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2,394,174

WIRE SKINNING MACHINE

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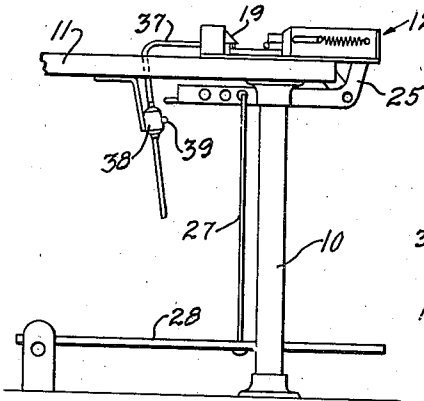


FIG. 1.

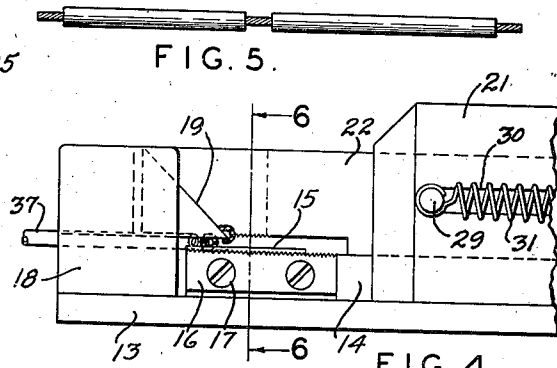


FIG. 5.

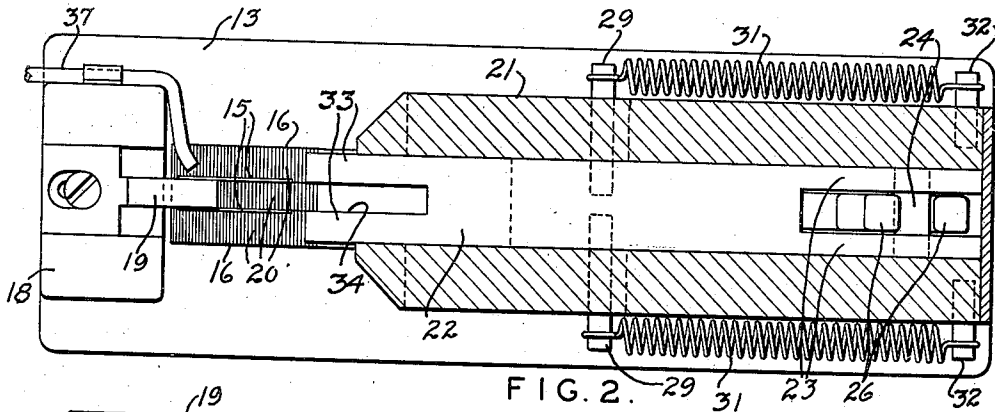


FIG. 2.

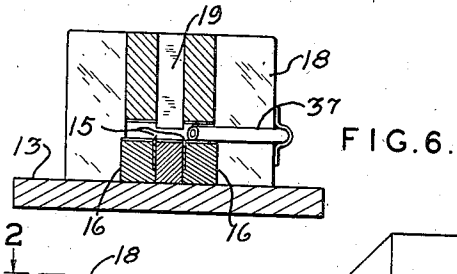


FIG. 6.

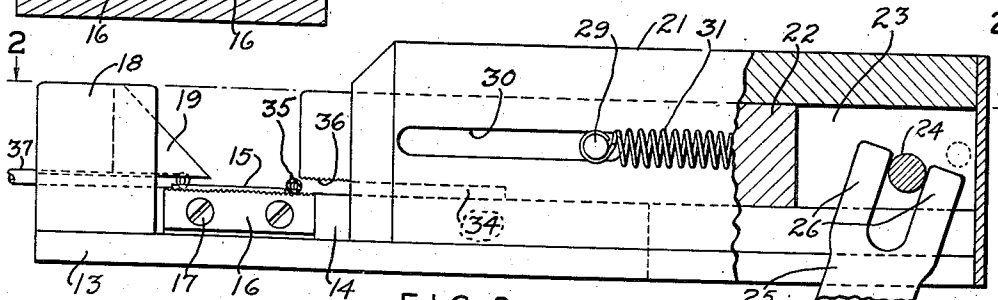


FIG. 3.

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WIRE SKINNING MACHINE

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8 Claims. (Cl. 81—9.51)

This invention relates to devices for removing or "skinning" a section of insulation from a strand of insulated wire.

While machines have been devised for removing insulation from the end of a piece of insulated wire, so far as applicant is aware, there has been no machine for automatically and rapidly cutting a section of insulation from an intermediate portion of the wire. Accordingly, it is the object of the present invention to devise such a machine.

A more detailed object is to provide a fully automatic machine for cleanly skinning a section of insulated wire, whether at the end or an intermediate portion of the wire, without affecting the wire itself.

These objects and other more detailed objects hereafter appearing are attained substantially by the device illustrated in the accompanying drawing in which:

Fig. 1 is a side view of the machine.

Fig. 2 is an enlarged horizontal section through the head portion of the machine and is taken substantially on line 2—2 of Fig. 3.

Fig. 3 is an enlarged side view of the head portion of the machine, partly broken away and sectioned for clearer illustration.

Fig. 4 is a partial view similar to Fig. 3, but showing the wire feeding member fully advanced.

Fig. 5 shows a strand of insulated wire with sections of the insulation removed by the machine.

Fig. 6 is a section on line 6—6 of Fig. 4.

