

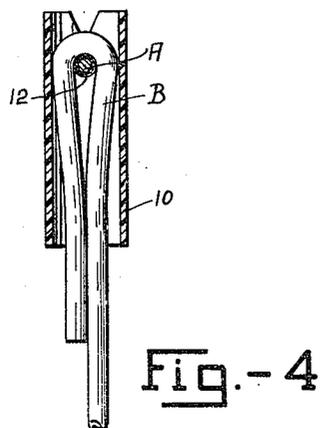
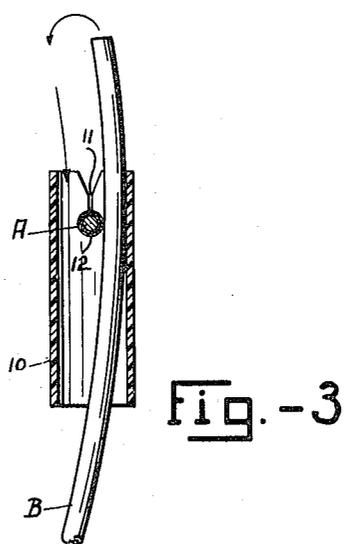
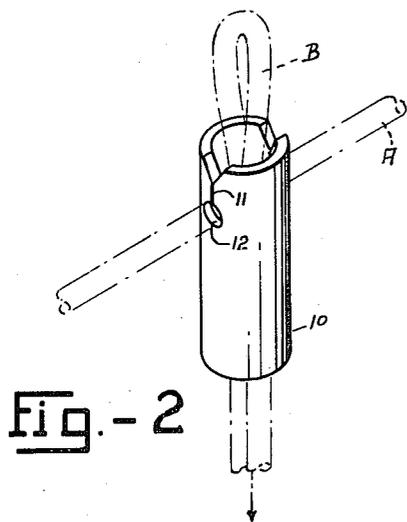
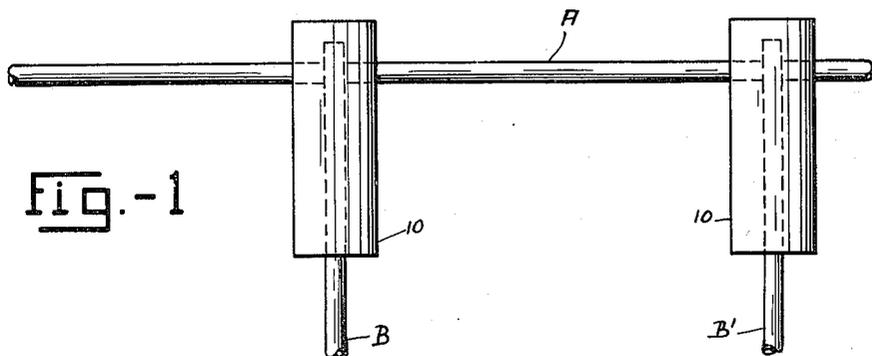
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FUSE CONNECTOR

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FUSE CONNECTOR

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3 Claims. (Cl. 102—27)

This invention relates generally to a device for effectively securing a pair of detonating fuse cords in operative relation with one crossing the other so that one of the cords can be operated by concussion from the other. Detonating fuse cords in the form of flexible tubes containing explosive powders are in common use, and it is customary to place them in such manner that a branch cord is secured tightly against a main cord so that the branch cord is detonated by concussion from the main cord. The device of this invention is especially adapted for this purpose in that it is capable of being very quickly applied to effectively secure the branch cords in operative engagement with the main cord. Another important feature embodied in the device of this invention is the relative ease of manual application of the device without visual assistance which makes it possible to apply the connecting device in mines or other locations where illumination is meager or absent.

Heretofore, such devices have been in the form of metal clips or the like which have not been entirely satisfactory. It is possible for the metallic clip to sever the branch line without resulting in the desired detonating action. Furthermore, the metallic clip is apt to disintegrate upon detonation and injure persons or equipment in the immediate vicinity. Other advantageous features of the device of this invention relate to the improved construction of the device which includes a portion that encompasses the main and branch cords at their intersection in such manner as to prevent short-circuiting or undesired severance of the branch cord without detonating action. The construction permits easy threading of the branch cords through the device into clamping relation with the main cord and is preferably made of plastic material having characteristics which are hereinafter more fully described. Still further advantages relate to the economy of manufacture and compact packing of the devices for economical shipment in large quantities.

Briefly, the foregoing advantages and objectives are accomplished in accordance with this invention by providing a tubular member made of suitable plastic material wherein one end is provided with a slit having registering apertures which are adapted to receive a main trunk cord. In operation, a branch cord passed through the tubular device transversely to the main cord at one side and drawn back through the tubular device from the other side of the main cord after which it may be pulled tightly to provide a positive clamping engagement between the main cord and the branch cord so that the branch cord will easily detonate by concussion from the main cord.

