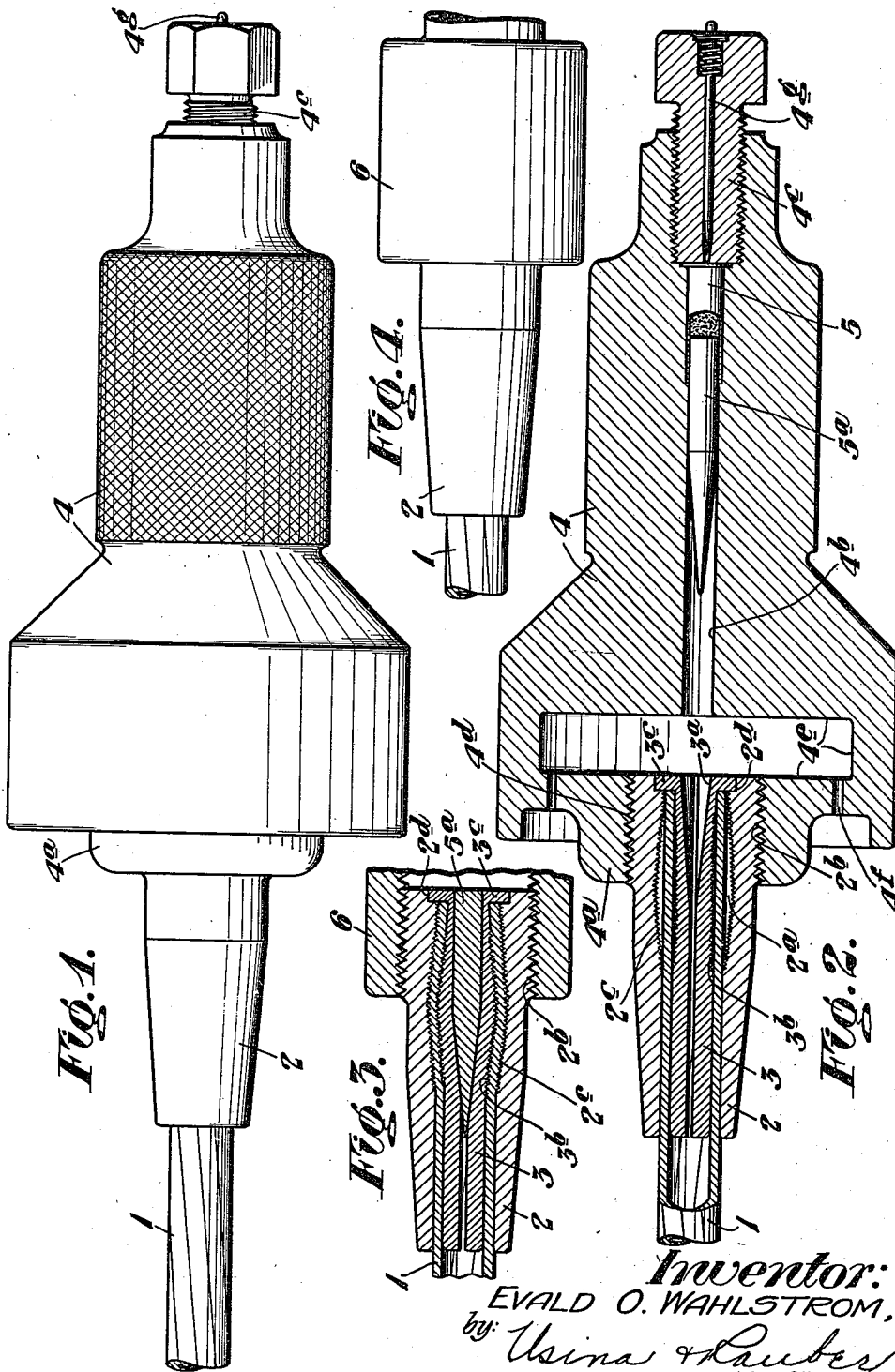


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HOLLOW STRAND TERMINAL
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HOLLOW STRAND TERMINAL

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4 Claims. (Cl. 173-269)

This invention relates to hollow or tubular strands, such as hollow conductors of the type used in the transmission of high-voltage electricity, one of the objects being to join lengths of such strands together in a secure but easy manner. Other objects may be inferred from the following disclosure of a specific example of the invention.

Referring to the accompanying drawing:

Figure 1 is a side elevation of this example.

Figure 2 is a longitudinal section of Figure 1.

Figure 3 is a longitudinal section of the details shown by Figure 2 and illustrating the results obtained.

Figure 4 is a side elevation of Figure 3.

