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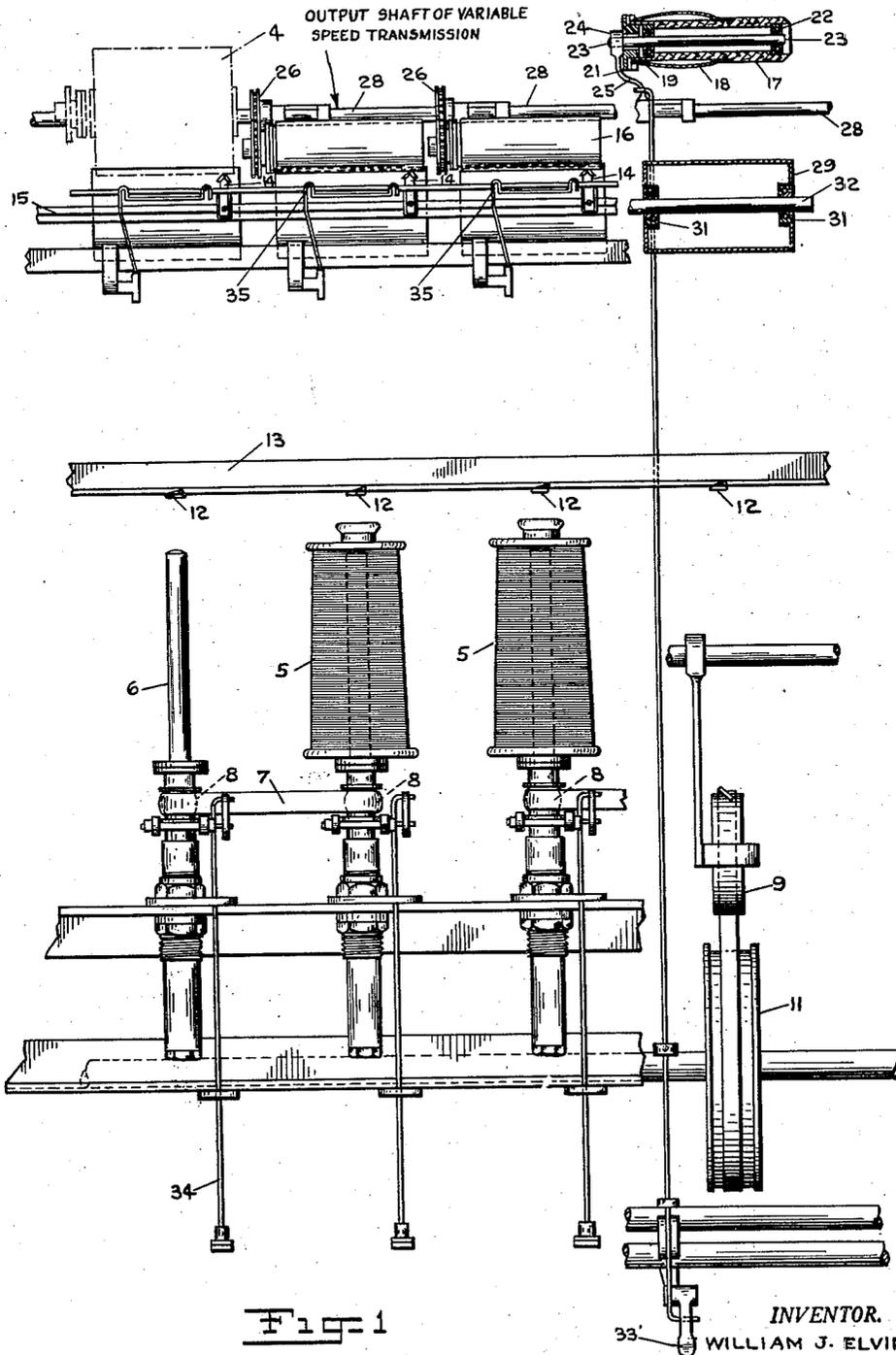
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2,401,725

