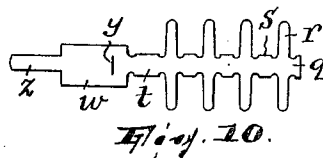
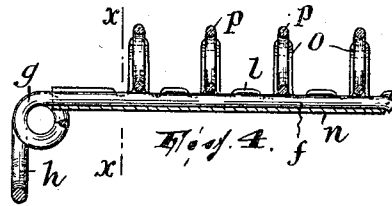
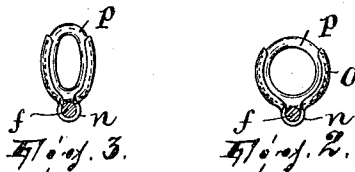
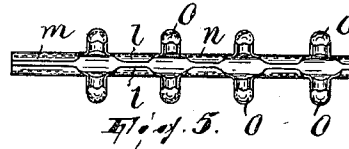
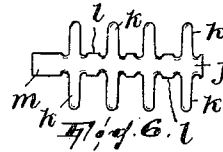
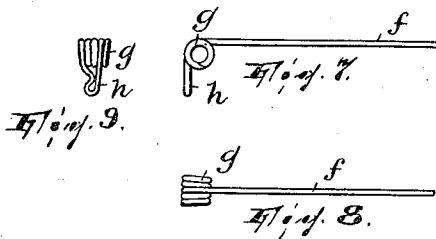
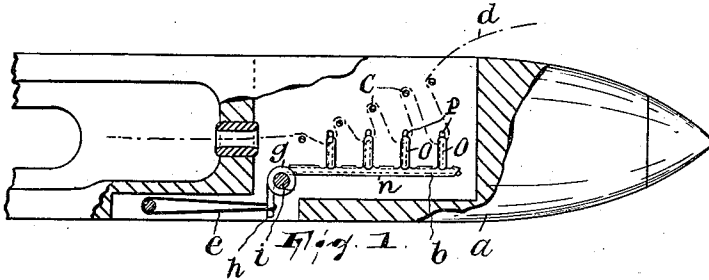


M. CAMAGNI.
 LOOM SHUTTLE TENSION MECHANISM.
 APPLICATION FILED JUNE 28, 1910.

990,334.

Patented Apr. 25, 1911.



WITNESSES:

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LOOM SHUTTLE-TENSION MECHANISM.

990,334.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed June 28, 1910. Serial No. 569,309.

To all whom it may concern:

Be it known that I, MARIO CAMAGNI, a citizen of the United States, residing in Paterson, Passaic county, New Jersey, have invented a certain new and useful Improvement in Loom Shuttle-Tension Mechanisms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to letters of reference marked thereon, which form a part of this specification.

In a well-known type of tension mechanism for shuttles for looms one of the thread-controlling parts is a spring-actuated device comprising a series of eyelets arranged parallel and in alinement with each other and rigidly connected together, such member being usually formed by twisting a length of wire so as to form loops (constituting the eyelets) at suitable intervals. Being all of metal, one or more of the eyelets sooner or later becomes cut partially or entirely through by the constant wear of the thread thereon, so that the device as a whole must be discarded and replaced by a fresh one. One adaptation of a device of the kind referred to may, for illustration, be seen upon reference to the U. S. Patent to Faisent *et al.*, No. 492395.

The object of my invention is principally to improve the device referred to by prolonging the life thereof.

In the accompanying drawing, in which the invention is fully illustrated, Figure 1 illustrates a fragment of a loom shuttle, a part of which is broken away to reveal the subject of the invention; Fig. 2 is a sectional view on the line $x-x$ of Fig. 4; Fig. 3 is a similar view, illustrating a slight modification; Fig. 4 is an enlarged view, partly in side elevation and partly in section, of the improved device; Fig. 5 is a plan view, also enlarged, of the improved device, the eyelets being removed; Fig. 6 shows the blank from which the holder-member of the device is formed; Figs. 7, 8 and 9 are side, plan and end views of the supporting member; Fig. 10 is a plan view of a blank from which a modified form of the device is made; and, Fig. 11 is a side elevation of the modified form of the device which results when the

blank in Fig. 10 has been converted to its ultimate form, the eyelets being omitted.

In the shuttle *a* shown in Fig. 1, *b* is the improved device and *c* a series of fixed guides which coact with the eyelets of the device *b* to preserve the proper tension on the thread *d*, the device *b* being controlled by the usual elastic band or the like *e* so that it normally tends to stand as in said figure.

In its preferred form, the improved device comprises a supporting member, Figs. 7, 8 and 9, a holder-member, Figs. 2, 3, 4 and 5, and a plurality of eyelets, Figs. 2, 3 and 4.

