

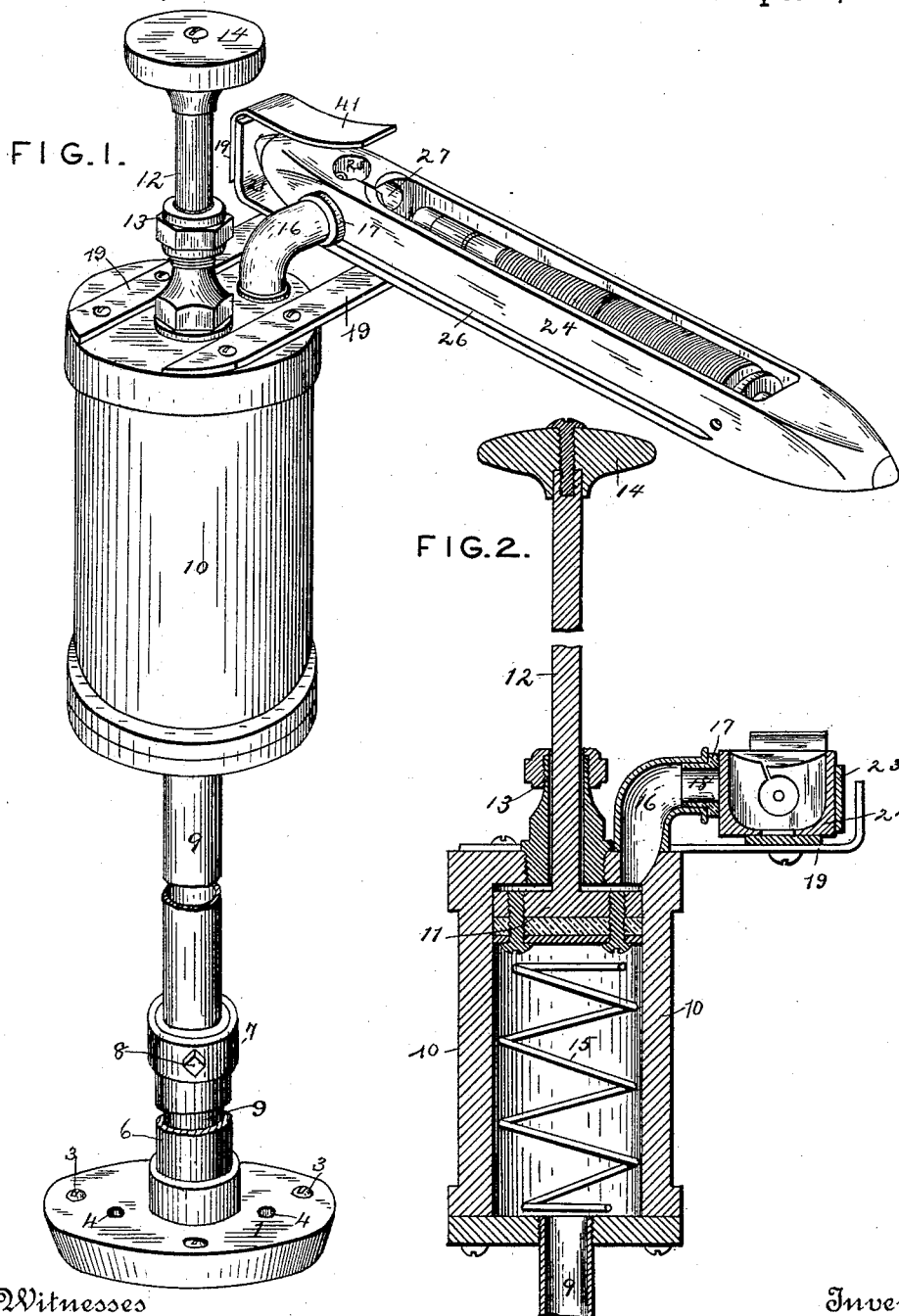
(No Model.)