The machine is mounted upon an upright 10 and bench 11 in a convenient position for the operator. The head portion 12 comprises a base plate 13 having a central longitudinal rib-like table 14 to the left hand extremity of which are secured a pair of longitudinal knives 15 by means of side plates 16, bolted to the table, as at 17. Projecting from base plate 13 adjacent the end of the table is a block 18 which adjustably mounts a cutter 19 having its under surface disposed parallel to the table between knife blades 15 and spaced slightly thereabove. The cutting edge of the knife extends transversely of the length of the table. The upper surfaces of blade attaching plates 16 and the portion of table 14 between blades 15 are provided with serrations 20 for a purpose to be described hereafter.

Projecting above the right hand portion of the base plate 13 is a three-sided housing 21 within the interior of which is slidably received the reciprocable feed member 22 having bifurcations 23 at its right hand extremity connected by a pin 24. A lever 25, pivoted beneath bench 11,

has a forked extremity 26 receiving pin 24. The opposite extremity of lever 25 is connected by a link 27 to a treadle 28 to be pressed by the operator for driving feed member 22 leftwardly. A pair of pins 29 project oppositely from feed member 22 through slots 30 in housing 21 for attachment of a pair of coiled retracting springs 31 connected at their opposite ends to pins 32 projecting from the sides of the housing.

The left hand extremity of feed member 22 is bifurcated, as at 33, the bifurcations being spaced apart just sufficiently to pass on opposite sides of blades 15 and 19 when the feed member is reciprocated. The undersurface of this portion of the feed member is recessed, as at 34, to provide a feed surface spaced just sufficiently above the table to frictionally receive a strand of insulated wire placed on the table, as at 35. This surface of the feed member is provided with wire gripping serrations 36. A compressed air line 37 is attached to the side of block 18 in position to discharge its jet against transverse blade 19. A valve 38 has an actuator 39 which is engaged by the extremity of lever 25, when the cuts in the insulation are completed, to remove the cut section from the cutter blade.

The device operates as follows:

The section of insulated wire is first laid upon the table, adjacent the end of the feed member as indicated in Fig. 3. The treadle is then depressed by the operator, which causes feed member 22 to move leftwardly above the wire, whereupon the wire is gripped between serrations 20 and 36 and caused to roll along the table. The wire is first rolled over longitudinal cutter blades 15 which make spaced, circumferential cuts in the insulation. As jaws 33 of the feed member pass transverse blade 19, a longitudinal cut is made in the insulation, between the circumferential cuts, and continued rolling causes the cut section of insulation to be severed completely from the wire. The operator thereupon removes his foot from the treadle permitting retraction of the feed member by springs 31, whereupon the wire can be easily removed by hand because of its reduced thickness beneath cutter 19. Just as the feed member is starting to retract, a blast of air insures removal of the cut insulation from blade 19 so that the operation can be promptly repeated on the same or another piece of wire.

The invention may be modified in various respects as will occur to those skilled in the art and the exclusive use of all modifications as come within the scope of the appended claims is contemplated.

I claim:

1. A wire skinning device comprising a table, a member mounted for reciprocation therealong, there being a space between said table and member sufficient to frictionally receive a strand of wire, a pair of cutters having cutting edges presented into said space, one arranged along the line of movement of said member and the other transversely thereof, and means for moving said member along said bed to bring an insulated wire, lodged in said space, against said cutters and thereby strip a section of insulation therefrom.

2. A wire skinning device comprising a table, a pair of cutters having cutting edges presented at a right angle to each other along said table, a feed member spaced from said table and mounted for reciprocation adjacent said cutters, said member having means for frictionally engaging and moving a strand of insulated wire therewith, and means to reciprocate said feed member to bring said wire against said cutters and strip a section of insulation therefrom.

3. A wire skinning device comprising a table, a knife with its cutting edge presented outwardly and longitudinally thereof, a second knife with its cutting edge presented transversely of the cutting edge of said first knife and spaced slightly thereabove, a feed member mounted for longitudinal movement along said table, there being a space between said table and said member for frictionally receiving a piece of insulated wire, and means to move said member along said table to cause said wire to successively contact said knives and thereby strip a section of insulation therefrom.

4. A wire skinning device comprising a table, a knife with its cutting edge presented longitudinally of and outwardly from said table, a second knife mounted with its cutting edge disposed transversely of said table and spaced directly thereabove, a feed member mounted for movement along said table and spaced thereabove sufficiently to frictionally receive a strand of insulated wire, and means to move said member along said table so as to roll said wire first along said longitudinal knife, for circumferentially cutting

the insulation, and then against said second knife for stripping the cut section of insulation from the wire.

5. A wire skinning device as described in claim 4 in which said table and said movable member are provided with serrations for more positively moving the wire strand received in said space.

6. A wire skinning device comprising a table, a pair of parallel knives with their cutting edges presented outwardly of said table, a third knife mounted with its cutting edge disposed transversely between said pair and slightly above said table, a feed member mounted for movement along said table, adjacent said knives, there being sufficient space between said table and said member for frictionally receiving a strand of insulated wire, and means to move said member so as to roll the received strand along said parallel knives to make spaced, radial cuts in the insulation, and against said third knife to cut the insulation longitudinally and strip a section thereof from the wire.

7. A wire skinning device as described in claim 6 in which the extremity of said feed member is bifurcated for extending on the sides of said transverse knife to continue the rolling of the received strand past the edge thereof to cause said edge to strip off the cut section of insulation.

8. A wire skinning device comprising a table, a knife projecting from said table, a second knife mounted with its cutting edge disposed transversely of said first knife and slightly above said table, a feed member mounted for reciprocation along said table and spaced slightly thereabove for frictionally receiving a strand of insulated wire between the same and said table, means to move said member so as to roll the received strand along said first knife and against said second knife for stripping a section of insulation therefrom, and means to expose the stripped insulation to an air blast, when the cuts are completed, to remove the same from said second knife.

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