

T. M. DANIELS.
 PROTECTOR FOR SAFETY FUSE CAPS.
 APPLICATION FILED JAN. 25, 1910.

966,171.

Patented Aug. 2, 1910.

Fig. 1,

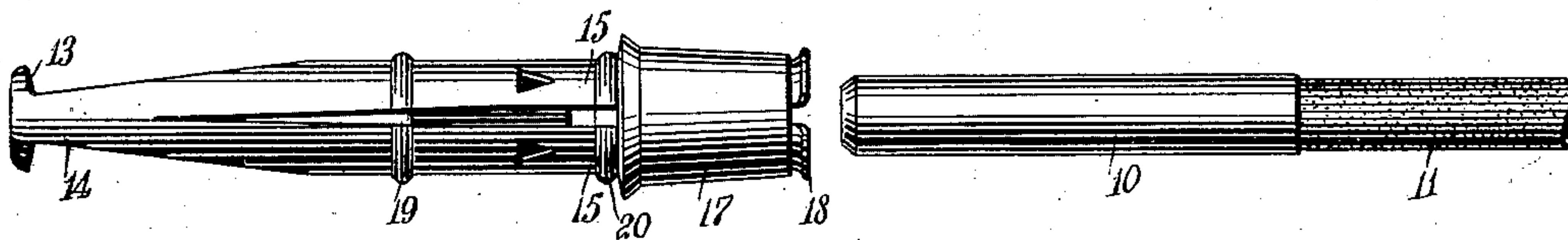


Fig. 2,

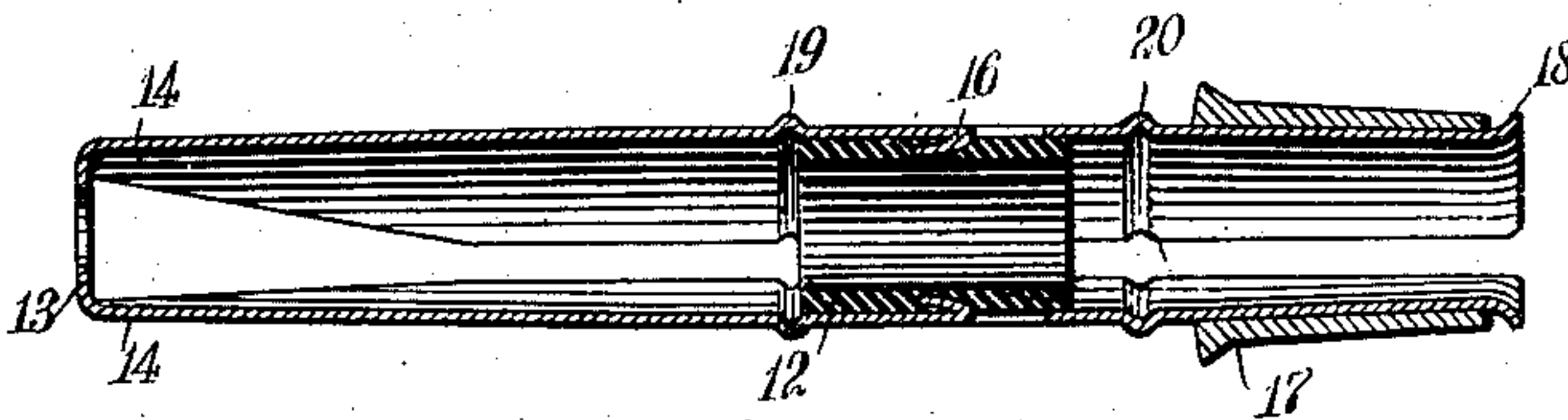
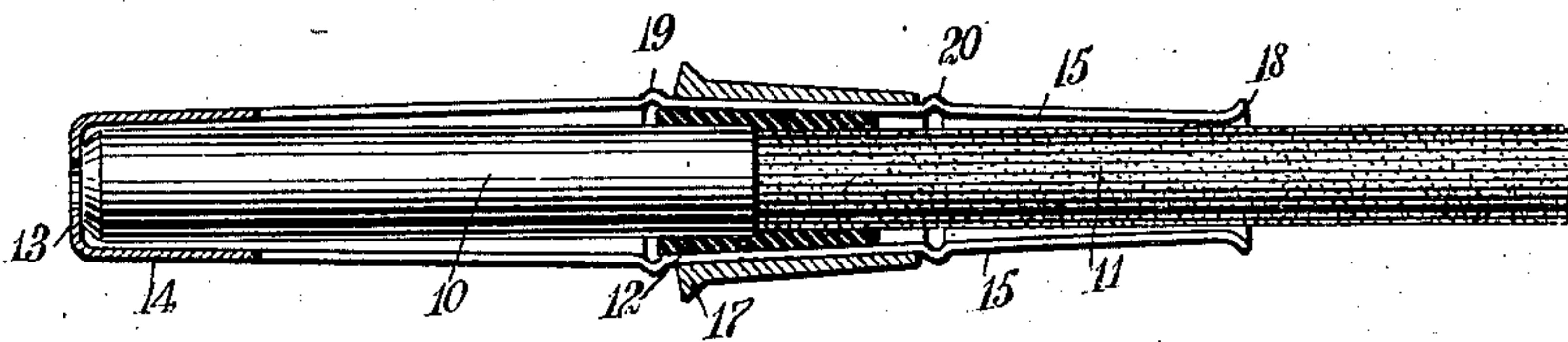


Fig. 3.



