Jan. 12, 1926. 1,569,712.

L. A. CADORET

SHUTTLE THREADER

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FIG. 1.

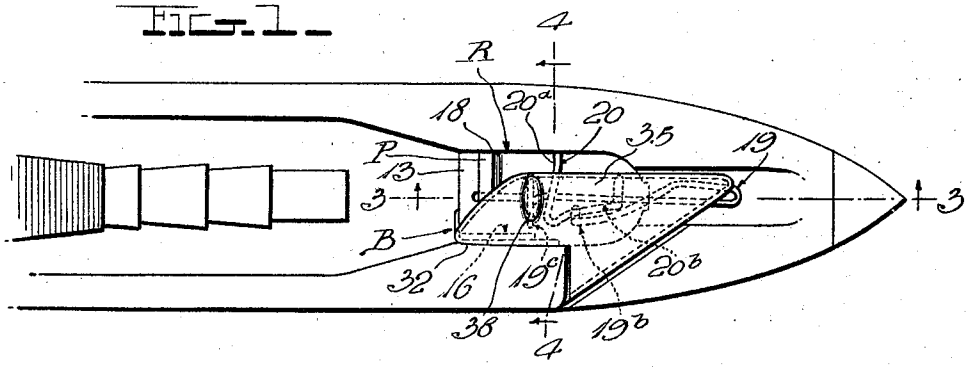


FIG. 2.

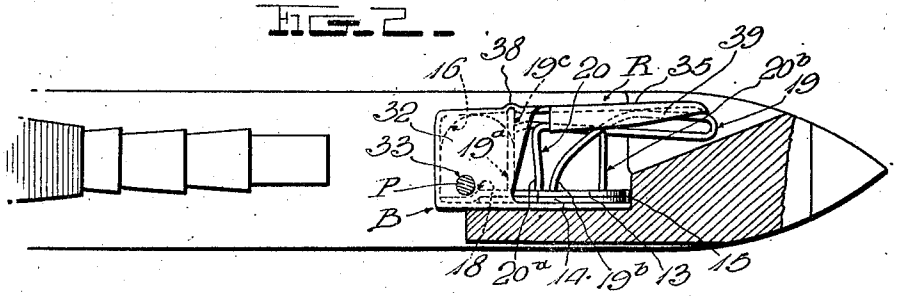


FIG. 3.

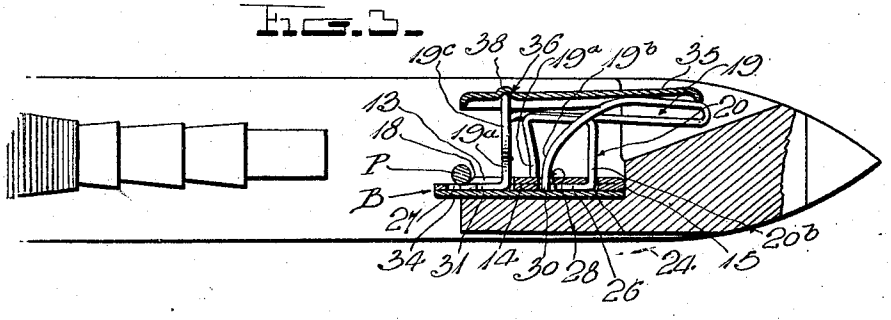
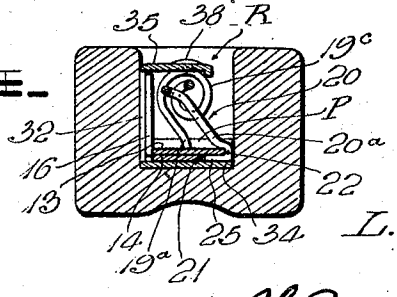


FIG. 5.



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FIG. 5.

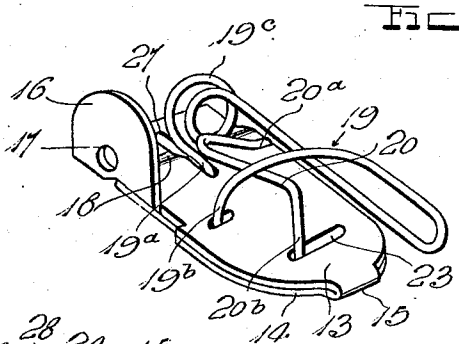


FIG. 6.

