(No Model.)

J. M. MOYERS.

LOOM SHUTTLE THREADER.

No. 473,849. Patented Apr. 26, 1892.

Fig. 1.

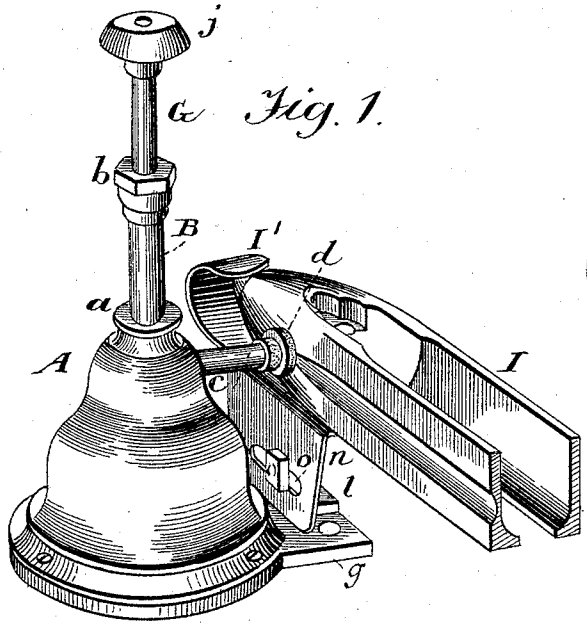


Fig. 3.

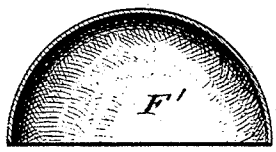


Fig. 4.

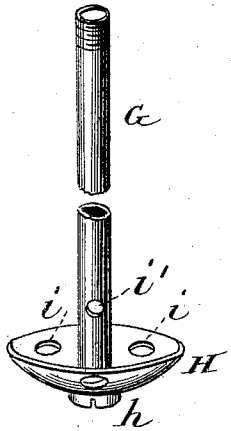


Fig. 5.

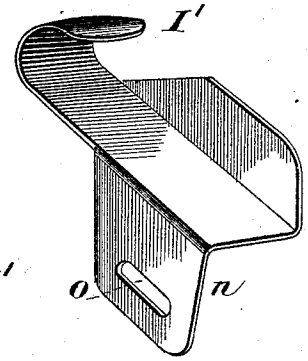
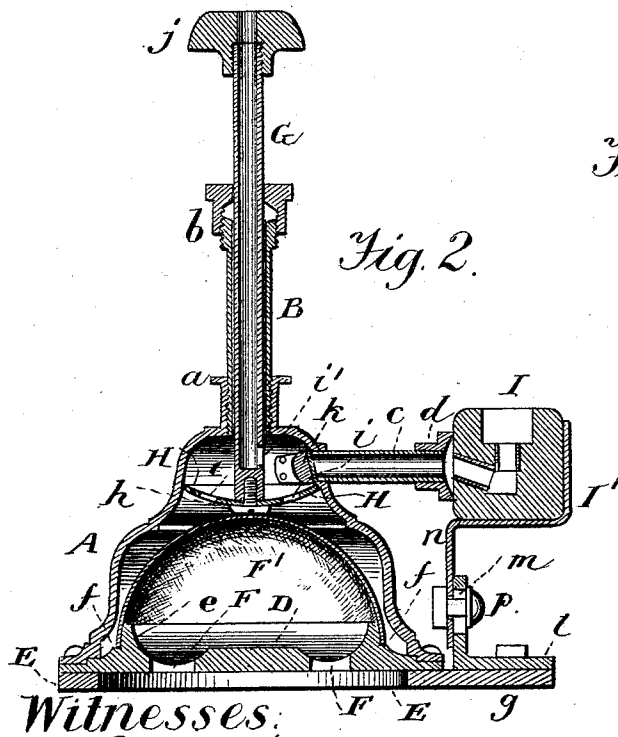


Fig. 2.



Witnesses:
A. Ruppert.
E. Cuse.

Inventor.
James M. Moyers,
by Howard & Howard
attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES M. MOYERS, OF RICHMOND, VIRGINIA, ASSIGNOR OF ONE-HALF TO WILLIAM J. PAYNE, OF SAME PLACE.

LOOM-SHUTTLE THREADER.

SPECIFICATION forming part of Letters Patent No. 473,849, dated April 26, 1892.

Application filed July 2, 1891. Serial No. 398,219. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. MOYERS, of Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Loom-Shuttle Threaders, of which the following is a specification, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to that class of shuttle-threaders by means of which a suction is artificially produced for drawing the thread through the eye of the shuttle, thereby rendering unnecessary the use of the mouth by the operative for that purpose.

