

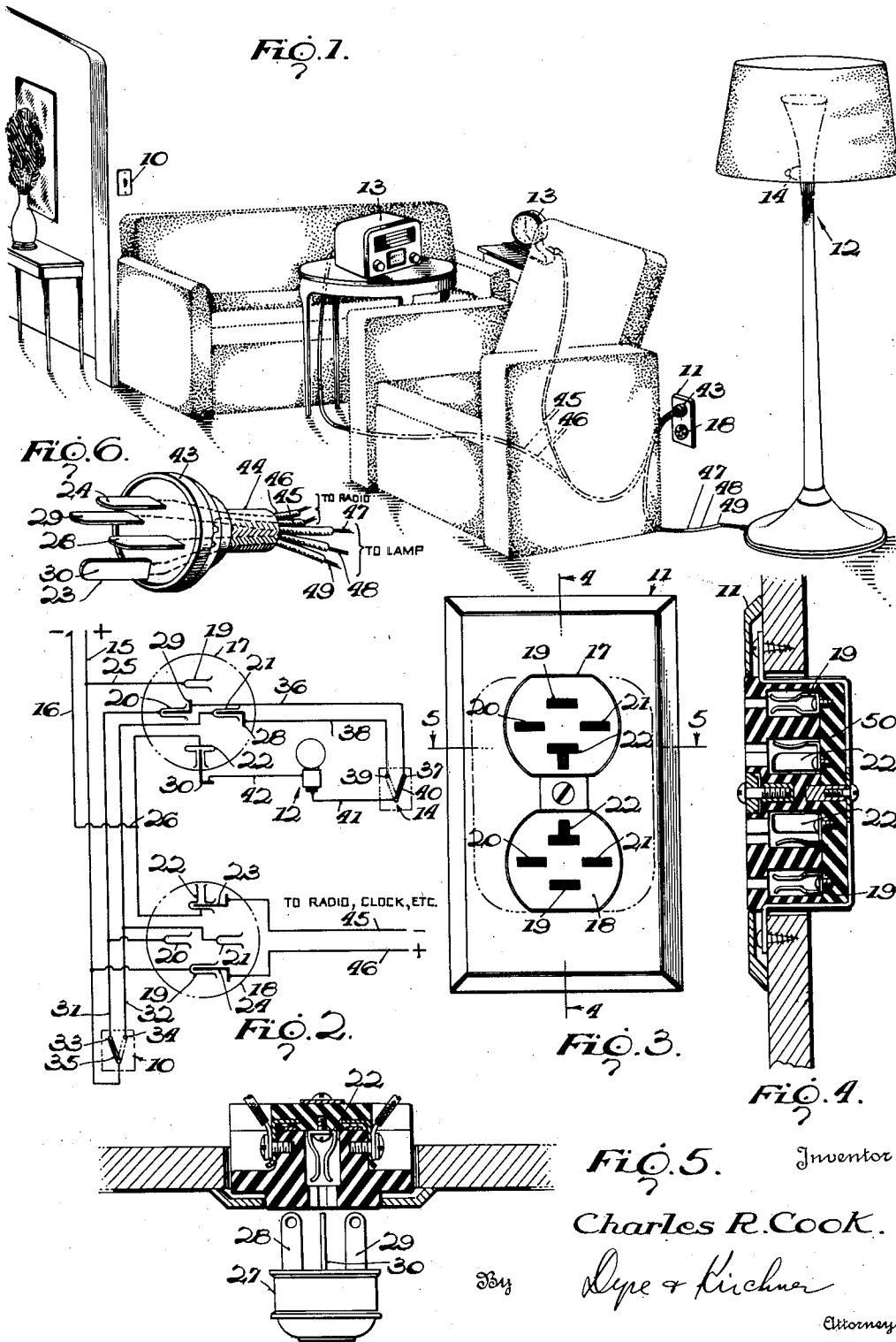
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HOUSE WIRING CIRCUIT

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HOUSE WIRING CIRCUIT

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2 Claims. (Cl. 171-97)

1 This application is a continuation of my co-
pending application Serial No. 461,764, filed Oc-
tober 12, 1942, and now abandoned.

