(No Model.)

J. S. GIBBS.

ELECTRIC SWITCH.

No. 490,746. Patented Jan. 31, 1893.

Fig. 1

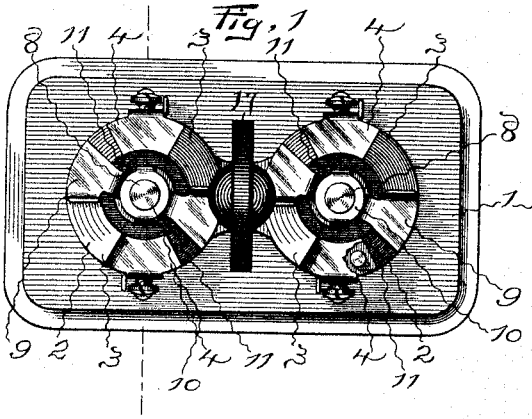


Fig. 2

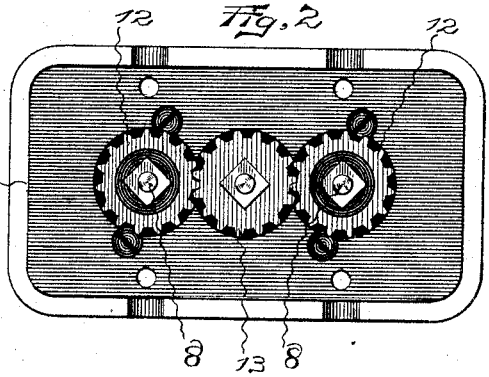


Fig. 5

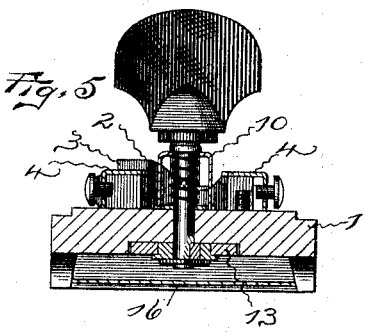


Fig. 3

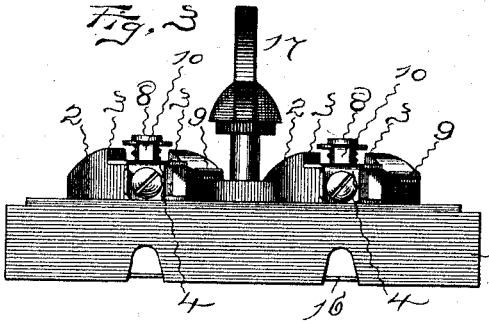


Fig. 4

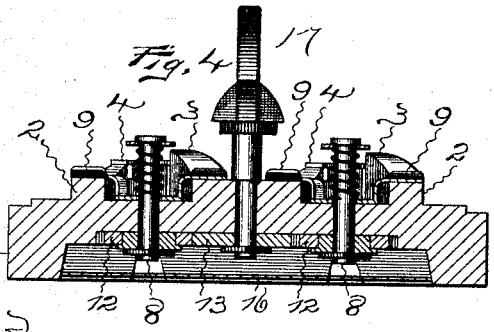


Fig. 6

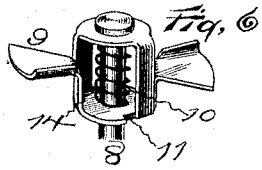


Fig. 8

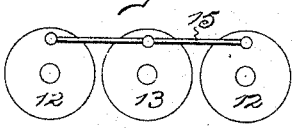
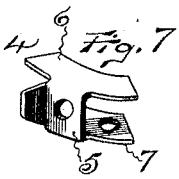


Fig. 7



Witnesses:
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Inventor:
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atty.

UNITED STATES PATENT OFFICE.

JACOB S. GIBBS, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE PERKINS ELECTRIC SWITCH AND MANUFACTURING COMPANY, OF SAME PLACE.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 490,746, dated January 31, 1893.

Application filed November 1, 1892. Serial No. 450,631. (No model.)

To all whom it may concern:

Be it known that I, JACOB S. GIBBS, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Electric Switches, of which the following is a full, clear, and exact specification.

The invention relates to the class of switches or cut-outs more particularly intended to be placed in the circuit of an incandescent system of electric lighting, and the object is to provide a simple and cheap electric switch of this class, having the poles arranged in such manner that the circuit is made or broken at four points by the turn of the single key in order to insure an absolute and complete break with no possibility of arcing the current.

