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METHOD AND APPARATUS FOR COILING WIRE

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Fig. 1.

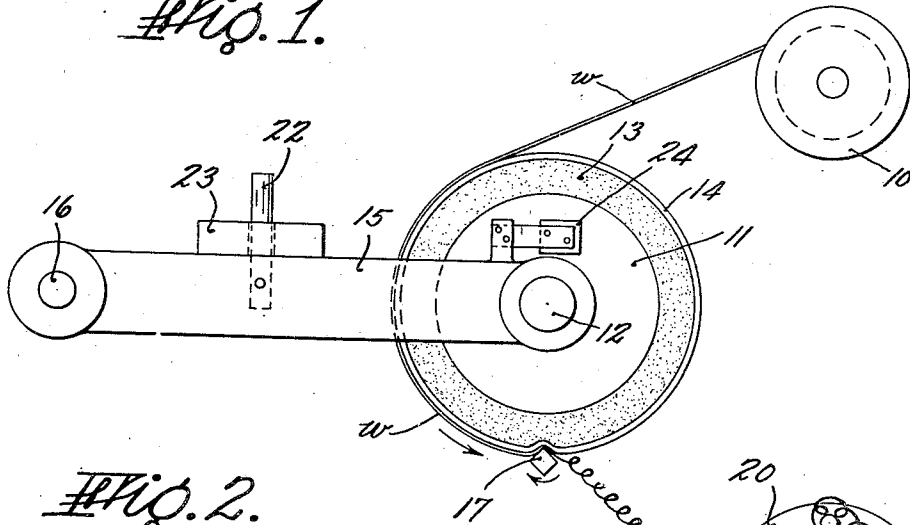


Fig. 2.

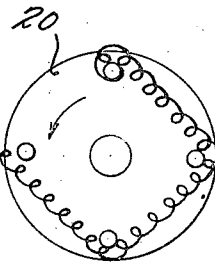
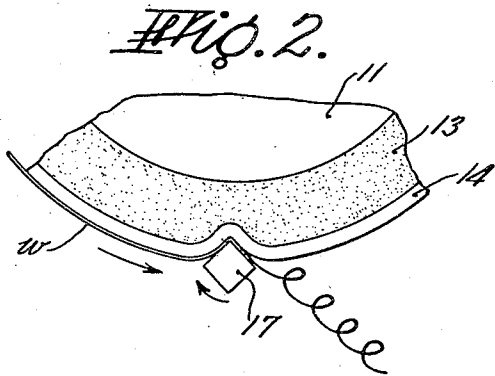
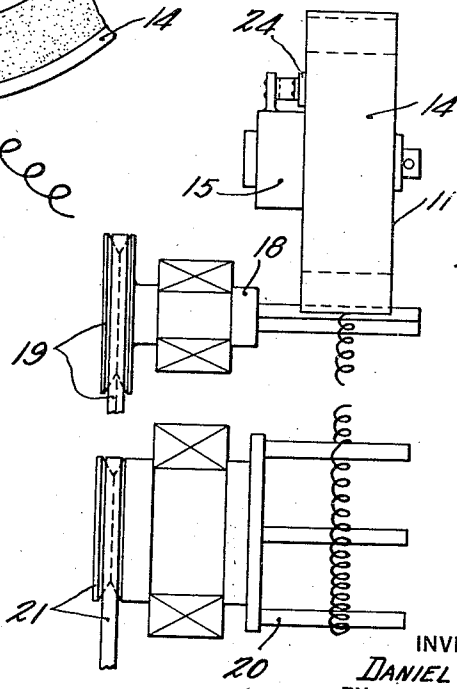


Fig. 3.



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METHOD AND APPARATUS FOR COILING WIRE

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11 Claims. (Cl. 140—71)

The present invention relates to an improved method and machine for making coiled wire, particularly for such wire as is very thin and flat in cross section.

The invention will be described in connection with the accompanying drawing, in which—

Fig. 1 is a side elevation of an apparatus embodying the invention;

Fig. 2 is an enlarged detail thereof; and

Fig. 3 is an end elevation thereof.

