No. 874,662. PATENTED DEC. 24, 1907.

J. A. DE VITO.

SPINNING MACHINE.

APPLICATION FILED MAR. 26, 1906.

2 SHEETS—SHEET 1.

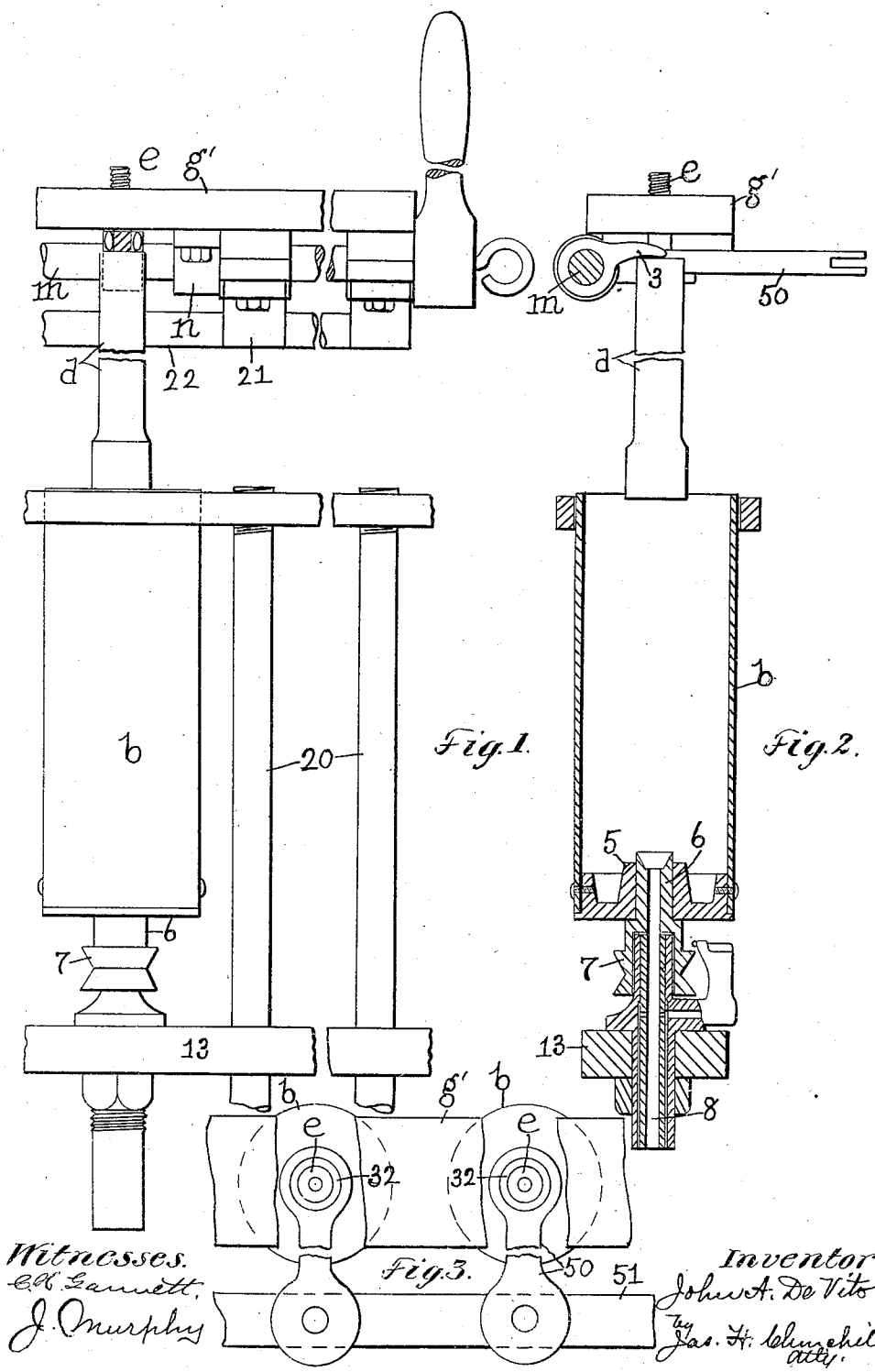


Fig. 1.