To this end the invention resides in a switch having a base supporting double revolving poles and a key connected with each of the double poles so that they act in unison, as more particularly hereinafter described and pointed out in the claims.

Referring to the accompanying drawings: Figure 1 is a plan of the switch. Fig. 2 is a view of the bottom. Fig. 3 is a side elevation. Fig. 4 is a central longitudinal section. Fig. 5 is a transverse section. Fig. 6 is a perspective view of one of the revolving poles. Fig. 7 is a similar view of one of the stationary poles; and Fig. 8 is a diagram of the operating disks on the bottom, illustrating a modified means for connecting the same.

In the views 1 indicates a base formed to the desired shape of porcelain or any other suitable insulating material, with a chamber in its bottom and on its upper surface a pair of cylindrical hubs 2, that have their top edges cut into a series of inclines or ratchet teeth 3. Stationary pole-pieces 4 to which the circuit wires are fastened, are placed diametrically opposite on portions of these inclines on both hubs behind drops of the ratchet teeth. These pole pieces are usually stamped to shape of conducting material, as brass or copper, preferably with upright portions 5 to which the circuit wires are fastened by binding screws, the plane segmental contact-pieces 6 and similar pieces 7 by which they are secured to the base. Through the base in the center of the hubs pass arbors 8 on which are loosely pivoted the movable pole-pieces 9, the wings of which are formed to extend diametrically across the hubs and move over their toothed top edges. To the upper end of the arbors, so as to rotate with them, are secured yokes 10 having downward projecting legs that extend through notches 11 cut, somewhat wider than the width of the legs, through the bodies of the movable pole-pieces 9, so that when the arbors are rotated the yokes rotate the movable pole-pieces until they, by means of the resiliency of the springs move themselves faster than the yokes in order to snap and accomplish a quick make or break. Springs 14 are placed between the yokes and the movable pole-pieces to hold the latter down so their wings rest yieldingly upon the tops of the hubs. Insulated from but secured so as to rotate with the arbors, in the chamber in the bottom of the base, are disks 12 that preferably have cog teeth on their peripheries, and meshing with these is a toothed disk 13 that is secured to the shank of the operating key 17. If desired, of course, instead of connecting these disks 12 and 13 by means of intermeshing cog teeth they may be joined by a connecting rod 15, as shown in the diagram view, and if necessary a thin piece of mica 16 or a similar substance may be placed over the chamber in the bottom to exclude dirt and moisture from these parts.

When the key is turned the connected disks are rotated so as to cause the yokes to revolve the movable poles, that first ride up on the inclines or teeth on the tops of the hubs and then snap down, under the impulse of the springs, upon the stationary poles, to make the circuit, which is broken by further turning the key so that the movable poles are snapped off the stationary poles into the hollows between the teeth. By means of this construction a simple switch is produced in which the circuit is made or broken at four different points simultaneously, with a quick make and break, which avoids any possibility that the current will arc. The parts of this switch can all be stamped by machinery so that they are cheap and may be readily assembled.

I claim as my invention:—

1. In an electric switch in combination with an insulating base having two series of annularly arranged insulating ratchet teeth formed integral with the upper surface and a double set of stationary contact pieces secured thereto for the attachment of the circuit wires, double revolving pole-pieces pivoted in the center of each series of teeth, a single key, and a connection between the key and both of the revolving pole-pieces, substantially as specified.

2. In an electric switch in combination with an insulating base having two series of annularly arranged insulating ratchet teeth formed integral with its upper surface and a double set of stationary contact pieces secured thereto for the attachment of the circuit wires, double revolving pole-pieces pivoted in the center of each series of teeth, cog-wheels connected with the shanks of the movable pole-pieces, a cog-wheel meshing with both of said wheels, and a key secured to the latter cog-wheel, substantially as specified.

3. In an electric switch in combination with an insulating base having annularly arranged insulating ratchet teeth formed integral with its upper surface and stationary contact pieces secured thereto for the attachment of the circuit wires, a revolving pole-piece extending across the ratchet teeth pivoted to an arbor in the center, a yoke loosely connected with the revolving pole-piece secured to the arbor, a spring between the yoke and movable pole-piece, a disk connected with the opposite end of the arbor, and a key for rotating the disk, substantially as specified.

JACOB S. GIBBS.

Witnesses:

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