

J. H. KRUSE.
 NO-FIRE CIRCUIT BREAKER.
 APPLICATION FILED MAR. 4, 1919.

1,331,650.

Patented Feb. 24, 1920.
 2 SHEETS—SHEET 1.

Fig. 1.

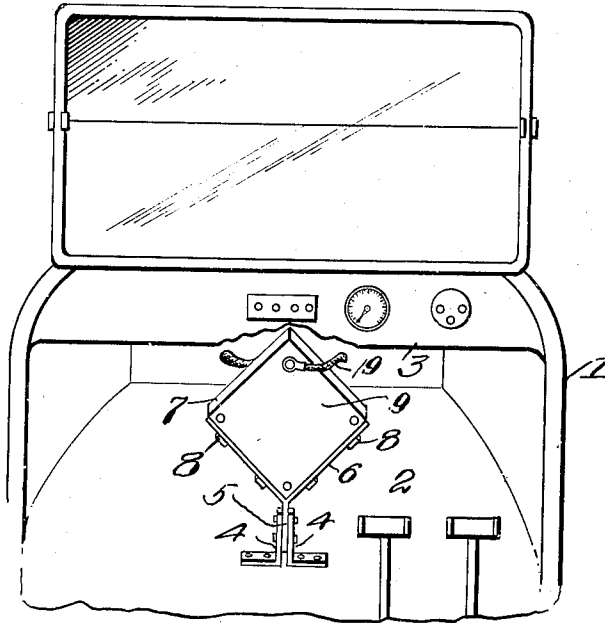
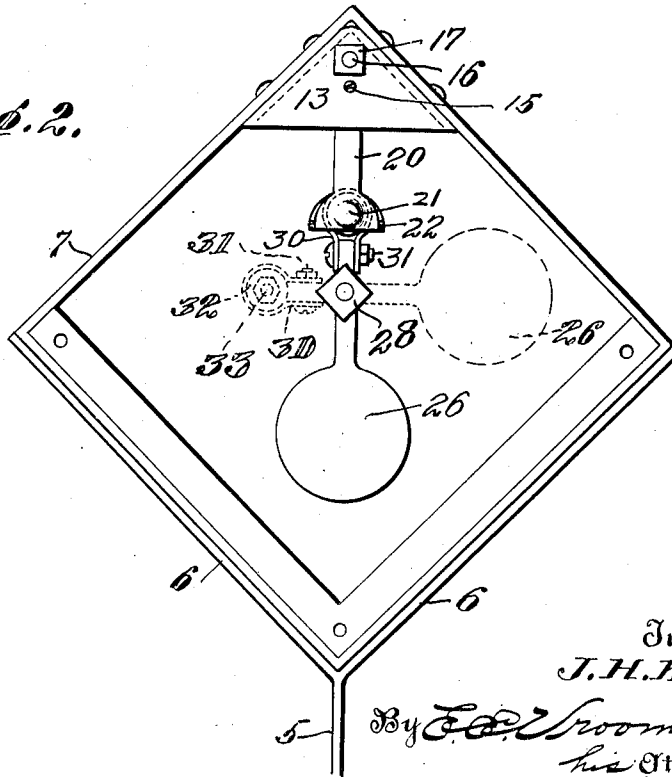


Fig. 2.



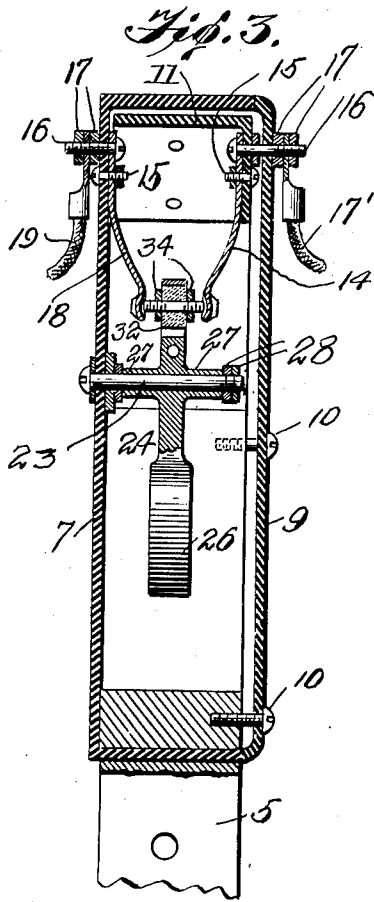
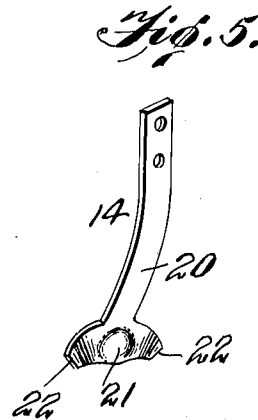
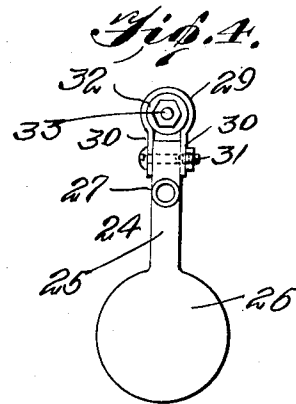
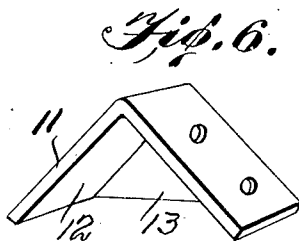
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UNITED STATES PATENT OFFICE.

