UNITED STATES PATENT OFFICE.

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CONTROLLER ATTACHMENT FOR SUPPLEMENTARY CIRCUITS.

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To all whom it may concern:

Be it known that I, WILLIAM LINTERN, a citizen of the United States, residing at West-
park, in the county of Cuyahoga and State of
Ohio, have invented new and useful Improvements
in Controller Attachments for Supplementary
Circuits, of which the following is a speci-
fication.

This invention relates to attachments for
controllers of motor-cars or other vehicles,
through which an electric circuit supple-
mentary to the controller-circuits may be op-
erated; and it has for its object to provide
such an attachment which may be operated in
the most convenient manner without neces-
sitating the operator's removing his hand from
the controller-handle. The supplementary

circuit may be employed for any desired pur-
pose for which it is adapted — such, for ex-
ample, as for ringing a gong in any part of
the car, for conductor's signal, or for oper-
ating fenders, lights, or other devices. The
operator's hands being constantly engaged
with the power-controller and brake, the prime
object of this attachment is to provide means
whereby a supplementary circuit may be closed
by simple pressure of the operator's thumb.

Minor objects growing out of the construc-
tion and arrangement of the parts of the at-
tachment will become apparent from the de-
scription and be set forth in the claims.

To these ends my invention consists in the
novel features, arrangements, and combina-
tions hereinafter described and claimed, an
embodiment thereof as applied to the con-
troller of an electric-motor car being illus-
trated in the accompanying drawings, in
which —

Figure I is a plan view of a portion of an
electric controller provided with the circuit-
closing attachment. Fig. II is an elevation
of the upper portion of an electric controller
equipped with my attachment, the supple-
mentary electric circuit being shown diagram-
atically. Fig. III is an end elevation showing
the parts of the apparatus which are attached
to the controller-box. Fig. IV is a sectional
elevation of the block p.

The reference-letter a indicates an electric
controller of the type usually employed upon
motor-cars, having a squared shaft b project-
ing upward through its top, upon which a
hand-lever c is removably fitted. A stop d
projects above the top of the controller-box
and is usually made integral therewith, its
purpose being to limit the movement of the
hand-lever c by intercepting the depending
rib e thereof. Thus the travel of the hand-
leve c is less than a complete circle, the dotted
lines in Fig. I indicating its extreme posi-
tions, in one of which the power is shut off
from the motor and in the other the motor
receives the maximum power. The swinging
end of the hand-lever c is raised above the
level of its hub, as shown, and is provided
with an upright handle f, which is preferably
of hard wood, having a metallic ferrule
g at q and a metallic bushing h driven therein
and screw-threaded, as shown, or otherwise
firmly secured to the hand-lever c.

A metallic lever j is fulcrumed to the hand-
leaver c at k, and its inner arm passes through
a suitable aperture in the hand-lever and ex-
tends horizontally over and slightly beyond
the center of the hub of the hand-lever. The
outer arm of the lever j extends to its termina-

cation close to the hand-lever beneath the
handle f, where it is hinged to an upright rod
l, passing loosely through the bushing h and
having rigidly secured to its upper end a cy-
lindrical push-button m of a larger diameter
than said rod. The button m is fitted to ex-
tend loosely into the bore of the handle, said
bore being preferably bushed with metal at
m. The upper end of the button m projects
normally some distance above the handle f,
as shown in Fig. II, and is upheld by a spiral
spring n in the handle-bore thereunder, which
spring rests upon the bushing h.

