

(No Model.)

F. LAFOUNTAIN.
SHUTTLE THREADER.

No. 562,002.

Patented June 16, 1896.

FIG. 1.

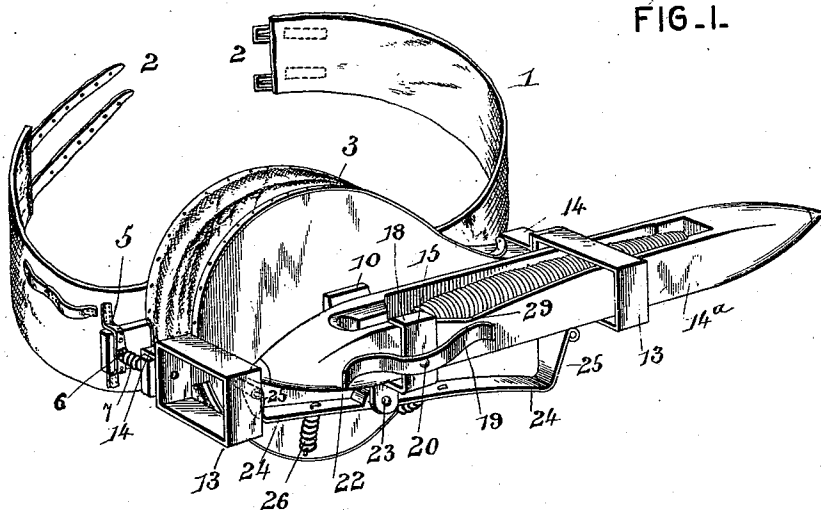


FIG. 3.

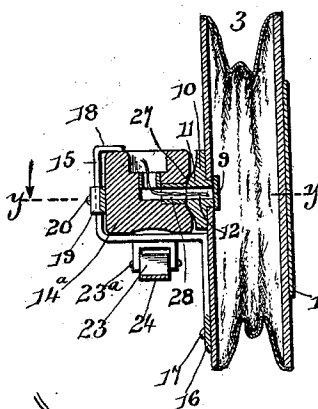


FIG. 2.

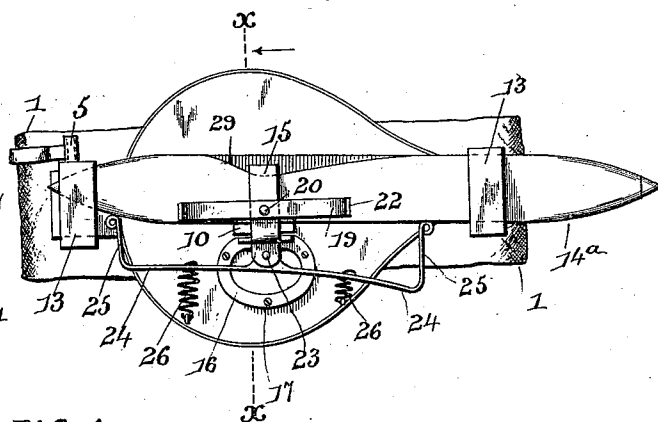
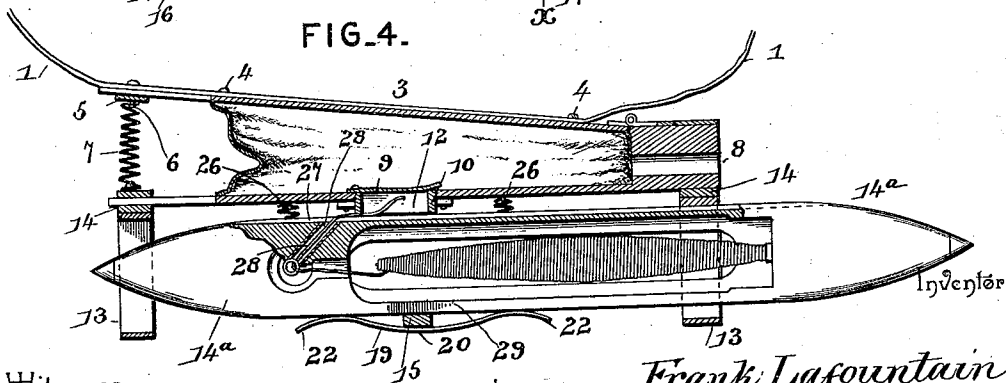


FIG. 4.



Witnesses

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FRANK LAFOUNTAIN, OF ENOSBURG, VERMONT.

SHUTTLE-THREADER.

