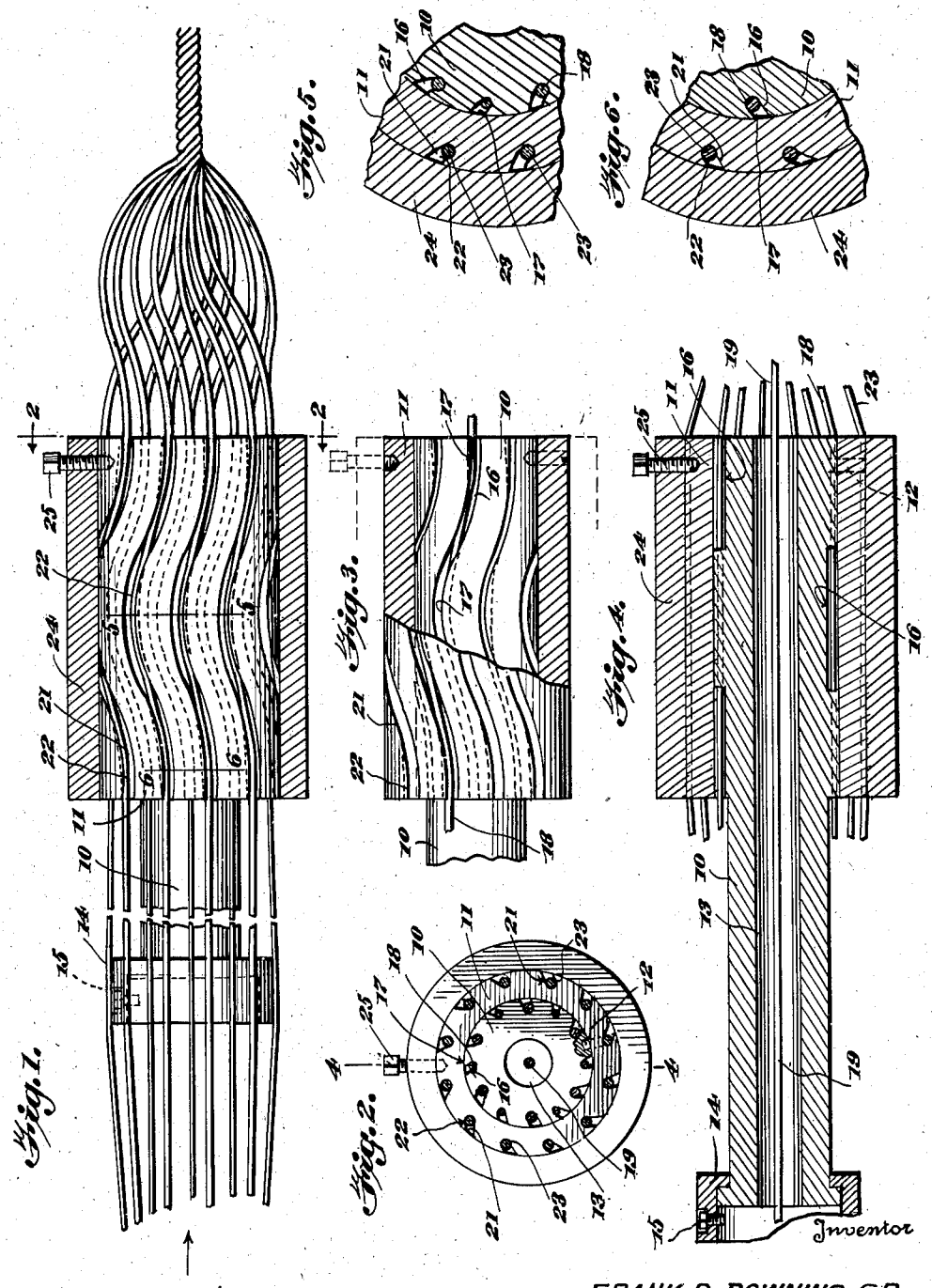
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HEAD FOR USE ON PREFORMED STRAND AND WIRE ROPE MACHINES

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HEAD FOR USE ON PREFORMED STRAND AND WIRE ROPE MACHINES

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This invention relates to an improved nozzle or head for use in connection with a machine for making preformed wire strands and wire ropes, and has for one of its objects the production of a simple and efficient means for holding the strands of wire and properly guiding the wires prior to the twisting thereof.