WITNESSES:

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PROTECTOR FOR SAFETY FUSE-CAPS.

966,171.

Specification of Letters Patent.

Patented Aug. 2, 1910.

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To all whom it may concern:

Be it known that I, THOMAS MARION DANIELS, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Protector for Safety Fuse-Caps, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in connection with fuse caps commonly employed in igniting explosive charges, and the object of the invention is to provide means for securing the cap to the fuse, so that the detonating charge will be protected against moisture, and without necessitating the crimping, slitting or folding of a portion of the cap. In my improved construction, there are no projecting parts which can injure the fuse, and the seal around the upper part of the cap is rendered perfectly water-proof. The liability of misfiring is reduced, and the reliability of the cap thus increased.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a side elevation of my improved cap protector, the fuse and cap being illustrated as removed from the protector; Fig. 2 is a longitudinal section through the protector; and Fig. 3 is a longitudinal section in a plane at right angles to the plane of Fig. 2, and showing the cap and fuse in position.

My improved protector is adapted for use in connection with any suitable form of cap and fuse. I have illustrated a cap 10, which is cylindrical in form and closely receives and fits a fuse 11. Within the lower portion of the cap, is the ordinary detonating charge which is ignited by the fuse.

One of the main objects of my invention is to prevent moisture from gaining access to the detonating charge by passing into the cap along the outer surface of the fuse. In order to prevent the access of such moisture, I provide a sleeve 12, of rubber or other suitable resilient water-proof material, said sleeve being of a size to fit the exterior of the cap, and of such length as to extend along the cap for a short distance from the open end of the latter, and along the outer

surface of the fuse for a short distance from the end of the cap.

For holding the sleeve 12 in position, I provide a protector which is preferably formed from a piece of sheet metal. This protector has a central or end portion 13, for engagement with the end of the cap, to insure the proper positioning of the protector, and at opposite sides of said end are two arms or extensions 14. These arms or extensions are bent to lie adjacent the outer surface of the cap and fuse, and are curved laterally, so as to lie substantially concentric with the outer surface of the fuse and cap.

Each arm or extension is subdivided into two prongs or branches 15, and these four prongs or branches are spaced substantially equi-distant about the periphery of the fuse. Each prong or branch has an inwardly-extending spur or tooth 16, stamped therefrom intermediate its ends, and these spurs or teeth are extended into the sleeve 12, so as to insure the proper positioning of the latter, and to prevent any displacement of the sleeve after the protector is secured in position. Encircling the branches or prongs is a slidable outer metal sleeve 17, of such size that when moved lengthwise of the protector, it will force the branches or prongs inwardly and compress the rubber sleeve 12 into firm engagement with the cap and fuse adjacent the meeting lines of the latter.

For preventing the sleeve 17 from sliding off the upper end of the protector, the ends of the prongs or branches may be bent outwardly to form terminal flanges 18, as illustrated in the drawings.

In securing the protector in position, the cap and fuse are inserted through the sleeve 12 until the end of the cap engages with the end 13 of the protector. By moving the sleeve 17 lengthwise to the position shown in Fig. 3, the rubber sleeve 12 will be compressed and the interior of the cap rendered water-proof.

For holding the sleeve 17 in its operative position and compressing the inner rubber sleeve, the prongs or branches 15 may have projections thereon, normally tending to prevent the longitudinal movement of the outer sleeve 17. As shown, each prong has two beads 19 and 20, which are in the form of circumferential corrugations. The sleeve

may slip over these corrugations into the space between them and will then be effectively held against accidental displacement.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A fuse cap protector having a packing sleeve adapted to encircle the cap and the fuse adjacent the open end of the former, and means for compressing said sleeve.

2. A fuse cap protector having a packing sleeve adapted to encircle the cap adjacent the open end of the latter, and means encircling said cap and carrying said sleeve and insuring the proper positioning thereof.

3. A fuse cap protector having a packing sleeve adapted to encircle the cap adjacent the open end of the latter, means carrying said sleeve and insuring the proper positioning thereof, and means for compressing said sleeve.

4. A fuse cap protector having a packing sleeve adapted to encircle the cap adjacent the open end of the latter, means carrying said sleeve and insuring the proper positioning thereof, and an outer slidable sleeve for compressing said first-mentioned sleeve.

5. A fuse cap protector adapted to encircle the cap adjacent the open end of the latter and including a resilient packing, and means for compressing the packing.

6. In combination, a cap, a fuse extending thereinto, a rubber sleeve having one end portion encircling the cap and the other end portion encircling the fuse and terminating beyond the end of the cap into which the

fuse is inserted, and a protector encircling said sleeve for insuring the positioning of the latter.

7. A fuse cap protector, including an end member adapted to engage with the end of the cap, a plurality of branches extending lengthwise of the cap, and a packing carried by said branches and adapted to engage with the cap adjacent the end of the cap into which the fuse is inserted.

8. A fuse cap protector, including an end member adapted to engage with the end of the cap, a plurality of branches extending lengthwise of the cap, a packing carried by said branches and adapted to engage with the cap adjacent the end of the cap into which the fuse is inserted, and means for engaging with said branches to compress said packing.

9. A fuse cap protector, including an end member adapted to engage with the end of the cap, a plurality of branches extending lengthwise of the cap, a packing carried by said branches and adapted to engage with the cap adjacent the end of the cap into which the fuse is inserted, and an outer slidable sleeve for engaging with said branches to compress said packing.

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

THOMAS MARION DANIELS.

Witnesses:

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ROSCOE L. ROBERTS.