SPECIFICATION forming part of Letters Patent No. 562,002, dated June 16, 1896.

Application filed May 4, 1895. Serial No. 548,140. (No model.)

To all whom it may concern:

Be it known that I, FRANK LAFOUNTAIN, a citizen of the United States, residing at Enosburg, in the county of Franklin and State of Vermont, have invented a new and useful Shuttle-Threader, of which the following is a specification.

This invention relates to automatic shuttle-threaders; and it has for its object to provide a new and useful device of this character adapted for use in factories for automatically drawing the thread through the eye of the shuttle in a simple, rapid, and convenient manner.

To this end the main and primary object of the present invention is to provide a shuttle-threading device that will obviate the usual unhealthful practice of operators threading the shuttles by applying the mouth to the eye of the same and then sucking the thread through the eye.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a perspective view of a shuttle-threader constructed in accordance with this invention, showing an ordinary loom-shuttle supported in proper position for the threading thereof. Fig. 2 is a side elevation of the device, showing the position of the shuttle as it is about to be withdrawn from the device. Fig. 3 is a transverse sectional view on the line *xx* of Fig. 2 with the eye of the shuttle directly over the air-suction opening of the bellows. Fig. 4 is a longitudinal sectional view of the device, taken on the line *yy* of Fig. 3, showing the position of the shuttle as it is about to be withdrawn from the device.

Referring to the accompanying drawings, 1 designates a flexible body-belt adapted to encircle the body of an operator and provided at its ends with strap-and-buckle connections 2, whereby the same can be readily attached to the body and readily detached. The flexible body-belt 1 has suitably attached to one side thereof a pair of hand-bellows 3 of an ordinary construction. The bellows 3 may be secured to one side of the belt 1 by means

of screws 4 or other suitable fasteners, and to insure the proper positioning of the bellows on the belt the latter is provided at one side with a loop or keeper 5, receiving one of the handles of the bellows, which is secured within said loop or keeper by means of a screw 6. The handles of the hand-operated air-bellows 3 are preferably connected by an intermediate spring 7, that provides means for normally collapsing the bellows and therefore assisting in an easy manipulation of the bellows to expel the air therefrom through the ordinary discharge-spout 8, located at the end opposite the handles of the bellows.

In the present invention the air-bellows 3 is provided centrally in the side opposite to the side attached to the body-belt with a valved suction-opening 9, and fitted on the bellows, over the opening 9 therein, is a gasket-plate 10, provided with a central longitudinally-disposed rib or ridge 11 and a longitudinally-disposed slot 12, communicating with the suction-opening 9. In alinement with the gasket-plate 10 is arranged the opposite rectangular guide-loops 13, that are located at directly opposite ends of the bellows 3. The said rectangular guide-loops 13 are preferably made of sheet metal and are provided at one side with suitable attaching-clips 14, that provide means for securing the said guide-loops respectively onto the discharge-spout 8 and one of the handles of the bellows. The said rectangular guide-loops 13 are sufficiently large to receive therein an ordinary loom-shuttle 14^a for the purpose of properly holding and guiding the same during the operation of threading such shuttle, and at an intermediate point between the said rectangular guide-loops 13 is arranged an intermediate offstanding guide-bracket 15.

The intermediate offstanding guide-bracket 15 is provided at its inner end with an attaching-plate 16, that receives the screws 17 for fastening the plate on the bellows at one side of the gasket-plate 10, and the said guide-bracket, exclusive of its attaching-plate, is substantially L-shaped and is provided at its outer upper end with an inturned flange 18, that is adapted to overlap one side edge of the loom-shuttle 14^a when the same is placed in position within the bracket 15 and against one side of the bellows 3, and when the loom-

shuttle is thus positioned the same is held tightly in contact with the gasket-plate 10 of the bellows by means of a retaining-spring 19. The retaining-spring 19 is secured fast at a point intermediate of its ends, as at 20, to the outer side of the bracket 15 and is provided at both sides of the bracket with the rounded extremities 22, that bear against one side of the shuttle when the same is placed within the guide-loops and bracket.

The offstanding guide-bracket 15 has pivotally connected to the lower side thereof at 23 a spring adjusting-lever 24. The spring adjusting-lever 24 is made of suitable spring material and is pivoted at 23^a to the bracket 15 at a point intermediate of its ends, and the said spring adjusting-lever 24 is provided at its opposite ends with the upturned contact-feet 25, that bear against the lower side of the shuttle as it is passed through the guide-loops and bracket in the operation of threading. The said spring adjusting-lever 24 has connected thereto at both sides of its pivot the retractile springs 26, that are also connected to one side of the air-bellows 3 to provide for normally holding the lever in a proper position, so as not to interfere with the introduction of the shuttle and also to provide for returning the lever to a proper position immediately after the shuttle has been withdrawn from the device.

