

(No Model.)

J. F. WOLLENSAK.

ELECTRIC PUSH.

No. 480,683.

Patented Aug. 9, 1892.

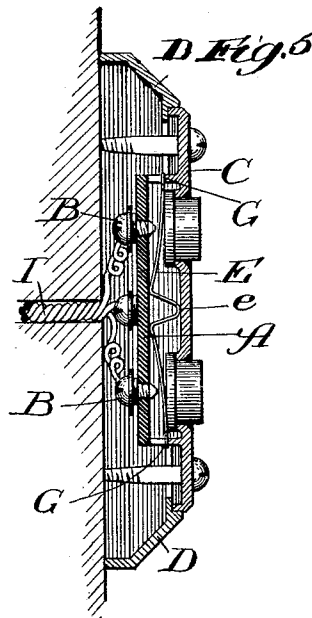
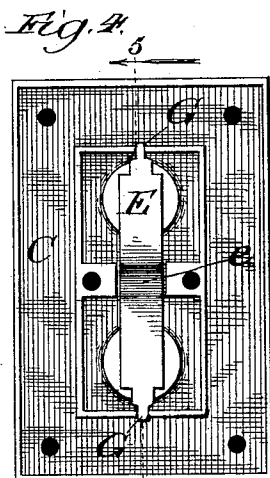
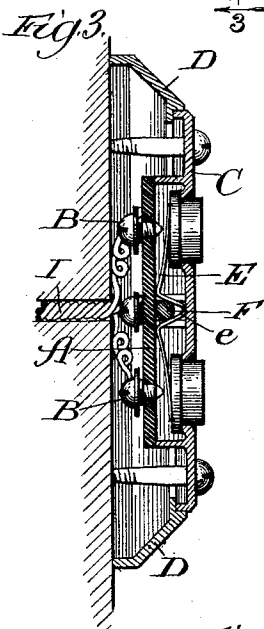
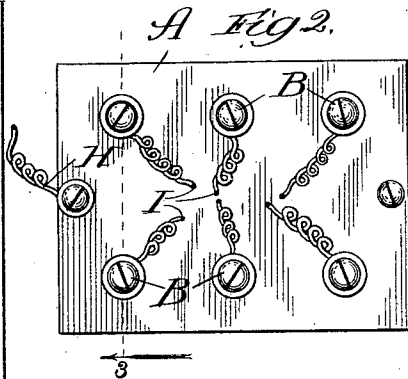
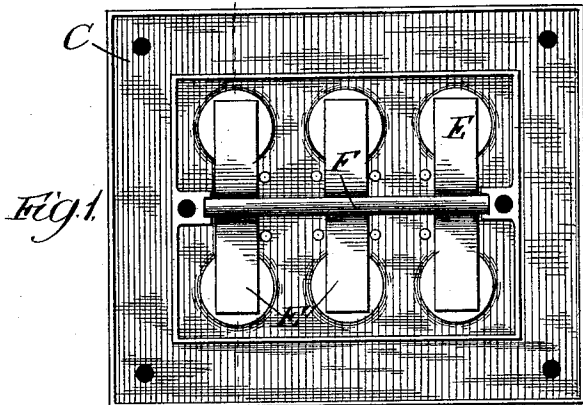
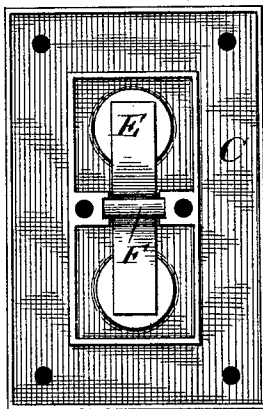


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN F. WOLLENSAK, OF CHICAGO, ILLINOIS.

ELECTRIC PUSH.

SPECIFICATION forming part of Letters Patent No. 480,683, dated August 9, 1892.

Application filed May 10, 1892. Serial No. 432,447. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. WOLLENSAK, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Electric Pushes, of which the following is a specification.