The supporting member is formed from a piece of wire so as to produce a straight shank *f*, a coil *g* at one end of said shank and a projection *h* extending from the coil. The coil *g* affords a bearing for the supporting member on the pivot *i* shown in Fig. 1, while the projection *h* serves as a means to which to attach the elastic band *e* (Fig. 1).

The holder-member is formed from the blank of sheet metal shown in Fig. 6, the same comprising a strip *j* from which project at regular intervals the pairs of ribs *k* (the ribs in each pair being alined and extending in opposite directions from the strip) and, between the ribs, the opposed projecting nibs *l*; at one end a substantially rectangular butt *m* is formed in the strip. Each rib *k* is also formed channeled longitudinally thereof.

From the blank thus produced the holder-member is formed as follows: The strip, including its nibs *l* and its butt *m*, is bent into the form of a tubular shank *n* (Fig. 5), the extremities of corresponding nibs *l* and the sides of the butt *m* being brought into approximate contact with each other, as shown in Fig. 5; each pair of ribs *k* (previously channeled or recessed in the manner described) is then bent so as to project upwardly from the shank *n* and stand, when seen in the end elevation of the holder-member, in the line of a circle, thereby producing gripping devices *o* (or said ribs may be so bent as to stand in the line of an ellipse, Fig. 3). The holder-member may now be assembled with the supporting member by introducing the shank *f* of the supporting member into the tubular shank *m* of the holder member (see Fig. 4).

The eyelets *p* (having the circular form

in Fig. 2 or the elliptical form in Fig. 3) are composed preferably of some hard substance calculated to resist wear, say glass or any other vitreous substance or the like which is commonly used in the manufacture of thread-guiding eyelets. They are introduced in the sockets formed by the gripping devices, each being held in a pair thereof, seated in the channels or recesses of said gripping devices.

In the modification shown in Figs. 10 and 11 the parts *q*, *r*, *s* and *t* of the blank correspond in form and arrangement to the parts *j*, *k*, *l* and *m* in Fig. 6, and when the blank is shaped to form the holder-member the parts *u* and *v* corresponding to the parts *n* and *o* in Figs. 3, 4 and 5 result. A rectangular extension, *w*, however, projects from the end of the strip *q* having the butt *t*, said extension having a transverse slit *y* and a tongue *z*, the latter projecting from the free end of the extension. To form the bearing for the improved device in this instance, the extension *w* is bent into the coil 2 in Fig. 11, its tongue *z* being passed through the slit *y* and extending therefrom to produce the projection 3 to which the band *e* may be attached.

As the results of the construction of the device as herein described, the life of each eyelet is very materially increased because, being of glass or other similar hard substance, it resists wear more effectively than the metal eyelets of the old type of the device; moreover, when the eyelet does wear to such an extent that it is no longer serviceable, the eyelet may be removed from the holder-member and a new one substituted.

It will be observed that the ends of the devices *o* are in each instance spaced from each other; thus, at the thread-contact portion of each eyelet no metal exists which in the whipping of the filling incident to its discharge from the shuttle when the latter is in action would become cut or nicked and lead to an unexpected failure of feed of the filling and consequent damage to the cloth being woven.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a tension mechanism of substantially the nature of that herein described, the combination of a plurality of eyelets and a holder member for the eyelets consisting of a sheet metal strip having parallel pairs of oppositely projecting ribs extending laterally therefrom, said ribs being bent up into gripping relation to the eyelets, substantially as described.

2. In a tension mechanism of substantially the nature of that herein described, the combination of a plurality of eyelets and a holder member for the eyelets consisting of a sheet metal strip having parallel pairs of oppositely projecting ribs extending laterally therefrom, said ribs being bent up into peripheral gripping relation to the eyelets, substantially as described.

3. In a tension mechanism of substantially the nature of that herein described, the combination of a plurality of eyelets and a holder member for the eyelets consisting of a sheet metal strip having parallel pairs of oppositely projecting channeled ribs extending laterally therefrom, said ribs being bent up into gripping relation to the eyelets and receiving said eyelets in their channels, substantially as described.

4. In a tension mechanism of substantially the nature of that herein described, the combination of an eyelet and a holder member for the eyelet consisting of a sheet metal strip bent longitudinally into substantially tubular form and having oppositely projecting ribs, said ribs being bent up into gripping relation to the eyelet, substantially as described.

In testimony, that I claim the foregoing I have hereunto set my hand this 27th day of June, 1910.

MARIO CAMAGNI.

Witnesses:

JOHN W. STEWARD,
WM. D. BELL.