The thin flattened wire *w* is fed from a spool 10 over the surface of a roll 11. This roll is mounted on an axis 12 and is of a soft or yielding construction. It preferably has a sponge rubber layer 13 surrounded by a rubber band 14. The roll is carried on its axis 12 on an arm 15 pivoted at 16 to any suitable fixed support, and rests upon a rotating former 17 preferably of polygonal cross-section. The former may be either straight or tapering. This former is carried by a shaft 18 driven as by a pulley and belt connection 19 from any suitable source of power. The wire passes between the rotating former and the soft roll, which is driven by the former, and emerges in a coiled state from between them in substantially a direct path at right angles to the axis of rotation of the former. It may be guided and removed from the forming rolls by a reel 20 driven at a suitable rate as by a pulley and belt 21.

The arm 15 is preferably provided with a pin 22 upon which different weights 23 may be placed to adjust the pressure with which the roll presses against the former. Increase in this pressure will cause the former to sink further into the soft body of the roll as shown in Fig. 2, and the coils are thereby made smaller. A slight braking action on the roll, as by a spring pressed pad 24, also tends to control the size of the coils.

I claim:

1. A method of coiling fine flattened wire which comprises feeding the wire in substantially a direct path between and past two rotating members, one of which has a diameter substantially the same as the size of curl to be produced, and the other of which is of a larger diameter and is sufficiently yielding to partially embrace the periphery of the smaller member.

2. A method of coiling fine flattened wire which comprises feeding the wire in substantially a direct path between and past two rotating members, one of which has a diameter substantially the same as the size of curl to be produced, and the other of which is of a larger diameter and is sufficiently yielding to partially embrace the periphery of the smaller member, the smaller

of the two rotating members being provided with a plurality of facets to augment the local bending of the wire.

3. A method of coiling fine flattened wire which comprises passing the wire between a rigid rotating member of a diameter substantially the same as the diameter of coil to be produced and a yielding rotating member with sufficient pressure to cause the wire to conform to a portion of the periphery of the rigid member, and leading the wire away from the rotating members substantially at right angles to the axes of rotation of the members.

4. A method of coiling fine flattened wire which comprises passing the wire between a small rotating roll and a larger yielding roll with the length of the wire at substantially right angles to the axes of the rolls and without winding the wire about the small roll.

5. A machine for coiling fine flattened wire which comprises a small former, means for rotating the former, a relatively large soft roll mounted so as to press against and to partially encompass the former, and means for feeding the wire to and guiding it away from its engagement between the roll and the former in a substantially direct path lying in a plane substantially at right angles to the axis of rotation of the former.

6. A machine for coiling fine flattened wire which comprises a former polygonal in cross section and of a diameter substantially the same as that of the coil to be produced, a relatively large soft roll mounted so as to press against and to partially encompass the former, and means for feeding the wire to and guiding it away from its engagement between the roll and the former in a substantially direct path lying in a plane substantially at right angles to the axis of rotation of the former.

7. A machine for coiling fine flattened wire which comprises a small former, means for rotating the former, a relatively large soft roll mounted so as to press against and to partially encompass the former, and means for feeding the wire to and guiding it away from its engagement between the roll and the former in a substantially direct path lying in a plane substantially at right angles to the axis of rotation of the former, the axes of the roll and the former being parallel.

8. A machine for coiling fine flattened wire which comprises a small former, means for rotating the former, a relatively large roll having a sponge rubber body surrounded by a band of rubber and mounted so as to press against and to partially encompass the former, and means for

feeding the wire to and guiding it away from its engagement between the roll and the former in a substantially direct path substantially at right angles to the axis of rotation of the former.

- 5 9. A machine for coiling fine flattened wire which comprises a former polygonal in cross-section and of a diameter substantially the same as that of the curl to be produced, a relatively large roll having a sponge rubber body surrounded by a band of rubber and mounted so as to press against and to partially encompass the former, and means for feeding the wire to and guiding it away from its engagement between the roll and the former in a substantially direct path substantially at right angles to the axis of rotation
10
15 of the former.

10. A method of coiling fine flattened wire which comprises conducting the wire to, past, and beyond a rotating former in a path substantially at right angles to the axis of rotation of the former, the former having a plurality of wire bending edges, and pressing the wire yieldingly against the former to produce in the wire a plurality of closely spaced coil-forming bends along lines substantially transverse to the length of the wire. 5

11. A method of coiling fine flattened wire which comprises creasing the wire momentarily along each of successive lines substantially transverse to the length of the wire to cause the creased portions successively to initiate free and unconstrained formation of coils. 10
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