2 Sheets—Sheet 1.

B. S. H. HARRIS & G. W. TAYLOR.  
LOOM SHUTTLE THREADER.

No. 435,603.

Patented Sept. 2, 1890.



Witnesses

*Harry L. Amer.*  
*Wm. Bagger*

Inventors  
*Benjamin S. H. Harris*  
and *Geo. W. Taylor.*  
By their Attorneys  
*C. A. Snow & Co.*

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FIG. 3.

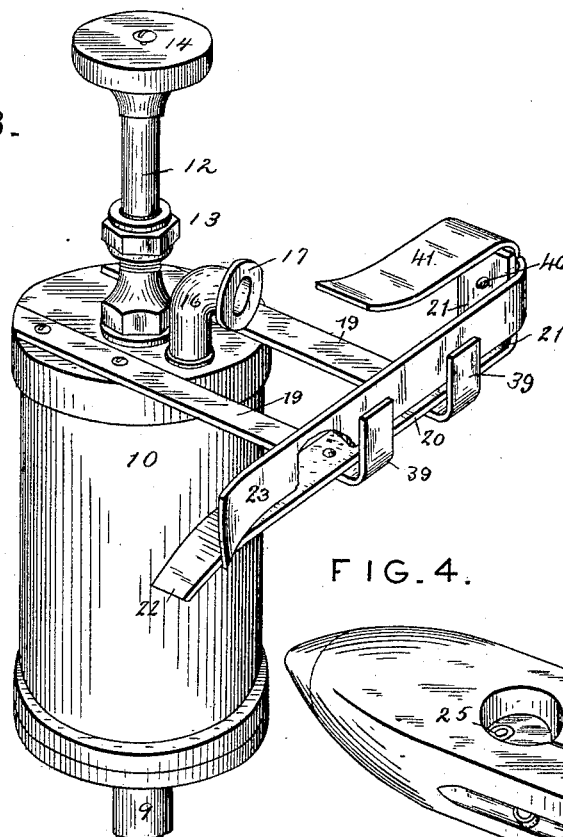


FIG. 4.

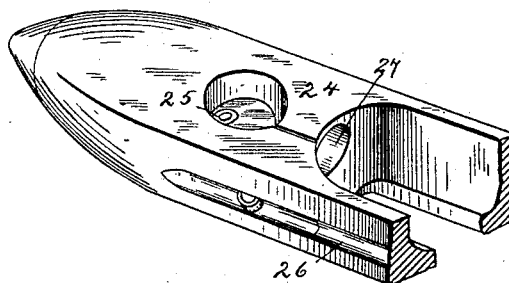
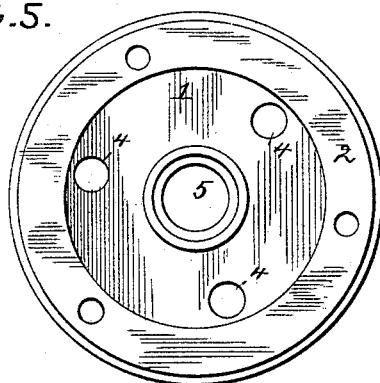


FIG. 5.



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# UNITED STATES PATENT OFFICE.

BENJAMIN S. H. HARRIS AND GEORGE W. TAYLOR, OF BELTON,  
SOUTH CAROLINA.

## LOOM-SHUTTLE THREADER.

**SPECIFICATION** forming part of Letters Patent No. 435,603, dated September 2, 1890.

Application filed February 1, 1890. Serial No. 338,874. (No model.)

*To all whom it may concern:*

Be it known that we, BENJAMIN S. H. HARRIS and GEORGE W. TAYLOR, citizens of the United States, residing at Belton, in the county of Anderson and State of South Carolina, have invented a new and useful Loom-Shuttle Threader, of which the following is a specification.

This invention relates to devices for threading shuttles for factory use; and it has for its object to construct a machine by means of which the thread may be drawn through the eye of the shuttle in a simple, rapid, and convenient manner.

