J. H. MILLSPAUGH.

CIRCUIT BREAKER.

APPLICATION FILED SEPT. 10, 1917.

1,276,557. Patented Aug. 20, 1918.

Fig. 1

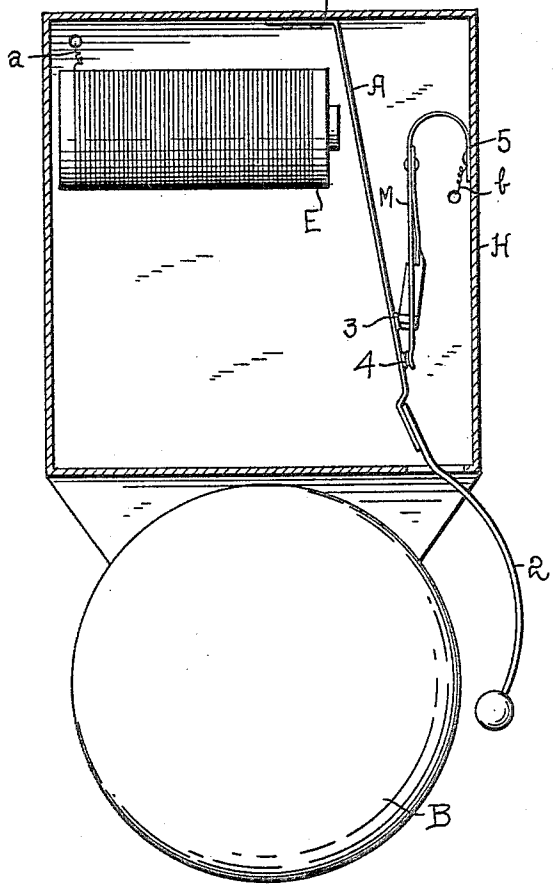


Fig. 2

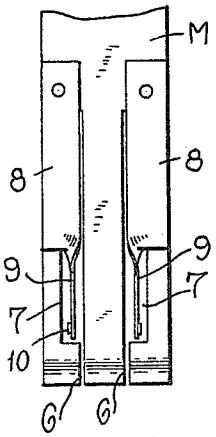


Fig. 3

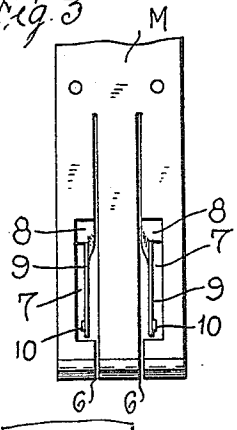


Fig. 4



Fig. 5

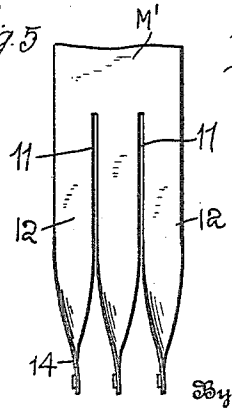
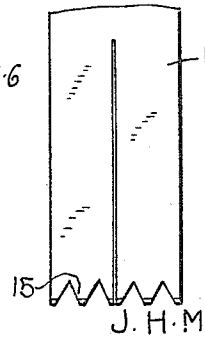


Fig. 6



Inventor

J. H. MILLSPAUGH

By Watson E. Coleman

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES H. MILLSPAUGH, OF GUTHRIE, OKLAHOMA.

CIRCUIT-BREAKER.

1,276,557. Specification of Letters Patent. Patented Aug. 20, 1918.

Application filed September 10, 1917. Serial No. 190,589.

