

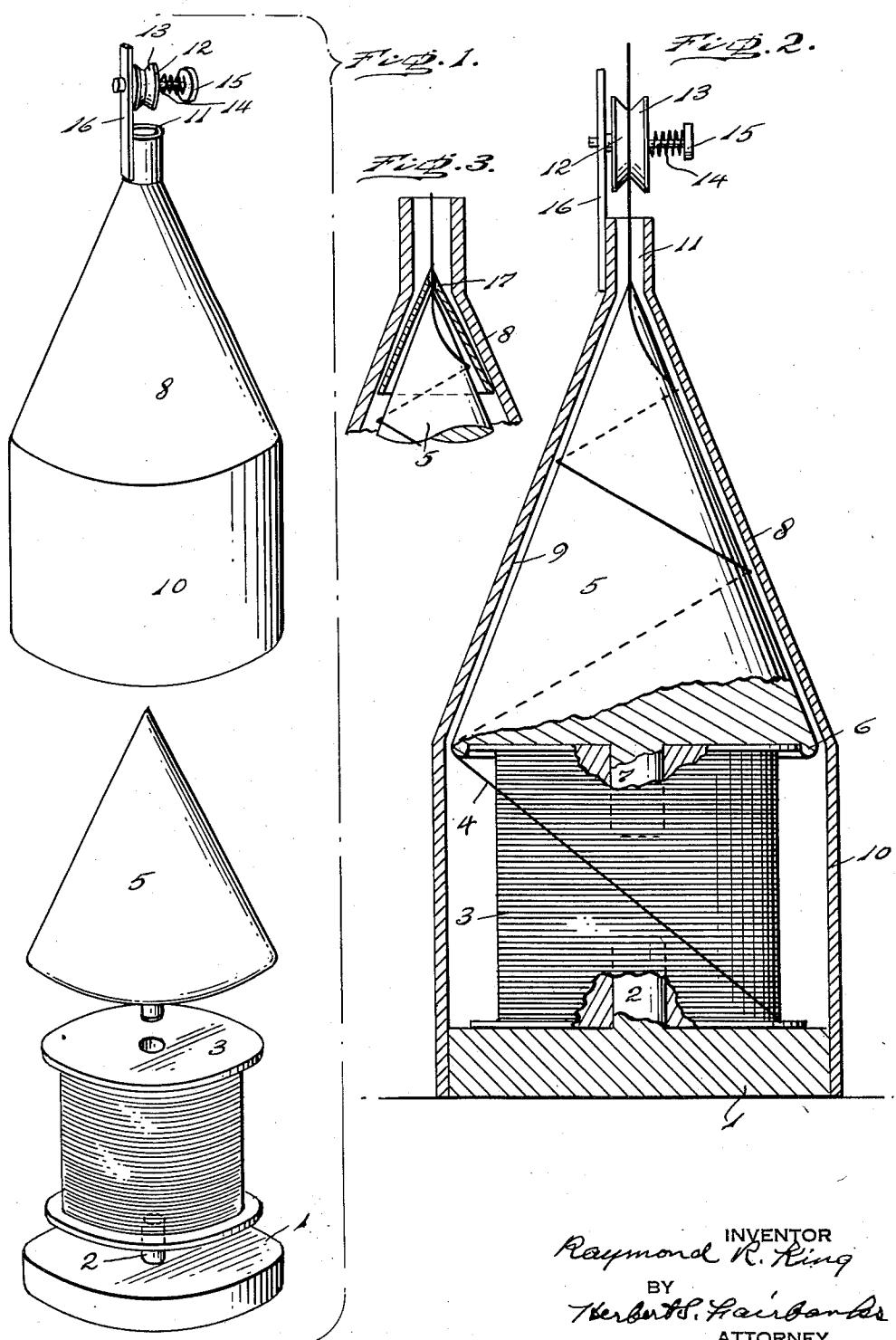
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SPOOL OPERATING DEVICE

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SPOOL OPERATING DEVICE

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1 Claim. (Cl. 242—128)

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The primary object of this invention is to devise novel spool operating devices which will enable one to withdraw wire or other strand material from spools at a high rate of speed with quick starts and stops in the withdrawal operation without breaking the strand or causing or permitting it to tangle.

