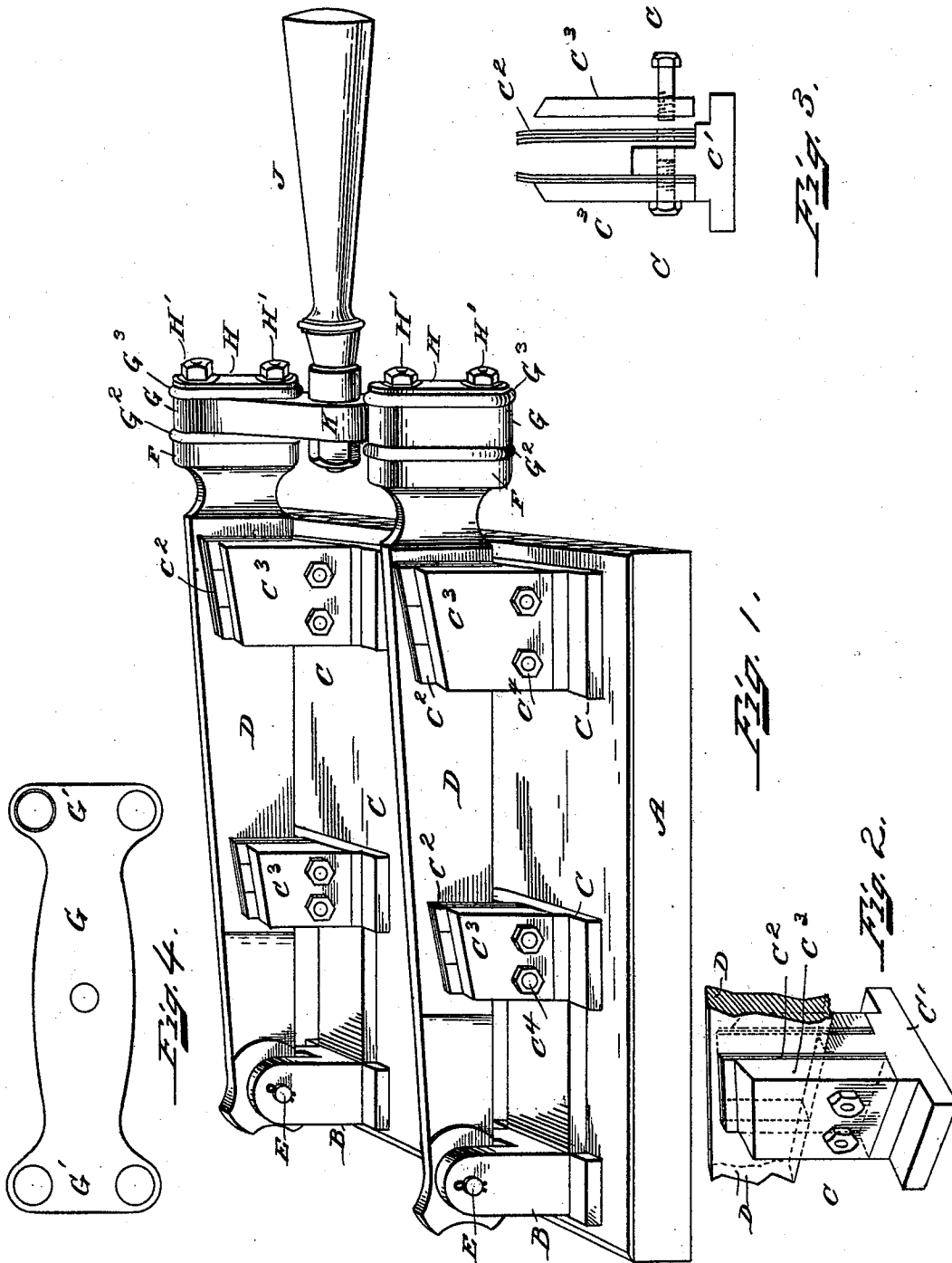


(No Model.)

W. S. HILL.  
ELECTRIC SWITCH.

No. 518,813.

Patented Apr. 24, 1894.



Witnessed.  
E. L. Harlow  
L. H. Dow

Inventor.  
Warren S. Hill  
By J. Stuart Rush  
Atty.

# UNITED STATES PATENT OFFICE.

WARREN S. HILL, OF HYDE PARK, MASSACHUSETTS.

## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 518,813, dated April 24, 1894.

Application filed October 31, 1893. Serial No. 489,658. (No model.)