JOHN H. KRUSE, OF SHELDON, IOWA.

NO-FIRE CIRCUIT-BREAKER.

1,331,650.

Specification of Letters Patent.

Patented Feb. 24, 1920.

Application filed March 4, 1919. Serial No. 280,583.

To all whom it may concern:

Be it known that I, JOHN H. KRUSE, a citizen of the United States, residing at Sheldon, in the county of O'Brien and State of Iowa, have invented certain new and useful Improvements in No-Fire Circuit-Breakers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to a circuit breaker, and more particularly to a circuit breaker or switch device adapted for use upon motor vehicles.

15 The object of the invention is the construction of a simple and efficient device for breaking a circuit when the motor vehicle is tilted to one side or overturned.

20 With this and other objects in view, my invention comprises certain novel combinations, constructions, and arrangements of parts as will be hereinafter specifically described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

25 In the drawings:

Figure 1 is a perspective view of my circuit breaker, showing the same attached to a motor vehicle.

30 Fig. 2 is a view in front elevation of the circuit breaker.

Fig. 3 is a vertical sectional view of my circuit breaker.

Fig. 4 is a detail view of the pendulum-like switch blade.

35 Fig. 5 is a perspective view of one of the contact fingers.

Fig. 6 is a perspective view of the insulating bracket.

Referring to the drawings by numerals, 40 1 designates the body of a motor vehicle and 2, the floor thereof. Preferably positioned contiguous to or under the dash board 3 is my improved circuit breaker hereinafter specifically described. A supporting bracket, comprising angle plates 4, 4, is suitably secured to the floor 2 of the motor vehicle; the plates 4 being spaced apart so as to receive the leg 5 of the Y-shaped bracket 6.

50 Casing 7, preferably square-shaped, rests upon the body of the Y-shaped bracket 6, and by means of suitable bolts, or other fastening means 8 the casing 7 is attached to bracket 6. A cover or front plate 9 is attached to the body of casing 7 by means of screws 10. It is to be noted that casing 7

is rigidly supported upon the plates 4, 4 so that the casing will not be displaced or moved from its relative position upon the floor 2, notwithstanding the fact that the motor vehicle may be tilted to one side or completely overturned.

60 An insulating bracket 11 comprising a substantially inverted V-shaped body 12 is secured in the upper corner of the casing 7; a closed side 13 of bracket 11 is provided for attaching the contact finger 14 thereto; this finger 14 being attached by a bolt 15, and through the finger extends the bolt 16, constituting a terminal or post. Connected by means of nuts 17 to the terminal or bolt 16 is a wire 17'. The insulating bracket, formed of insulating material, insulates the finger 14 of the terminal 16 from the casing 7. A finger 18, similar in construction to finger 14, is attached by a bolt 15 to the inner face of the casing 7 and a bolt 16 extends through the upper end of the finger 18 and constitutes a terminal to which wire 19 is securely attached by the nuts 17 on bolt 16. It will be obvious that I have employed two contact fingers as well as two terminal bolts in constructing my device.

Each contact finger is formed from a resilient piece of material and comprises an inwardly-curved body 20 having at its lower end a concavo-convex or outwardly-dished portion 21 at each side of which is an outwardly-curved ear 22, for the purpose hereinafter described.

90 An axle bolt 23 is carried near the center of the casing 7, and upon this axle bolt is detachably mounted the pendulum-like switch blade 24, which blade is provided with an elongated body 25 having at its lower end an integral weight 26 and being provided with oppositely-extending hollow extensions 27 that constitute the hub of the switch blade. Nuts 28 secure the switch blade upon the axle bolt 23. A collar 29 has its parallel ends 30 engaging the upper end of the body 25 of the switch blade 24, and through these parallel engaging ends 30 extend fastening means, such as bolt 31, and within the collar 29 is positioned a sleeve-like insulating member 32, and carried by the insulating sleeve 32 is a contact member or bolt 33 that has threaded ends, and upon these ends are positioned nuts 34 for holding the contact member or bolt 33 in position for engaging the contact fingers 14 and 18.

