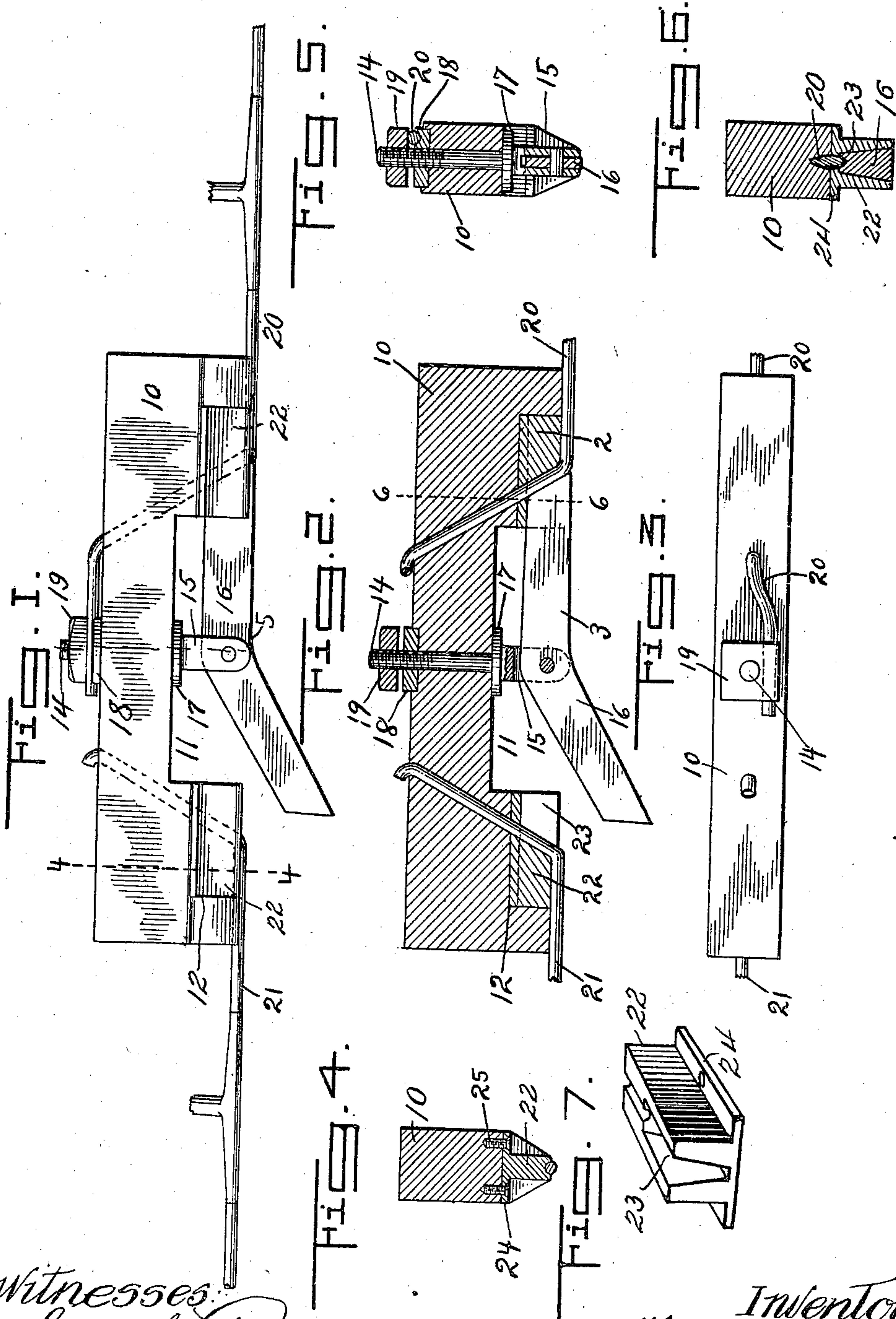


W. E. RICHARDS.
CIRCUIT BREAKER.
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966,360.

Patented Aug. 2, 1910.



Witnesses:
Samuel Payne
L. Cloud Newman.

Inventor
W. E. RICHARDS.
by *W. E. Richards*
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM E. RICHARDS, OF PORTAGE, PENNSYLVANIA.

CIRCUIT-BREAKER.

966,360.

Specification of Letters Patent.

Patented Aug. 2, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM E. RICHARDS, a citizen of the United States of America, residing at Portage, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Circuit-Breakers, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in circuit breakers, and relates particularly to that type of circuit breakers which are used in connection with the trolley lines in coal mines and the like.