This invention is intended to be an improvement upon the ones covered by my patents, No. 421,340, of February 11, 1890, and No. 459,605, of September 15, 1891; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of a compound electric push containing my improvements with the insulated back-plate removed. Fig. 2 is a plan view of the outside of such back-plate. Fig. 3 is a transverse section taken on the line 3 of Figs. 1 and 2, looking in the direction of the arrows. Fig. 4 is a plan view of a modified form of my improvement with the insulated back-plate removed. Fig. 5 is a transverse sectional view taken on the line 5 of Fig. 4, looking in the direction of the arrow; and Fig. 6 is a plan view of my improvement applied to a single set of pushes with the insulated back-plate removed.

In making my improved electric push I make a plate A of any proper insulating material or of metal insulated from the binding-screws, and hereinafter in speaking in the specification or claims of an "insulated plate" or a "plate of insulating material" I mean to indicate or include either kind. I provide this plate with binding-screws B, arranged on the outside or back. The binding-screws pass through the plate and extend into the interior of the push, so that their ends may serve the purpose of contact-points in completing the circuit. I make a face-plate C, provided with holes for the buttons, adapted to be secured in proper position upon a case or frame D. I make as many springs E as the number of buttons intended to be used may require. These springs are made of strips of metal containing sufficient resiliency and are provided at their central portions with a crimp or bend e. This crimp or bend, when the insulated plate is in place, is pressed against the face-plate E and the ends of the springs rest against the inner ends of the push-but-

tons. Where desired, a rod F may be arranged to lie in the bend or channel caused by the crimping of the springs, so as to assist in holding them more securely in place. The inner ends of the buttons need not be provided with grooves or channels, as in the case of my patents above mentioned, to hold the ends of the springs in place, as they are broad enough to always rest against the inner ends of the buttons; nor need the springs be coiled around the rod F, as in the case of my other patents; but the rod may simply be placed in the bend or channel formed by the crimping. This of course simplifies the construction and enables the parts to be more easily and readily adjusted together. The binding-screws need not be broad or thick at their ends, as owing to the breadth of the springs the smallest-sized or pointed binding-screws will always come in contact with the springs when pushed in by the buttons. No particularity or nicety is therefore required in adjusting the parts to always insure the contact of the binding-screws with the spring. I prefer to make the springs crimped at the middle instead of making them straight, as I thus secure greater length of stock and elasticity in the springs and am able to utilize the elasticity from one end of the spring to the other, instead of simply from its central part, as would be the case if the spring were fastened at its center.

In Figs. 4 and 5 I have shown my improvements somewhat modified. In these cases the ends of the springs are provided with extensions G, which lie in guides or slots cut in the ends of the framework, which insure their proper relative position with reference to the other parts. In this form it is of course unnecessary to use any rod to assist in holding the parts in their proper positions. It will be understood that the electricity from the battery enters the metal frame of the push through a wire, as H, and that the springs bearing against the face-plate form a part of the circuit. The other part of the circuit comes into the binding-screws through wires, as I, so that when the push-buttons move the ends of the springs in against the binding-screws the circuit will be completed.

What I regard as new, and desire to secure by Letters Patent, is—

1. In electric pushes, the combination of a plate of insulating material, binding-screws for holding the ends of the circuit-wires, arranged on the plate and extending through to the inside, a face-plate having push-buttons, and flat springs loosely and removably arranged in the framework for holding the buttons in place and adapted to be pressed into position by the buttons to complete the circuit, substantially as described.

2. In electric pushes, the combination of a plate of insulating material, binding-screws for holding the ends of the circuit-wires, arranged on the plate and extending through to the inside, a face-plate having push-buttons, and flat springs crimped or bent at their middles to rest against the face-plate and adapted to be pressed into position by the

buttons to complete the circuit, substantially as described.

3. In electric pushes, the combination of a plate of insulating material, binding-screws for holding the ends of the circuit-wires, arranged on the plate and extending through to the inside, a face-plate having push-buttons, flat springs crimped or bent at their middles to rest against the face-plate and adapted to be pressed into position by the buttons to complete the circuit, and a rod lying in the crimp or bend of the spring and transverse thereto, substantially as described.

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Witnesses:

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