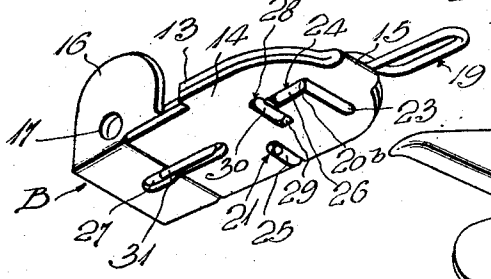
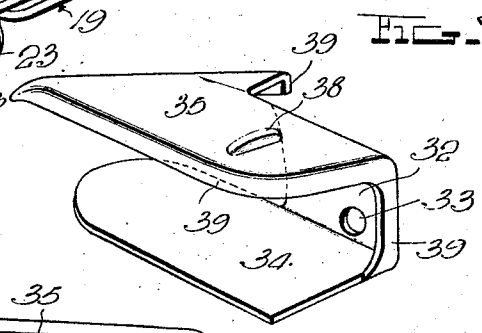


FIG. 7.



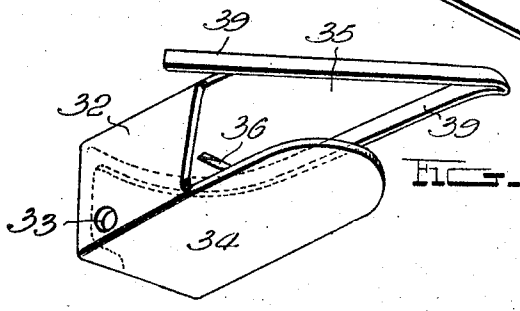
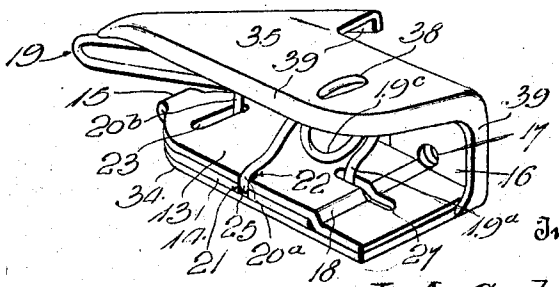


FIG. 8.

FIG. 9.



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Fig. 10.

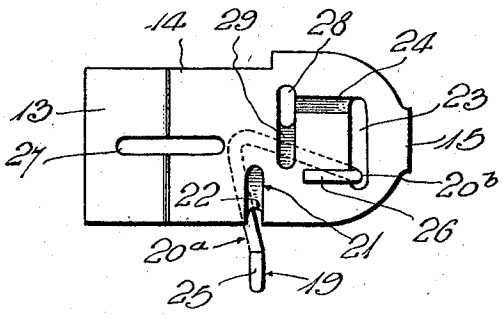


Fig. 11.

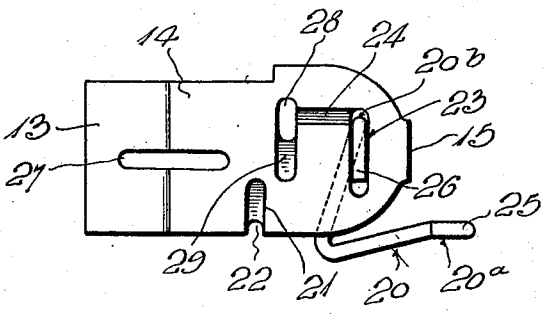
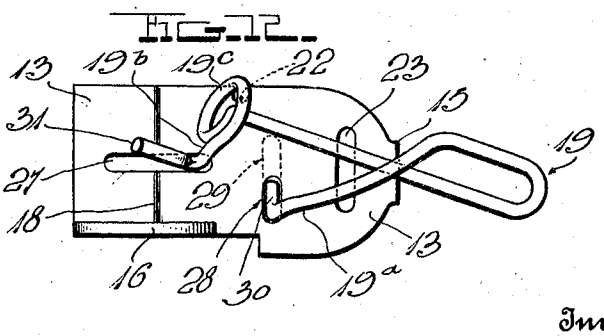


Fig. 12.



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UNITED STATES PATENT OFFICE.

LOUIS ALEXANDRE CADORET, OF PAWTUCKET, RHODE ISLAND.

SHUTTLE THREADER.

Application filed October 8, 1925. Serial No. 61,284.

To all whom it may concern:

Be it known that I, LOUIS A. CADORET, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Shuttle Threaders; and I do 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.

The invention relates to improvements in devices for threading the shuttles of looms, and the present disclosure of the invention relates specifically to that type of shuttle threader shown in my U. S. Patent No. 1,542,214 of June 16, 1925. In the patented structure, thread guides formed of wire, were secured permanently to a base member and in case of breakage, could not readily be replaced, usually making it necessary to install a totally new threader even though only a small portion of one of the thread guides should become damaged. It is the primary object of the present invention to overcome this difficulty, by the provision of a simple and inexpensive construction, by means of which the thread guides are connected with the base member so that they may be quickly and easily detached therefrom, in case it is advisable to substitute another guide or guides.

