

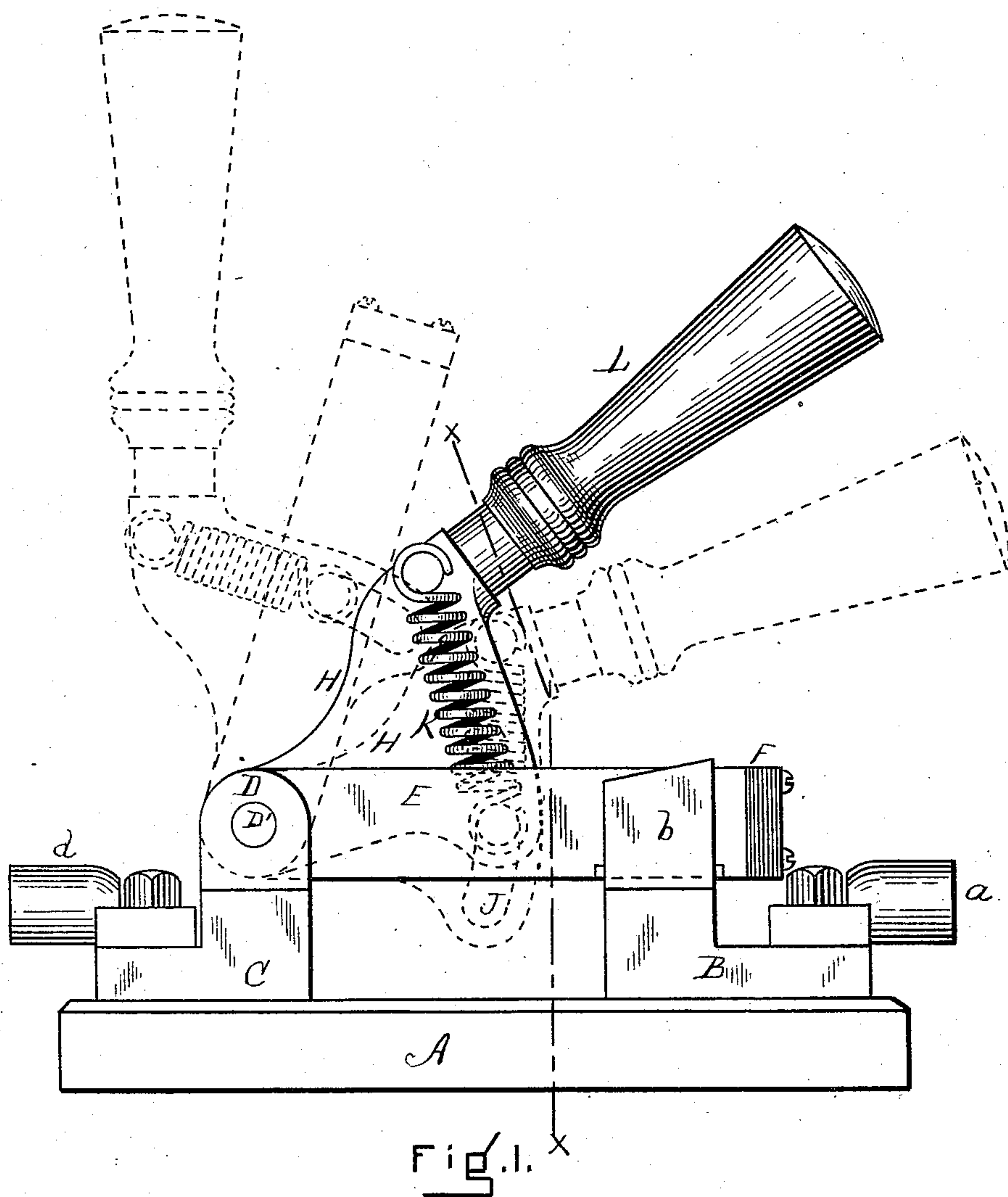
(No Model.)

2 Sheets—Sheet 1.

W. P. HANCOCK.  
ELECTRIC SWITCH.

No. 532,662.

Patented Jan. 15, 1895.



WITNESSES

E. A. Woodbury.

A. H. Bonney.

INVENTOR

William P. Hancock

By his Atty.

Sperry Williams

(No Model.)

