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SHUTTLE SPRING

Filed Aug. 13, 1921

Fig. 1.

Fig. 2.

Fig. 3.

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WILLIAM A. BASHAW, OF WILKINSONVILLE, MASSACHUSETTS.

SHUTTLE SPRING.

Application filed August 13, 1921. Serial No. 492,080.

To all whom it may concern:

Be it known that I, WILLIAM A. BASHAW, a citizen of the United States, residing at Wilkinsonville, in the county of Worcester and State of Massachusetts, have invented a new and useful Shuttle Spring, of which the following is a specification.

This invention relates to a shuttle spring of the general type shown in my prior Patent No. 1,241,076 issued to me September 25, 1917.

Such springs are used to grip and hold a bobbin or other web carrier in the shuttle of an automatic filling replenishing loom. The bobbins are provided with rings at their butts adapted to be forced between the jaws of the shuttle spring and to be firmly gripped in recesses or notches therein. A considerable range of movement is necessary to take care of variations in the diameters of different bobbin rings and this requires that the spring jaws be bent inward more than would be otherwise necessary or desirable. When the springs are thus shaped, the difficulty of inserting bobbins is increased, as a relatively heavy blow is required to insert the bobbin.

It is the object of my invention to provide a shuttle spring of an improved construction in which the parts are more readilymovable and in which they have a wider range of movement than is the case with a spring made as described in my prior patent.

With this object in view, an important feature of my invention relates to the provision of a shuttle spring having the ends or jaws of the spring formed with separately yielding parts. Other features of my invention relate to a novel method for forming a shuttle spring of this improved construction and to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of my invention is shown in the drawings, in which—

Fig. 1 is a partial plan view of a shuttle with my improved spring mounted therein;

Fig. 2 is a view illustrating a step in the method of forming my improved spring; and

Fig. 3 is a perspective view of the finished spring.

Referring to the drawings, I have shown a shuttle spring 10 mounted in a shuttle 11 and secured therein by a bolt 12 and nut 13. A guide plate or holder 14 encloses the spring 10 and forms an additional securing means therefor as well as acting as a guide for the bobbin during transfer.

My improved spring, as shown in Fig. 3, is substantially similar to the spring shown in my prior patent with the exception that each of the holding jaws of the spring is split or slitted longitudinally at 15 to form separately yieldable jaw members 16 and 17. A preferred method of manufacturing my improved spring comprises taking a piece of straight bar stock of the required length and splitting the stock inward from each end as indicated in Fig. 2, this operation being most conveniently performed by shearing dies in a punch press. The downwardly displaced portions of the stock are then preferably straightened to their original positions, after which the bar stock is bent into the usual and substantially U-shaped form shown in Fig. 3.

The jaws are then provided with notches or recesses 18 to receive the bobbin rings and the upper parts 16 are beveled on their upper edges as shown at 19. The springs are then hardened and tempered in the usual way and are commonly assembled in the shuttle with a spacing block 20 (Fig. 1) inserted between the sides of the spring in the narrow end thereof.

It has been found by experiment that a spring provided with separately yieldable end portions such as the parts 16 and 17 will yield more readily to permit the insertion of a bobbin and will at the same time hold the bobbin very securely in the shuttle.

While I have described a preferred method of constructing the springs, it will be understood that my invention is not limited to a spring thus produced, except as relates to the method claim, as springs embodying novel features of my invention may be formed by other methods, such as splitting the jaws with a thin saw after they have been bent to finished shape.

What I regard as my invention and what I claim is:—

1. As an article of manufacture, a shuttle spring having its bobbin engaging jaws...
formed in separately yieldable portions by relatively narrow slits extending inwardly from the outer ends of said jaws.

2. As an article of manufacture, a shuttle spring formed from a single piece of bar stock bent to a general U-shape and having its side portions split longitudinally from each end inwardly to form separately yieldable engaging means extending side by side in substantially parallel relation and having the inner edges of said members positioned closely adjacent to each other.

In testimony whereof I have hereunto affixed my signature.

WILLIAM A. BASHAW.