Further objects are to make certain minor improvements, which will be hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawings.

Figure 1 is a top plan view showing the application of the invention to a shuttle.

Figure 2 is a side elevation of the threader within a shuttle, the latter being shown in longitudinal section.

Figure 3 is a longitudinal sectional view on the plane of line 3—3 of Fig. 1.

Figure 4 is a vertical transverse section as indicated by line 4—4 of Fig. 1.

Figures 5 and 6 are perspective views of the wire thread-guiding members and the base member with which they are detachably connected.

Figures 7 and 8 are perspective views showing a thread-guiding plate which overlies the wire thread guides, together with a vertical wall which carries this plate and another plate connected to the wall to underlie the above-mentioned base member.

Figure 9 is a perspective view of the complete shuttle threader.

Figures 10 and 11 are detail bottom plan views showing the manner of disconnecting one of the thread guides from the base member.

Figure 12 is a detail top plan view showing the way of disconnecting the other thread guide from the base member.

In the drawings above briefly described, B designates a metallic base member adapted for disposition in a shuttle recess R and held therein by a removable pin P. In the construction shown, the base member B comprises a top plate 13 and another relatively short plate 14 which contacts with the lower side of said top plate, the two plates being preferably although not necessarily stamped from sheet metal and integrally connected with each other by the folded portion 15. One longitudinal edge of the top plate 13 is formed with an upstanding ear 16 having an opening 17 to receive the pin P, and said plate is formed with a transverse shoulder 18 co-incident with said opening 17, said shoulder being adapted to abut the pin to assist in holding the entire device rigidly in place. The shoulder 18 is preferably formed by stamping one end portion of the top plate 13 downwardly at the corresponding end of the relatively short plate 14, as shown most clearly in Fig. 9.

Two thread guides 19 and 20 respectively, formed of wire, are provided over the base member B, the general construction of each of these guide members, being substantially the same as that disclosed in the patent above referred to, so that specific description of such construction will not herein be necessary. For purposes of future reference, however, the end portions of the guide member 19 are specifically identified at 19^a and 19^b. Similarly, the end portions of the guide 20 are indicated at 20^a and 20^b. All of these end portions are connected with the base member B in a unique manner. It may also be stated at this point, that the thread guide 19 includes an eye 19^c which is disposed in a vertical plane. One feature of improvement is associated with this eye and hence the specific reference thereto.

The plate 14 is formed with a slot 21 which is preferably at right angles to one of its longitudinal edges, said slot opening through said edge and registering with a small notch 22 in the overlying edge of the

plate 13. Parallel with and spaced from this slot 21, the base B is formed with a transverse slot 23 which opens through both of the plates 13 and 14, and leading from the end of this slot, remote from the notched edge of the plate 13, is a slot 24 which is formed only in the lower plate 14. The end portion 20^a of the thread guide 20 is passed downwardly through the notch 22 and is bent laterally as indicated at 25, this laterally bent terminal lying within the slot 21. The end portion 20^b of the guide 20 passes through the slot 23 and has its terminal laterally bent as indicated at 26, this lateral terminal being confined within the slot 24. It will be seen that by forming the two slots 21 and 24 only through the lower portion 14 of the base member B, said slots and the overlying portion of the plate 13, in reality form grooves in the lower portion of the base member B. When the member 20 is to be detached, the operations shown in Figs. 10 and 11 may be followed. The terminal 26 is forced downwardly out of the slot 24, so that the entire member 20 may be slid transversely of the base member B, in a direction to slide the terminal 25 endwise out of the slot 21 as clearly shown in Fig. 10. Then, the member 20 may be turned about the end portion 20^b as a pivot until its terminal 26 may pass through the slot 23, as will be clear from Fig. 11. A reversal of these steps is of course used when applying the member 20 or when applying a new member to take its place.

Formed longitudinally in the base member B and opening through both of the plates 13 and 14, is a slot 27, and spaced from this slot, is an opening 28 which also passes through both of said plates. The lower plate 14 is formed with a transverse slot 29 leading from the opening 28 and co-operating with the overlying portion of the plate 13 in forming a groove. The end portion 19^b of the thread guide 19, passes downwardly through the opening 28 and has its terminal laterally bent as indicated at 30 for seating within the groove 29. The other end portion 19^a of the guide 19 enters the slot 27 and has its terminal laterally bent as indicated at 31, for disposition in said slot 27. By angling the member 19 with respect to the base member B, substantially as shown in Fig. 12, the terminal 30 may be passed downwardly through the opening 28 and the terminal 31 engaged with the slot 27, the member 19 being sufficiently resilient to yield and overcome any slight binding which might take place. With equal ease, the thread guide 19 may be detached from the base member, so that another may be substituted if desired.