*To all whom it may concern:*

Be it known that I, WARREN S. HILL, of Hyde Park, county of Norfolk, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Electric Switches; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

One object of my invention is to produce an electric switch board construction in which the fitting of the contacting parts, by which the circuit is completed, is made accurate, and a further object is to increase its carrying capacity.

My invention consists of certain novel features, combinations and arrangements hereinafter described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the electric switch board construction. Fig. 2 is a detail perspective view showing one of the contact pieces and one of the blades in position to complete the circuit. Fig. 3 is a detail view in end elevation showing my improved construction of the contact pieces. Fig. 4 is a detail view showing the construction of the yoke connecting the two blades of the switches.

Like letters of reference refer to like parts throughout the several views.

A represents a switch board of the usual construction, and upon it are secured the standards B and the contact pieces C. The two blades D are independently pivoted to the standards B by pivots E, and each blade has at its outer end a broad end F. These two blades are joined together at their broad ends by a connecting yoke G of the construction shown in Fig. 4, the extremities G' of the yoke conforming in shape to the broadened ends F of the blades, between which and the yoke the insulating plates G<sup>2</sup> are located. The insulating plates G<sup>3</sup> are located as shown between the outer plates H and each extremity of the yoke. Two bolts H' pass through each plate H, extremities G' of connecting yoke G and are secured in each broadened end F of the blades so that the blades D, yoke G, outer plates H and insulating plates G<sup>2</sup> are held firmly together so as to move as one and

enter the contact pieces at the same time. The handle J, by which the blades are raised and lowered, is secured to the connecting yoke G at the point K.

Heretofore the connecting yoke of two or more blades was secured to each blade by a single bolt and where one blade offered greater resistance than the other in moving downward to complete the circuit the loose blade would start ahead and throw the two blades out of alignment, as the connecting yoke would turn on the bolt of the blade which offered resistance to moving, as a pivot, and one blade would complete the circuit on one side of the switch board before the other blade, and the entire current would pass through one side of the switch board, which would thereby be soon burned out. It will be seen by my improvement that the two bolts at each end of the yoke prevent said connecting yoke from turning on the end of one blade as a pivot, and the two blades cannot be thrown out of alignment with one another but must move as one and enter the contact pieces simultaneously.

The usual construction of contact pieces consists in securing to the base thereof thin copper pieces which are made flexible in order to yield as the blade of the switch enters between the same to complete the circuit, but as it very often happens that the blade is not carried down to the full limit of the stroke the entire current would pass through the copper contact pieces, and not partly through the base, so that a strong current would soon burn up these copper contact pieces. Now it is my intention to increase the carrying capacity of the contact pieces by securing on the outside of the copper contact pieces reinforcing plates by which the carrying capacity is increased and the thin copper contact pieces are not burned out by a strong current.

As shown in Fig. 3 these contact pieces are constructed with a base C' to the upper portion of which the thin copper contact pieces C<sup>2</sup> are secured, and at the back of the contact pieces the reinforcing plates C<sup>3</sup> are placed, and all are securely held together by bolt and nut C<sup>4</sup>. By this arrangement it will be seen that the cross sectional area of the contact pieces is increased so as to meet any increase in the current.

I do not limit myself to the exact arrangements and constructions shown as the same may be varied without departing from the spirit of my invention.

5 Having thus ascertained the nature and set forth the construction of my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

10 1. In an electric switch, the combination with the contact pieces, of blades pivoted at one end and having their free ends broadened, said blades adapted to connect with said contact pieces to close the electric circuit, and a connecting yoke for joining said  
15 blades together, having its ends broadened to match the broadened ends of the blades, and secured at each end to said blades by two bolts, whereby movement of one upon the other is prevented.

20 2. In an electric switch, the combination with the contact pieces, of blades adapted to connect therewith to close the electric circuit, said contact pieces having flexible plates be-

tween which the blades pass to close the electric circuit, and rigid reinforcing plates se- 25 cured thereto to increase the carrying capacity of the said contact pieces.

3. In an electric switch, the combination with the contact pieces curved inwardly at their upper ends, of blades contacting there- 30 with to close the circuit, said contact pieces having flexible plates between which the blades pass to close the circuit, and rigid reinforcing plates secured thereto to increase the carrying capacity of the contact pieces, 35 the said reinforcing plates terminating at their upper ends a short distance below the curved upper ends of the contact pieces.

In testimony whereof I have signed my name to this specification, in the presence of 40 two subscribing witnesses, on this 28th day of October, 1893.

WARREN S. HILL.

Witnesses:

A. F. ACTON,  
L. H. TROW.