

March 12, 1940.

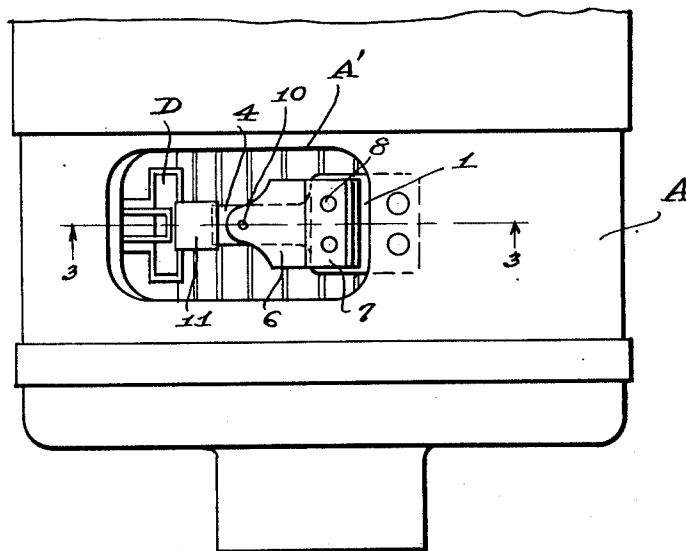
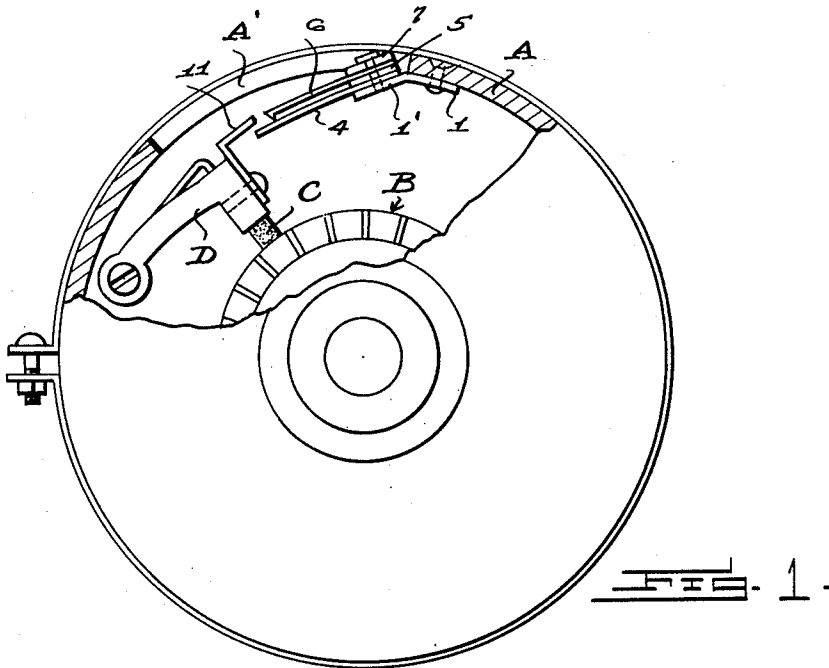
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2,193,172

SAFETY DEVICE FOR GENERATORS

Filed July 11, 1939

2 Sheets-Sheet 1



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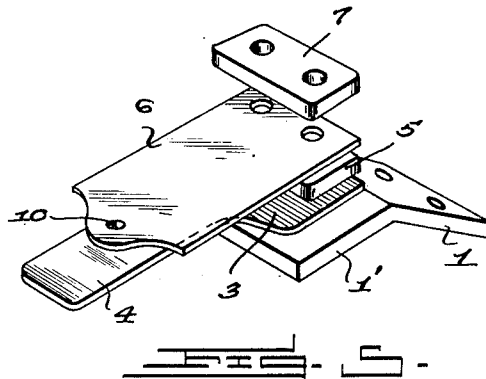
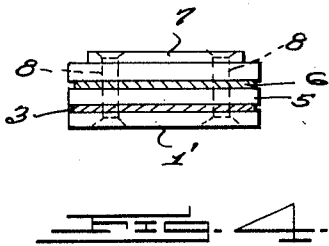
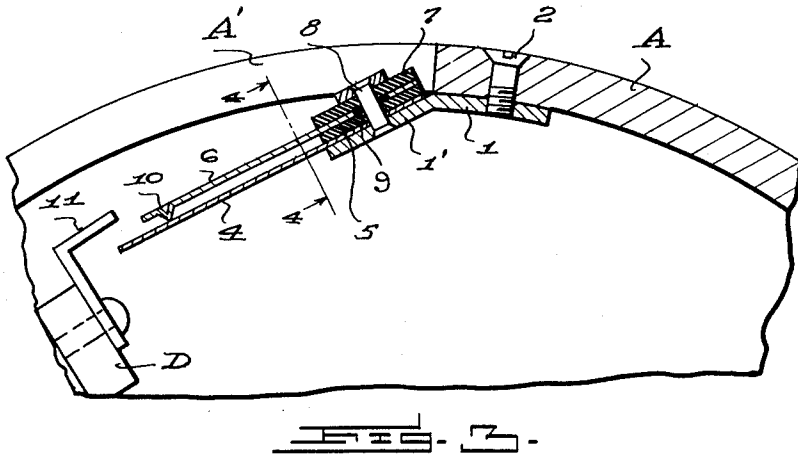
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SAFETY DEVICE FOR GENERATORS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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SAFETY DEVICE FOR GENERATORS