A vertical wall 32 is disposed in contact with the outer side of the ear 16 and is formed with an opening 33 registering with the opening 17 to receive the pin P. Joined integrally to or otherwise connected with the lower end of the wall 32, is a horizontal plate 34 which underlies the base member B and retains the terminals 25, 26, 30 and 31 within the pockets, grooves or slots of said base member. This plate 34 thus co-operates with the plates 13 and 14 in forming a composite base whose component parts anchor the projections on the ends of the thread guides 19 and 20.

Projecting horizontally from the upper end of the wall 32 is a thread-guiding plate 35 which overlies the thread guides 19 and 20, said plate 35 being provided in its lower side with a groove 36 snugly receiving the upper portion of the eye 19^c, so as to effectively hold said eye in upright position. Moreover, by having the plate 35 lie upon the eye 19^c, the lateral terminal 31 of the thread guide 19, is retained within the slot 27 and cannot accidentally move therefrom. To form the groove 36, the plate 35 preferably has an upwardly stamped portion 38. For reinforcing purposes, this plate may be formed with integral flanges 39 wherever advisable.

The threader as a whole functions in the same manner as that disclosed in my prior patent, above mentioned. It will be seen however that when the pin P is withdrawn and the entire threader is removed from the shuttle, its parts may be readily separated, so that any worn or injured parts may be replaced, quickly and with ease.

Excellent results have been obtained from the details herein disclosed, for which reason they are preferably followed. However, within the scope of the invention as claimed, modifications may of course be made.

I claim:—

1. In a shuttle threader, thread-guiding means formed of wire and having laterally bent lower ends, and a base having pockets in which said ends are held.

2. In a shuttle threader, thread-guiding means formed of wire and having projections on the lower ends of the wire, and a composite base whose component parts anchor said projections and thus secure the thread-guiding means to the base.

3. In a shuttle threader, a base, and thread-guiding means over the base formed of wire, said thread-guiding means having end portions extending to a plane below the top of said base and bent laterally, a downwardly facing surface of said base having grooves in which said laterally bent ends are anchored.

4. A structure as specified in claim 3; said base having a portion underlying said laterally bent ends to secure them in said grooves.

5. In a shuttle threader, a base having a top plate formed with openings, and an-

other plate contacting with the lower side of said top plate, said other plate having slots leading horizontally from the aforesaid openings, and thread-guiding means formed of wire and having end portions passing through said openings, said end portions being laterally bent and disposed in said slots.

6. A structure as specified in claim 5; together with a third plate underlying said other plate and retaining said laterally bent ends in said slots.

7. In a shuttle threader, a base member having a groove in its lower side and opening through one of its edges, said base member being formed with a slot from its upper to its lower side and parallel with said groove, said lower side of the base member also having another groove extending laterally from the end of said slot remote from said edge of the base member, and a thread guide over the base member having two end portions, one of said end portions passing downwardly through said slot and being horizontally bent into said lateral groove, the other end portion being hooked around said edge of the base member and seated in the first named groove, downward movement of the horizontally bent portion of said one end from its receiving groove permitting sliding of said one end in said slot, thus allowing sliding of said other end from the first named groove.

8. In a shuttle threader, a base member having a slot from its upper to its lower side, an opening spaced from said slot, and a groove transverse to the slot, said groove being formed in the lower side of the base member and leading from said opening, and a thread guide over the base member having end portions passing downwardly through said slot and said opening respectively, said end portions being laterally bent and lying within said groove and said slot respectively.

9. In a shuttle threader, a base having a pocket which opens upwardly, a thread guide over the base having an end portion received in said pocket, a wall rising from the base and secured against upward movement with respect thereto, and a thread-guiding plate secured to and projecting laterally from said wall, said plate lying upon said thread guide to hold said end portion thereof against upward movement from the aforesaid pocket.

10. In a shuttle threader, a base member, thread guiding means over and connected with said base member, said thread guiding means including an eye disposed in a vertical plane, a wall at an edge of said base member, a plate underlying said base member and secured to said wall, and another plate secured to the wall and overlying said eye, said other plate having a groove in its lower side in which the upper portion of said eye is seated.

11. In a shuttle threader, a guide-carrying base member having an upstanding ear at one longitudinal edge and a transverse shoulder leading to said ear, a wall contacting with the outer side of said ear, a lower plate secured to said wall and underlying said base member, and an upper thread guiding plate projecting from said wall over said base member, said wall and said ear having registering openings co-incident with said shoulder to receive an anchoring pin.

In testimony whereof I have hereunto affixed my signature.

LOUIS ALEXANDRE CADORET.