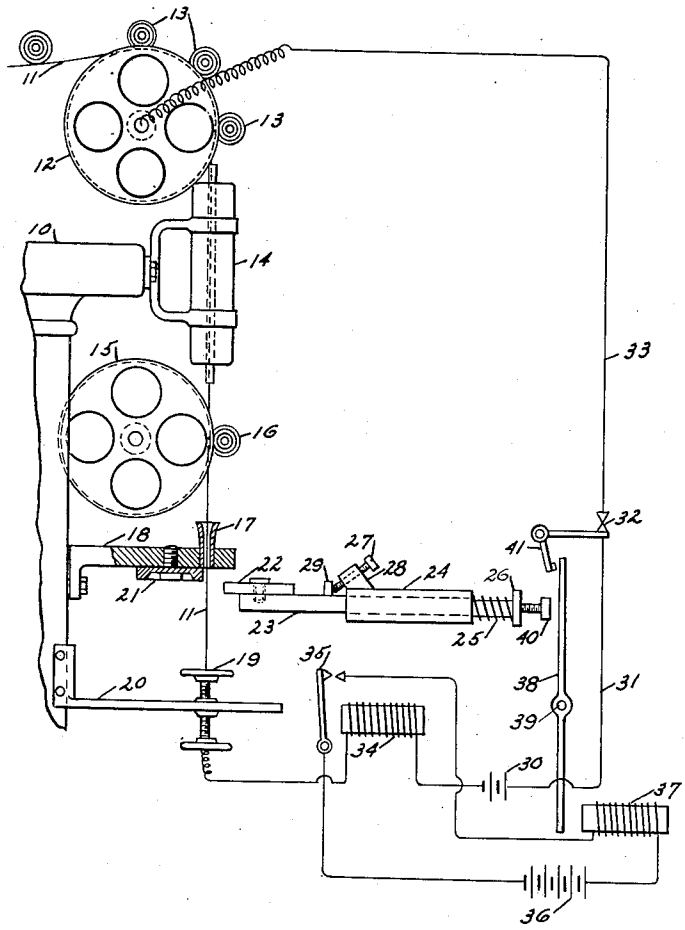
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APPARATUS FOR CUTTING WIRE INTO LENGTHS

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APPARATUS FOR CUTTING WIRE INTO LENGTHS

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3 Claims. (Cl. 140—145)

Our invention relates to apparatus for cutting wire into lengths and is particularly adapted to the cutting of wire into filaments for electric incandescent lamps and similar devices. The said apparatus comprises electrical means for securing automatic operation and adjustable means whereby the lengths of the cut wires may be regulated. Various features and advantages will appear from the following description of a species of our invention and from the accompanying drawing.

The drawing is a vertical elevation with diagrammatic representation of the electrical circuits, of the device embodying our invention.

The device shown in the drawing is an embodiment of the invention particularly adapted to cut coiled filaments for incandescent electric lamps and has been combined with a coil forming machine of which the table 10 is shown in part. Coming from the coiling machine, the wire 11 passes over the reel 12, to which it is held by idler pulleys 13, through the annealing furnace 14 which is supported by table 10. It then passes between the reel 15, which is electrically insulated, and the idler pulley 16, then through the guiding cylinder 17 which is supported in the bracket 18 mounted on and electrically insulated from table 10, to the face of a stop specifically shown as the disk 19 which is mounted in the bracket 20, attached to and electrically insulated from table 10, said disk 19 being adjustable in bracket 20 coaxially with the wire 11. The reels 12—15 are rotated at a constant speed by suitable mechanism which is not shown in the drawing, which serves to feed the wire at a constant rate of speed. A knife 21, preferably in the form of a disk, is mounted on the bottom of bracket 18 close to the bottom opening of the guiding cylinder 17. The wire is cut between knife 21 and knife 22 which is held in the rod 23 which slides in the grooved bed 24. The knife 22 is held back in the open position by the action of the spring 25, located between the bed 24 and a shoulder 26 on rod 23, the amount of the opening being adjusted by the action of the screw 27, which bears in a lug 28 of the bed 24, on the projection 29 of the bar 23.

In the operation of this device, when the wire 11 touches the disk or plate 19 it closes the circuit from the electrical source 30, through lead 31, key 32, lead 33, reel 12, wire 11, plate 19 and through electromagnet 34 back to battery 30. The energizing of electromagnet 34 causes it to attract and close the switch 35 which is normally open. This closes the circuit from the electrical source 36 through the electromagnet 37 and switch 35. The energizing of electromagnet 37 causes it to attract the lower end of lever 38 which pivots on a pin 39. The upper end of lever 38 then strikes the adjustable screw 40 mounted on the end of rod 23, which causes the knife 22 to advance across the knife 21 and to cut the wire 11 and with the same movement the lever 38 strikes the arm 41 of the switch 32 breaking the circuit through the source 30. The demagnetization of electromagnet 34 allows the switch 35 to open which breaks the circuit through the source 36. The knife 22 is retracted to its original position through the action of the spring 25 on the rod 23, and the device is then ready to repeat the process. By adjusting the plate 19, the lengths of the wires may be varied.

What we claim as new and desire to secure by Letters Patent of the United States is:

1. An apparatus for cutting wire into lengths comprising a feeding means, a cutting means disposed adjacent to the path of travel of said wire, a stop against which the wire is fed and with which it makes electrical contact, electrically controlled actuating means for said cutting means, a switch for the electrical circuit of said actuating means including an electromagnet, and another electrical circuit including said wire and the said electromagnet which is energized when said wire makes contact with said stop, thereby closing the said switch in the circuit of said actuating means to sever said wire.

2. An apparatus for cutting wire into lengths comprising a feeding means, a cutting means disposed adjacent to the path of travel of said wire comprising a movably supported knife, a stop against which the wire is fed and with which it makes electrical contact, electrically controlled actuating means for said cutting means, a switch for the electrical circuit of said actuating means including an electromagnet, and another electrical circuit including said wire and the said electromagnet which is energized when said wire makes contact with said stop, thereby closing

the said switch in the circuit of said actuating means to sever said wire.

3. An apparatus for cutting wire into lengths comprising a feeding means, a cutting means disposed adjacent to the path of travel of said wire, a stop against which the wire is fed and with which it makes electrical contact, electrically controlled actuating means for said cutting means, a switch for the electrical circuit of said actuating means including an electromagnet, a second switch in said circuit controlled by said actuating means, and another electrical circuit including said wire and the said electromagnet which is energized when said wire makes contact with said stop, thereby closing the said switch in the circuit of said actuating means to sever said wire, said actuating means opening said second switch to interrupt the circuit through said wire just before said cutting means engages said wire.

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