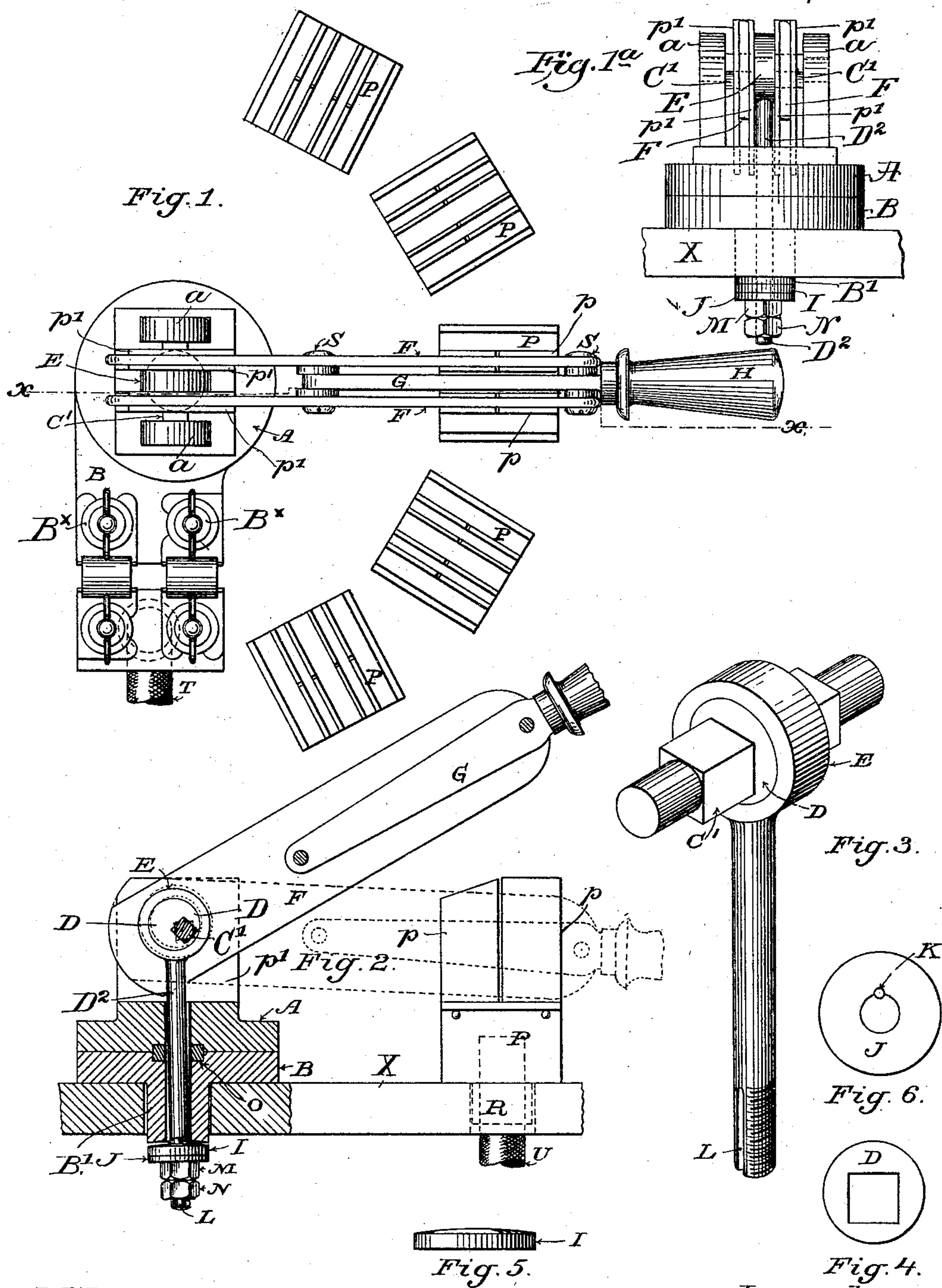


(No Model.)

C. E. PATTISON.
ELECTRICAL SWITCH.

No. 488,740.

Patented Dec. 27, 1892.



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES E. PATTISON, OF BOSTON, MASSACHUSETTS.

ELECTRICAL SWITCH.

SPECIFICATION forming part of Letters Patent No. 488,740, dated December 27, 1892.

Application filed August 8, 1892. Serial No. 442,420. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. PATTISON, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Electrical Switches, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to electrical switches of the class wherein the movable switch member or blade is fulcrumed or hinged at one end and adapted to be turned about its hinge into and out of electrical engagement with one or more co-operating fixed contacts.

The invention particularly relates to a circuit establishing device by means of which the movable hinged member is automatically thrown into and out of electrical connection with a plate connected in the electric circuit, by movement of the movable member about its hinge.

The invention is particularly useful when the hinged member is made to rotate about a vertical axis into position to co-operate with any one or more of several contacts arranged in an arc about the center of rotation of the switch member, the circuit establishing device acting to establish a circuit whenever the member is turned on its hinge into electrical engagement with any of the fixed contacts.

Figure 1, of the drawings represents in plan view, an electric switch embodying this invention. Fig. 1^a, is an end elevation thereof, partly broken out. Fig. 2, a side view and partial section on line $x-x$ of the switch shown in Fig. 1; and Figs. 3, 4, 5 and 6, details to be referred to.

