Jan. 28, 1947. E. W. PETERSON 2,414,893

GELATIN ROLL SPINDLE

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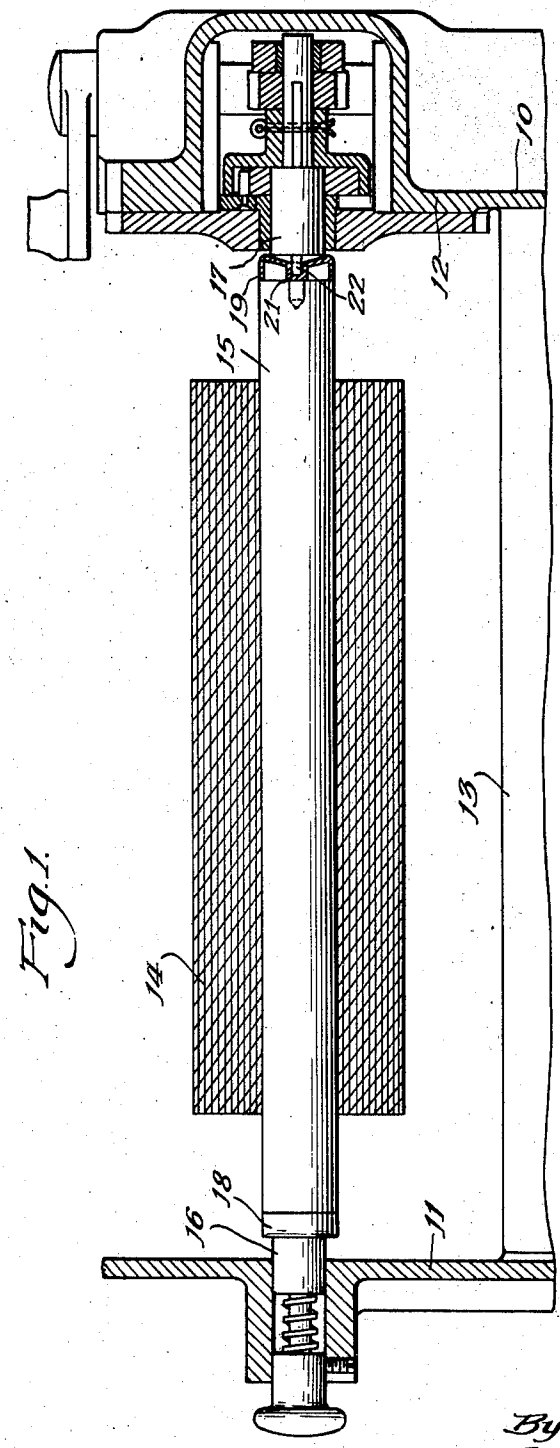


Fig. 1.

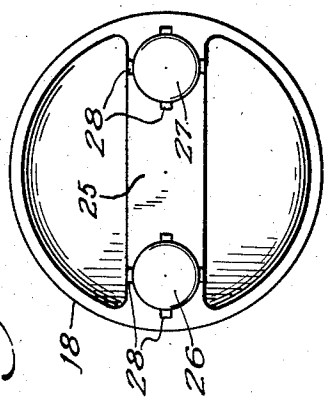


Fig. 4.

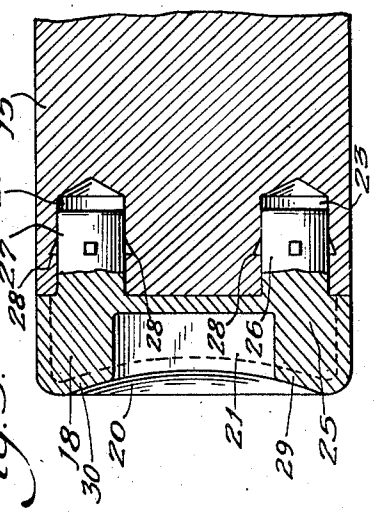


Fig. 3.

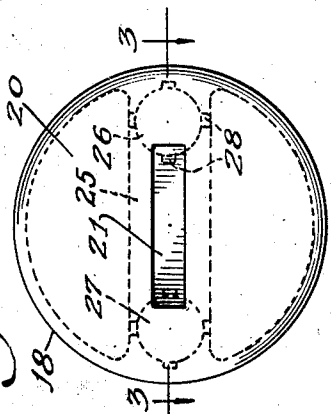


Fig. 2.

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GELATIN ROLL SPINDLE

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5 Claims. (Cl. 242—68)

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The present invention relates to spindles and is particularly adapted to be embodied in spindles which carry the gelatin bands of hectograph machines.

The gelatin bands of hectograph machines are rolled upon spindles which may be inserted into or removed from the machines as necessary, the construction of the spindles being such that when they are inserted in the machines they are operably connected to mechanism whereby they may be rotated to feed the gelatin band across the platen of the machine.

It is the principal purpose of this invention to provide an improved spindle wherein the wooden body of the spindle may be adequately fastened to metal journal members at the ends of the spindle. The invention contemplates the provision of duplicate journal members at the two ends of the spindle and connecting means to secure the journal members to the spindle body with the minimum weakening of the wood.

It is a further object of the invention to provide a large contact area in the journal members to receive the driving key thereby obviating the wear and strain due to the action of tightening the gelatin band.