Another object of this invention is the production of a simple and efficent nozzle or head for use in connection with a machine for making wire strands and wire rope, wherein the head is provided with irregular channels throughout its length which are undercut to provide means for holding the wire strands in engagement with the longitudinal surface of the head.

A further object of this invention is the production of a nozzle, the parts of which may be taken apart while the nozzle is mounted upon the machine without the necessity of cutting or destroying the rope or strands.

Other objects and advantages of the present invention will appear throughout the following specification and claims.

In the drawing:

Figure 1 is a side elevational view of the head, the outer sleeve being shown in longitudinal section;

Figure 2 is a sectional view taken on line 2—2 of Figure 1;

Figure 3 is a side elevational view of the head assembly, the outer portion of the head being shown partly in longitudinal section;

Figure 4 is a longitudinal sectional view taken on line 4—4 of Figure 2;

Figure 5 is an enlarged transverse sectional view taken on line 5—5 of Figure 1;

Figure 6 is an enlarged transverse sectional view taken on line 6—6 of Figure 1.

By referring to the drawing it will be seen that 10 designates the inner section of the head comprising a tubular member over which fits the outer section 11 of the head also constituting a tubular member. The outer section 11 of the head is preferably secured to the inner section of the head by a suitable anchoring pin 12 so that the inner and outer sections are locked in an assembled position. The inner section 10 of the head is provided with a longitudinally extending bore 13 extending through the longitudinal center of the section 10, as shown in Figure 4, and this bore 13 is adapted to communicate with a bore or channel formed in a machine upon which the head is adapted to be fitted. The section 10 may be secured in any suitable or desired manner to a collar 14 which may be carried by and secured in any desired manner to the machine and the section. 10 is locked in a position upon the collar 14 by means of a set screw 15. Any suitable or desired means may be employed for attaching the section 10 of the head to the machine depending upon the nature of the machine upon which the head is adapted to be mounted.

The section 10 is provided upon its outer face with a plurality of serpentine grooves 16 which extend from the rear end toward the forward end thereof. The grooves 16 are undercut, as shown at 17, for the purpose of permitting the wire strands 18 to pass longitudinally of the head and to fit into the grooves in a serpentine manner, these undercut grooves overhanging the wire strands, as shown in Figures 1 to 3, inclusive, and also in Figures 5 and 6 for holding the wires firmly in engagement with the section 10 of the head throughout the length of the head. A central strand 19 extends longitudinally through the central bore 13, as shown in Figure 4, and this central bore 13, as well as the channels or grooves 16 will constitute an efficient means for guiding the wire strands 18 and 19 toward the forward end of the head where the wires may be twisted in the usual manner, as indicated at 20 in Figure 1.

The outer section 11 of the head fits snugly over the inner section 10 and due to the fact that the grooves 16 are provided with the undercut portions 17 the wires will remain firmly in position throughout the length of the section 10 while the outer section 11 is being moved to position. The outer section 11 is provided with a plurality of longitudinally extending grooves 21 of similar construction to the grooves 16, the grooves 21 having undercut portions 22 overhanging the wire strands 23 which extend longitudinally through the grooves 21. The undercut portions 22 will also assist in holding the wires within the grooves against accidental displacement and will tend to prevent the wires from becoming crushed or pinched while moving longitudinally through the grooves while the cable is being formed. As an additional precaution I preferably provide an encasement sleeve 24 which fits over the outer tubular section 11, as shown in Figure 1, and is anchored in position by means of a set screw 25. The wires which pass through the grooves 21 are twisted about and around the wires 18 and the central core wire 19 in the manner shown in Figure 1.

