Oct. 15, 1940. C. BRIGNALL 2,218,104

WIRE TWISTING DEVICE

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Fig. 1.

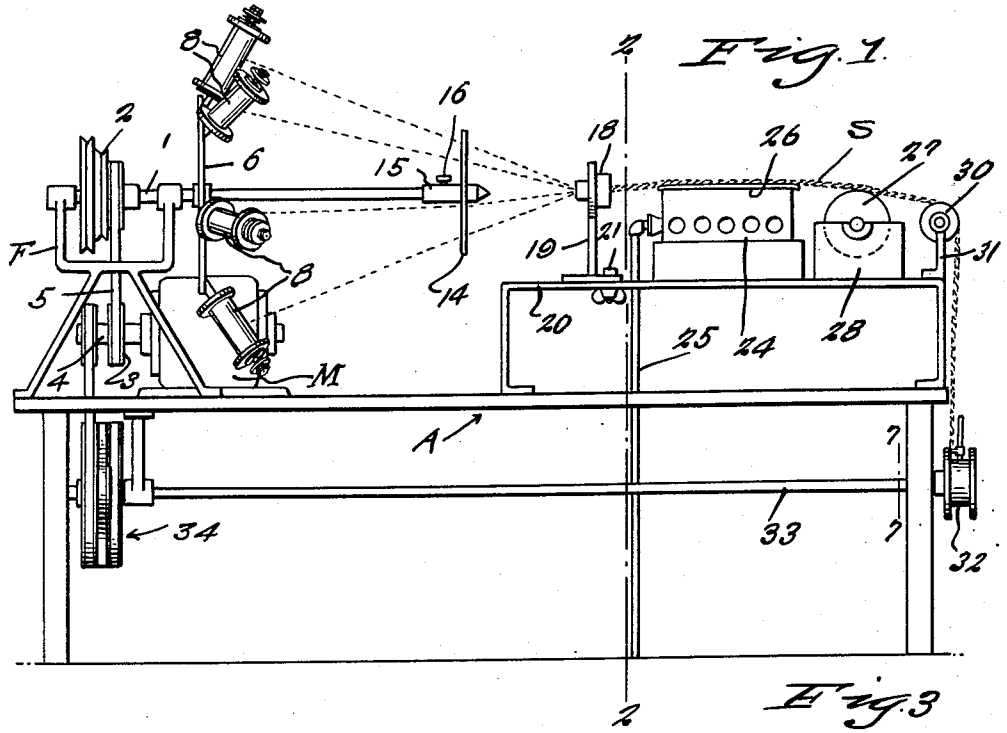


Fig. 3

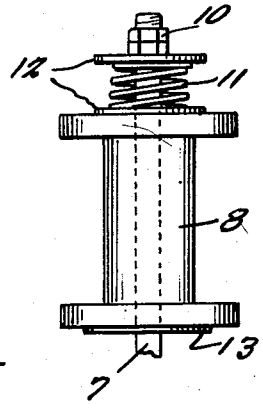
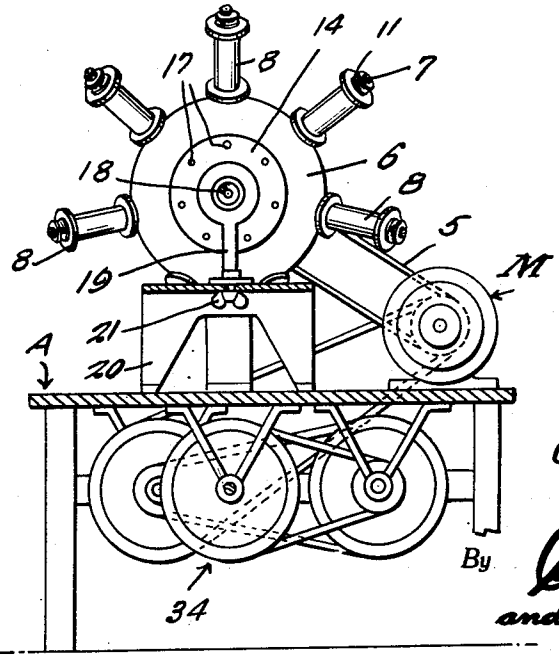


Fig. 2.