To all whom it may concern:

Be it known that I, JAMES H. MILLSPAUGH, a citizen of the United States, residing at Guthrie, in the county of Logan and State of Oklahoma, have invented certain new and useful Improvements in Circuit-Breakers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in circuit breakers and has relation more particularly to a device of this general character which is automatically operated through the medium of an electromagnet, and it is an object of the invention to provide a novel and improved device of this general character wherein the armature coacting with the electromagnet serves as one of the contact members and wherein the second contact member is provided with means whereby interference with the operation of the closer by the accumulation of dust or other foreign substances is prevented.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved circuit breaker wherein certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be better understood I will now proceed to describe the same with reference to the accompanying drawings wherein:

Figure 1 is a view partly in elevation and partly in section illustrating a circuit closer constructed in accordance with an embodiment of my invention and in applied position;

Fig. 2 is a fragmentary view in rear elevation of one of the contact members as herein employed;

Fig. 3 is a fragmentary view in front elevation of the contact member illustrated in Fig. 2;

Fig. 4 is a fragmentary view in side elevation of a contact member constructed in accordance with a modification of my invention;

Fig. 5 is a fragmentary view in front elevation of the form of contact member illustrated in Fig. 4; and

Fig. 6 is a fragmentary view in front elevation of a contact member constructed in accordance with a further modification of my invention.

As illustrated in the accompanying drawings H denotes a housing having mounted therein an electromagnet E in communication with a suitable source of electricity through the medium of a conductor *a*. Coacting with the electromagnet E is a spring armature A suitably anchored, as at 1 to a wall of the casing and having secured to its opposite or free end portion the hammer 2 adapted to strike the bell B supported by the housing H and arranged therebelow. Disposed transversely of the spring armature A adjacent its free end are the transversely disposed contact strips 3 and 4 and coacting in a conventional manner with the strip 4 is the free end portion of the spring contact member M suitably secured, as at 5 to a wall of the housing H and in communication with the electrical source through the medium of the conductor *b*.

The free end portion of the member M is provided with the longitudinally disposed slits 6, the inner end portions of which are enlarged, as at 7.

Secured to the opposite longitudinal marginal portions of the member M are the elongated resilient strips 8 of metal or other suitable electrical conducting material and each of said strips partially overlies an adjacent enlarged portion 7 of the slits 6. The free end portion of the strip 8 overlying an enlarged portion 7 is twisted as at 9 so that the free end portion of said strip has its flat faces substantially at right angles to the flat faces of the opposite end portion of the strip 8. The portion 9 of the strip extends through the enlarged portion 7 and is provided adjacent its free end with the transversely disposed contact strip 10 which is adapted to engage the second or inner transverse contact strip 3 carried by the spring armature A. By having the portion 9 of each of the strips 8 arranged as hereinbefore described it will be at once self evident that an edge of the strip carried by the member M will contact with the spring armature A and by this arrangement it will be at once self evident that no obstruction will be of-

fered by dust or other foreign substance to the proper coaction between the portions 9 of each of the springs 8 and the spring armature A. This in practice has proven of material advantage.

In the form of invention particularly illustrated in Figs. 4 and 5 the contact member M' has its contacting or free end portion provided with the elongated slits 11 affording fingers 12 and the free end portions of said fingers are twisted as indicated at 14 to an angle of substantially 90° whereby the same advantageous result is afforded as produced by the portions 9 of the strips 8 hereinbefore referred to.

In the form of invention illustrated in Fig. 6 the contact member M^2 has its contacting or free end portion provided with the teeth 15 which also afford means whereby the efficiency of the member M^2 is not impaired by dust or other foreign substances.

From the foregoing description, it is thought to be obvious that a circuit breaker constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated and it will also be obvious that my invention is susceptible of some change and modification without materially departing from the principle and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:

1. A circuit closer comprising two relatively movable members, one of said members comprising spaced strips having their contacting ends twisted whereby the edges of said strips engage the second member.

2. A circuit closer comprising two relatively movable members, one of said members being provided with an opening therethrough, a strip secured to said last named member and having an end portion disposed edgewise through said opening for contact with the second member.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

JAMES H. MILLSPAUGH.

Witnesses:
KENNETH COCHRELL,
GEO. STEVENS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."