A further object of the invention is to devise a construction having no moving parts to wear, jam or replace, which does not require lubrication or maintenance costs.

A further object of the invention is to provide a controlled tension so that the strand cannot tangle between the unwinding device and the machine it is feeding.

A further object of the invention is to completely enclose the wound spool so that the wire cannot become tangled exterior of the cover surrounding the spool.

With the foregoing and other objects in view as will hereinafter clearly appear, my invention comprehends a novel spool operating device.

It further comprehends a novel construction and arrangement of a spool supporting base, a cone and a cover.

For the purpose of illustrating the invention, I have shown in the accompanying drawings a preferred embodiment of it which I have found in practice to give satisfactory and reliable results. It is, however, to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized, and the invention is not limited to the exact arrangement and organization of these instrumentalities as herein shown except by the scope of the appended claim.

Figure 1 is an exploded view of the component parts of a spool operating device, embodying my invention.

Figure 2 is a sectional elevation of the device. 40
 Figure 3 is a modified form.

Similar numerals of reference indicate corresponding parts.

Referring to the drawings:

The spool operating device has a base 1 provided with a centrally located, upstanding stud 2 which supports and centers a wound spool 3, the strand 4 of which is to be fed to a strand treating machine of any desired character. While not limited to such use, the device has been particularly designed for feeding a wire strand from a spool to a flattening and curling mechanism which imparts to the flattened strand an inherent tendency to curl and form a continuous helical coil for tangling into bunches for cleaning and polishing operations.

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A cone 5 has a flat bottom which rests on the top of the spool 3 and is provided with an annular, rounded rib or bead 6 which overhangs the spool and centers the cone on the spool. If desired, although not necessary the cone may be provided with a stud 7 to seat in the central opening of the spool.

A cover 8 has an inner cone shaped face 9 spaced from the cone 5 so that the strand 4 can pass spirally around the cone and be prevented from kinking or tangling. The cover below the cone shaped face merges into a sleeve, preferably cylindrical, and this sleeve encloses the spool and the base but has no connection with the base. 10
 15 The cover at its upper end has a strand passage 11 and exterior of the cover a tension device 12 for the strand.

This tension device as illustrated comprises slip washers 13 tensioned by a spring 14 and a nut 15 on a rod carried by a bracket 16 fixed to the cover.

It will be understood that the spool is stationary on the base, and it has been found in practice that spools loosely or unevenly wound operate 20 much better in this device than in the conventional manner of unwinding by permitting the spool to revolve.

The operation will now be readily apparent to those skilled in this art and is as follows.

The wound spool is placed on the base, the cone is placed on top of the spool, and the strand threaded through the cover and slip washers. The cover is then placed over the cone and rests on the floor. The cylindrical or sleeve portion of the cover completely encloses the spool so that if the strand should break within the cover it cannot fly out and tangle together.

The strand can be withdrawn from the spool operating device at any desired rate of speed.

Referring now to the embodiment seen in Figure 3, I have found that when the strand is in the form of a very thin wire that a loop or kink is formed in the wire as it leaves the cone and there is a tendency for the wire to break during the flattening and curling operation. This has been overcome by placing a small cone 17 on top of the cone 5 and threading the strand through the apex of the auxiliary cone 17. This auxiliary cone can be dispensed with when the customary size wire strand is employed.

50 The cones and cover are preferably made of transparent plastic material.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

In a spool operating device, a base, a strand

wound spool resting on said base, a main cone on top of the spool, a cover having an opening at its top and having an inner cone shaped face spaced from the main cone, and an auxiliary cone resting on said main cone between which and the main cone the strand passes, said auxiliary cone having an aperture in its apex through which the strand passes.

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