosure. Now, connect all of the centerposts of the three switches together. This will be wire A.

Determine what combination you want to use for the lock and short all the contacts on each switch together except the contact to the number you have chosen. That is, if you have decided that the combination you want is 583, on the first switch leave the terminal for position 5 empty and short all the remaining ones on that switch together. The same is done for terminal 8 on the second switch, and terminal 3 on the third switch.

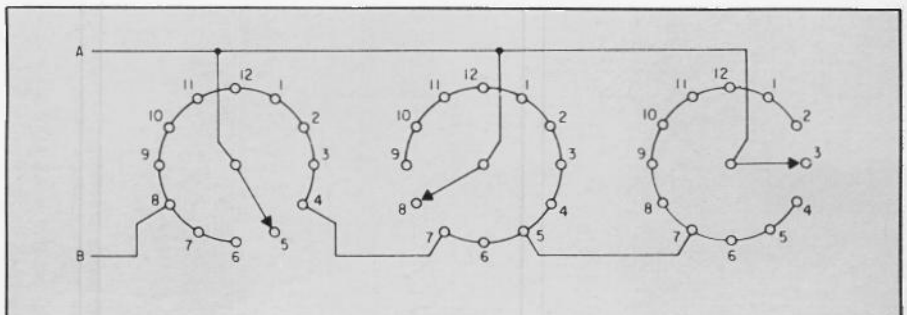


Figure 2

causing the switch to open and close, the wire you connected across the switch makes it look as if that switch is still sitting there doing nothing. But if you were to disconnect that shorting wire, telephone dialing would be normal.

Now connect all of the shorted terminals on the three switches together. This will be wire B. To check the circuit, place an ohmmeter or continuity tester across A and B. Dial in the combination. The ohmmeter or continuity tester should

indicate an open circuit. If it doesn't you have connected the switches properly. If it does, turn one switch to another number. A short circuit should immediately be indicated.

Attach a piece of lamp cord, or just two individual wires, to A and B that are long enough to reach your phone. Fasten the case closed.

The phone lock can be attached directly to the telephone with a piece of double-sided tape, or can be installed at some remote point.

To connect the device to the phone, remove the case by unscrewing the two screws located on the bottom of the telephone. Next locate the network block, which is inside the phone with the screw terminals on top of it.

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For telephones manufactured by Western Electric, ITT, or Bell Telephone, locate the green and blue wires coming from the dial to the terminal block. Connect lead A from the phone lock to the green terminal, which is usually designated RR on the terminal block. Wire B from the phone lock should be connected to the blue terminal, designated F.

For telephones manufactured by Automatic Electric or General Telephone, locate the blue and yellow wires coming from the dial to the terminal block. Connect lead A from the phone lock to the blue terminal, which is usually designated No. 1 on the terminal block. Wire B should be connected to the yellow terminal, which is usually designated as No. 11.

On some telephones the dial may have to be removed to get to the terminal block. This can be done by simply pressing down on the dial and pushing it towards the front of the phone.

Once the phone-lock leads have been connected, route the wires out of the phone and replace the cover. It is now ready to use. To place a call, set the combination on the phone lock and dial as you normally do.

To prevent unauthorized use of your telephone, simply turn each switch so that it is set on any number but the number in the combination. Now only incoming calls can be received. No outgoing calls can be made.

By the way, since the phone lock connects directly to the dial switch, it can be used to secure all the lines of a multiline phone, as well as single line ones.

One more important point, if you have one or more extension phones in the house, each one must have a phone lock on it to effectively secure your phone system.