May 27, 1924. 1,495,913

M. LOBUONO

EXPANSION BOLT

Filed Feb. 6, 1923

Fig. 1.

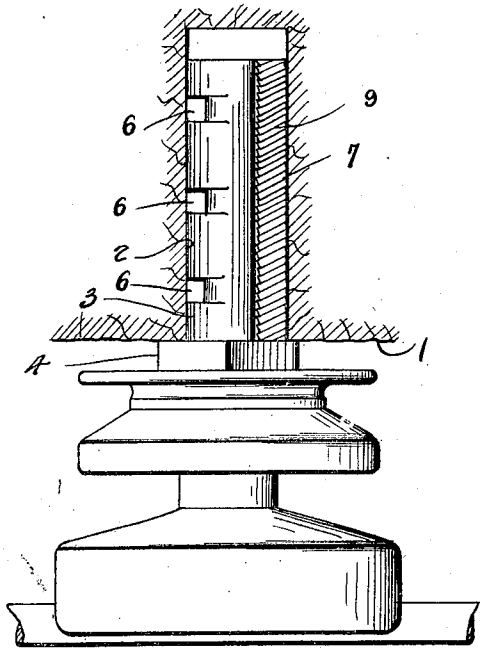


Fig. 2.

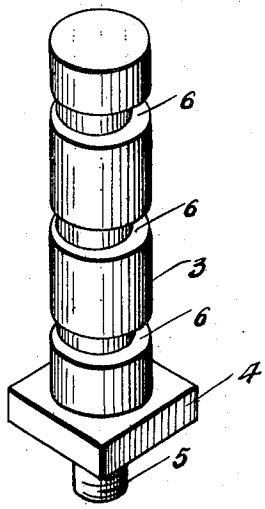


Fig. 3.

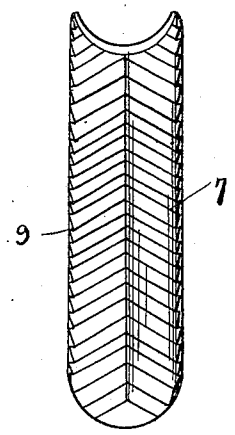


Fig. 4.

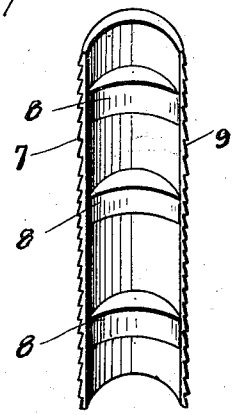


Fig. 5.

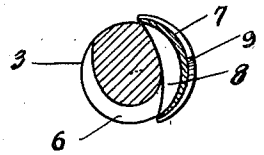
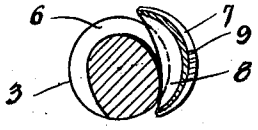


Fig. 6.



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UNITED STATES PATENT OFFICE.

MICHAEL LOBUONO, OF HOOVERSVILLE, PENNSYLVANIA.

EXPANSION BOLT.

Application filed February 6, 1923. Serial No. 617,325.

To all whom it may concern:

Be it known that I, MICHAEL LOBUONO, a citizen of the United States, residing at Hooversville, in the county of Somerset and State of Pennsylvania, have invented certain new and useful Improvements in Expansion Bolts; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary object of the present invention is the provision of a hanger for electric trolley wires in coal mines which may be readily removed when required without endangering the roof of the mine to be used again when required.

Other objects and advantages will be apparent and suggest themselves as the nature of the invention is understood.

While the drawings illustrate an embodiment of the invention it is to be understood that in adapting the same to meet different conditions and requirements, various changes in the form, proportion and minor details of construction may be resorted to without departing from the nature of the invention.

Referring to the accompanying drawings forming a part of the application:

Figure 1 is a detail view illustrative of the invention,

Figure 2 is a perspective view of the bolt,

Figures 3 and 4 are obverse and reverse views in perspective of the shoe,

Figure 5 is an end view of the bolt with the shoe in the first position, and

Figure 6 is a similar view with the shoe adjusted, the bolt being partly turned.

Corresponding and like parts are referred to in the following description and designated in the several views of the drawings by like reference characters.

The numeral 1 designates a portion of the roof of a coal mine having an opening 2 bored therein for the reception of the hanger to which the trolley line is attached. The numeral 3 designates the body of the bolt which is provided at one end with a polygonal portion 4 and a threaded stem 5, the latter receiving the insulator and clamp whereby the trolley line is connected to the bolt, as indicated by the dotted lines in Figure 1. The polygonal portion 4 is adapted to receive a wrench or other form of spanner whereby the bolt may be turned to tighten or loosen the same. A plurality of grooves 6 are formed in a side of the bolt and gradually decrease in depth, whereby to provide cam surfaces to effect lateral movement of a shoe 7 provided to coact with the bolt. The shoe 7 is approximately the length of the bolt and is of concavo-convex form to snugly fit against the side of the bolt, as indicated most clearly in Figure 5. The hollow or concave side of the shoe 7 is provided with ribs 8 which correspond in number and position with the cam grooves 6. The ribs 8 are concave to conform to the convex cam surfaces forming the bottoms of the grooves 6. When the shoe is first placed in position, it fits close against the side of the bolt, as indicated most clearly in Figure 5, and when the bolt 3 is turned slightly, the cam surfaces riding upon the ribs 8 move the shoe 7 outwardly, as indicated in Figure 6, thereby causing a binding of the bolts in the opening 2 of the roof 1. The outer surface of the shoe 7 is corrugated or roughened, as indicated at 9, to insure a positive gripping on the wall of the opening 2, whereby to prevent withdrawal of the bolt when the trolley line is attached thereto. By rotating the bolt in a reverse direction, it is loosened and may be readily withdrawn from the opening 2 for further use without endangering the roof of the mine.

What is claimed is:

1. A hanger comprising a pair of elements arranged side by side, one of said elements having a cam groove and the other of said elements provided with a rib to coact with said cam groove, one of said elements being adapted for rotation, and the other of said elements adapted to be moved laterally upon rotation of said rotary element.

2. A hanger comprising a bolt having a transverse groove in its outer side, and a shoe disposed against a side of the bolt and having a transverse rib to enter the said groove, the shoe being moved laterally by rotation of the bolt, there being a cam surface between the bolt and shoe.

3. A hanger comprising a bolt provided in a side with a plurality of cam grooves, and a shoe disposed against a side of the bolt and provided with ribs adapted to coact with said cam grooves, whereby said shoe is moved laterally upon partial rotation of the bolt.

4. A hanger of the character specified

comprising a bolt having a polygonal head at one end and a threaded stem and provided in a side with a plurality of cam grooves, and a shoe disposed at one side of the bolt and provided with ribs entering the cam grooves thereof and having its outer side corrugated.

In testimony whereof I affix my signature in presence of two witnesses.

MICHAEL LOBUONO.

Witnesses:
SAMUEL PELLATIRO,
FLOYD T. SABIN.