Oct. 7, 1930. C. J. LINDEGREN 1,777,372

BOBBIN SUPPORT FOR WEFT MAGAZINES

Filed May 17, 1929

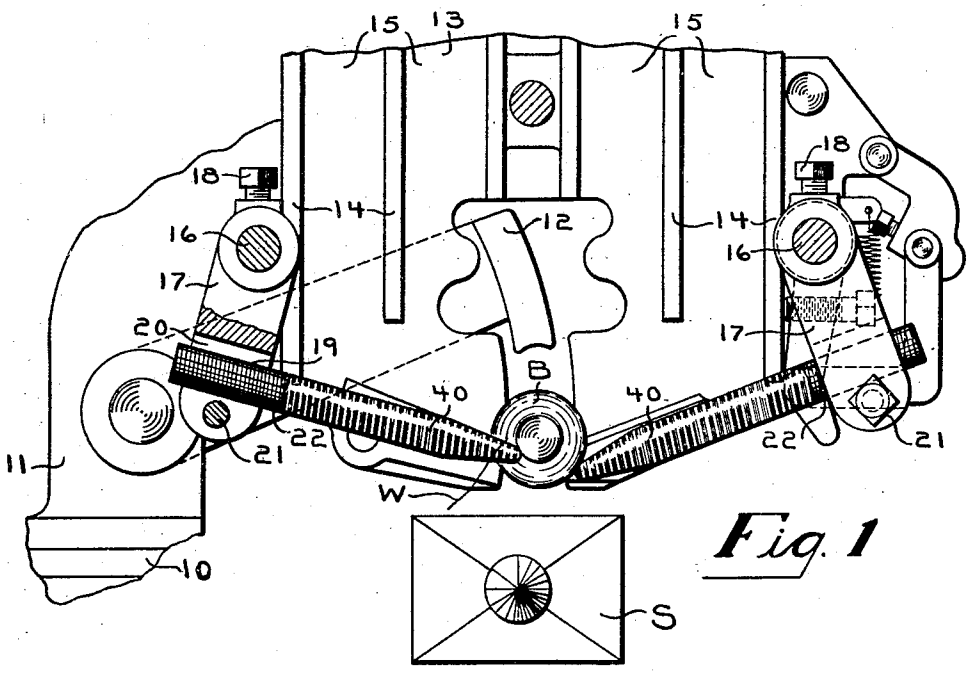

Fig. 1

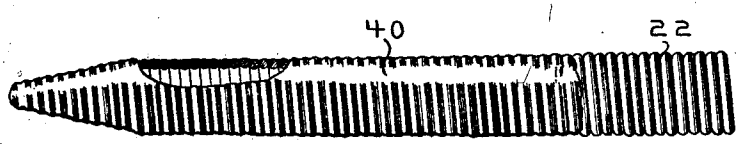

Fig. 2

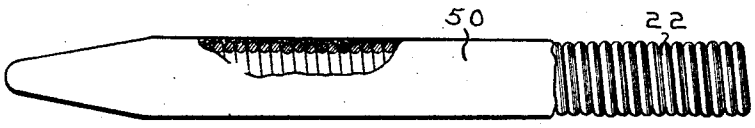

Fig. 3

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UNITED STATES PATENT OFFICE

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BOBBIN SUPPORT FOR WEFT MAGAZINES

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This invention relates to improvements in supports for bobbins awaiting transfer in weft replenishing looms and it is the general object of the invention to provide a support formed of a wire coiled on itself and treated so as to present a substantially smooth and uninterrupted surface to the passage of thread thereover as the bobbin moved toward transfer position.

In the usual multicolor weft replenishing loom a plurality of stacks of bobbins are arranged in parallel relation and so-called cradles are employed to release bobbins from the stacks. The bobbins move down inclined guides or supports to a common position from which they are moved into the depleted shuttle by means of a transferrer hammer, the supports yielding to permit discharge of the bobbin. When the supports are made of a closely wound coil spring it is found that the threads which extend from the bobbin to the thread holder are likely to be caught in the spaces between two successive coils of the spring and it is an important object of my present invention to coat the coils with a compound which will substantially fill these spaces in this way permitting the thread from the bobbin to slide uninterruptedly over the support as the bobbin moves toward transfer position.

It is a further object of my invention to coat a coil spring bobbin support with a rubber compound and vulcanize the same to the coils of the spring, so that as the latter bends on its axis there will still be a continuous and smooth surface presented to the thread.