2 Sheets—Sheet 2.

W. P. HANCOCK.  
ELECTRIC SWITCH.

No. 532,662.

Patented Jan. 15, 1895.

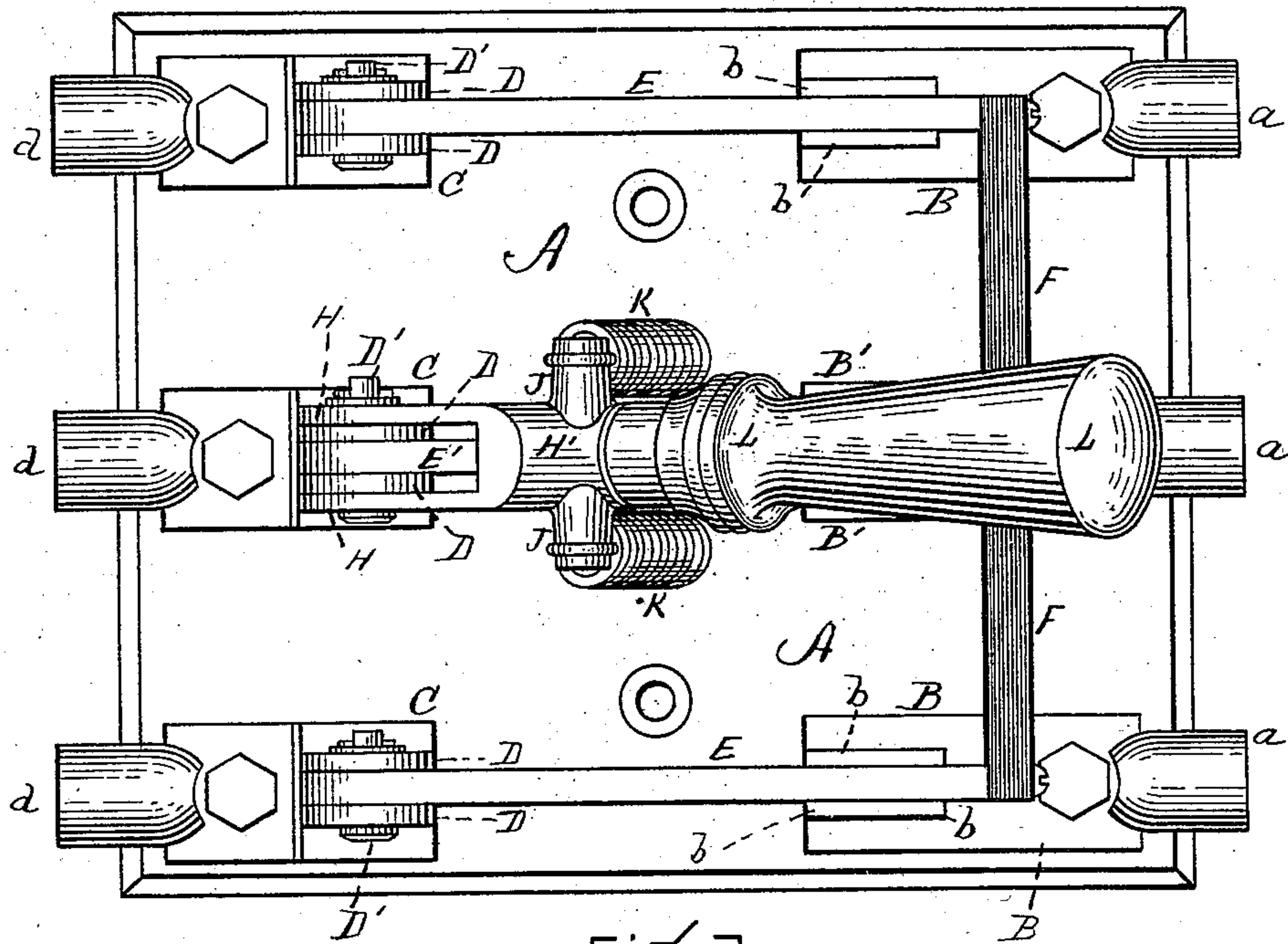
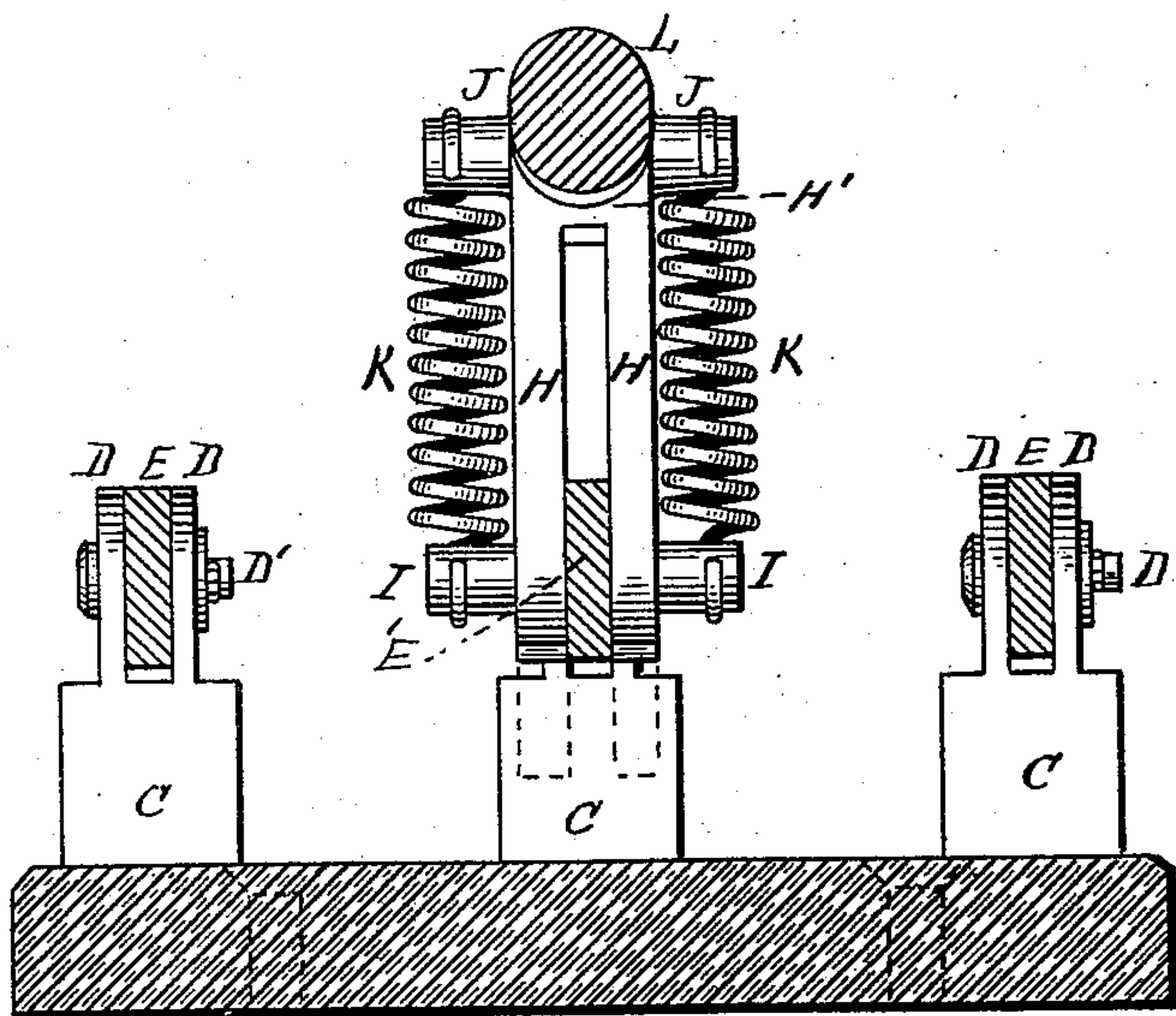