Fig. 2.

Fig. 3.

Witnesses.
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THE NORRIS PETERS CO., WASHINGTON, D. C.

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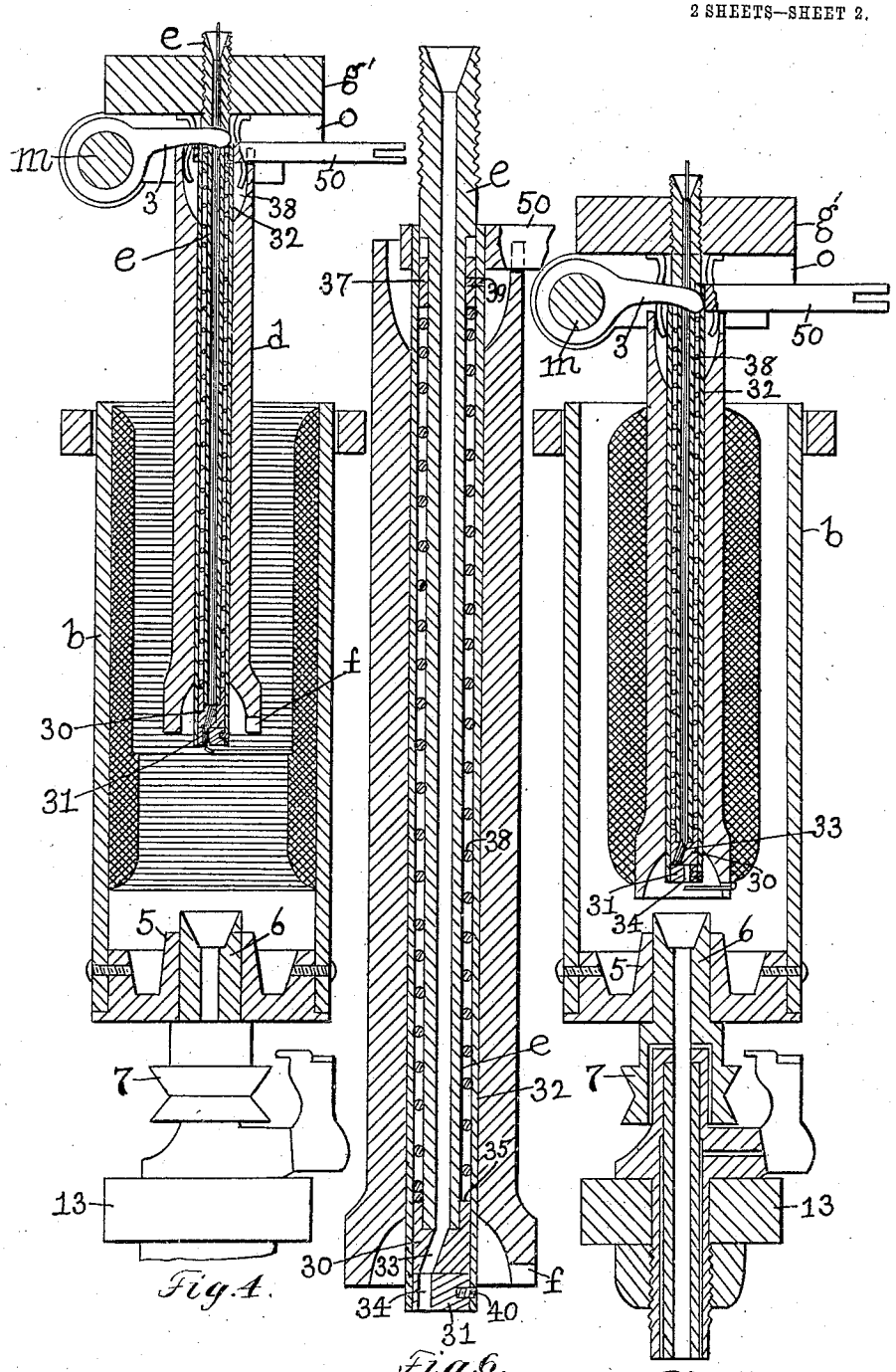


Fig. 4.