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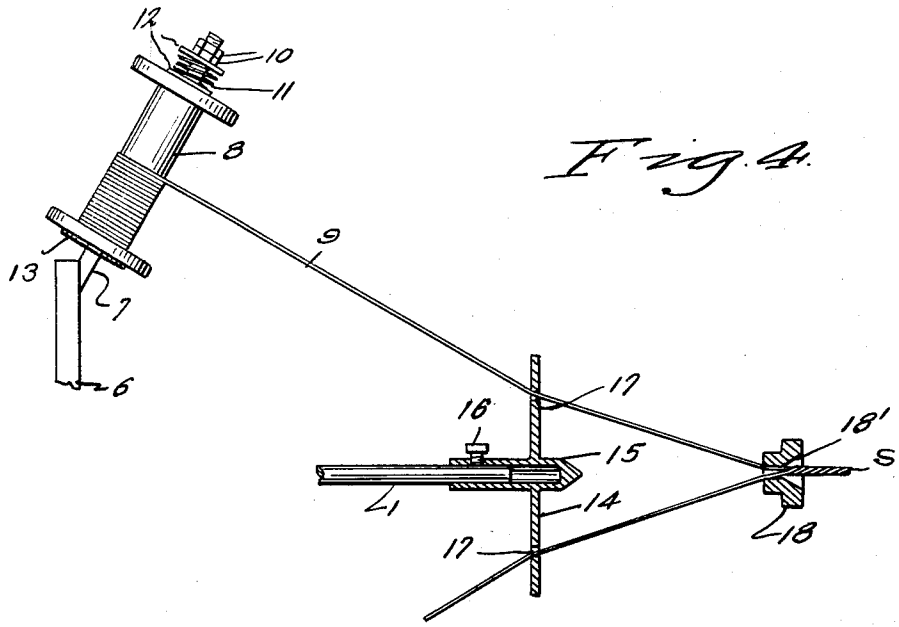


Fig. 4.

Fig. 5.

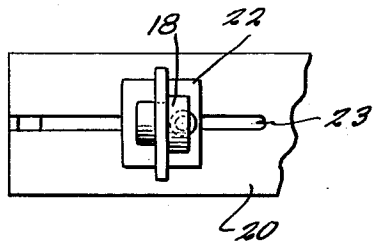


Fig. 6.

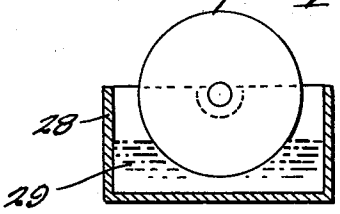


Fig. 8.

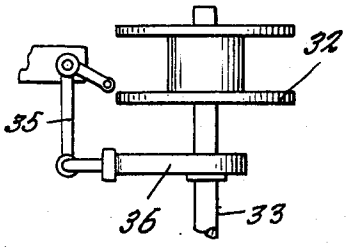
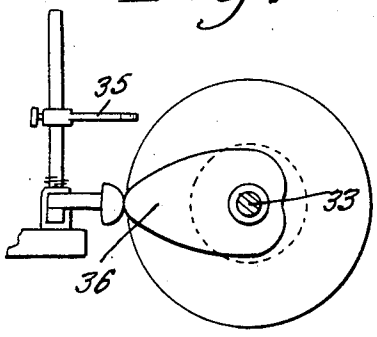


Fig. 7



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Patented Oct. 15, 1940 2,218,104

UNITED STATES PATENT OFFICE

2,218,104

WIRE TWISTING DEVICE

Clifford Brignall, Long Beach, Calif.

Application September 22, 1939, Serial No. 296,161

2 Claims. (Cl. 140—149)

This invention relates to wire twisting device, the general object of the invention being to provide means for twisting wires together to form a strand which may be used as leaders for fishing purposes or for any other suitable purpose, the strand having great tensile strength and one which is kink resisting and will not become untwisted.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is an elevational view of the device of the invention.

Figure 2 is a section on the line 2—2 of Figure 1.

Figure 3 is a view showing means for holding a spool of wire on a spindle.

Figure 4 is a diagrammatic elevation with parts in section showing how the wires are twisted together.

Figure 5 is a fragmentary plan view showing the means for adjusting the tubular member.

Figure 6 is a sectional view through the roller and the oil tank.

Figure 7 is a view of the winding means.

Figure 8 is a plan view of the winding means.

