

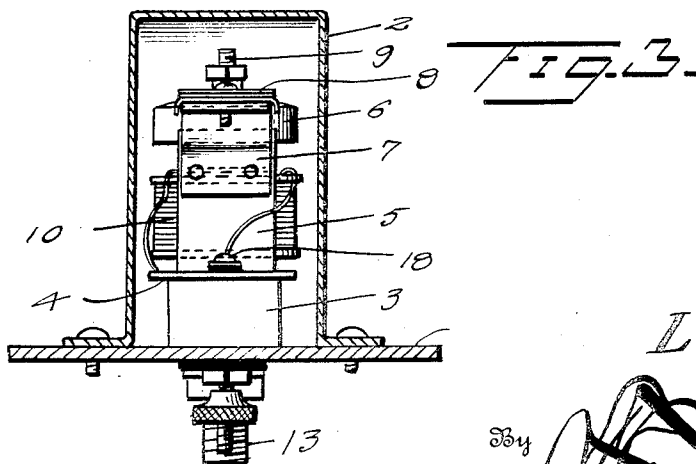
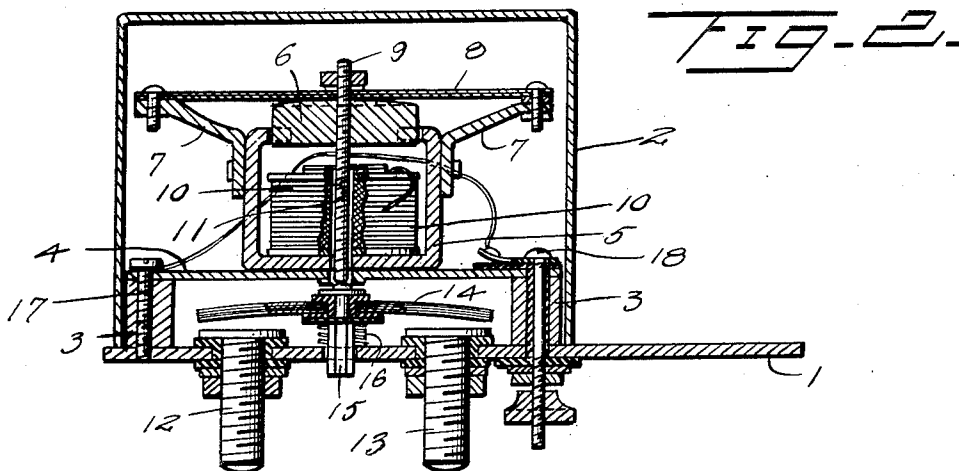
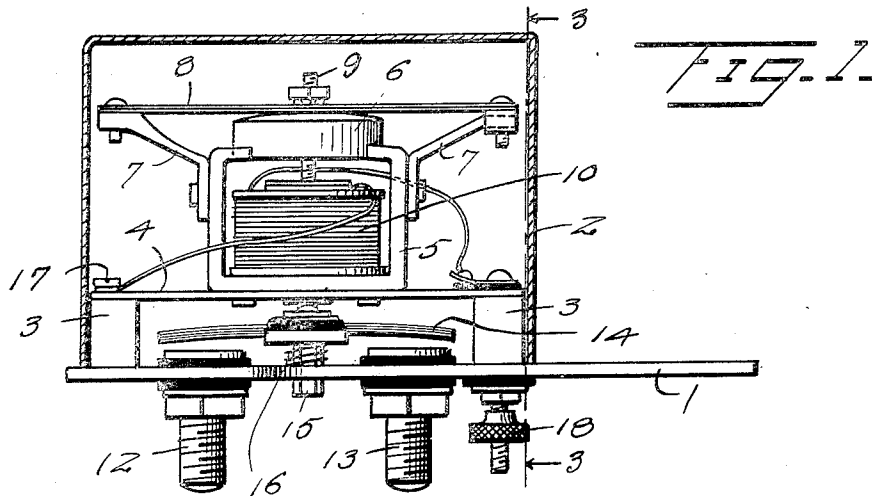
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L. C. SPENCER

ELECTROMAGNETICALLY OPERATED STARTER SWITCH

Filed June 10, 1924



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UNITED STATES PATENT OFFICE.

LEON C. SPENCER, OF OGDEN, UTAH.

ELECTROMAGNETICALLY-OPERATED STARTER SWITCH.