Fig. 6.

Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN A. DE VITO, OF BOSTON, MASSACHUSETTS.

SPINNING-MACHINE.

No. 874,662. Specification of Letters Patent. Patented Dec. 24, 1907.

Application filed March 26, 1906. Serial No. 308,007.

To all whom it may concern:

Be it known that I, JOHN A. DE VITO, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Spinning-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to yarn or thread twisting and bobbin winding machines of that class wherein the yarn or thread is led through a hollow guide tube into a hollow cylinder upon the interior surface of which the yarn or thread is wound, and from which it is doffed and wound upon a bobbin carried by the hollow guide tube, one form of such machine being shown and described in U. S. Patent No. 802,161 dated October 17, 1905.

The present invention has for its object to provide machines of the class referred to with means for cutting or severing the thread on the bobbin from that in the guide tube, whereby said thread or yarn may be severed or cut with certainty. For this purpose, I employ two cutting members, which practically form a part of the guide tube, and one of which is movable with relation to the other so as to shear or cut the thread as will be described. These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is an elevation of a sufficient portion of a spinning machine embodying this invention to enable it to be understood. Fig. 2, a detail in section and elevation to be referred to. Fig. 3, a detail in plan to be referred to. Figs. 4 and 5, enlarged sectional views to illustrate the operation of the invention, and Fig. 6, an enlarged section of the guide tube shown in Figs. 1, 4 and 5.

The main portions of the machine are and may be substantially the same as shown in the patent referred to and such parts are identified by the same letters and numerals, as in said patent, wherein *b* represents the hollow rotatable cylinder, 5 the head therefor, 6 the bushing, 7 the pulley thereon, 8 the spindle to which the bushing 6 is secured, in any suitable manner, as for instance, by a tight fit as herein shown, 13 the bearing rail, which is connected with the reciprocating frame 20, *e* the guide tube for the yarn or thread, *g'* the bobbin rail connected to the rod *m* by the hinges *n*, and resting on the cross pieces *o*, supported by the brackets 21 secured to the rigid rail 22.

In accordance with the present invention, the guide tube *e* has coöperating with it a cutting mechanism for the yarn or thread, comprising two members 30, 31, (see Figs. 4, 5 and 6). The member 30 is secured to the lower end of the tube *e*, and the member 31 to a tube 32 of larger diameter than the tube *e* and surrounding the latter. The members 30, 31 have extended through them holes or openings 33, 34, one of which is eccentrically located with relation to the passage or bore of the guide tube *e*, and in the present instance the hole 34 is eccentrically placed and is connected by the inclined hole 33 with the bore or passage of the tube *e*. In the present instance the member 30 has an annular flange 35 which surrounds the tube *e*, and the latter at its upper end has loose on it a collar 37, between which and the flange 35 is interposed a helical spring 38, for a purpose as will be described.

The collar 37 is secured to the outside tube 32 as by the screw 39, and the cutter member 31 is also secured thereto as by the screw 40, the spring 38 being compressed when the cutter member 31 is secured to the said tube, and the spring pressure thus obtained forces the cutting member 30 into firm contact with the cutting member 31, so that the thread or yarn may be cut or severed with certainty. The cutting member 30 is fixed to the guide tube *e* and may be regarded as the stationary cutter, and the member 31 is fixed to the tube 32 which is movable, and therefore the cutting member 31 may be regarded as the movable cutter.