TEXTILE MACHINE

Filed May 6, 1943

2 Sheets-Sheet 1



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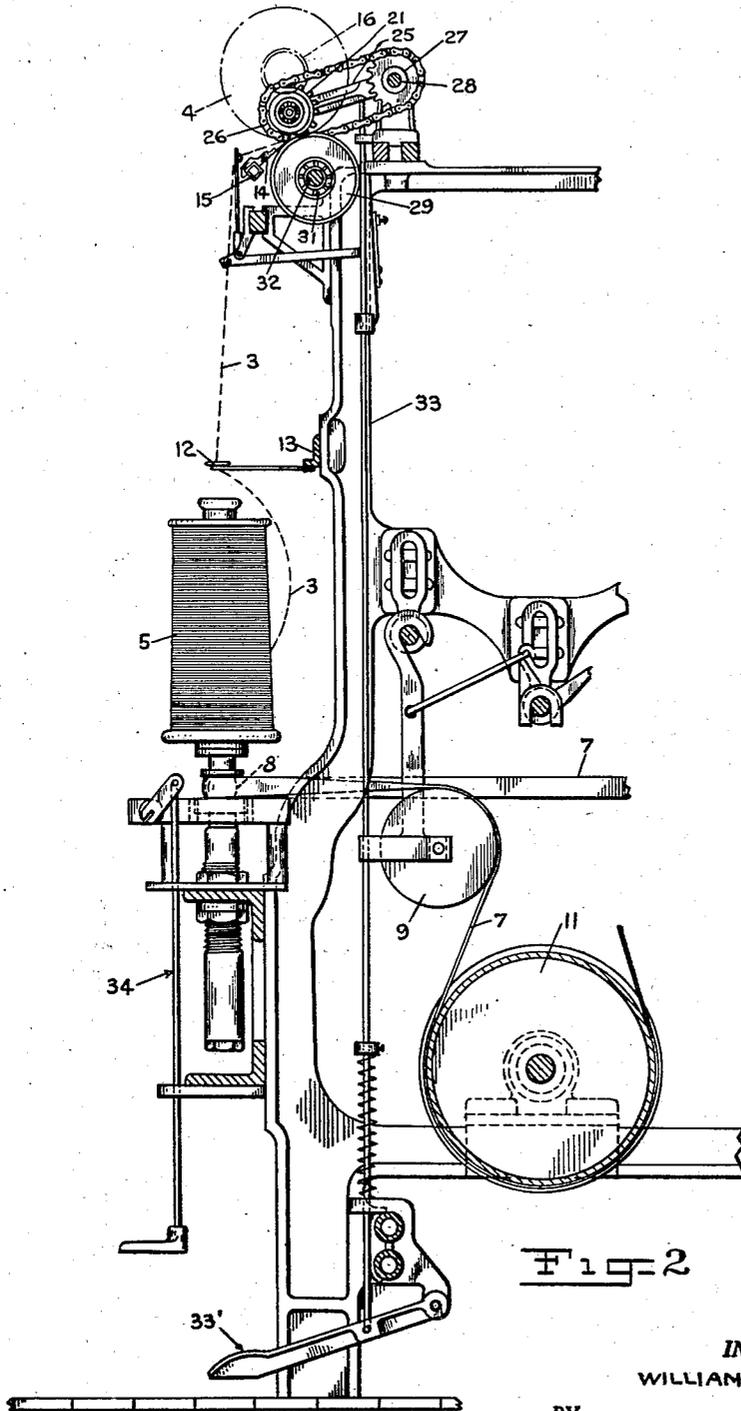


Fig. 2

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TEXTILE MACHINE

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7 Claims. (Cl. 242—18)

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This invention relates to textile machines and relates more particularly to an improvement in the take-up means of textile machines on which are produced cheeses and like packages of yarn.

In winding or twisting and winding machines for producing yarn packages, as heretofore commonly constructed, the yarn was wound into packages formed by means of a cork-covered roll or drum which frictionally rotated the yarn package. The positively driven cork-covered roll or drum often caused excessive friction on the yarn being wound which resulted in broken filaments and hairy yarns. It is, accordingly, an important object of this invention to provide an improved take-up means for a winding or twisting and winding machine which will be free from the above mentioned and other disadvantages, and which will be especially simple in construction and efficient and inexpensive in operation.

Another object of this invention is the provision of a winding or twisting and winding machine for producing packages of yarn which are perfectly wound as to the density and traverse and which will be substantially free from broken filaments.

A further object of this invention is the provision in a winding or twisting and winding machine of an improved take-up means wherein the package being wound is directly driven.

Other objects of this invention, together with certain details of construction and combinations of parts, will appear from the following detailed description.

In the accompanying drawings wherein a preferred embodiment of my invention is shown,

Figure 1 is a front elevational view of a portion of a twisting and winding machine in which my invention is embodied, and

Figure 2 is an end elevational view, partly in section, of Figure 1.

Like reference numerals indicate like parts throughout both views of the drawings.

Referring to Figure 1 of the drawings, there are shown some of the twisting and winding units generally making up a machine of this type. However, in order to simplify the disclosure of my invention, the description will be particularly directed to one of said twisting and winding units such as is shown in Figure 2.