In the accompanying drawings, Figure 1 is a perspective view of my invention, showing the shuttle applied thereto. Fig. 2 is a vertical section of the invention. Figs. 3, 4, and 5 are detached details.

Similar letters of reference indicate similar parts in the respective figures.

A is a shell formed of metal, having a neck *a*, in which is screwed a tubular guide B, having a stuffing-box *b*. The shell is provided with a branch pipe *c*, at the outer end of which is placed a rubber flange *d*, concave upon its outer face, as shown. The shell A rests upon a base D, having a vertical flange *e*, the base being perforated, as shown at F. The base D is secured to an annular metallic plate E, having a projection or foot *g*, to which is secured, as hereinafter explained, the adjustable support for the shuttle to be threaded. Around the flange *e* and upon the base *f* rests the edge of an inverted rubber cup F′, preferably hemispherical in shape, Fig. 3, the cup extending upward within the shell A to a short distance below the branch pipe *c*. The connection between the cup and base is air-tight.

A hollow stem G is supported by and adapted to move vertically within the tubular guide B and is provided at its lower end with a dished plate H, having perforations *i*, the plate being secured to the hollow stem G by means of a screw *h*, or in any other suitable manner. (See Fig. 4.) The stuffing-box on the tubular guide B is suitably packed to make an air-tight joint between it and the stem G. The hollow stem G has near its lower end an aperture *i′*, and the knob *j* at the upper end of the stem is perforated, so that a free passage is provided through the stem from the interior of the shell A to the outer air. The inner end of the branch pipe *c*, or the communication between the said pipe and the interior of the shell A is guarded by a flexible valve *k*, opening into the shell.

The adjustable sheet-metal support for the shuttle I is shaped as shown in Fig. 5. It is mounted upon an angular standard *l*, the horizontal portion of which is bolted to the projection or foot *g*, while its vertical portion, or that which receives the shuttle-support, is slotted vertically, as shown at *m*. The portion *n* of the adjustable support I is furnished with a horizontal slot *o*, so that when the support is secured to the standard *l* by means of a bolt *p*, passing through the two slots *m* and *o*, the said support is capable of adjustment in both vertical and lateral directions to suit shuttles of different sizes and lengths.

In operation the shuttle to be threaded, containing the bobbin with the thread wound thereon, must be brought to the position shown in Fig. 1, the eye of the shuttle being in close contact with the concave rubber flange *d*. The operative then depresses the stem G by means of the knob *j*, the hole therein being covered by the hand and the dished and perforated plate H being forced down upon the top of the inverted cup F′, a partial vacuum will be produced above it and the pressure of exterior air will force the thread through the eye of the shuttle in a manner heretofore known. The valve *k* over the end of the branch pipe *c* is intended to prevent the air from returning through said pipe, it passing upwardly through the perforations *i* of the plate H into the aperture *i′* and out of the hollow stem G as soon as the hand is removed from the hole in the knob *j*. This quick relief of pressure and the shape of the cup, which gives it elasticity, causes the cup to instantly resume its normal position upon the removal of the hand of the operative. This is an important feature in my improvement.

By means of my invention the thread may

be drawn through the eye of the shuttle in a simple, rapid, and positive manner, and the mode heretofore practiced by operatives for effecting this result by means of the mouth, so injurious to health, rendered unnecessary.

I am aware that means have heretofore been devised to effect the threading of shuttles by atmospheric pressure; but, so far as my knowledge extends, such means have been deficient in several points upon which I have improved.

Having described my invention, I claim—

1. In a loom-shuttle threader, a shell, a base, a tubular guide, a flexible inverted cup, and a branch pipe, combined with a hollow stem having an aperture within the shell, a perforated dished plate attached to the lower end of said stem, and a valve closing the inner end of the branch pipe and opening into the shell, substantially as set forth.

2. In a loom-shuttle threader, a shell, a base, and an inverted flexible cup, said shell having a branch pipe for connection with the shuttle to be threaded, combined with a hollow stem having an aperture, a perforated dished plate at the lower end of the stem, and a perforated knob at its upper end, substantially as set forth.

3. In a loom-shuttle threader, a shell, a base, and an inverted flexible cup, said shell having a branch pipe for connection with the shuttle to be threaded, and a valve on the inner end of said pipe opening into the shell, combined with a hollow stem having an aperture within the shell, and a perforated dished plate at the lower end of said stem, substantially as set forth.

4. The combination of a shell, a perforated hollow stem, a perforated dished plate attached to the lower end of said stem, a knob on the upper end of the stem having a central outlet, a branch pipe for connection with the shuttle to be threaded, a valve over the inner end of the said pipe within the shell, a flexible inverted cup, and a perforated base, substantially as set forth.

In testimony whereof I hereto set my hand and seal.

JAMES M. MOYERS. [L. S.]

Witnesses:
G. J. SAYALL,
A. F. CARLETON.