By considering Figure 4 it will be noted that the space from the collar 14 to the sleeve 11 is

of sufficient length to permit the sleeve to be moved toward the machine upon which the device is mounted to clear the serpentine grooves and free the wires. The sleeve **24** may be slipped forward and thus all of the wires or strands can be taken from the nozzle for welding where solid wire is used or splicing where twisted strands are used. The set screw **15** is counter sunk so as to provide a free-running nozzle to conform to the natural twist in the wire or strand.

By means of the present device a nozzle has been produced by which reel back or wrapping in wire or strands that may have been destroyed, or injured or broken may be preformed. These strands or wires cannot under the type of device previously known, be preformed. This preforming is made possible by means of the nozzle which I have produced.

It should be borne in mind that the present invention relates solely to the construction of the head and particularly the longitudinally extending serpentine channels or grooves **16** and the similarly constructed grooves **21** which are formed in the inner and outer sections **10** and **11** of the head. These grooves **16** and **21** are undercut to provide overhanging portions for holding the wires **18** and **23** respectively within the grooves **16** and **21** respectively. It will therefore be seen that one series of wires **18** is carried by the inner tubular section **10** and a second series of wires **23** is carried by the outer section **11**, and it should be understood that any number of these sections or tubular members may be employed if desired, for the purpose of winding as many strands as may be desired within the cable. It should be further understood that any suitable or desired number of grooves or channels may be employed to accommodate the desired number of strands which may be necessary to produce a cable, rope, or suitable unit to be produced by the wire strands.

It will be noted that the grooves **16** on the section **10** and the grooves **21** on the section **11** are preferably arranged to extend longitudinally in substantially spaced relation and in serpentine formation through the length of the sections.

It will be obvious that I have provided a very simple device in the nature of a preforming head eliminating elaborate parts, and at the same time providing a head which definitely preforms or sets the wires prior to twisting, this being a very important feature in properly forming a wire cable and the like.

Certain detail changes in the mechanical construction may be employed without departing from the spirit of the invention so long as such changes fall within the scope of the appended claims.

Having described the invention what I claim as new is:

1. A head of the class described comprising an elongated body provided with serpentine grooves formed upon the outer face thereof for receiving wire strands and preforming the strands and guiding these strands throughout the length of the body, said body provided with a central bore for receiving a central strand, a sleeve mounted upon said body and provided with longitudinally extending serpentine grooves for receiving other strands and preforming said other strands, all of the strands being adapted to be twisted together for the purpose of producing a cable.

2. A head of the class described comprising an elongated tubular body having serpentine grooves formed upon the outer face thereof and adapted to receive wire strands to be twisted together for preforming the strands, a sleeve mounted upon said tubular body and provided with serpentine grooves formed upon the outer face thereof for receiving other strands and preforming said other strands, all of the strands being adapted to be twisted together, and means for securing said head to a wire twisting machine.

3. A preforming head of the class described comprising a body having a plurality of spaced longitudinally extending serpentine grooves, said grooves being undercut to provide overhanging edges for the purpose of retaining wire strands passing through the length of said grooves and preventing the accidental displacement of said strands, and said serpentine grooves constituting a preforming means for setting and shaping the wires passing therethrough.

4. A preforming head of the class described comprising a body having a plurality of spaced longitudinally extending serpentine grooves, said grooves being undercut to provide overhanging edges for the purpose of retaining wire strands passing through the length of said grooves and preventing the accidental displacement of said strands, said serpentine grooves constituting a preforming means for setting and shaping the wires passing therethrough, and said body having a centrally located bore adapted to receive a core wire about which said preformed wires may be twisted.

5. A preforming head of the class described comprising a plurality of tubular sections, each section having longitudinally extending serpentine substantially parallel grooves formed on the outer face thereof, an outer section fitting snugly over an inner section, and a retaining sleeve fitting over the outer section.

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