The present invention relates to a house wir-
ing circuit and to certain of its component ele-
ments, including especially a receptacle or out-
let and plug means cooperating therewith, and a
principal object of the invention is to increase
the convenience and utility provided by con-
ventional circuits and parts without appreciable
increase in cost of manufacture or installation.

More particularly, the invention is concerned
with providing a wiring circuit for a building in-
terior, such for example as a room in a dwelling
house, including a convenience outlet for sup-
plying current to various appliances and switch
means for controlling the supply in accordance
with the special character and requirements of
the individual appliances.

In a specific suggested use of the invention, a
wiring circuit and convenience outlet are pro-
vided for energizing simultaneously an appliance
having an unswitched circuit requiring a constant
supply of current and another appliance having
a switched circuit.

One of the problems solved by the invention
can best be understood from Fig. 1 of the ap-
pended drawing, which illustrates in perspec-
tive a portion of a furnished living room equipped
with a preferred embodiment of the invention.

For many years the more or less standard
practice in house wiring was to provide a room
with a fixed lighting fixture, generally a ceiling
lamp, controlled by a wall switch. Such rooms
were also provided with a plurality of continu-
ously supplied wall sockets adapted to receive the
plug connectors of such portable appliances as
radio receiving sets, electric clocks, fans, table
and floor lamps, vacuum cleaners, etc. Nowadays
most people prefer not to use a permanently
positioned lamp for continuous illumination. It
is much more popular to employ floor and table
lamps for this purpose, and the modern trend
is entirely to eliminate ceiling fixtures. In most
houses equipped with wall-switched ceiling fix-
tures, where the wall switch is generally near an
entrance doorway and the favorite portable lamp
is generally remote therefrom, the occupant must
turn the ceiling light on when entering the dark-
ened room, then turn on the desired portable
lamp, and then extinguish the ceiling light. The
only alternative is to walk through the dark to the
portable lamp and turn it on by its own bulb
switch. When the room is to be vacated it is of
course necessary to light the ceiling fixture and

2 then return to and extinguish the portable lamp
and finally extinguish the ceiling fixture, or walk
through the darkened room from the portable
lamp to the doorway. Either procedure is ob-
viously inconvenient, both when lighting or dark-
ening the room.

Some improvement has been effected by plac-
ing one wall socket under the control of the wall
switch and connecting a portable lamp to such
socket. But this of course unfits such socket for
any other use, and is productive of considerable
annoyance whenever the switch on the lamp is
left in open position, because in such case the
lamp cannot be turned on by the wall switch.
Moreover, unless a number of such special, wall-
switch controlled sockets are provided in the
room, it is impossible to rearrange the furniture
and move the favorite portable lamp very far
from its special socket. Most householders, hav-
ing one or more such special wall-switched sock-
ets, prefer to disable the individual bulb switches
of the lamps plugged into such sockets to make
sure that these lamps will always be turned off at
the wall switch, but of course this is inconvenient
when one wants to turn the lamp out and remain
at the location of the lamp or depart from the
room by a doorway other than that where the
wall-switch is located.

The present invention solves all these difficul-
ties by providing a special wiring system including
one or more outlet sockets into which can be
plugged either or both a lamp and a continuously
supplied appliance, with the lamp adapted to
be turned on or off at a wall switch or at its
own bulb switch, regardless of the open or closed
condition of the other one of these two switches,
and with the appliance which must be contin-
uously supplied, like the clock and radio receiv-
ing set shown in Fig. 1, unaffected by the lamp
switching. Hence the room shown in Fig. 1 may
be entered through the doorway there shown and
the lamp promptly lit by operating the adjacent
wall switch. The lamp may later be turned off
by its own bulb switch, as may be desirable if
the occupant wishes to remain in the darkened
room or to leave the room by another doorway,
not shown but assumed to be remote from that
one which is shown. Subsequently the lamp may
be lit from its own bulb switch or from the wall
switch, and none of this interferes in the slight-
est degree with continuous supply of current,
from the outlet which supplies the lamp, to the
radio receiving set and/or any other appliance,
such as an electric clock, which may be plugged
into the same outlet.

