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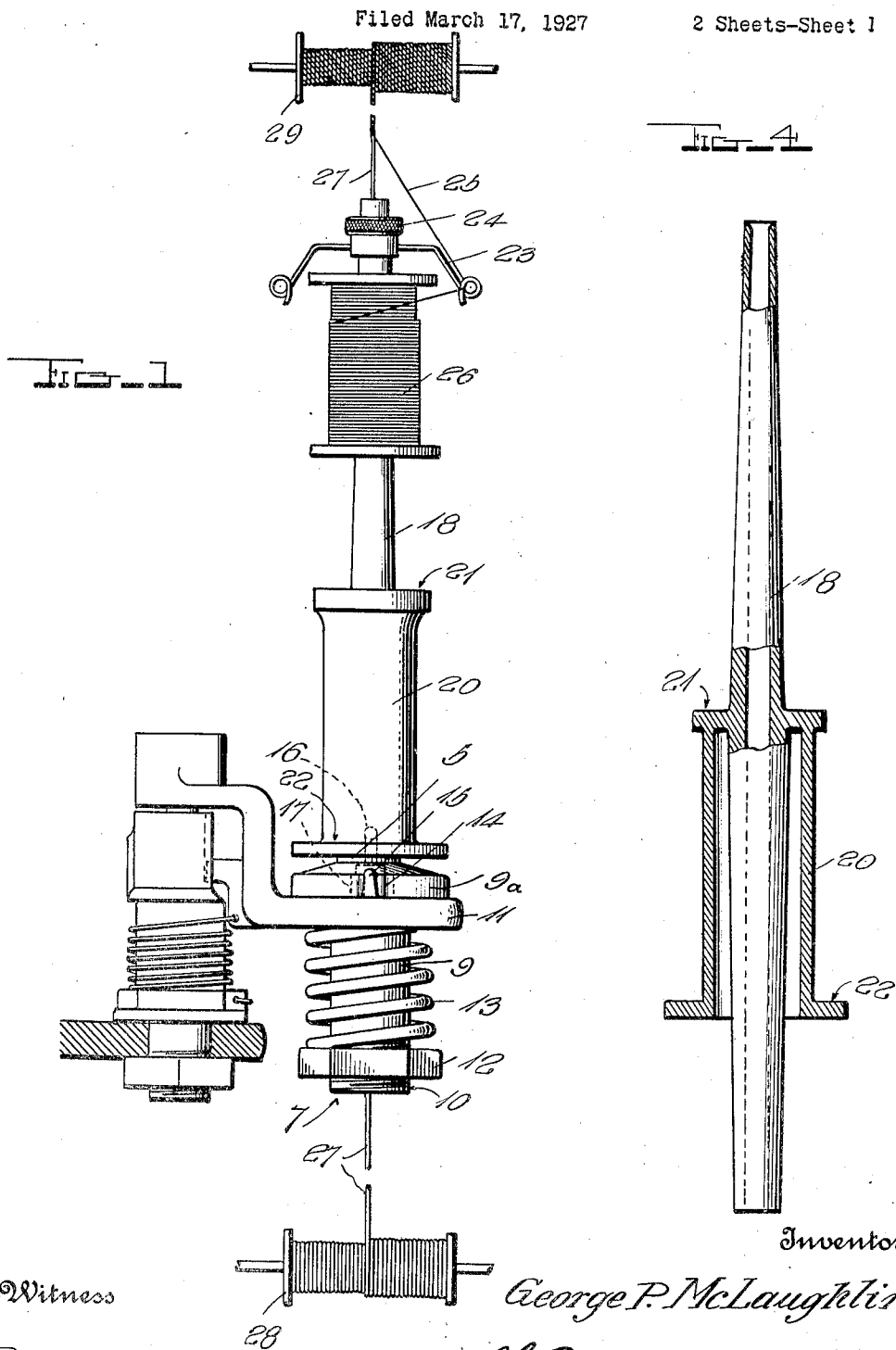
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SPINDLE AND BEARING ASSEMBLY FOR SPINNING AND ANALOGOUS MACHINES

Filed March 17, 1927

2 Sheets-Sheet 1



Witness

[Signature]

Inventor

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[Signature]