When the motor vehicle is running under normal conditions, the pendulum will not swing from its vertical position, by reason of the strength of the springy contact fingers 14 and 18, since the ends of the contact member or bolt 33 will be in the concavo-convex pockets or portions 21, but upon a decided tilting to one side of the motor vehicle or upon the motor vehicle turning over, then in such emergencies the weight 26 will be sufficient to overcome the resistance of the springy fingers 14 and 18, causing the contact member 33 to ride out from between said contact fingers and thereby breaking the circuit. When the motor vehicle is righted, the ends of the contact member 33 first engage the ears 22 at one side of the concavo-convex pockets or recesses 21, riding over these outwardly flared or curved ears and finally is seated in the pockets or sockets 21, the contact fingers 14 and 18 having sufficient strength to temporarily lock the switch blade in this closed circuit position until an accident occurs placing the motor vehicle out of commission.

The insulations are complete and efficient so that when the automobile is swung to one side, breaking the circuit through the wires 17 and 18, the efficient operation of my circuit breaker or switch will be assured, and by using my device upon motor vehicles a safety means is provided for preventing fire in the case a motor vehicle is partly or entirely overturned, which overturning often causes the gasoline tank to be emptied, and if the engine is still running or a complete circuit is in order, and the gasoline comes in contact with the spark plugs or the circuit, often fire results that causes great injury.

I wish it to be understood that I reserve the right to make such alterations or modifications in the construction of my device as shall appear to one skilled in the art to which it relates, and I, therefore, reserve the right to make such alterations or modifications as shall fairly fall within the scope of the appended claims.

What I claim is:

1. In a device of the class described, the combination of a main supporting bracket comprising a pair of angle plates, a Y-shaped bracket having its depending leg positioned between the plates, means securing the leg and plates together, and a casing provided with means for making and breaking a circuit positioned within the Y-shaped bracket and supported thereby.

2. In a device of the class described, the combination with a casing, of an inverted V-shaped insulating bracket carried by said casing, a terminal carried by said bracket, a cover for said casing normally positioned over said terminal, a second terminal secured to said casing, contact fingers con-

nected to said terminals, and a weight switch blade between and normally closing a circuit through said contact fingers.

3. In a device of the class described, the combination with a casing, of an angle bracket provided with a side secured to said casing, a terminal securely mounted upon the side of said bracket, a cover for said casing and positioned upon said terminal, said terminal extending through said cover, a second terminal secured to the side of the casing, depending resilient contact fingers connected to said terminals, and means pivotally mounted upon the fingers and being adapted to normally close a circuit through the fingers.

4. In a device of the class described, the combination with a casing, of contact fingers carried by said casing, terminals connected to said fingers, each finger comprising an inwardly-curved spring body having at its lower end a concavo-convex portion with outwardly-curved or extending ears at opposite sides of said concavo-convex portion, and weighted, swinging means positioned between the fingers and normally engaging the concavo-convex portions thereof for closing a circuit.

5. In a device of the class described, the combination with a casing, of inwardly-extending springy fingers carried by said casing, terminals connected to said fingers, an axle bolt secured upon the side of said casing, a switch blade provided with a body and with an integral weight at the lower end of said body, said body being provided with oppositely-extending hollow extensions constituting a hub, said hub mounted upon said axle bolt, a collar provided with parallel extensions engaging the upper end of said body, fastening means extending through said extensions of the collar and connecting the same to said body, an insulating sleeve in said collar, a contact member provided with threaded ends carried by said insulating sleeve, nuts upon said contact member and engaging opposite sides or ends of said insulating collar, and said contact member normally engaging the contact fingers when the switch blade is in its normal, set position.

6. In a device of the class described, the combination with a casing, of contact fingers carried by said casing, terminals connected to said contact fingers, of a switch blade movably mounted upon said casing and being adapted to swing between said blades, said switch blade provided with a collar adjustably mounted thereon, an insulating sleeve in said collar, and means carried by said insulating sleeve and normally engaging said contact fingers for closing a circuit through said fingers.

7. In a device of the class described, the combination with a motor vehicle provided

with a floor, of a substantial square-shaped casing, means attached to the floor and to the sides of said casing for holding one corner of the casing in the highest position, 5 contact fingers in the highest corner of said casing, and means pivotally mounted in the casing and being adapted to close a circuit through said fingers when the motor vehicle is running under ordinary conditions or breaking the circuit through said fingers 10 when said motor vehicle is turned on one side or upset.

In testimony whereof I hereunto affix my signature.

JOHN H. KRUSE.