Referring now to the entire drawing, in which, as has been seen,

Fig. 1 is a perspective view of a room, such as a living room, in a dwelling house;

Fig. 2 is a diagram of a circuit provided by the invention;

Fig. 3 is a front face view of an outlet or receptacle which may form part of the construction proposed by the invention;

Fig. 4 is a lengthwise central sectional view of the receptacle, taken on the line 4—4 of Fig. 3;

Fig. 5 is a transverse sectional view of the receptacle, taken on the line 5—5 of Fig. 3; and

Fig. 6 is a generally schematic phantom view of a plug which may be used with the construction.

In Fig. 1, the room is assumed to be provided with main leads concealed in its walls and connected to a wall switch 10 located adjacent to a doorway and any convenient number of receptacles or outlets 11 mounted at various points on the walls of the room. The room is illuminated by any desired fixture 12, here shown as a portable floor lamp, and contains also one or more electrical appliances which must be continuously supplied with electrical energy, here shown as a radio receiver and a clock, both designated 13. Other appliances of this character may include ventilating fans, air-conditioning units, door bell transformers, and many other instrumentalities. The lamp 12 is intended to be controlled by the switch 10 as well as by a switch 14 mounted on the lamp, and the other appliances, of which the radio set and clock 13 are typical, are not controlled by the switch 10. As has been seen, the problem is to provide a wiring circuit including the receptacle 11 which will service at one and the same time the lamp 12 under the control of the switch 10, and some other appliance or appliances, like the radio set and clock 13, which are independent of the switch 10.

The circuit, shown in Fig. 2, includes the main lead 15, which may be considered to be the hot wire, and 16, which may be considered to be the ground wire. These main leads are connected to the receptacle 11, which is of a special type, and the wall switch 10, which may be a conventional double-throw switch. The receptacle is here shown as of double form, adapted to receive simultaneously two appliance plugs, one in each of its similar parts. Inasmuch as the two parts, shown at 17 and 18 in Fig. 3, are identical except that they are relatively reversed, only one will be described.

The part 17, for example, includes four contact sockets designated respectively 19, 20, 21 and 22. Each contact socket includes an opening as shown in Fig. 3, behind which there is provided a conventional type of spring clip contact which, for convenience, is designated in Fig. 2 by the reference numeral used for the corresponding opening in Fig. 3. One of these contact sockets, such as that designated 22, is specially formed as by being of T-shape, so that the receptacle is polarized.

The contact sockets 19 and 22 are intended to be engaged by the two prongs 23, 24 (Fig. 2) of a conventional plug connected to the radio set 13 and/or other appliance by wires 45, 46 requiring constant current supply. These contact sockets 19 and 22 are the only ones of the four provided in each receptacle part which will receive such a plug. As is evident from Fig. 2 these two sockets

are connected directly with the main leads by the wires 25 and 26.

The sockets 20, 21 and 22 are adapted to receive a special plug 27, shown in Fig. 5, having prongs 29 and 28 for the sockets 20 and 21 and a polarizing prong 30 for that arm of the T-shaped opening 22 which is shown vertical in the drawing. As has been seen, the socket 22 is connected to one of the main leads by the wire 26. Each of the sockets 20 and 21 is connected by one of the wires 31, 32 to one of the two contacts 33, 34 which are alternatively engageable by the arm 35 of the wall switch 10, and this arm is connected to the main lead 15.

Thus the sockets 19 and 22 are constantly supplied with current, independently of the switch 10, while the three sockets 20, 21 and 22 provide contacts for a circuit which will include the socket 22 and one or another of the sockets 20, 21 depending on the position of the switch arm 35.

If the plug 27 be connected in the lamp circuit shown in Fig. 2, and be inserted in the receptacle 17, the lamp may be lighted and extinguished at the wall switch 10 or at its bulb switch 14, which is a conventional double-throw switch as shown in Fig. 2. This lamp circuit consists simply of a wire 36 connected to the prong 29 and terminating at contact 37 of the double-throw lamp switch 14, and wire 38 connected to prong 28 and terminating at contact 39 of the switch 14. The arm 40 of this switch is connected to one terminal of the lamp by a lead 41, and the other terminal of the lamp is connected to the prong 30 by a wire 42. It will be evident that if the arm 35 of the switch 10 happens to be engaged with contact 33 the lamp will be illuminated if switch arm 40 is engaged with contact 37 of switch 14, while if switch arm 35 happens to be engaged with contact 34 the lamp will be illuminated if switch arm 40 is engaged with contact 39. Thus the lamp may be extinguished or lighted by manipulating either of the switches 10 or 14.