Attorneys

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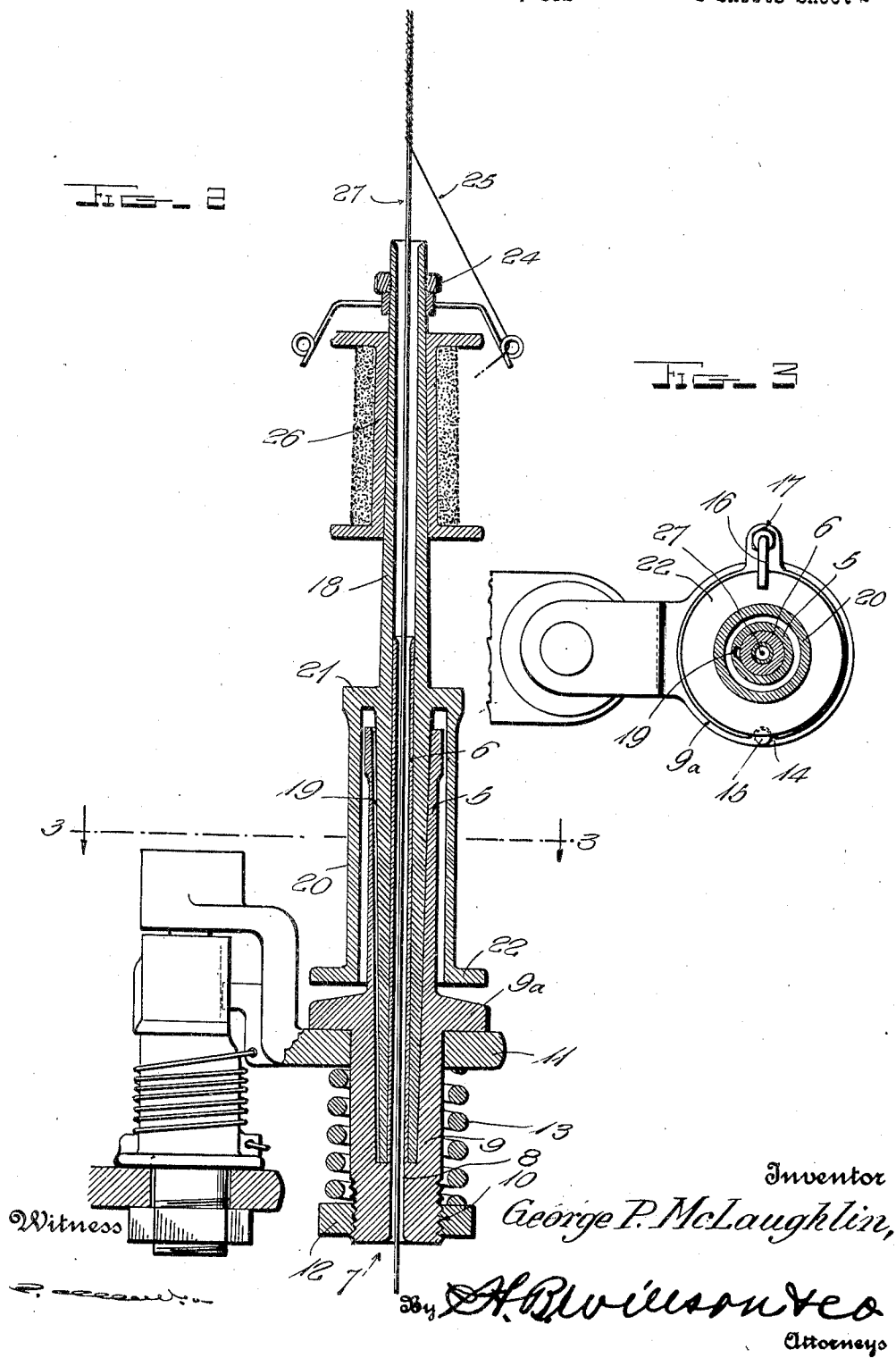
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UNITED STATES PATENT OFFICE.

GEORGE PATRICK McLAUGHLIN, OF SHICKSHINNY, PENNSYLVANIA.

SPINDLE AND BEARING ASSEMBLY FOR SPINNING AND ANALOGOUS MACHINES.

Application filed March 17, 1927. Serial No. 176,234.

The invention aims to provide a new and improved spindle and bearing assembly whose central portion is of tubular form to permit the passage of a strand therethrough, so that as the spindle is rotated, another strand may unwind from a spool thereon and be wrapped, through the instrumentality of a fly or guide, around the central strand, as the latter is being upwardly fed. Hence, by embodying the improved spindle and bearing assembly on machines such as spinning machines, they are not only usable for spinning and twisting, but for "insulating", that is, wrapping one strand around another. For instance, a strand of silk may be wrapped around a strand of wool, a strand of insulating material may be wrapped about a wire, such as a copper wire, or any other strand may be wrapped about any desired strand.

In carrying out the above end, further objects are to provide a construction in which the lubricating oil for the spindle bearing, is prevented from reaching the strand passing centrally through the spindle and bearing assembly; to provide an assembly which may be easily and inexpensively manufactured, and to make provision whereby said assembly may be readily mounted upon the conventional spindle and bearing supporting bracket of a spinning or analogous machine.

With the foregoing in view, the invention resides in the novel subject matter herein-after described and claimed, the description being supplemented by the accompanying drawings.

Fig. 1 is a side elevation of the improved device, and it will be observed from this view that the external formation of the spindle, the driving pulley and the spindle bearing, are substantially the same as in a conventional construction of spindle and bearing assembly, in which no provision is made for wrapping one strand about another.

Fig. 2 is a vertical longitudinal section through the parts shown in Fig. 1, the spools for the strand to be wrapped and the wrapped strand however, being omitted.

Fig. 3 is a horizontal sectional view on line 3—3 of Fig. 2.

Fig. 4 is a side elevation partly in section of the spindle and its flanged driving pulley.