The device is supported in proper position on the body of the operator by the body-belt, and in order to thread the shuttle 14^a it is simply necessary to introduce the eye end of the same through one of the guide-loops 13 and within the guide-bracket 15 to a point at which the flange 18 of the guide-bracket will stand substantially in a line with the eye of the shuttle. In this position of the shuttle the eye end thereof will not be located within one of the guide-loops 13, and one of the contact-feet 25 of the lever 24 will be bearing against the lower side of the shuttle, thereby causing the opposite contact-foot to be disposed directly at one side of one extreme end of the shuttle between such end and the adjacent guide-loop 13. In this position of the shuttle the longitudinal side groove 27 thereof, with which communicates the usual eye 28, will be held in engagement with the rib or ridge 11 of the plate 10, and the eye of the shuttle will be in direct communication with the suction-opening 9. By grasping any convenient part of the device and operating the bellows the thread will be sucked through the eye of the shuttle and into the suction-opening of the bellows.

After the end of the thread has been sucked through the eye of the shuttle the latter is moved in a direction that will force the eye end thereof against one of the contact-feet 25 of the lever 24, and a continued movement in this direction will bring both of the contact-feet 25 against the lower side of the shuttle, so as to throw the side groove of the shuttle off of the rib or ridge 11 and out of align-

ment with the suction-opening 9, and this movement of the shuttle is provided for by notching one side of the shuttle, as at 29, to receive the flange 8 of the bracket 15. A continued movement of the shuttle in the direction indicated, with the thread caught between the shuttle and the gasket-plate 10, will cause a drawing out of the thread, so that when the shuttle is entirely removed the thread is not lost, but will be pulled out a considerable distance from the bobbin and through the eye.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a shuttle-threader, the body-belt, a pair of air-bellows fastened on said belt and provided in one side with an air-suction opening, shuttle-supporting devices mounted on said bellows to provide for supporting the shuttle with its eye over said suction-opening, and means for forcing the shuttle in a lateral direction as it is withdrawn from said supporting devices to provide for throwing the side groove of the shuttle out of alinement with the air-suction opening and thereby binding the thread in said suction-opening, substantially as set forth.

2. In a shuttle-threader, a body-belt, a pair of air-bellows fastened on said belt and provided at one side with an air-suction opening, a slotted gasket-plate fitted on the bellows over its suction-opening and provided with a longitudinally-disposed rib to fit in the side groove of a loom-shuttle, and shuttle-supporting devices arranged on said bellows, substantially as set forth.

3. In a shuttle-threader, the air-bellows provided in one side with an air-suction opening, guide-loops arranged on one side and at opposite ends of the bellows in line with the suction-opening, an L-shaped guide-bracket attached to the bellows at one side of the suction-opening between the guide-loops, and a shuttle-adjusting spring arranged to bear directly against the lower side of the shuttle to force the same laterally as it is drawn through said loops to provide for throwing the side groove of the shuttle out of alinement with said suction-opening, substantially as set forth.

4. In a shuttle-threader, a body-belt, a pair of air-bellows fastened on said belt and provided at one side with an air-suction opening, rectangular guide-loops arranged at one side and the opposite ends of the bellows in alinement with the suction-opening; an L-shaped guide-bracket attached to the bellows at one side of the suction-opening between the guide-loops, a retaining-spring secured at an intermediate point to the outer side of the guide-bracket and adapted to bear against one side of a loom-shuttle, and a shuttle-adjusting

spring attached to the lower side of said guide-bracket, substantially as set forth.

5 In a shuttle-threader, a body-belt, a pair of air-bellows fastened on the belt and provided at one side with an air-suction opening, rectangular guide-loops arranged at the opposite ends of the bellows in alinement with the suction-opening, an L-shaped guide-bracket attached to the bellows intermediate of the
10 guide-loops and carrying a retaining-spring for a loom-shuttle, a spring adjusting-lever pivotally connected at an intermediate point to the lower side of the guide-bracket and

provided at its opposite ends with upturned contact-feet, and retractile springs connected 15 to said adjusting-lever at both sides of its pivot, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

his
FRANK X LAFOUNTAIN.
mark

Witnesses:

EMMET McLUTIN,
JAMES E. KENNEDY.