The guide tube *e* constitutes a carrier for the stationary cutter, and the tube 32 a carrier for the movable cutter. The tube 32 may be turned or moved by hand, but in practice it is desired that all the tubes 32 should be capable of being simultaneously operated and to this end, each tube 32 has extended from it an arm 50, which may be pivotally connected to a common actuating bar 51 (see Fig. 3), which latter in practice may be moved by hand, or by suitable mechanism on the spinning machine, which mechanism may be of any desired or suitable construction for producing an intermittent reciprocation of the bar 51. The bobbin *d* is mounted on the tube 32 and may be moved

downward thereon by the finger 3 as described in the patent referred to.

In operation with the apparatus herein shown, the hole 34 in the movable cutter 31 normally registers with the hole 33 in the stationary cutter (see Fig. 6), so that an unobstructed passage is obtained for the yarn or thread through the guide tube *e* and the cutters 30, 31, into the hollow cylinder *b*, upon the inside of which said yarn or thread is wound, as the said cylinder is rotated and reciprocated and moves longitudinally of the bobbin. When it is desired to doff the yarn or thread and wind it upon the bobbin, the latter is moved downward on the tube 32 by the finger 3, and the thread or yarn is engaged by the notch *f* in the lower end of said bobbin, whereupon the thread or yarn is unwound from the cylinder *b* and is wound upon the bobbin. When the thread or yarn has been removed from the cylinder and wound upon the bobbin, the bar 51 is moved longitudinally in one direction to turn the tube 32 and thereby rotate the movable cutter 31 so that the upper edge of the hole 34 is moved out of line with the lower edge of the hole 33 (see Fig. 5) and cuts or shears the yarn or thread, and at the same time holds the end of that portion of the thread or yarn which passes through the guide tube. After the thread or yarn has been cut, the cutter 31 is moved back into its normal position, thereby leaving the severed ends of the yarn loose or free.

Claims.

1. In a spinning and twisting machine, in combination, a hollow rotatable member upon the interior of which the yarn or thread is wound, a tubular yarn guiding member cooperating with said hollow rotatable member, one of said members being movable with relation to the other, a cutting member fixed to said guiding member and having a hole or opening which registers with the passage in said guiding member, a coöperating movable cutting member having a hole or opening eccentrically located with relation to the passage in said guiding member and normally communicating therewith through the hole in the fixed cutting member, a tube surrounding said guiding member and to which the movable cutting member is secured to move therewith, a collar loose on said guiding member, means to secure said surrounding tube to said collar, a spring interposed between said tube and guiding member to maintain the cutting members in contact, and means to rotate said surrounding tube, substantially as described.

2. In a spinning and twisting machine, in combination, a hollow rotatable member upon the interior of which the yarn or thread is wound, a tubular yarn guiding member cooperating with said hollow rotatable member, one of said members being movable with relation to the other, a cutting member fixed to said guiding member, and a coöperating cutting member movable with relation to the fixed cutting member, substantially as described.

3. In a spinning and twisting machine, in combination, a hollow rotatable member upon the interior of which the yarn or thread is wound, a tubular yarn guiding member cooperating with said hollow rotatable member, one of said members being movable with relation to the other, a cutting member fixed to the said guiding member at its lower end and having a hole or opening through it which communicates with the passage in the guiding member, a rotatable cutting member arranged in line with the fixed cutting member and provided with a hole or opening through it eccentric to the passage in the guiding member and normally communicating therewith through the hole in the fixed cutting member, and a rotatable carrier for said rotatable cutting member, substantially as described.

4. In a spinning and twisting machine, in combination, a hollow rotatable member upon the interior of which the yarn or thread is wound, a tubular yarn guiding member cooperating with said hollow rotatable member, one of said members being movable with relation to the other, and a rotatable cutting member to sever the portion of the yarn in the passage of the guiding member from the portion of the yarn outside thereof, substantially as described.

5. In a spinning and twisting machine, in combination, a hollow rotatable member upon the interior of which the yarn or thread is wound, a tubular yarn guiding member cooperating with said hollow rotatable member, one of said members being movable with relation to the other, and a cutting member having its cutting edge movable transversely with relation to the passage of the guiding member, substantially as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN A. DE VITO.

Witnesses:
JAS. H. CHURCHILL,
J. MURPHY.