C. L. JOHNSON.

ARMORED CABLE.

APPLICATION FILED SEPT. 8, 1919.

1,414,024. Patented Apr. 25, 1922.

Fig. 1

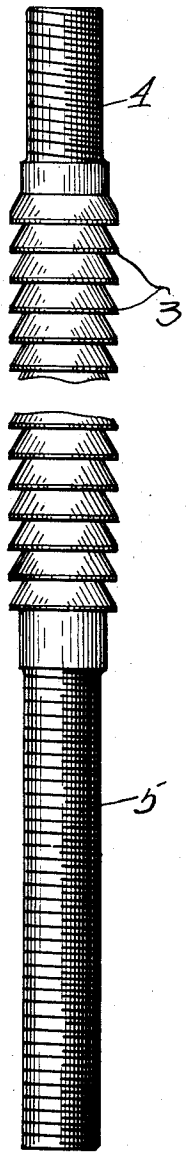


Fig. 2

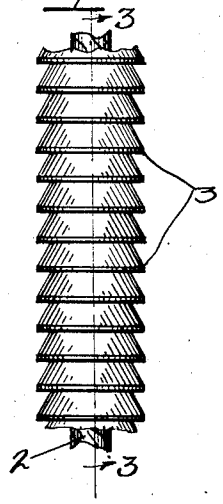
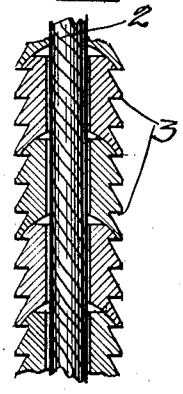


Fig. 3.



Witnesses

J. W. Angell

Fred E. Baesler

Inventor

Colvin L. Johnson.

By Charles O. Miller Atty.

UNITED STATES PATENT OFFICE.

COLVIN L. JOHNSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO JOHNSON AUTOMOBILE LOCK CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ARMORED CABLE.

1,414,024. Specification of Letters Patent. Patented Apr. 25, 1922.

Application filed September 8, 1919. Serial No. 322,439.

To all whom it may concern:

Be it known that I, COLVIN L. JOHNSON, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in an Armored Cable; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates to armored cables, and although not restricted to such use, is particularly adapted for use in connection with automobile tire locks or for other purposes where a padlock and chain is ordinarily employed.

Cables as ordinarily constructed are readily cut through by files, hack saws or other cutting instruments, since hardness and flexibility are not ordinarily associated.

It is an object, therefore, of the present invention to provide a cable having a very hard surface and also possessing very considerable flexibility.

Another object is to provide a flexible casing of hardened steel for a cable of stranded wire or the like.

A further object of the invention is to provide means for retaining the flexible casing in position on the cable.

Other and further important objects of this invention will be apparent from the disclosures in the specification and drawings.

The invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

On the drawings:

Figure 1 is a side view of an armored cable embodying the features of the present invention.

Figure 2 is a side view of a portion of the armored cable.

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

As shown in the drawings:

The armored cable comprises a central flexible cable, preferably of flexible stranded wire 2, such as steel, around which are arranged rings 3 of hardened steel. Each ring is machined and then case-hardened afterwards.

The ends of each ring are spherically formed so that each ring may rock or rotate on the rings adjacent thereto. Further, as the point about which the rings turn about each other by virtue of their spherical engaging surfaces is some distance from the ends of the rings the latter would normally tend to bind or cut the cable 2. Preferably, therefore, at least one end of the central aperture through each ring is countersunk or flared outwardly or otherwise enlarged, as shown more particularly in Figure 3. The construction shown in Figure 3 is particularly advantageous since the conical shaped aperture enables the ring to be accurately centered at one end on the cable while allowing full play for the cable and ring at the other end.

These rings 3 are held in place on the cable 2 by means of terminals 4 and 5, secured to the ends of the cable 2 in any convenient manner. As shown, these terminals are hollow and the hole therethrough is countersunk at its outer end so that the end of the cable may be spread out and secured to the sides of the hole by welding, soldering, brazing or the like. When the cable 2 is of steel wire and the terminals are also steel the two may be welded together by an oxy-acetylene torch, using nickel or a high carbon steel. This welding is performed prior to the hardening of the terminals so that when the latter are case-hardened the ends of the cables are also case-hardened so that the terminals cannot be detached by drilling out the ends of the cables embedded therein.

As the chief purpose of the rings 3 is to prevent access to the inner cable by cutting tools or to prevent wear of the inner cable, the external form of these rings 3 may be varied within wide limits without detracting from their utility. The rings 3 are formed with a series of annular projections thereon, as indicated in Figures 2 and 3. This form of construction is particularly adapted for use with locking devices such as described in my patent for a "locking device" No. 1,380,719, dated June 7, 1921.

I am aware that numerous details of con-

struction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. An armored cable comprising a stranded wire cable, a series of ribbed cylindrical hardened steel rings therearound having spherical concave and convex contacting surfaces to allow the cable to bend, the apertures in the rings being formed with flaring mouths to facilitate the bending of the cable, and apertured externally threaded terminals adapted to receive and to be secured to each end of the cable to retain the rings in position thereon.

2. An armored cable comprising a cable and a series of circumferentially ribbed cylindrical members therearound having concave surfaces at one end and convex surfaces at the other end to permit the cable to bend.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

COLVIN L. JOHNSON.

Witnesses:
EARL M. HARDINE,
LE ROY D. KILEY.