Aug. 1, 1933. F. J. COUNIHAN 1,920,843

CABLE REEL

Filed May 5, 1931

Fig. 1.

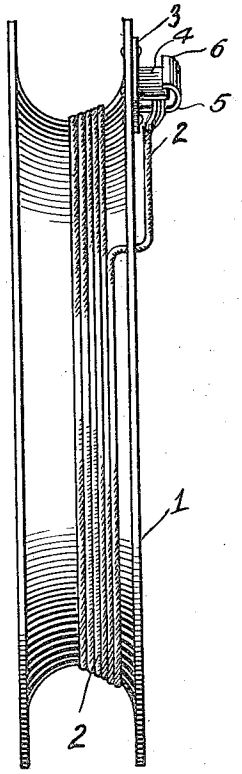


Fig. 2.

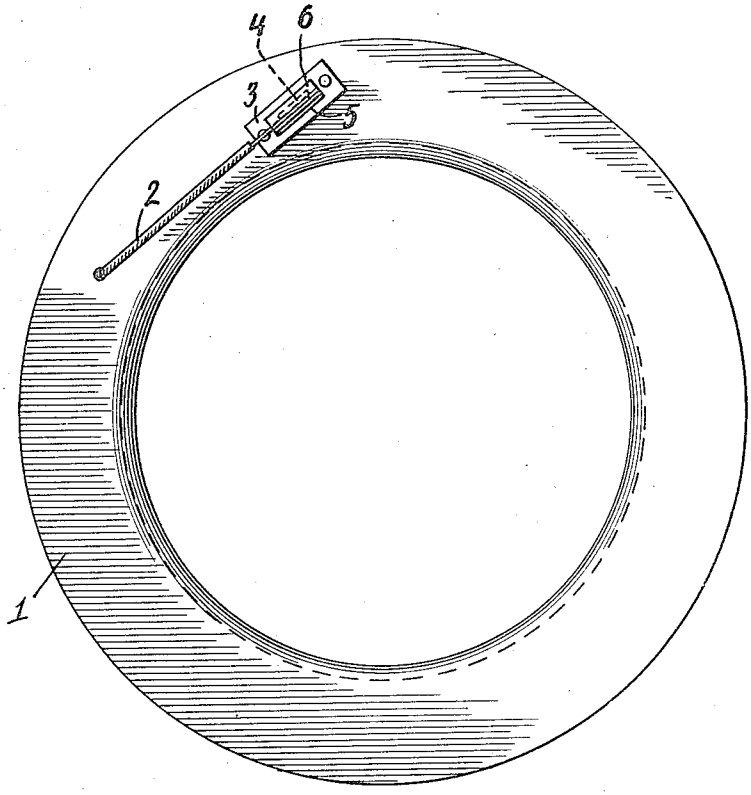


Fig. 3.

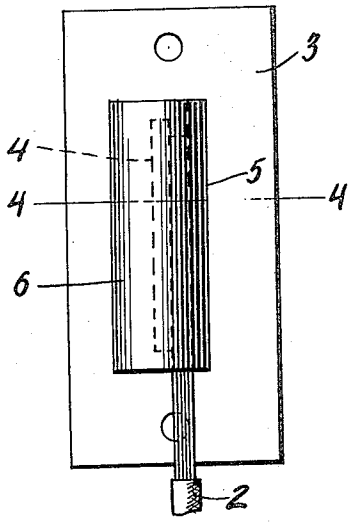
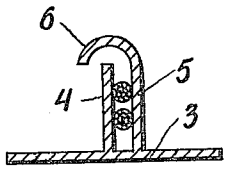


Fig. 4.



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Arthur Crane Jr. WITNESS:

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UNITED STATES PATENT OFFICE

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CABLE REEL

Frank J. Counihan, Indiana, Pa.

Application May 5, 1931. Serial No. 535,241

1 Claim. (Cl. 173—367)

My present invention has reference to a means for overcoming the danger in handling electric wires and shot-firing batteries employed in blasting and shooting rock, blasting coal and other materials, and my object is the provision of a reel or wheel on which the electric wires are wound and which reel or wheel has arranged thereon a short circuiting clip to engage with the uncovered ends of the wires to prevent the said ends of the wires from coming in contact with electric ground wires for mine rails and mining machinery or other causes due to the present methods of shot firing and the handling of shot firing equipment.