The features and advantages of the invention will appear more fully from the following description and the accompanying drawing wherein a preferred form of the invention is shown. It should be understood, however, that the drawing and description are illustrative only and are not to be taken as limiting the invention except insofar as it is limited by the claims.

In the drawing:

Figure 1 is a fragmentary sectional view of a duplicating machine of the hectograph type utilizing a spindle which embodies my invention;

Figure 2 is an end view of the spindle journal member;

Figure 3 is a sectional view taken on the line 3—3 of the Figure 2 showing the manner in which the journal member is secured to the end of the wooden body part of the spindle; and

Figure 4 is an end view of the journal member as viewed from the opposite end thereof to that shown in Figure 2.

Referring now to the drawing, the numeral 10 designates generally the frame of a hectograph duplicating machine of any suitable conventional type. The frame comprises two side sections 11 and 12 and a flat platen 13 over which a gelatin band 14 is adapted to be drawn. The gelatin band 14 is usually wound upon a pair of spindles, one of which is shown at 15; the other spindle

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(not shown) being put at the opposite end of the machine. The spindle 15 is mounted between a spring pressed pin 16 that is carried by the side frame 11 and a driving member 17 that is journaled in the side frame 12. The spindle has journal members 18 and 19 at its ends. These journal members are alike in that they have concave portions such as is indicated at 20 in Figure 3 and in the center of the concave portion each journal member has a socket 21 to receive a driving key 22.

In winding and rewinding the gelatin band across the platen 13, it is desirable to maintain the band quite taut for a certain purpose. This of course subjects the spindle to considerable strain and makes it essential that adequate connection be provided between the journal members and the body of the spindle. According to my invention I provide the body portion of the spindle 15 which is of wood with two spaced holes or sockets 23 and 24. These holes can be bored in each spindle end when the spindles are turned down to proper dimensions or later as desired. The journal member 18 or 19 is provided with a transverse rib portion 25 in which the socket 21 is located. This rib portion is utilized as a base for mounting two round pins 26 and 27. The pins 26 and 27 are preferably formed integral with the journal members, for example, by die casting. Each of the pins 26 and 27 is then provided with punched out barbs 28 so that when the pins are inserted in the holes 23 and 24 the barbs will lock them in place.

For some purposes it may be unnecessary to go to the extent of providing the barbs 28, for example, a good close fit may be sufficient to mount the pins in place. With the present invention it is unnecessary to fit the journal member over the end of the spindle. This saves considerable expense in the preparation of the spindle since it saves not only the work of turning the two ends down, but it also saves material in the length of the spindle. The holes 23 and 24 can be made accurately enough under uniform production procedure to match the pins 26 and 27 which will, of course, be uniformly spaced when they are made from die castings. It will be noted that the rib 25 gradually increases in thickness beyond the ends of the socket 21 to provide thickened portions 29 and 30 opposite the pins 26 and 27.

Where the abuse to which the spindle is to be subjected justifies it, the spindle can, of course, be set into the journal member but this unnecessarily increases the expense of making the

device and for most purposes is entirely unwarranted. The journal members are recoverable from worn spindles and can be used over and over until the ends become so badly worn as to make it necessary to throw them away.

One particular advantage, aside from the economy of the present device, lies in the fact that the great central portion of the spindle lying between the pins **26** and **27** is not weakened at all and thus there is little danger of splitting the spindle. Another particular advantage of the device lies in the provision of the rib **25** which contains the socket **21**. This enables me to have full unbroken walls for the socket so that it resists wear and abuse. I am aware that journal members concaved and then slotted to receive a driving element are old in the art. See the patent to Marchev 1,967,676. In the socket, constructed according to my invention, I provide greatest strength in the side walls of the socket at the portions nearest the ends. These are the portions which receive the most strain and wear in use.

Having thus described my invention, I claim:

1. In a spindle for a gelatin band roll, a rod-like body portion, a journal member rigidly mounted at one end of the body portion, said body portion having two spaced apart sockets in the end thereof and having an imperforate wall between said sockets, said journal member having a transversely running rib aligning with said sockets, and pins projecting from said rib into the spindle sockets.

2. In a spindle for a gelatin band roll, a rod-like cylindrical wooden body, having two spaced cylindrical sockets at one end thereof on opposite sides of the axis of said body and having an imperforate wall between said sockets, and a journal member having two spaced cylindrical pins seated in said sockets, the pins having barbs thereon.

3. In a spindle for a gelatin band roll, a rod-like cylindrical wooden body, having two spaced cylindrical sockets at one end thereof on opposite sides of the axis of said body and having an imperforate wall between said sockets, and a journal member having two spaced cylindrical pins seated in said sockets, the pins having barbs thereon, said journal member having an elongated socket in its outer end aligned with and lying between said pins, and having thickened portions at the ends of said elongated socket opposite said pins.

4. In a spindle for a gelatin band roll, a journal member comprising an annular shell having a concave face on one side thereof, and flanged to provide a cupped formation on the other side thereof, a rib extending transversely across said cupped formation and spaced pins projecting from said rib.

5. In a spindle for a gelatin band roll, a journal member comprising an annular shell having a concave face on one side thereof and flanged to provide a cupped formation on the other side thereof, a thickened rib extending transversely across said cupped formation, and spaced pins projecting from said rib, said rib having a rectangular socket formed therein opening upon the concave face of said shell.

ERIC W. PETERSON.