With these and other objects in view which will appear as the description proceeds, my invention resides in the combination and arrangement of parts hereinafter described and set forth in the claims.

In the accompanying drawings wherein I have shown two convenient forms of my invention,

Fig. 1 is a vertical section through the lower portion of a multicolor weft replenishing mechanism provided with bobbin supports forming the subject matter of my present invention,

Fig. 2 is a side elevation of a bobbin support made according to the preferred form of my invention and having certain coils thereof dipped in a coating compound such as lacquer, and

Fig. 3 is a view similar to Fig. 2 but showing the modified form of the invention wherein certain coils of the spring support are coated with vulcanized rubber.

Referring particularly to Fig. 1 I have shown a loomside 10 supporting a magazine frame 11 having pivoted thereto a transferrer arm 12. The magazine includes in its construction an inside plate 13 having a plurality of flanges 14 which define compartments 15 down which the bobbins may move toward transfer position. The rods 16 also enter into the construction of the magazine, two of said rods being shown herein.

Secured to each tie rod is a holder 17 held in adjusted angular and longitudinal position with respect to the tie rod by means of a set screw 18. The lower end of the holder may be provided with a bore 19 and split as at 20. A bolt 21 extends through a split portion of the holder and affords means for clamping in adjusted angular and longitudinal position the previously referred to support 22. The latter is formed preferably of a single piece of wire coiled on itself and having a series of closely wound convolutions of substantially the same diameter, a portion of which extends through the bore 19. The bolt 20 serves to clamp said coils in position with respect to the holder 17.

That portion of the holder which supports the bobbin B in transfer position may be conical in form, as set forth in the drawings, the coils becoming progressively of lesser diameter. I find that the conical end is somewhat stiffer than the larger end of the support with the result that any flexure incident to transfer is likely to deform the axis of the spring at points remote from the conical end.

The matter thus far described forms no part of my present invention and in operation a bobbin B will be released from one or another of the compartments to fall on to the supports and move toward and finally arrive

at the position shown in Fig. 1. Thereafter the transferrer arm 12 will descend by mechanism not shown but well understood and expel the bobbin from the magazine and cause the same to enter a depleted shuttle S.

As previously stated I find that as the bobbin moves down the supports the weft end W extending therefrom is likely to become entangled with the spring by being caught between two successive coils. In order to prevent this I treat the support so that the spaces between successive coils are substantially filled. According to the preferred form of my present invention I dip the conical end or the whole of the spring support in some such a compound as enamel or lacquer. When this substance dries I find that all the objectionable spaces between the coils of the spring are filled and as a result there is presented to the thread a continuous smooth surface shown at 40 in Fig. 2 which does not entangle the thread.

In the modified form of my invention I rubberize the conical end and certain of the larger coils of the support and thereafter vulcanize the rubber so that the coils are coated with a surface of durable elastic substance which fills the spaces between the coils and presents a smooth continuous surface to the thread, the rubberizing permitting flexure of the support without disruption of the surface along which the thread extends.

In Fig. 3 I have designated at 50 a zone of the support which has been vulcanized.

From the foregoing it will be seen that I have provided a very simple means for filling the spaces between successive coils of a spring bobbin support, the support being coated either with a composition such as lacquer or enamel or similar substance. In the modified form of the invention a portion of the spring is coated with vulcanized rubber which in addition to having the properties of the lacquer in filling up objectionable spaces also preserves continuity of surface while the support is bending. With the vulcanized rubber coating the latter will have internal ridges which closely fit the spaces between the coils to prevent slipping of the coating off the support.

Having thus described my invention it will be seen that changes and modifications may be made therein by those skilled in the art without departing from the spirit and scope of the invention and I do not wish to be limited to the details herein disclosed, but what I claim is:

1. A bobbin support formed of a wire wound to present a series of closely adjacent coils and having a coating of material to substantially fill the spaces between the coils to present a continuous surface to a thread.

2. A bobbin support formed of a wire wound to present a series of closely adjacent coils and having a coating of lacquer-like material substantially filling the spaces between the coils to present a continuous surface to a thread.

3. A bobbin support formed of a wire wound to present a series of closely adjacent coils which are coated with lacquer to present a continuous surface to a thread.

4. A bobbin support formed of a wire wound to present a series of closely adjacent coils which are coated with a material to fill the spaces between the coils to present a continuous surface to a thread.

In testimony whereof I have hereunto affixed my signature.

CARL J. LINDEGREN.