Referring to the drawings, the base X is of slate or other preferably insulating material, to which is secured a base plate B having a boss B' extending through to the under side of the base as best shown in Fig. 2. The upper face of the plate B is made true to receive upon it the similar face of the rotatable disk A, the latter being recessed at its under side to receive a ring ϕ set in the plate B, and which acts to retain the disk A in proper axial position and guide it in its rotative movements.

The disk A is provided with two ears a, a , in which is loosely journaled a shaft C to

which are rigidly secured the two arms or blades F, F, shown as unyielding, which hold between the shank G of the operating handle H. The outer ends of the blades F, F, which constitute the movable member of the switch are adapted when turned into their dotted position Fig. 2, to enter respectively between the two pairs of spring plates p, p , standing upwardly from the contacts P, the inner ends of said blades being always in contact with the pairs of spring contact plates p', p' , attached to and projecting upwardly from the disk A, see Figs. 1 and 1^a. A series of two or more of these contacts P are arranged about the center of rotation of the disk A and preferably in the same plane, so that the movable member F of the switch may be withdrawn from engagement with one contact and be rotated to bring it into proper position to co-operate with another contact, which will be clearly understood from Fig. 1.

The shaft C between the blades F is made square or other than round, as at C' Fig. 3, squared to receive and hold an eccentric D, the eccentric strap D' of which is attached to a rod D² which extends axially through the disk A and the plate B and its boss B' to the underside of the latter where it is threaded to receive the nuts M, N, as shown in Fig. 2.

Two washers or disks I, J, are shown interposed between the nuts M, N, and the boss B' to provide a better bearing or clamping surface, the uppermost of the washers being preferably beveled slightly at its upper side, as best shown in Fig. 5, to permit flexibility.

The rod D² is grooved as at L, Fig. 3, to form a way for a key K, Fig. 6, the washers I, J, being also correspondingly grooved, so that the key when inserted will lock the parts against rotative movement.

When the movable member is in its elevated full line position Fig. 2, the eccentric D is turned to drop the rod D² and the nuts and washers thereon away from the boss B', to permit the disk A to freely turn upon the face of the base plate B as the movable member is turned into position to co-operate with one or another of the fixed contacts P. When, however, the movable member is depressed into its dotted position Fig. 2, in engagement with a fixed contact, the shaft C and eccentric D are turned to lift the rod D² and draw the

washers I, J upon its threaded end against the boss B', further rotation of the eccentric D by the movable member causing the disk A to be drawn down firmly into contact with the base plate B and establishing electrical connection between the two. As the blades of the movable member are at the same time moved into frictional contact with the spring blades of the fixed contact, the circuit from the base plate B to the fixed contact is established. When the movable member is turned into its elevated position to break the circuit, the shaft C and eccentric D are turned to drop the rod D² and washers I, J, to relieve the frictional contact between the disk A and plate B and permit the former to be turned by the movable member, such clamping or circuit establishing means being necessary in a switch such as the one shown to illustrate this invention and which is designed to carry large or small currents of electricity.

In switches which are designed to carry less ampère currents, the frictional contact between the disk A and plate B alone may be relied upon for an electrical connection without the additional clamping means shown, or the electrical connections between the disk A and plate B may be established in any other suitable manner if desired.

The base plate B in the switch shown is provided with suitable binding screws B^x through which the plate is connected in circuit with the wire T.

U represents one of the wires leading from the fixed contacts P, the said wire being connected with its contact in suitable manner.

This invention is not limited to the particular construction or arrangement of parts herein shown for the purpose of illustrating this invention, for the same may be varied without departing from the scope of the invention.

I have used the term "disk" when referring to the part marked A, but this invention is not limited by the word disk to the employment of a circular piece of metal, as the part designated by the term "disk" may be of any other suitable shape to rest on the base plate B and make electrical contact therewith, and yet be within the scope of this invention.

I claim.

1. In an electric switch, a fixed contact, a base-plate, and a hinged switch member adapted to be turned on its hinge into and

out of electrical engagement with said fixed contact, combined with a circuit establishing device actuated by movement of the switch member about its hinge to electrically connect and disconnect the said base-plate and movable switch member, substantially as described.

2. In an electric switch, two or more fixed contacts combined with a rotatable hinged member adapted to be rotated into position to co-operate with and to be moved on its hinge into engagement with any of said fixed contacts, a plate with relation to which said member rotates, and a circuit establishing device actuated by movement of the said member about its hinge to electrically connect and disconnect said member with said plate at times, substantially as described.

3. In an electric switch, two or more fixed contacts, combined with a base plate, a disk rotatable thereon, a member hinged to said disk and adapted to co-operate with any of said fixed contacts, and means actuated by movement of said member about its hinge to clamp the said disk and base plate firmly together, substantially as described.

4. In an electric switch, two or more fixed contacts, combined with a base plate, a disk rotatable thereon, a member hinged on a pivotal shaft loosely journaled in a part of said disk, to co-operate with one or another of said fixed contacts, an eccentric on said shaft, its strap and means actuated thereby to clamp the disk and its base plate firmly together when the said member is in some positions, to operate, substantially as described.

5. In an electric switch, two or more fixed contacts combined with a base plate, a disk rotatable thereon and provided with ears, a shaft loosely journaled in said ears and having fixed to it two contact blades to co-operate with one or another of said fixed contacts, an eccentric on said shaft between said blades, and eccentric rod moved thereby and extending downwardly through the disk and base plate and provided with one or more adjustable devices on its end, all to operate, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. PATTISON.

Witnesses:

R. E. DEAN,
JOHN C. EDWARDS.