April 5, 1966 F. SAVASTANO ETAL 3,243,859

STEEL FITTINGS FOR LOOPED, STEEL, WIRE ROPE CABLES

Filed Oct. 19, 1965

Fig. 1.

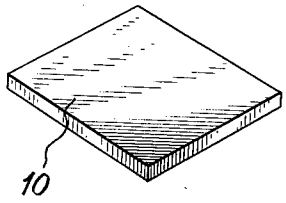
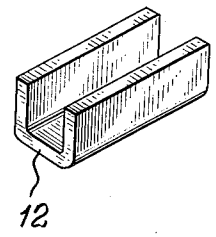


Fig. 2.



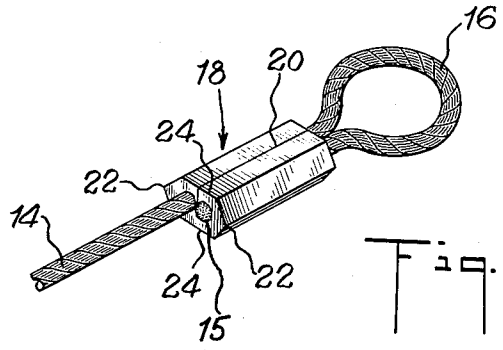


Fig. 3.

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STEEL FITTINGS FOR LOOPED, STEEL, WIRE ROPE CABLES

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1 Claim. (Cl. 24—123)

This is a continuation-in-part of application Serial No. 330,785, filed December 16, 1963, assigned to the assignee hereof.

The invention relates to steel fittings which are affixed to steel, wire rope cables such that the fitting maintains the breaking strength of the cable. In particular, the invention relates to those fittings which are formed from a flat piece of stock of stainless or carbon steel and the steel, wire rope cable has a loop formed in its end which is held by the steel fitting.

The prior art, steel fittings for steel, wire rope cables are commonly machined out of bar stock or tubing. Sometimes, these fittings are forged. The bar stock is usually drilled and reamed so that the inside and outside dimensions are accurately held. The fitting is then slipped onto the steel, wire rope cable and is pressed or swaged to the cable. The machining and production of these fittings is both time-consuming and expensive and adds a substantial amount to the cost of producing the finished cable.

The term "breaking strength" throughout this specification means the strength with which the steel, wire rope cable resists rupture. "Maintaining the breaking strength of the cable" means the steel fitting will not slip or break when a force less than that required to rupture the cable is applied to the completed assembly.

It is an important object of the invention to provide a steel fitting formed from a flat piece of stainless or carbon steel stock for a steel, wire rope cable having a loop in the end thereof.

It is a further object of the invention to provide such a steel fitting which will provide strength up to and including the breaking strength of the steel, wire rope cable.

These and other objects, advantages, features and uses will be apparent during the course of the following description when taken in connection with the accompanying drawings wherein:

FIGURE 1 is a perspective view of a piece of flat steel stock from which the fitting is to be formed;

FIGURE 2 is a perspective view of the U-shaped form which has been punch-formed from the flat, steel stock of FIGURE 1; and

FIGURE 3 is a perspective view of a steel fitting formed from the steel stock shown in FIGURES 1 and 2 applied to a steel, wire rope cable having a loop in the end thereof.

In the drawings, wherein, for the purpose of illustration, is illustrated a preferred embodiment of the invention, the numeral **10** designates a flat piece of stainless or carbon steel stock (FIGURE 1). Stock **10** is formed into U-shaped element **12** (FIGURE 2) in a punch press or similar forming machine. Steel, wire rope cable **14** is then placed in U-shaped element **12** so that loop **16** is formed and end **15** is parallel to and tangent to cable **14** within at least a portion of U-shaped element **12**. Pressure is now applied to the combination so as to force element **12** into intimate contact with steel, wire rope cable **14** and its end portion **15**. The pressure may be applied by pressing or other methods which are well-known in the art. The pressure must be such that the sleeve maintains the breaking strength of the cable. The finished sleeve **18** takes the shape of a hexagonal prism which is closed throughout its length at seam **20**.

Cable portions **14** and **15** are parallel and tangent to each other in at least a portion of the sleeve. The apexes **22** are in a straight line with the diameters of portions **14** and **15** which go through the point of tangency and the sides **24** are normal to the tangent which is common to both portions of the steel, wire rope cable at their point of tangency. In order to maintain the breaking strength of the steel, wire rope cable, the finished dimensions of the steel fitting **18** of material such as #1010 carbon steel should be of the order of at least:

Distance between points **22**—4 times the diameter of cable **14**;

Distance between sides **24**—2 times the diameter of cable **14**;

Length of steel fitting **18** which is in intimate contact with the cable portions **14** and **15**—6½ times the diameter of cable **14**.

Fittings having greater dimensions may be formed but the foregoing are the practical minimum values needed to obtain the required breaking strength so that the combination may be readily used in various applications.

While a particular embodiment of the invention has been shown and described, it is apparent to those skilled in the art that modifications are possible without departing from the spirit of the invention or the scope of the subjoined claim.

What is claimed is:

The combination of a steel, wire rope cable and a steel fitting affixed thereto comprising:

a longitudinally extending steel, wire rope cable with one end thereof turned back upon itself to form a loop;

a steel fitting formed from a piece of flat stock into a sleeve in the shape of a hexagonal prism with a predetermined length from end to end thereof and a longitudinal seam throughout said length;

at least a portion of the sleeve being forced into intimate contact with the portions of the steel, wire rope cable beyond the loop so that the portions of the steel, wire rope cable are parallel and tangent to each other along at least part of their lengths within the sleeve;

the portion of the length of the sleeve in intimate contact with the steel, wire rope cable being of the order of 6½ times the diameter of the steel, wire rope cable, the diameters of the portions of the steel, wire rope cable through the point of tangency thereof being in a straight line with two apexes of the hexagonal base of the prism, the tangent common to the portions of the steel, wire rope cable at their point of tangency being normal to two sides of the hexagonal base of the prism, the distance between the two apexes in line with the diameters through the point of tangency being of the order of at least four times the diameter of the steel, wire rope cable, the distance between the two sides of the hexagonal base normal to the tangent being of the order of at least twice the diameter of the steel, wire rope cable such that the strength of the union between the steel fitting and the steel, wire rope cable exceeds the breaking strength of the cable.

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