The above show the end portion of a hollow strand 1, a sleeve 2 having an inside 2^a that tapers toward its ends to diameters substantially the same as the outside diameter of the strand 1, a plug 3 adapted to fit inside of the strand 1, and a tool 4 having an end 4^a adapted to be attached to the outside of the sleeve 2 and having a guide-way 4^b leading centrally toward the latter and which is provided with a breech mechanism 4^c adapted to fire a suitable ball cartridge 5 down the same and into the plug 3 when the sleeve 2 is positioned over the outside and when the plug 3 is positioned inside of the end portion of the strand 1.

More specifically, the sleeve 2 may have external threads 2^b and the end 4^a of the tool 4 may be internally threaded as at 4^d, whereby these two may be screwed together. The plug 3 may be solid but is preferably longitudinally split and provided with a centering recess 3^a which aids in the initial penetration of the ball of the cartridge 5. Also, the outside of the plug 3 and the inside of the sleeve 2 may be respectively provided with teeth 3^b and 2^c, these teeth becoming embedded in the strand 1 when the plug 3 is expanded by the ball from the cartridge 5 so as to force the strand into continuous contact with the inside of the sleeve 2 in the manner illustrated by Figure 3.

The cartridge 5 has been described as being a ball cartridge, this terminology being used to indicate that the cartridge is not merely a blank. Actually, the ball of this cartridge is in the form of a long pointed pin expander 5^a which is dimensioned to produce the result described specifically in connection with Figure 3. The tool 4 is illustrated as having a gas expansion chamber 4^e arranged between the muzzle of the guide-way 4^b and the plug 3 and provided with ports 4^f, while the breech mechanism 4^c may consist sim-

ply of a plug that is screwed into this end of the tool 4 so that it may be removed to provide for the insertion of the cartridge 5, and which is provided with a firing pin 4^g. Firing of the cartridge may be effected by striking the externally protruding end of the firing pin 4^g with a hammer. It will be noted that the tool 4 is constructed along relatively massive lines, this being both in the interests of safety and to provide a relatively large mass whose inertia will absorb most of the recoil resulting when the tool is used.

Returning to the sleeve 2, it will be noted that this element is provided with a recess 2^d, and the plug 3 is provided with a flange 3^c that fits in this recess 2^d. This serves to properly position the plug 3 in the end of the strand and to prevent it from being driven further into the same by the expander 5^a. It is also to be noted that when the tool 4 is removed after having performed its function that the external threads 2^b on the sleeve 2, now firmly attached to the strand 1, may be used to function as a connecting means when the strand is placed in service. This may be done by providing an internally threaded coupling 6 that is of sufficient length to be screwed completely over the exteriorly threaded ends of both the sleeve being described and another that has been similarly applied to another length of strand.

Although not previously mentioned, it is to be understood that the expander 5^a fired into the plug 3 by firing of the cartridge 5 remains in the plug and is not extracted. Therefore, the end of the strand is provided with what is in effect a solid integral unit, the extreme pressures created by the penetration of the pin expander being sufficient to cold forge the various units together. The cartridge 5 carries a sufficient charge to propel the pin expander at such an extreme velocity as to effect the desired penetration into the plug 3.

Because of the great force available resulting from the manner of the insertion of the plug 5^a the present invention provides for the application of end fittings not only to hollow strands but to wire ropes as well. In cases where the rope is provided with a hemp core, a portion of this core may be removed, and in case it is provided with a steel core there is sufficient power available to deflect the steel core and thus secure expansion by the plug. Other types of strands may also be accommodated.

I claim:

1. The combination of a tubular strand, a

sleeve having an inside that tapers towards its ends and in which the end portion of said strand is positioned, and a plug forged inside said end portion of said strand and forcing the outside of the same into substantially continuous contact with said inside of said sleeve.

2. The combination of a tubular strand, a sleeve having an inside that tapers towards its ends and in which the end portion of said strand is positioned, and a plug forged inside said end portion of said strand and forcing the outside of the same into substantially continuous contact with said inside of said sleeve, the latter having teeth which are embedded in said outside of said end portion of said strand.

3. The combination of a tubular strand, a sleeve having an inside that tapers towards its ends and in which the end portion of said strand is positioned, a plug inside said end portion of

said strand and an expander forged into said plug and expanding the same and thus expanding said strand, the outside of the latter being forged into continuous contact with said inside of said sleeve.

4. The combination of a tubular strand, a sleeve having an inside that tapers towards its end and in which the end portion of said strand is positioned, a plug inside said end portion of said strand and an expander forged into said plug and expanding the same and thus expanding said strand, the outside of the latter being forged into continuous contact with said inside of said sleeve, said plug and said inside of said sleeve having teeth which are embedded in the inside and said outside of said end portion of said strand.

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