Application filed June 10, 1924. Serial No. 719,155.

To all whom it may concern:

Be it known that I, LEON C. SPENCER, a citizen of the United States, residing at Ogden, in the county of Weber and State of Utah, have invented certain new and useful Improvements in Electromagnetically-Operated Starter Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention provides an electric switch for controlling the starter current of a motor vehicle, said switch being included in an electric circuit containing a push button, which when operated effects automatic operation of the starter switch to close the starter circuit, thereby dispensing with the ordinary foot operated switch whereby the starter circuit is usually closed.

Other objects and advantages will be apparent and suggest themselves as the nature of the invention is understood.

While the drawing illustrates an embodiment of the invention it is to be understood that in adapting the same to meet different conditions and requirements, various changes in the form, proportion and minor details of construction may be resorted to without departing from the spirit of the invention.

Referring to the accompanying drawings forming a part of the application:

Figure 1 is an elevational view of an electric switch embodying the invention, the housing being in section;

Figure 2 is a view similar to Figure 1, partly in section; and

Figure 3 is a sectional view on line 3—3 of Figure 1.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawing by like reference characters.

The switch is mounted upon a base plate 1 and the operating parts are enclosed by a housing 2 which is detachably connected to the plate 1. Stud 3 project from the base plate 1 and support a plate 4 which is attached thereto. An approximately U-shaped frame 5 is mounted centrally upon the plate 4 and the upper ends of its side members are intumed to engage and form a guide for an armature 6 which as shown is flat and of circular outline. Arms 7 extend

outwardly and upwardly from the members of the U-shaped frame 5 and support a flat spring 8 to which a post 9 is adjustably connected and upon which the armature 6 is mounted. An electro-magnet 10 is mounted upon the closed end of the frame 5 and its core has an axial opening 11 through which the post 9 passes freely. The post 9 is of non-magnetic material such as brass and is threaded to make adjustable connection with the plate 4 and adjustably support the armature 6.

Contacts 12 and 13 are mounted upon the base plate 1 and are electrically insulated therefrom. The starter circuit includes the contacts 12 and 13. A circuit closing member 14 co-acts with the contacts 12 and 13 and is attached to a stud 15 which is loosely mounted in the base plate 1 and which is of non-circular outline to prevent turning of the member 14 and insure its proper co-action with the contacts 12 and 13. A light spring 16 mounted upon the stud 15 normally holds the member 14 clear of the contacts 12 and 13. The starter portion of the circuit closing member 14 is disposed in line with the post 9 and when the electromagnet 10 is energized and the armature 6 attracted the member 14 is advanced and engages the contacts 12 and 13 thereby closing the starter circuit. One terminal of the winding of the electro-magnet 10 is grounded to the base plate 1 as indicated at 17, and the other terminal is electrically connected to a binding post 18 mounted upon the base plate 1 and electrically insulated therefrom. The electromagnet is included in a circuit which is controllable by means of an ordinary push button which when pressed upon closes the circuit including the electro-magnet 10 and the latter in turn becoming energized, automatically closes the starter circuit in the manner stated.

What is claimed is:—

1. An electric switch comprising circuit closing elements including a bridging member yieldingly held from engagement with contact members, a substantially U-shaped frame having the ends of its side members intumed, an electromagnet mounted upon said frame and having an opening through its core, an armature directed in its movements by the intumed ends of the said frame, an element connected to said armature and passing through the opening of the

core of the electromagnet and adapted to actuate said bridging member into engagement with the contact members.

2. An electric switch comprising circuit closing elements including a bridging member yieldingly held from engagement with contact members, a supporting frame, an electromagnet mounted upon the frame and having an opening through its core, a flat spring supported by the said frame, a post having adjustable connection with the flat spring and passing loosely through the opening in the core of the electromagnet and adapted to engage said bridging member and move it into engagement with the contact members, and an armature mounted upon the said post.

3. An electric switch comprising a base

plate, circuit closing elements associated therewith, a substantially U-shaped frame mounted upon the plate and having the ends of its side members intumed, arms extending from the side members of the frame, a flat spring attached to the said arms, an electromagnet mounted upon the frame and having an opening through its core, a post having adjustable connection with the said flat spring and passing loosely through the opening in the core of the electromagnet, and an armature adjustably mounted upon the post and disposed between the intumed terminals of the said frame.

In testimony whereof I affix my signature.

LEON C. SPENCER.