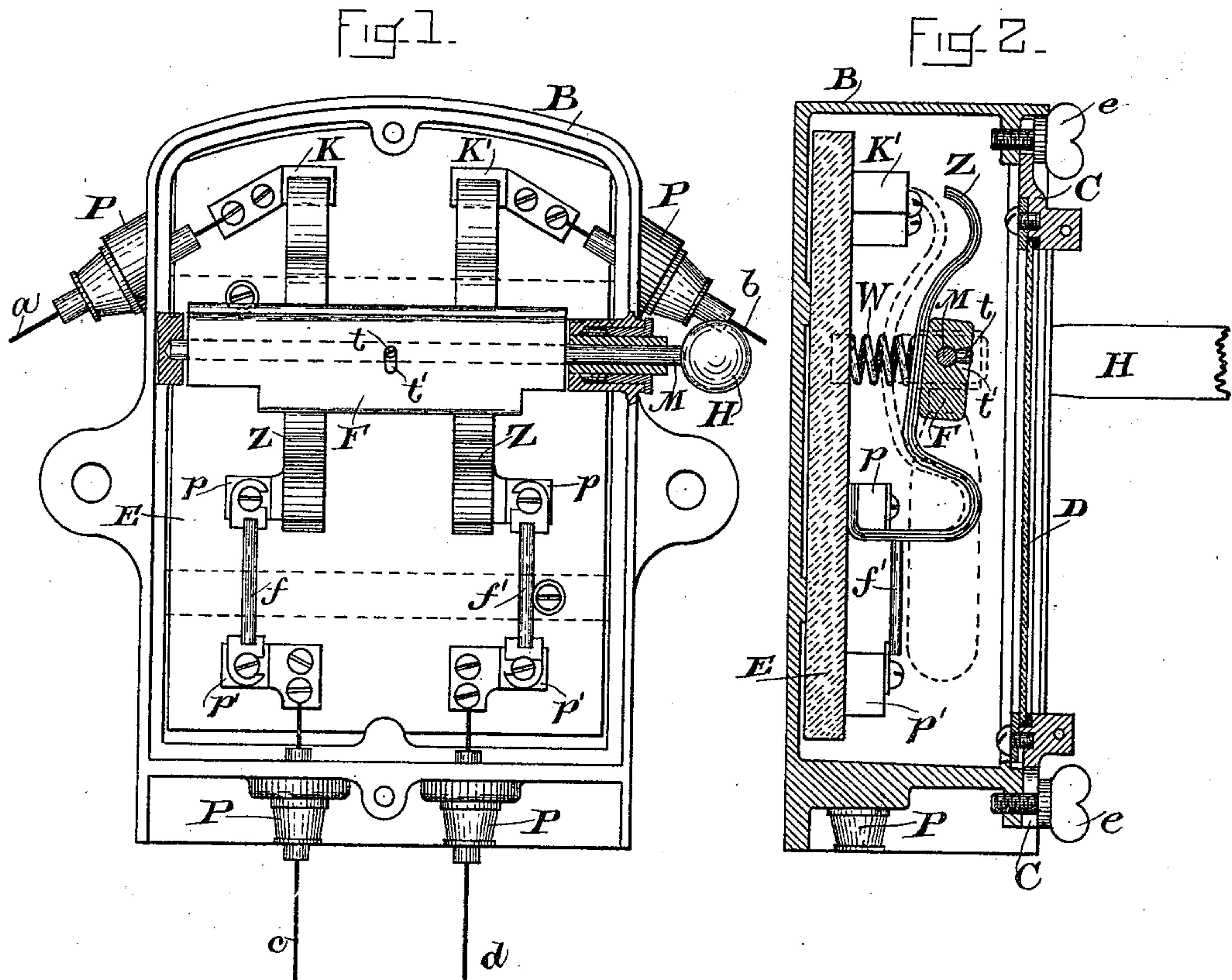


(No Model.)

A. EKSTRÖM.
ELECTRIC SWITCH.

No. 518,231.

Patented Apr. 17, 1894.



WITNESSES.

A. F. McDonald.
John McLibboney

INVENTOR.

And Ekström
by Bentley Knight.
Att'y.

UNITED STATES PATENT OFFICE.

AXEL EKSTRÖM, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE THOMSON-HOUSTON ELECTRIC COMPANY, OF CONNECTICUT.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 518,231, dated April 17, 1894.

Application filed December 24, 1890. Serial No. 375,668. (No model.)

To all whom it may concern:

Be it known that I, AXEL EKSTRÖM, a citizen of the United States, residing at Lynn, county of Essex, and State of Massachusetts, have invented a certain new and useful Improvement in Electric Switches, of which the following is a specification.

My invention relates to an electric switch adapted for use in various connections, but designed particularly for alternating current circuits.

It consists of certain details of construction by which the switch contacts are inclosed in a tight box, and the circuit may be quickly broken in such a way as to prevent arcing.

These improvements are illustrated clearly in the accompanying drawings, wherein—

Figure 1 is a plan view of the switch and protecting case with the cover removed, and Fig. 2 is a sectional view through the same.

B represents a cast iron box of suitable shape, which is normally closed by a cover C secured in place by thumb screws *e* and provided, if desired, with a glass face D. In the box is an insulating base piece E which may be made of leatheroid or vulcanized fiber, but preferably will be of slate. Upon this insulating piece are set the terminals *p, p* which are electrically connected by the fuses *f, f'* to similar plates *p', p'* to which are attached the local circuit wires *c, d*, or in alternating current work the wires leading to the primary of the transformer. These local circuit wires, as well as the main circuit wires *a, b* pass into the box through ports P fitted with insulating gaskets so as to form a tight joint, and guard the wires against becoming electrically connected with the metal of the box. The main circuit wires *a, b* are attached to the second set of terminals of the switch, seen in Fig. 1 at K, K'. There are two spring contacts Z, Z, one in each limb of the circuit, each of which consists of a number of thin elastic superimposed metal strips, such for instance as strips cut from phosphor bronze, or hard drawn copper, and then bent in the

manner shown to secure considerable spring action. These contacts are attached at one end to the terminals *p, p*, and their free ends are adapted to be brought into engagement with the contacts K, K' when the local circuit will be closed, as will be readily understood.

To move the switch contacts I pivot within the box an insulating cam F which bears against the springs Z, Z, and is thrown back and forth over a dead center by handle H outside the box so that the switch will remain fixed either in its closed or open position. The handle H is formed upon a metal pin or bar M running through the cam and connected with it by a pin *t* working in a slot *t'* in the cam, and thereby allowing a certain amount of lost motion in order to allow a quick opening of the circuit at the switch contacts by reason of the resiliency of the contacts themselves, and the action of a supplementary spiral spring W which may be used when desired. Should the fuses become melted the switch is opened, the cover of the box removed and the fuses can then be replaced conveniently and with entire safety.

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

The combination with the closed switch box having the circuit wires led thereinto through insulating gaskets, with the contact springs Z, Z, attached to one set of terminals, and adapted to be thrown into engagement with the second set of terminals, the cam journaled in the box, but insulated therefrom, the handle outside the box connected to the cam by a pin and slot connection and a supplementary spring W, assisting in throwing the switch contacts so as to form a quick break of the circuit.

In witness whereof I have hereto set my hand this 20th day of December, 1890.

AXEL EKSTRÖM.

Witnesses:

JOHN W. GIBBONEY,
M. A. WAKEFIELD.