In the drawings:

Figure 1 illustrates in elevation a plurality of branch cords held in engagement with a main cord by the connecting devices of this invention;

Figure 2 is a perspective view of a preferred form of the connecting device as applied to two crossing cords shown in dotted lines;

Figure 3 is a vertical section through the connecting

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device illustrating an intermediate stage in the application of the device to a branch cord;

And Figure 4 is a vertical section through the connecting device as finally applied to the branch cord.

Referring now, more particularly, to Figures 1 and 2 of the drawings, the connecting device of this invention is shown as embodying a tubular member 10 made of suitable plastic material such as poly-ethylene having physical characteristics of relatively high strength and resistance to wear and deterioration in outside use. One end of the tube 10 is divided by a slot 11 which extends axially from that end for a short distance and terminates in diametrically opposed wall portions of the tube in a pair of registering apertures such as 12 which are adapted to receive the main detonating cord A transversely therethrough as shown in Figures 1 and 2. The slot 11 in the tubular member 10 is provided with beveled or outwardly diverging portions at the extremity of the tube which receives and guides the cord A into the registered apertures 12 at the base of the slot. This provides for relative ease of manual application of the connecting device to the main cord, even without visual assistance.

After the tubular connecting device 10 is applied to the main trunk cord A, the procedure is to then thread the branch cord B through the device in position where it can be detonated by concussion from the main cord. This is accomplished as best shown in Figures 3 and 4 by first inserting the branch cord B up through the non-slotted end of the tubular connecting device 10 transversely to the axis of the main cord, as best shown in Figure 3. The branch cord B is then bent over the main cord A and is drawn downwardly through the non-slotted end of the connecting device, as best shown in Figure 4; after which the ends of the branch cord B are pulled tightly so as to closely engage the underlying portion of the main trunk cord A.

As shown in Figure 1, in usage, the main cord A usually lies for a considerable distance along the ground, and the branch cords B and B' are disposed transverse to the main cord at spaced distances along the main cord. The connecting device of this invention is easily applied to connect a plurality of such branch cords to the main cord by simply placing the device beneath the main cord A and raising it upwardly to receive the main cord in the apertured slot 11; thereafter the branch cords B are passed upwardly through the tubular device, as hereinbefore described, looped over the main cord, and then drawn taut so that the surface of each branch cord is in intimate engagement with the surface of the main cord. It is readily apparent that, once so connected, the branch cords B are disposed in direct operative engagement with the main cord A so that they can be detonated through concussion upon detonation of the main cord. There is no danger of the cords being severed by the device and disintegration of the plastic material of the connecting device upon detonation of the cords is not likely to injure persons or equipment in the immediate vicinity. The connecting devices are very economically manufactured and, because of their simplicity in construction and small size, they can be readily packed in a compact container for economy in shipment. Thereafter, the devices can be readily applied and used as expendable items in the field.

I have shown and described what I consider to be the preferred embodiment of my invention, along with suggestions of modified forms and usages, and it will be obvious to those skilled in the art that other changes and modifications may be made without departing from the scope of my invention as defined by the appended claims.

I claim:

1. In combination, a main detonating cord, a branch detonating cord, and a connecting device for readily securing said branch detonating cord in looped abutting

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and positive ignitive relation about said main cord, said device comprising a tubular-like member of plastic material, such as polyethylene, said member having a pair of oppositely disposed slots extending lengthwise and inwardly from one end of said member and receiving therein at the inner ends thereof said main cord in transversely extending relation with respect to said member, said slots providing opposed finger portions resiliently gripping said main cord to retain it in assembled relation with said member, the hollow interior of said member defining a passage open at both ends, an end portion of said branch cord being fed axially through said passage, looped over said main cord, and then fed back through said passage until the loop portion of said branch cord is drawn into intimate abutting relation with the underlying surface of said main cord, the transverse width of the hollow interior of said member at the inner ends of said slots being of such dimension that said loop portion engages in confined relation opposite sides of the interior surface of said member and is retained in intimate abutting relation with the underlying surface of said main cord.

2. The combination in accordance with claim 1 wherein the outer end of each of said slots is flared outwardly to provide inwardly converging guide surfaces for readily

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guiding the main detonating cord into the inner end of the respective of said slots.

3. The combination in accordance with claim 1 wherein each of said slots is of a smaller transverse width than the width of the main cord received therein, each of said slots at its inner end opening into an enlarged aperture extending transversely through said member, said enlarged apertures being axially aligned and receiving the main detonating cord therethrough, said apertures being of a configuration complementary to that of the main detonating cord.

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