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Application July 11, 1939, Serial No. 283,919

3 Claims. (Cl. 171-252)

This invention relates to a safety device for generators, the general object of the invention being to provide means for breaking the circuit of the generator if the brushes become too short which would result in burning out of the arma-
 5 ture and field coils and also to break the circuit if the generator starts overheating for any reason.

This invention also consists in certain other features of construction and in the combination
 10 and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference
 15 will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is an end view with parts in section of the generator supplied with the invention.

20 Figure 2 is a fragmentary top plan view of Figure 1.

Figure 3 is a section on the line 3-3 of Figure 2.

25 Figure 4 is a section on the line 4-4 of Figure 3.

Figure 5 is a view of the parts of the invention separated.

In these views the letter A indicates a part of the generator casing, the letter B a portion of the armature and the letter C indicates a brush
 30 carried by the supporting member D, these parts being of the usual or any designed construction. In carrying out my invention I provide a bracket 1 which is connected to a portion of the housing
 35 A by the screws 2 with a part of the bracket extending into the housing adjacent the opening A' of the housing. An enlarged part 3 of a spring steel blade 4 rests on said part 1' of the bracket and a block 5 of non-conductive material rests
 40 on the base part 3 while a thermal blade 6 has an end portion resting on the block 5 and a second block 7 of non-conductive material rests on the end of the blade 6, all the parts being connected together and to the portion 1' of the
 45 bracket by the rivets 8 which pass through the pairs of holes in the parts. Sleeves 9 of non-conductive material surround the rivets 8 where
 50 said rivets pass through the blade 6 so as to insulate the blade 6 and said rivets. This blade 6 is formed of two strips of different kinds of metal, such as one strip being formed of brass and the other steel so that the strips will bend when subjected to heat and this bending of the strips or blade 6 will cause it to move away from the spring

blade 4 so that the contact point 10 formed on the free end of the blade 6 will move out of engagement with the spring blade 4 and thus break the circuit to the parts if the generator becomes over-
 5 heated.

Also the circuit will be broken by separation
 5 of the blades 4 and 6 if the brush C should become unduly worn for when this occurs an angle member 11 attached to the brush supporting
 10 member D will engage the extended part of the blade 4 and thus separate the blade from the blade 6 and thus break the circuit. It will be seen that the blade 4 is longer than the blade 6 so that the member 11 will contact the blade 4
 15 without contacting the blade 6 when the brush becomes short.

Thus it will be seen that the circuit will be broken if the brushes should become too short or the generator should become overheated for
 20 any reason, such as by loose connections in the circuit wires.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be
 25 made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claims.

Having described the invention, what is claimed
 30 as new is:

1. A safety device for a generator comprising a switch located in the generator circuit, said switch including a pair of spring members normally in engagement with each other to close the
 35 circuit and a projection on a brush carrier for separating the two members to break the circuit if the brush should become too short.

2. A safety device for a generator comprising a switch located in the generator circuit, means
 40 for opening the switch if a brush becomes too short and means for opening said switch if the generator should become overheated.

3. A safety device for a generator comprising a switch located in the generator circuit, said
 45 switch including a spring steel blade, a thermal blade, means for insulating the two blades from each other, a projection on the thermal blade normally engaging the steel blade, a projection
 50 on a brush carrier for separating the two blades if the brush should become too short and the thermal blade moving away from the steel blade when the generator overheats.

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