E. WITZENMANN.

MACHINE FOR ARMORING CABLES.

APPLICATION FILED NOV. 10, 1908.

946,090.

Patented Jan. 11, 1910.

Fig. 1.

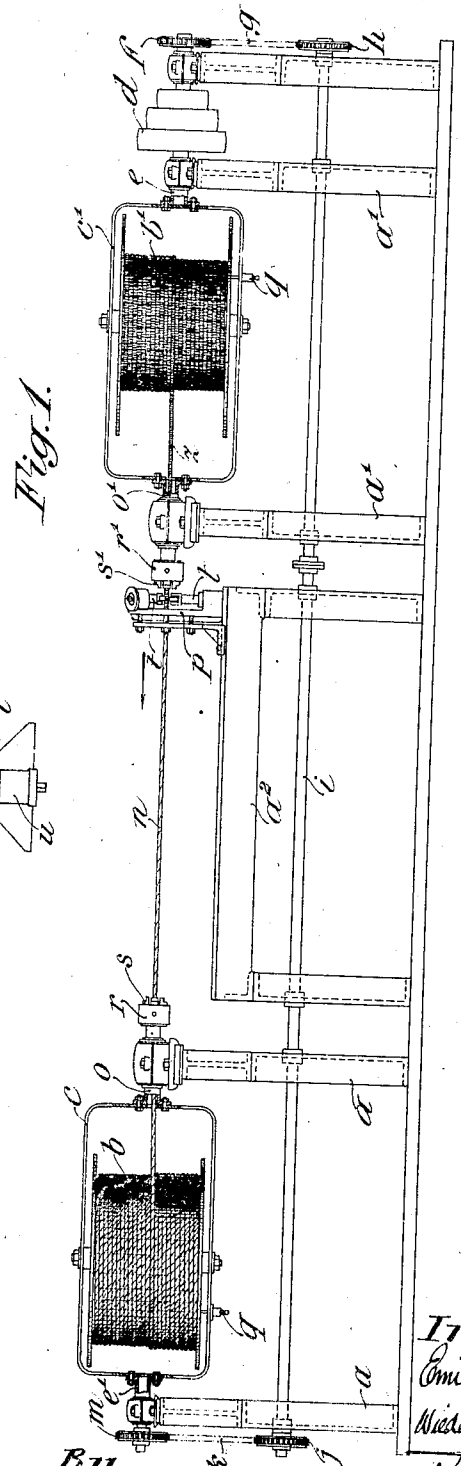


Fig. 2.

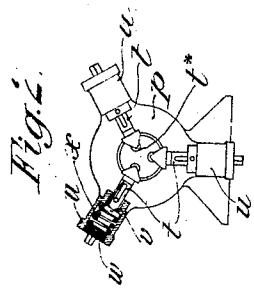
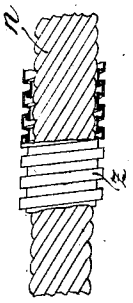


Fig. 3.



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UNITED STATES PATENT OFFICE.

EMIL WITZENMANN, OF PFORZHEIM, GERMANY.

MACHINE FOR ARMORING CABLES.

946,090. Specification of Letters Patent. Patented Jan. 11, 1910.

Application filed November 10, 1908. Serial No. 461,958.

To all whom it may concern:

Be it known that I, EMIL WITZENMANN, manufacturer, a subject of the Grand Duke of Baden, residing at No. 48 Holzgartenstrasse, Pforzheim, German Empire, have invented new and useful Improvements in Machines for Armoring Cables, of which the following is a specification.

The subject of my invention is a machine for armoring cables with metallic hose. According to my invention the cable is fed from a delivery-reel to a winding-reel in well known manner, and the piece of cable for the time being lying between the two reels, and about to be armored, is rotated on its longitudinal axis. At the same time a metal tape of suitable cross section, fed to the cable by means of the rollers of the so-called winding-head of the machine, is coiled around the cable by the said head being caused to travel along the machine in the direction of the length of the cable.

The essential feature of the invention is the provision, firstly, of clamping devices or chucks for holding taut the portion of the cable which is in course of being armored, and, secondly, of tape winding-rollers whose carriers are resiliently mounted in the winding-head and are actuated by pressure.

