

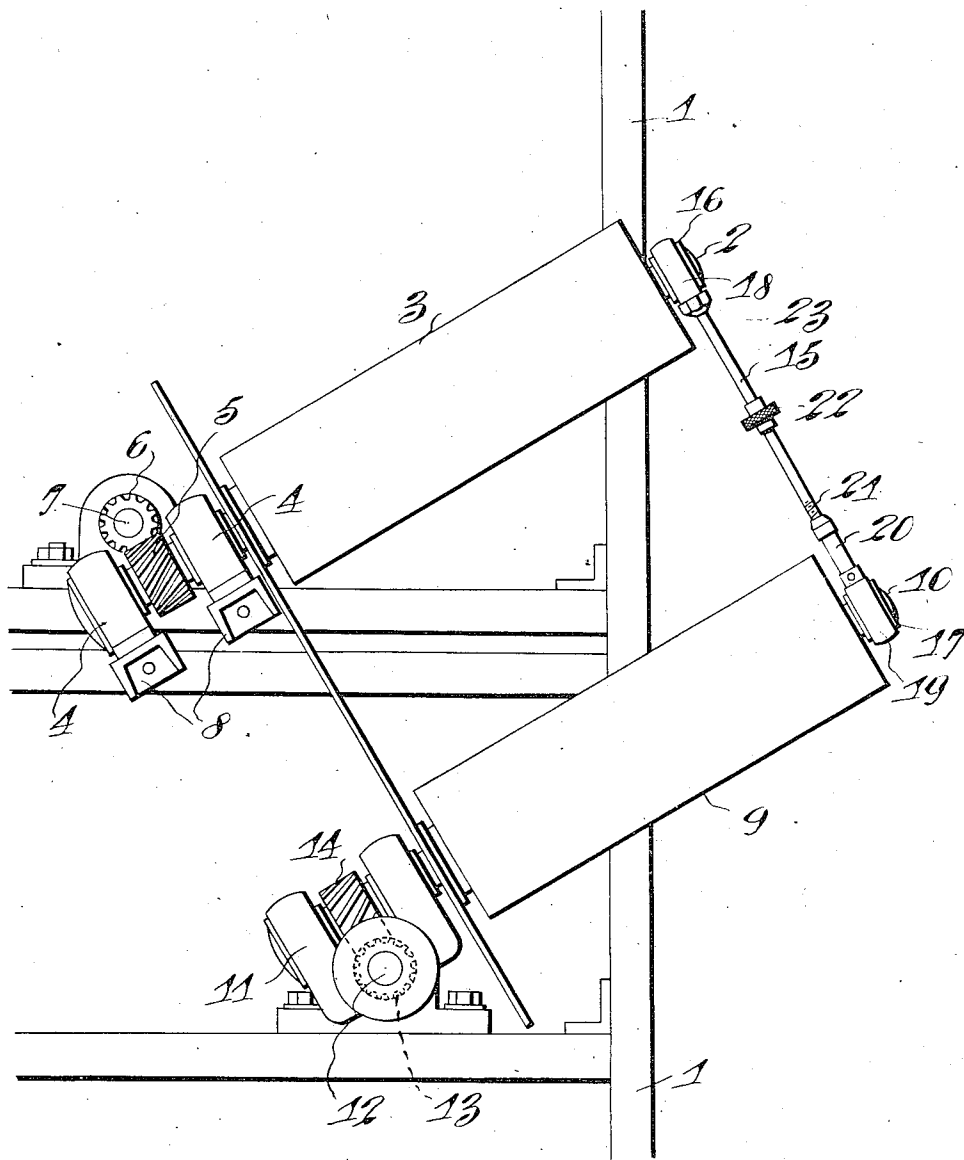
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ROLLER FEEDING DEVICE

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## UNITED STATES PATENT OFFICE

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## ROLLER FEEDING DEVICE

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## 9 Claims. (Cl. 18—8)

This invention relates to an improved drawing roller arrangement for use on an apparatus for the manufacture of freshly spun artificial silk.

In the manufacture of artificial silk a spinning solution of cellulosic origin is made up and extruded through the orifices of a spinning nozzle into a coagulating medium. The filaments thus formed are drawn therethrough by either the collecting device or by means of intermediate power-driven rollers.

These roller arrangements are sometimes used for stretching the thread or for prolonging the coagulating length. If the purpose is to prolong the path of the filaments between the spool and spinning nozzle, the filaments are passed a plurality of times from one roller to another. These rollers are in spaced relation and at an angle, one to the other, whereby the thread is automatically advanced over the rollers in a helical path. The rollers may be driven and usually are.

It was found, however, that the angle at which the rollers were placed with relation to one another was not always the position best suited for all spinning conditions. In order to change this angle to the one required it was necessary to discontinue drawing the thread until the proper angular relation was obtained. This resulted in a number of disadvantages in view of the fact that the spinning solution was still running and that it would be inconvenient to shut it off.