In the drawings above briefly described,

the numeral 5 designates an upstanding tubular bearing open at its upper end and of either cylindrical or downwardly tapered, internal form. A centrally disposed tube 6 is rigidly joined to and rises from the bottom 7 of the bearing 5, said tube preferably extending to a point above the upper end of said bearing. The bearing bottom 7 is formed with a passage 8 alined with the interior of the tube 6. The lower portion of the bearing consists of a vertical, cylindrical portion 9, an outstanding flange 9^a at the upper end of said portion 9, and external screw threads 10 at the lower end thereof. The cylindrical portion 9 is intended for passage through the usual opening of a conventional bearing-and-spindle-supporting bracket 11, the threads 10 are for engagement with the usual nut 12 which engages the well known spring 13, the latter surrounding the cylindrical portion 9 and bearing at its upper end against the bracket 11. To hold the bearing 5 against rotation, its flange 9^a is provided with a notch 14 to receive the usual lug 15 on the bracket 11. This flange 9^a also carries a suitable type of spindle lock 16, being preferably provided with an outstanding lug 17 upon which said lock is mounted.

A tubular spindle 18 has its lower end portion rotatably received in the bearing 5, around the tube 6, and the inner side of said bearing is preferably provided with a longitudinal oil groove 19, permitting effective lubrication of the contacting surfaces of said bearing and spindle, from a quantity of oil within the bearing.

The spindle 18 is provided with a tubular driving pulley 20 which surrounds the bearing 5 and has its upper end joined to said spindle as at 21, the lower end of said pulley being provided with an outstanding flange 22 which underlies the spindle lock 16 to hold the spindle against appreciable upward movement, until it is desired to remove it from the bearing.

The upper end of the spindle 18 is provided with a suitable fly or strand-guide 23 which may be detachably held thereon by a nut 24. A strand 25 from a spool 26, placed on the spindle, is engaged with the fly or guide 23 and, upon rotation of the spindle, will be wrapped around a central strand 27 passing through the spindle, the tube 6 and the passage 8. The strand 27 is of course unwound from a lower spool 28

and with its wrapping, is wound upon an upper spool 29, said strand 27 being continuously fed upwardly while the spindle is driven. Hence, the strand 25 will be effectively wrapped around the strand 27 to effect an insulating function or any other desired function. In this connection, attention may be directed to the fact that either of the strands 25—27, may consist of any desired number of independent strands or filaments. Moreover, by placing a plurality of strands such as 25 upon the spool 26, all of the strands from said spool may be engaged with the fly or guide 23 and wrapped about the strand 27; the wrapping strands being of either the same or different materials, as occasion may demand.

It will be seen from the foregoing that I have produced a rather simple and inexpensive, yet an efficient, reliable and highly desirable mechanism for carrying out the objects of the invention. Excellent results are obtainable from the details disclosed and they are therefore preferably followed. However, within the scope of the invention as claimed, variations may of course be made.

I claim:

1. A thread wrapping means comprising a tubular upstanding oil-containing bearing open at its upper end and provided with an integral upstanding rigid strand-receiving tube rising from the center of its bottom, said bottom having a strand-receiving passage alined with the interior of said tube, a tubular strand-receiving spindle whose lower end is rotatably received in said bearing and surrounds said tube, and a strand guide carried by the upper end of said spindle to guide a strand from a spindle-carried spool, permitting wrapping of this strand around a strand passed through the aforesaid passage, tube and tubular spindle.

2. A thread wrapping means comprising a tubular upstanding oil-containing bearing open at its upper end and provided with an upstanding rigid strand-receiving tube rising from the center of its bottom, said bottom having a strand-receiving passage

alined with the interior of said tube, a tubular strand-receiving spindle whose lower end is rotatably received in said bearing and surrounds said tube, a tubular driving pulley surrounding said bearing and joined at its upper end to the spindle, the lower end of said pulley having an outstanding flange to underlie a spindle lock, and a strand guide carried by the upper end of said spindle to guide a strand from a spindle-carried spool, permitting wrapping of this strand around a strand passed through the aforesaid passage, tube and tubular spindle.

3. A thread wrapping means comprising a tubular upstanding oil-containing bearing open at its upper end and provided with an upstanding rigid strand-receiving tube rising from the center of its bottom, said bottom having a strand-receiving passage alined with the interior of said tube, a tubular strand-receiving spindle whose lower end is rotatably received in said bearing and surrounds said tube; the lower portion of the bearing consisting of a cylindrical portion for passage through a conventional supporting bracket, an outstanding flange at the upper end of said cylindrical portion to rest on the bracket, and external screw threads on the lower end of said cylindrical portion; a tubular driving pulley surrounding said bearing above said flange and joined at its upper end to the spindle, the lower end of said pulley having an outstanding flange, a spindle lock on the first named flange overlying the pulley flange, and a strand guide carried by the upper end of said spindle to guide a strand from a spindle-carried spool, permitting wrapping of this strand around a strand passed through the aforesaid passage, tube and tubular spindle.

4. A structure as specified in claim 3; said first named flange having a notch to receive the usual lug on the bracket to hold the bearing against rotation.

In testimony whereof I have hereunto affixed my signature.

GEORGE PATRICK McLAUGHLIN.