For clarity of illustration Fig. 2 shows schematically two separate plugs, one engaged with each of the duplicate parts of the receptacle 11. In the lower part of Fig. 2 a conventional plug having prongs 23, 24 is engaged with receptacle part 18, while in the upper part of the figure the special plug 27 is shown engaged with receptacle part 17.

I prefer however to combine the conventional and special plugs into the single plug designated 43 and shown in Fig. 6. In this figure each of the four prongs of the combined plug is designated with the same numeral used for the corresponding prong in the other figures. Each of the prongs is separately connected to its own wire, except the polarizing prong 30, which is connected to two wires. Thus the plug carries five wires, conveniently assembled as a single cable 44 adjacent to the plug and branching at a suitable distance from the plug as wires 46 and 45, connected to prongs 24 and 30 and leading to the radio set, clock, etc., and wires 47, 48 and 49, connected to the prongs 29, 28 and 30, and leading to the lamp 12.

Fig. 1 shows a plug 43 inserted in one of the duplicate parts of the double receptacle, with its two-wire branch connected to the radio set and clock 13 and with its three-wire branch connected to the lamp 12. This arrangement leaves the part 18 of the receptacle available to receive another plug 43, or another plug 27, or a conventional plug. Thus the arrangement shown in Fig.

1 may be duplicated from the receptacle 11, as by connecting to the receptacle another lamp and one or more appliances which require continuous current supply, say a phonograph, fan or the like. The part 18 of the receptacle 11 in Fig. 1 may be left normally unused, so as to be available to receive a plug connected to some such appliance as is only temporarily used, such as a vacuum cleaner or the like.

The mechanical construction of the plugs and receptacles forms no part of the invention and may be conventional. In Figs. 4 and 5 the receptacle is shown made largely of the usual dielectric composition material 50, and with the contacts made in the form of the customary resilient metal clips.

It will be obvious that the arrangement hereinabove explained accomplishes the objects of the invention since it permits one to enter the darkened room by the doorway shown in Fig. 1 and turn the lamp on by operating the switch 10. The person may thereafter leave the room by another doorway, or remain in the room, after turning the lamp out by its switch 14. Obviously, the lamp may again be turned on at the switch 10 or at its switch 14, whichever is most convenient. None of these operations interferes with a constant supply of current to the appliances 13 or to any other which may be connected by a plug having prongs engaged in the sockets 19 and 22.

It is recognized that variations and modifications from the details of the illustrated constructions and circuits may be made within the spirit of the invention and the scope of the claims. Not all of these details are essential to the invention or need be used in combination with each other, as will be recognized by those skilled in the pertinent art, inasmuch as certain advantages can be realized by use of less than all of the structures and circuits here shown as embodying a preferred complete embodiment of the invention. All such modifications and variations and the individual novel elements thereof, to the extent that they are within the spirit of the invention as defined by the appended claims, are to be deemed within the scope and purview thereof.

I claim:

1. In a house wiring circuit comprising a first main lead and a second main lead, a receptacle having a pair of contact sockets, one connected to each lead, and having two additional contact sockets, a double-throw switch device having a switch connected to the first main lead and having two switch contacts engageable alternatively by the switch and connected one to each of said additional contact sockets, means for connecting that contact of the first named pair which is connected to the second main lead to the unswitched side of an appliance having on its other side a second double-throw switch having two contacts, and means for connecting the two additional sockets separately to the last named two contacts.

2. The combination claimed in claim 1, in which the contacts are polarized, and which combination includes plug means having prongs polarized for the first named pair of contact sockets connecting said sockets with an unswitched appliance, and which combination includes also plug means having three prongs polarized to fit the two additional sockets and the socket which is connected to the second main lead, said second plug means connecting said two additional sockets separately with the two contacts of the second double-throw switch and connecting said last named socket with the unswitched side of the appliance to which said double-throw switch is connected.

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