In these views, the letter A indicates a table which supports the parts of the device and the letter M indicates a motor supported on the table. An upright frame F is supported on one end of the table adjacent the motor and supports shaft 1 which has a plurality of pulleys 2 thereon any one of which is to be driven from a pulley 3 on the motor shaft 4 by a belt 5. A large disk 6 is attached to the shaft 1 and a plurality of spindles 7 extend outwardly from one face of the disk 6 adjacent the periphery thereof, said spindles extending outwardly at an angle as shown. These spindles are adapted to receive the spools 8 containing the wires 9 which are to be twisted together to form a strand. The outer end of each spindle 7 is threaded to receive the nuts 10 and a spring 11 is placed on each spindle between washers 12 one of which engages the outer end of the spool and the other a nut, these springs acting to hold the spools against outward movement under centrifugal force while the shaft 1 and disk 6 are rotating. A seat forming disk 13 is secured to each spindle 7 adjacent its inner end upon which the spool rests. A small perforated disk 14 is attached to a tubular hub member 15 which is adjustably connected to the free end of the shaft 1 by a set screw 16 so that the disk 14 can be adjusted toward or away from the spool carrying disk 6. The perforations 17 in the disk 14 have the wires 9 from the spools passing therethrough and after passing through these perforations the wires pass through a hardened steel throat or tube 18 having the rear part of its bore flaring as shown at 18'. This tube is carried by an upright 19 seated on a frame 20 on the table and adjustable toward and away from the disk 14 by means of a bolt 21 passing through the base 22 of the upright into a slot 23 in the top of the frame 20. A stove or heating device 24 is seated on the frame 20 in rear of the upright 19 and gas or other fuel is led to a burner in the stove 24 from any suitable source through a pipe 25 and the top of the stove is formed by a flat plate 26 over which the strand S formed by the twisted wires 9 pass after passing through the tube 18. From this stove the strand passes over a roller 27 journaled in a box or tank 28 which contains oil as shown at 29 in Figure 6. After passing over the roller 27 the strand passes over a guide roller 30 supported on an upright 31 at the rear end of the frame 20 and then the strand passes downwardly to a receiving reel 32 attached to the rear end of a shaft 33 journaled in the lower part of the table and driven from the motor M by belt and pulley means shown generally at 34 in Figures 1 and 2. A winding device shown generally at 35 and including a cam 36 winds the strand in even layers on the spool or reel 32.

The revolving spools carried by the disk 6 have the wires therefrom passing through the perforations in the disk 14 which revolve with the disk 6 and this revolving of parts cause the wires 9 to twist together after they have passed through the throat or tube 18 and while they are in this process of twisting they pass across the steel plate 26 which is heated to the desired temperature. From this heated plate the twisted wires pass over the oil laden roller 27, then over the guiding roller 30 to the winding means for winding the strand in even layers on the reel or spool 32. By varying the temperature of the plate 26 the strand is discolored to different degrees and the wires are tempered and set together so that they will not separate readily and the finished cable or strand will be without kinks or twists. By adjusting the tension of the springs 11, the tension on the wires leaving the spools will be adjusted as the spools are moved against the springs by cen-

trifugal force and this tension can also be adjusted by adding to or detracting from the weight of each spool.

Having described the invention, what is claimed as new is:

1. A device for forming a wire strand comprising a shaft supported for rotary movement, a circular member carried by the shaft for movement therewith, a plurality of spool carrying spindles extending outwardly from the periphery of the supporting member, the spindles supporting the spools in a manner whereby the spools are subjected to centrifugal force during the rotary movement of the shaft, adjustable spring means for resisting such movement of the spools, a perforated member connected with the shaft, the perforations therein being arranged in an annular row and through which perforations the wires from the spools pass, a tubular part through which the wires from the perforated disk pass, means for heating the twisted wires after passing through the tubular member and means for applying oil to the twisted wires after passing the heating means.

2. A wire strand forming device comprising a table, a shaft rotatably supported by the table, a disk carried by the shaft, spool carrying spindles extending at an angle from one face of the disk adjacent the periphery thereof, said spindles receiving the spools of wire, and holding said spools subject to the action of centrifugal force, spring means at the ends of the spindles for resisting outward movement of the spools under the action of centrifugal force, a perforated disk at the free end of the shaft the perforations of which receive the wires from the spools, means for adjustably connecting the perforated disk to the shaft, an adjustable upright, a tubular member carried by the upright and receiving the wires from the perforated disk, heating means over which the twisted wires pass from the tubular member and means for applying oil to the twisted wires after they leave the heating means.

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