To the attainment of the foregoing the invention consists in the improvement hereinafter described and definitely claimed.

In the drawing:

Figure 1 is an edge view of the improvement.

Figure 2 is a side elevation thereof.

Figure 3 is an enlarged plan view of the short circuiting device.

Figure 4 is a transverse sectional view approximately on the line 4—4 of Figure 3.

Before proceeding with the description it is well to state that electric wires and shot firing batteries are gradually replacing the fuse method of blasting and shooting rock, coal and other materials. However, the present methods of handling the cables are dangerous to the blaster and costly to the owner, especially in underground mining. With my improvement I aim to reduce the hazards in blasting or shot firing, to save time and expense for labor and to lower the maintenance cost and cable renewals. This I accomplish by the construction now to be described.

In carrying out my invention I employ a peripherally grooved reel or wheel 1 which is preferably of rubber or fibre but which may be of metal. In the groove of the reel 1 I wind the covered conductor wires 2. One side or rim of the wheel or reel 1 is provided with an opening through which the ends of the covered wires 2 are passed and the ends of the wires have their covering removed and are received in a short circuiting device that is fixed on one side of the wheel or reel 1.

The short circuiting device is of metal and comprises a flat base 3 that is of substantially rectangular formation and that is provided with openings for the reception of rivets or like elements for securing the same on the side of the wheel or reel 1. The body plate 3 is centrally formed with spaced upstanding flanges 4 and 5, respectively, the flange 5 having its outer end arched, as at 6, over the flange 4, but the arched portion is spaced away from the flange 4 so that a space is provided to permit of the uncovered wire ends being received between the flanges 4 and 5 and to be frictionally engaged thereby. Preferably the short circuiting device or clip is made of copper and, of course, the flanges 4 and 5 exert a sufficient tension against each other to hold and short circuit the battery ends of the cable. The ends of the conductor wires not wound upon the reel are uncovered and are connected to the usual explosive cap which is inserted in the blast. The operator places the reel in one of his hands and turns the same or permits the same to automatically turn as the wires are drawn taut to unwind the wires from the reel and after the wires have been unwound sufficiently to permit of the operator to be in position a safe distance from the blast the uncovered ends of the wires engaged by the cap are removed from said cap and are connected with a battery, magneto or other source of electricity of sufficient potential to explode the cap and the charge.

Numerous accidents have occurred to workmen, especially in coal mines, by the electric wires coming in contact with electric ground wires from mine rails and mining machinery or other causes due to the present methods of shot firing and the handling of the shot firing equipment. It is customary to have approximately one hundred feet of cable for shot firing in coal mines. At present, the cable is wrapped around a piece of wood or the shot firer will wrap the wire around his arm. This method of reeling produces short kinks in the cable which are destructive to the insulation and wires and such methods do not employ means for short circuiting the battery end of the cable.

It is, therefore, obvious that the use of a cable reel with a short circuiting clip thereon will prove a safeguard to life and prolong the use of the materials used for blasting purposes. Obviously I do not wish to be restricted to the specific structure herein shown and described and, therefore, hold myself entitled to make such changes therefrom as fairly fall within the scope of what I claim.

Having described the invention, I claim:

A reel for covered conductor wires employed in blasting, comprising a ring having a peripheral groove on which the covered wires are wound and through which ring one arm of an operator is designed to be inserted to serve as a journal for the ring, the outer ends of the wires being

uncovered and designed to be connected to an explosive cap which is inserted in a blast, the reel having one of its sides provided with an opening through which is passed the second end of the covered wires, and the covering on the said ends of said wires being removed, a clip for frictionally engaging and electrically connecting the said uncovered ends of the wires, said clip comprising a metal base having spaced metallic arms exerting a pressure toward each other and one of said arms having its outer end arched over but spaced away from the second arm of the clip.

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