It is therefore one object of the present invention to devise a driven roller arrangement whose angular relationship can be quickly and easily changed without interruption of the drawing of the threads.

Another object of the present invention is to devise a driven roller arrangement which is mounted on a spinning machine in an improved and novel manner.

These and other objects will in part become obvious and in part be pointed out in the following specifications and claims when taken in conjunction with the accompanying drawing, in which is illustrated in side-elevation the novel roller arrangement comprising the invention.

In the drawing the reference numeral 1 indicates a portion of the frame of a spinning machine, the shaft 2 of the upper roller 3 rotates in bearings 4—4. A spiral gear 5 is mounted on the shaft 2 between the bearings 4—4 and meshes with another spiral gear 6 on a drive shaft 7 which is driven in any suitable manner (not shown).

The bearings 4—4 are attached to U-brackets 8 mounted on the frame 1. The upper roller 3

is therefore seen to be held in a set angular position.

The lower roller 9 is mounted on a shaft 10 which rotates in a bearing 11 rotatable around the drive shaft 12. The drive shaft 12 drives a spiral gear 13 which meshes with another spiral gear 14 mounted on the roller shaft 10.

In order to adjust and hold the spaced relation of the rollers 3 and 9 there is attached to the free ends of the shafts 2 and 10 a rod arrangement 15. The rod 15 is attached to bearings 16 and 17 which are mounted on the free ends of the shafts 7 and 10.

The bearing 16 is attached to and rotates with the shaft 2. A band 18 is rotatably mounted on the bearing 16 and is secured to the rod 15.

The bearing 17 is mounted to rotate with the shaft 10 and is surrounded by a band 19 which has secured thereto by a ball and socket arrangement an internally threaded extension 20 into which the threaded end 21 of the rod 16 screws.

By turning the knurled nut 22 the angle of the roller 9 is changed.

A lock nut 23 prevents any inadvertent turning of the rod 16 when the angular relationship desired is obtained.

It is possible of course to provide the frame 1 of the machine with a means for setting the position of the roller 9, such as a slot and bolt arrangement, but it is believed more accurate settings may be obtained by use of the illustrated form of invention.

From the foregoing description, taken in connection with the accompanying drawing, it is thought the complete construction, operation and advantages of the invention will be clear to those skilled in the art to which it relates.

As many apparently widely different embodiments of this invention may be made without departing from the spirit thereof, it is to be understood that it is not intended to limit the invention to the specific embodiment thereof except as indicated in the appended claims.

What is claimed is:

1. A device for drawing threads, comprising in combination a pair of rollers each of which is mounted at one end, one of said rollers being pivotally mounted, and spacer means for adjusting the angular relationship of said rollers.

2. A device for drawing threads, comprising in combination a pair of rollers each of which is mounted at one end, one of said rollers being pivotally mounted, and spacer means mounted on the other ends of said rollers for adjusting the angular relationship of said rollers.

3. A device for drawing threads, comprising in combination a pair of rollers each of which is mounted at one end, one of said rollers being pivotally mounted, a spacer rod whose length may be varied mounted in bearings which are supported on the other ends of said rollers for adjusting the angular relationship of said rollers.
4. A device for drawing threads, comprising in combination a pair of rollers each of which is mounted at one end, one of said rollers being pivotally mounted, bearings mounted on the other ends of said rollers, a spacer rod whose length may be varied connecting said bearings, and means for holding said rod in locked position.
5. A device for drawing threads, comprising in combination a roller mounted and driven at one end, a second roller pivotally mounted and driven at one end, and means mounted on the free ends of said rollers whereby said second roller may be adjustably positioned.
6. A device for drawing threads, comprising in combination a roller mounted and driven at one end, a second roller pivotally mounted and driven at one end, bearings mounted on the free ends of said rollers, a spacer rod whose length may be varied connected at either end to said bearings.
7. A device for drawing threads, comprising in combination a roller mounted and driven at one end, a second roller pivotally mounted and driven at one end, bearings mounted on the free ends of said rollers, a spacer rod connecting said bearings, said first roller-bearing attached to said rod by a ball and socket arrangement, said rod having its other end threaded, said threaded end screwing in a threaded socket on said second roller-bearing whereby when said rod is turned the distance between the free ends of said roller may be varied.
8. A device for drawing threads, comprising, in combination, a pair of rollers each of which is mounted at one end, one of said rollers being pivotally mounted, and means for adjusting the angular relationship of said rollers.
9. A device for drawing threads comprising, in combination, a pair of rollers each of which is mounted at one end, one of said rollers being pivotally mounted, and means to adjust the pivoted roller angularly to vary the angular relationship of the said pivotally mounted roller with respect to the other.
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