Fig. 2.



A

WITNESSES

E. A. Woodbury.

A. N. Bonney.

INVENTOR

Fig. 3. William P. Hancock.

By his Atty.

Henry Williams



# UNITED STATES PATENT OFFICE.

WILLIAM P. HANCOCK, OF EVERETT, MASSACHUSETTS.

## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 532,662, dated January 15, 1895.

Application filed November 27, 1894. Serial No. 530,117. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM P. HANCOCK, a citizen of the United States, residing at Everett, in the county of Middlesex and State of Massachusetts, have invented a certain new and useful Improvement in Electric Switches, of which the following is a specification.

This invention relates to that class of switches for electric circuits in which a spring or springs are employed for the purpose of making a quick and sharp break of the circuit in order to prevent injurious sparking by reason of the formation of an arc at the contacts when the circuit is broken.

My invention consists of the novel construction and combination of parts hereinafter described, whereby the desired effect is produced with a greater degree of certainty, and the switch rendered less liable to get out of repair, the latter result being largely on account of the impossibility of overloading the springs, and more easily repaired without taking the switch out of circuit if such a necessity arises, by means of the accessible and external location of said springs.

In the accompanying drawings in which similar letters of reference indicate like parts: Figure 1 is a side elevation of an electric switch embodying my invention, the full lines representing the position of the parts with the switch closed, but with the carrier raised to such a height that the circuit is about to be broken; and the two sets of broken lines representing the normal position when the circuit is closed and the position when the circuit is open. Fig. 2 is a plan view of the same. Fig. 3 is a transverse section taken on line *x*, Fig. 1.

The position of the parts in Figs. 2 and 3 is the same as that illustrated in full lines in Fig. 1.

The switch illustrated is what is known as a three-pole switch mounted upon a suitable base A of non-combustible insulating material. On this base are mounted three (in this instance) contacts B B', the central one B' being for the neutral wire and the outer ones B for the positive and negative wires. Each of these contacts consists of a block or base and a pair of vertical spring plates *b*, not new in

this invention. Ordinary sleeves or sockets *a* extend from the contacts for the purpose of receiving the wires of the circuit in which the switch is to be used. Opposite the three contacts, and mounted on the opposite edge of the base A, are three metal blocks C provided with sleeves or sockets *d* for the wires. Extending vertically from each of these blocks is a pair of ears D, to each of which is pivoted at D' one end of a blade E E', the other or outer ends of said blades being connected by a cross piece F made of insulating material. H is a U shaped carrier consisting of the two side plates lettered H joined at their upper ends at H'. These plates are of substantially the shape shown and swing at their rear ends from the pivot D' which connects the central blade E' to the central block C, such pivot being made slightly longer than the others for the purpose. By means of the U shape of the carrier, its two portions or plates extend down on opposite sides of the central blade E'. This blade is provided with a pair of horizontal pins I extending outward therefrom through curved slots shown at broken lines J in Fig. 1, the curvature of such slots being on an arc of the circle described by the movement of the carrier. Two outward extending pins J are made integral with the carrier and extend from its upper portion horizontally above the arms I. Spiral springs K extend from and have their opposite ends secured to the pins I and J respectively.

When the switch is closed, the blades are horizontal, as shown, and are pressed between the springs *b* which extend up from the contacts B, and the handle L which extends from the carrier is in the position shown in the lowest broken lines in Fig. 1. When the switch is to be opened, the handle L is raised, thus lifting the carrier without moving the blades E E' until about the position represented in full lines in the drawings is reached. When in this position the carrier is lifted, and the springs K stretched, until the pins I nearly or quite touch the lower ends of the slots J. A little further lifting of the carrier enables the tension of the springs K to overcome the friction of the springs *b* at the contacts, and the



blades E E' fly quickly upward, breaking the circuit. This movement produces a sudden and quick break so that the chances of sparking or the formation of arcs at the contacts  
5 are reduced to a minimum.

The external position of the springs K renders them easily accessible, so that repairs can be made without taking the switch out of circuit. The springs K cannot be overloaded  
10 beyond the desired tension, inasmuch as the load is relieved by and taken by the carrier as soon as the pins I come in contact with the lower ends of the slots J.

Although the switch illustrated in the drawings is a triple-pole switch, I propose to use  
15 my device in connection with any switch where it can be practically used.

Having thus fully described my invention,

what I claim, and desire to secure by Letters Patent, is—

In an electric switch of the character described, the combination of the pivoted U shaped carrier H H' provided with slots in its sides and with the oppositely extending horizontal pins J, the pivoted blade E within said  
20 carrier and provided with the oppositely projecting horizontal pins I extending through the slots in the carrier, the external springs K flanking the carrier and extending from the  
25 pins I to the pins J, the pivoted blades E, and the stationary contacts engaged by said  
30 blades, substantially as set forth.

WILLIAM P. HANCOCK.

Witnesses:

HENRY W. WILLIAMS,  
E. A. WOODBURY.