The clamping devices insure correct and uniform rotation of the piece of cable in course of being armored, while the resiliently mounted carriers of the rollers, actuated by pressure, enable the rollers to adapt themselves automatically to any irregularities in the metal tape being wound on, and further always press the tape firmly against the cable being armored with it.

One form of construction of the invention is illustrated in the accompanying drawing, in which—

Figure 1 is an elevation of the entire machine, Fig. 2 an elevation and part section of the winding-head, and Fig. 3 an elevation and part section of a fragment of cable armored with metallic hose according to this invention.

The frames c c' for supporting the delivery- and winding- reels b b' respectively, are mounted in well-known manner in the standards a a and a' a'. These frames can be rotated at right angles to the axes of rotation of the reels. For this purpose, in the particular construction shown, the trunnion e of the frame c', carrying the stepped pulley d, has mounted at the end a sprocket wheel f, which is connected by the chain g with the sprocket wheel h of a shaft i, whose other end has mounted on it another sprocket wheel j, connected by a chain k with a sprocket wheel m carried by the trunnion e', of the other frame c. By means of the stepped pulley d both frames are thus rotated in the same direction.

The cable n is fed from the delivery-reel b. through the hollow trunnion o of the frame c, thence through a hole in the winding-head p, which slides on the bed a^2, and then farther through the hollow trunnion o' of the frame c' to the winding-reel b'. Spring-actuated pins q q' are provided for the purpose of preventing unintentional rotation of the reels on their own axes during the winding-operation.

The hollow trunnions o o' carry clamping-heads or chucks r r', whose jaws s s' can be approached to and retracted from each other in any desired manner. By means of these jaws the piece of cable n which for the time being lies between the chucks r r' is kept taut. On rotation of the frames c c' by means of the stepped pulley d, the chucks r r', and thus the piece of cable stretched between them, are rotated in like direction.

The members t, which carry the rollers t^* of the winding-head p (Figs. 1 and 2), are so mounted as to yield in radial direction, and are kept under uniform pressure. For this purpose the winding-head p is provided with three housings u, constituting cylinders, in which slide the rods t having heads v (Fig. 2). The housings u are closed by screw-caps w, and between the latter and the heads v there are located coiled springs x, which always have the tendency to force the rods t toward the center of the winding-head p.

As is obvious, the carrier-members t of the rollers t^* will always act under the influence of yielding pressure, which can be regulated by means of the screw-caps w, so that the rollers t^* can adapt themselves automatically to any irregularities in the tape being wound, whereby firm pressing of the tape against the cable is insured.

In order to armor the cable, the portion between the chucks r r' must first be drawn taut and fixed by tightening the latter, and the winding-head p brought into the position shown in Fig. 1. On starting the machine, in consequence of the winding-head traveling along the bed a^2, in the direction

of the arrow (Fig. 1), the tape *z* (not shown in Fig. 1) running in between the rollers *t** of the winding-head *p*, will be wound in the manner illustrated in Fig. 3, until the winding-head reaches the chuck *r*. Hereupon the two chucks *r r'* are loosened and the now armored piece of cable rolled up on the reel *b'*. The winding-head *p* can now be returned into its initial position, ready for armoring the next piece of cable, which now lies between the two chucks, in the same manner as before.

It will be clear that the machine can also be employed for armoring in addition to cables, any other objects presenting the character of a rope or the like.

Having thus described my invention, I claim as new:

1. The combination, in a machine for armoring cables and the like with metallic hose, of cable delivery and receiving reels, trunnions for supporting said reels, a sliding metal tape winding-head located between said trunnions, and rollers mounted resiliently on the winding head so as to yield in a radial direction.

2. The combination, in a machine for armoring cables and the like with metallic hose, of cable delivery and receiving reels, trunnions for supporting said reels, means carried by the trunnions for clamping the taut cable between said reels, a sliding metal tape winding-head located between said clamping means, and rollers mounted resiliently on the winding head so as to yield in a radial direction.

In witness whereof I have hereunto signed my name this 21st day of October 1908, in the presence of two subscribing witnesses.

EMIL WITZENMANN.

Witnesses:

HERMANN PLISCHK,

OTTO SCHROEDTER.