The yarn 3 to be twisted and wound into the form of a cheese 4 is drawn from a bobbin 5 drivingly supported by spindle 6 driven by any suitable means, such as a motor (not shown), through a belt or tape 7 passing over whorl 8 and idler pulley 9 and driving pulley 11, which pulleys are

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suitably supported on the machine framework. The yarn 3 is drawn from bobbin 5 through a fixed guide 12 supported on a cross-piece 13 attached to the framework of the machine, said guide eye 5 being positioned centrally or substantially centrally over the spindle 6. From the guide eye 12 the yarn passes from a traverse guide 14 carried by a traversing rod 15 which traverses the yarn on to the cheese 4.

The cheese 4 is wound on a yarn support or core 16 held on a mandrel 17 provided with spring fingers 18 for retaining the core on the mandrel. The mandrel 17 is attached to a support 19 having integral therewith a sprocket 21, the mandrel 15 and support assembly being mounted on ball bearings 22 mounted on a spindle blade 23 journalled in a bearing member 24 in the end of an arm 25.

The sprocket 21 is connected by means of an articulated chain 26 to the sprocket 27 mounted on the shaft 28 driven by the output shaft of a positive, infinitely variable speed transmission (not shown) such as the one known as a "P. I. V." gear manufactured by the Link-Belt Co. As is well known, such a variable speed drive is so constructed and arranged that changes in speed may be effected continuously during the operation thereof. By the use of such a variable speed arrangement, the cheese 4 being rotated by the mandrel 17 may be given the constant peripheral 25 speed which is necessary to produce satisfactory cheeses. The shaft 28 is journalled in suitable bearings carried on the upper extremities of standards 28' supported on the framework of the machine.

For taking up the yarn 3 on to the package to form the cheese 4, the mandrel 17 with a core or yarn support 16 thereon is placed in contact with a polished steel drum 29 having roller bearings 31 rotatably mounted on a stationary shaft 32. 40 the rotation of the mandrel also rotating the drum 29. The use of the idler drum 29 for supporting the package being wound is advantageous since it makes for very little friction on the yarn being wound thereby substantially eliminating broken filaments and hairy yarn.

As is shown in the drawings, means may be provided for lowering the package support on to the yarn and for automatically lifting the cheese. Such means is generally indicated by reference numeral 33 and is mounted on the framework of the machine, being attached at one end to arm 25 and at the other end to a foot pedal 33'. A spindle brake generally indicated by reference numeral 34 is provided for stopping the rotation of the spindle, as is well understood in the art.

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The reference numeral 35 indicates drop wires which may be employed to stop the rotation of the yarn package upon the breaking or failure of the yarn.

It is to be understood that the foregoing detailed description is given merely by way of illustration and that many variations may be made therein without departing from the spirit of my invention.

Having described my invention what I desire to secure by Letters Patent is:

1. Apparatus for winding textile packages, comprising means for positively and directly rotating the package being wound at a constant peripheral speed and idler means for supporting said package being wound during the winding thereof.
2. Apparatus for winding textile packages, comprising means for pivotally supporting the package, means for positively and directly rotating the package being wound at a constant peripheral speed and idler means for supporting said package being wound during the winding thereof.
3. Apparatus for winding textile packages, comprising means for positively and directly rotating the package being wound at a constant peripheral speed and a freely rotatable drum for supporting said package being wound during the winding thereof.
4. Apparatus for winding textile packages, comprising means for pivotally supporting the package, means for positively and directly rotating the package being wound at a constant

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peripheral speed and a freely rotatable drum for supporting said package being wound during the winding thereof.

5. Apparatus for winding textile packages, comprising a mandrel adapted to support the package being wound, means for positively and directly driving said mandrel at a constant peripheral speed, and a freely rotatable polished steel drum for supporting said package being wound during the rotation thereof.

6. Apparatus for winding textile packages, comprising a mandrel for supporting the package being wound, means for positively driving said mandrel at a constant peripheral speed, said means comprising a variable speed drive means, a sprocket attached to said mandrel, a second sprocket attached to said variable speed drive means and an articulated chain connecting said sprockets, and a freely rotatable drum for supporting said package being wound during the winding thereof.

7. Apparatus for winding textile packages, comprising a mandrel for supporting the package being wound, means for positively driving said mandrel at a constant peripheral speed, said means comprising a variable speed motor, a sprocket attached to said mandrel, a second sprocket attached to the output shaft of said variable speed motor and an articulated chain connecting said sprockets, and a freely rotatable drum for supporting said package being wound during the winding thereof.

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