Rigidly secured to the stop d is an upright
guide-block p, of hard rubber or other suit-
able electrically non-conducting material,
having a broad groove in its outer face, in
which a contact-arm o is slidably fitted. A
stud-bolt q is carried by the guide-block p,
and the arm o is slotted upward from its
lower end, so that it may be slid down over
said bolt to its normal position in contact with
a metallic plate r, secured to the guide-block at
the bottom of its groove. A thumb-nut s on
the bolt q serves to clamp the arm o to the
guide-block p. The contact-piece r may be
an angle-plate, as shown, or of any suitable
form, and any suitable means besides the
screws shown in the figures may be employed
for securing it to the insulator p; but it must
be provided with means, such as a binding-
post ′, for the attachment of a conducting-wire ′, which latter is connected to the electric device or devices—such as a bell ′, as shown, or a lamp, or a combination of bell and lamp, or other devices to be operated by the supplementary circuit—and from thence said conducting-wire is carried to a battery or generator ′. The battery or generator ′ is connected with the controller ′, as shown; but where the controller is properly grounded it is obvious that the wire ′ may also be connected with the ground-wire of the motor-circuit. The upper end of the contact-arm ′ is extended horizontally over the hub of the controller-handle, and an adjustable contact-screw ′ is threaded vertically therein in line with the axis of the controller-shaft ′.

In the operation of the device it is evident that in any position of the controller-handle the operator can readily depress the push-button ′ with his thumb without releasing his grasp upon the handle ′ and that such depression of the push-button operates to throw the inner end of the lever ′ into contact with the end of the contact-screw ′, which closes the supplementary circuit and operates the bell ′ or other electric devices connected therein. The block ′ being composed of non-conducting material serves to insulate the arm ′ and contact-plate ′ from the controller. When it is desired to remove this controller-handle from its shaft ′, the arm ′ may first be removed by loosening the thumbnut ′.

Without limiting myself to details of construction, which may be varied within the scope of the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In apparatus of the class described, the combination with conducting means for an electric circuit, of a controller-handle, a push-button in said handle, and operative means whereby an inward thrust of said push-button closes said circuit, substantially as set forth.

2. In apparatus of the class described, the combination with a power-controller, of conducting means for an electric circuit, a controller-handle, a push-button in said handle, and operative connections whereby at any point in the travel of said handle said circuit may be closed by an inward thrust of said push-button, substantially as set forth.

3. In apparatus of the class described, the combination with a power-controller, of conducting means for an electric circuit, a removable controller-crack provided with a handle, a push-button in said handle, and operative means whereby an inward displacement of said push-button effects the closing of said circuit, said-means being adapted to permit the removal of said crank, substantially as set forth.

4. In apparatus of the class described, the combination with a power-controller, of a contact-arm connected in an electric circuit and insulated from said controller, a controller-handle, a push-button in said handle, and operative means whereby an inward thrust of said push-button effects an electrical connection between said arm and said controller, substantially as set forth.

5. In apparatus of the class described, the combination with a power-controller, of a removable contact-arm connected in an electric circuit and extended over the shaft of said controller, an insulator interposed between said arm and said controller, a controller-handle provided with a push-button, and operative means whereby a displacement of said push-button effects an electrical connection between said arm and said controller, substantially as set forth.

6. In apparatus of the class described, the combination with conducting means for an electric circuit, of a controller having a removable crank provided with a handle, a lever fulcrumed to said crank having its inner arm extended over the center of said crank, a push-button in said handle operatively connected to the outer arm of said lever, and an arm electrically connected to said conducting means secured to and insulated from said controller and extended over the inner end of said lever, substantially as set forth.

7. In apparatus of the class described, the combination with conducting means for an electric circuit, of a power-controller, a removable crank upon said controller provided with a handle, a lever fulcrumed to said crank having its inner arm extended over the center of said crank, a push-button in said handle operatively connected to the outer arm of said lever, a guide-block of insulating material rigidly attached to said controller, a contact-piece secured to said guide-block and connected to said conducting means, and a removable contact-arm adapted to slide upon and be clamped to said guide-block bearing against said contact-piece and adapted to be engaged by the inner end of said lever, substantially as set forth.

In testimony whereof I affix my signature, in the presence of two subscribing witnesses, at Mansfield, Ohio, this 3d day of November, 1904.

WILLIAM LINTERN.

Witnesses:

GEORGE A. MEAD,
F. W. MILLER.