The primary object of the invention is to provide a circuit breaker of extremely simple and durable construction, positive in its action, and unlikely to become damaged or get out of order easily in use.

The practical embodiment of the invention is shown in the accompanying drawings, wherein:—

Figure 1 is a view in side elevation of a circuit breaker constructed in accordance with my invention, Fig. 2 is a central longitudinal sectional view of the same, Fig. 3 is a top plan view thereof, Fig. 4 is a transverse vertical sectional view taken on the line 4—4 of Fig. 1, Fig. 5 is a similar view taken on the line 5—5 of Fig. 1, Fig. 6 is a transverse vertical sectional view taken on the line 6—6 of Fig. 2, and Fig. 7 is a detached perspective view of one of the contact blocks.

To put my invention into practice, I provide a suitable body 10 which may be of wood, or a suitable insulated material, as desired, and which is substantially rectangular in form, being provided on its under face, intermediate the ends, with a cut away portion 11, and further provided on the under face, at the ends of the cut away portion with recesses 12.

Extending through the body 10, centrally thereof, is a bolt 14 having a bifurcated or clevis-like lower end 15 which lies within the cut away portion 11 and has the blade 16 pivotally-hung therein, said blade being substantially angular in outline, and substantially wedge-shaped in cross section. The bolt is provided with an annular shoulder or intermediate head 17 which fits against the body 10, and said bolt carries on its upper threaded end nuts 18, 19 by means of which one section of the trolley wire as 20 may be securely fastened to the

body of the circuit breaker. The other section as 21 of the trolley wire is extended through the body of the circuit breaker, and the free end thereof bent over so as to secure the wire firmly to the circuit breaker.

In the recesses 12 are mounted contact blocks 22, the lower faces of which are grooved to receive the sections 20, 21 of the trolley wire, and the inner ends of which are provided with substantially wedge-shaped recesses 23, through which the sections 20, 21 of the trolley wire extend, and which recesses receive the arms of the knife or switch 16, the ends of the said arms being inclined so as to permit the said ends contacting throughout with the inclined portions of the wires 20, 21 which lie within the recesses 23 and against the inclined inner walls of said recesses. The contact blocks are suitably secured in position in the body, as by providing the said blocks with flanges 24 which are fastened to the body 10 as by screws 25 or equivalent fastening means.

Obviously, a trolley traveling to the left as the device is shown in the drawing will, when it strikes the free arm of the knife or switch, force the same upwardly into its recess 23 and into engagement with wire 21, so that the trolley will pass onto wire 21, the circuit breaker remaining set so that the trolley in its return travel throws the opposite arm into engagement with conductor wire 20.

It will be understood that any suitable hanging means desired may be attached to the body, and owing to the particular cross sectional recesses 23 which receive the ends thereof, the knife will normally remain either in the position shown in Figs. 1 and 2, or in the opposite position according to the direction in which it was last placed, until such time as it is again actuated by a trolley to move it to the reverse position.

Having fully described my invention, what I claim is:—

1. In a circuit breaker, a body portion having its lower face cut away to provide an enlarged recess and further cut away to provide a pair of smaller recesses opening at their inner ends into the enlarged recess, a suspension means arranged centrally of said body portion and extending in said enlarged recess, a knife pivotally connected centrally thereof to said suspension means and formed with a pair of blades angularly-disposed with respect to each other, a

contact block mounted in each of said smaller recesses and each having its lower face at its inner portion grooved and its lower face at its outer portion provided
5 with a recess for the reception of a blade, a conducting wire seated in the groove of each block, extending through the recess of its respective block and through the body portion to one side of the enlarged recess,
10 and means for connecting the suspension means to the body portion and to one of said conducting wires.

2. In a circuit breaker, a body portion having its lower face cut away to provide
15 an enlarged recess and further cut away to provide a pair of smaller recesses opening at their inner ends into the enlarged recess, a suspension means arranged centrally of said body portion and extending in said en-
20 larged recess, a knife pivotally connected centrally thereof to said suspension means and formed with a pair of blades angularly-

disposed with respect to each other, a con-
tact block mounted in each of said smaller recesses and each having its lower face at
25 its inner portion grooved and its lower face at its outer portion provided with a recess for the reception of a blade, a conducting wire seated in the groove of each block, ex-
30 tending through the recess of its respective block and through the body portion to one side of the enlarged recess, and means for connecting the suspension means to the body portion and to one of said conducting wires,
35 each of said blades being wedge-shaped in cross-section and the recesses of said blocks being wedge-shaped in contour.

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

WILLIAM E. RICHARDS.

Witnesses:

WM. T. YEMLEY,
DAVID J. McMONIGAL.