Heretofore it has been the practice of operatives to thread the shuttles by applying the mouth to the eye of the same and to suck the thread through the eye. This practice has been not only unpleasant to the operator, but actually dangerous to health when long continued. At the same time no efficient method has heretofore been devised to take the place thereof. We have endeavored, as nearly as possible, to imitate this natural operation; and with this end in view our invention consists, mainly, in a cylinder or air-pump having a suitably-constructed and arranged mouth or inlet, and means whereby the shuttle may be applied to and held in contact with the said inlet while the air is being exhausted, the vacuum or partial vacuum thus produced serving to draw or suck the thread through the eye of the shuttle.

The detailed construction and operation of the device will be hereinafter more fully described, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of our improved loom-shuttle threader, showing a shuttle arranged therein in position for operation. Fig. 2 is a vertical sectional view of the threader with the shuttle placed therein. Fig. 3 is a perspective detail view of the upper end of the cylinder or air-pump. Fig. 4 is a detail view of one end of the shuttle. Fig. 5 is a bottom plan view of the standard of the device.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the base of the device, which

consists of a circular or other suitably-shaped plate provided on its under side with an annular rim or flange 2, adapted to rest upon the floor, to which the said base is secured by means of screws or bolts 3. The base is provided inside of the flange with perforations 4. The said base is also provided with a central opening 5, in which is secured a vertical tubular standard 6, the upper end of which has a collar 7, through which and the standard extends a transverse set-screw 8.

9 designates a pipe fitted in the tubular standard 6, in which it is vertically adjustable by means of the set-screw 8. The upper end of the vertically-adjustable pipe 9 is exteriorly screw-threaded to engage the bottom of the cylinder 10, which is smoothly bored to receive the piston 11. The latter is provided with the piston-rod 12, which extends upwardly through a stuffing-box 13 in the top of the cylinder, and is provided at its upper end with a cushioned knob or handle 14. A suitably-arranged spring 15 serves to force the piston-rod and piston automatically in an upward direction.

Into the top of the cylinder 10 is screwed an elbow-pipe 16, in the outer end of which is fitted a cushion 17, of rubber or other suitable material, having a central mouth or inlet 18. Straps 19, having upturned outer ends 39, are secured to the top of the cylinder on opposite sides of the elbow-pipe 16, and transversely across the straps is secured an additional strap 20, one end of which is turned upwardly to form a stop 21 for the end of the shuttle, and the opposite end of which is bent downwardly, as shown in 22, to enable the shuttle to be readily placed in position.

Suitably attached to the stop 21, by means of a bolt or rivet 40, is a flat, slightly-curved spring 23, which in practice serves to hold the shuttle firmly in contact with the cushion 17 at the end of the elbow-pipe 16 of the cylinder. An additional spring 41 is secured to the stop 21 by the rivet 40, and extends over the supporting-strap 20, serving in practice to hold the shuttle down in contact with the latter.

24 designates the shuttle, which is of ordinary construction, being provided with the

eye 25, extending laterally through the side thereof and registering with the groove 26.

The operation of our invention is as follows: The bobbin having been mounted in the shuttle, the thread is drawn through the slot 27 thereof and inserted into the upper end of the eye 25. The shuttle is now adjusted in the position shown in Figs. 1 and 2 of the drawings, with the outer end of the eye 25 registering with the opening or inlet 18 in the cushion 17, this position being easily and instantaneously attained, owing to the stop 21 of supporting-strap 20, which has been secured upon the supporting-brackets 19 in such a position as to cause this result to be attained. The spring 23 serves to hold the eye of the shuttle closely in contact with the cushion 17. The operator now depresses the handle 14 at the upper end of the piston-rod, thus depressing the piston and creating in the upper end of the cylinder a partial vacuum, whereby the thread is sucked through the eye of the shuttle. The latter is then ready for use. The air displaced from the lower end of the cylinder is permitted to escape through the tubular standard and through the perforations 4 in the base of the machine. When pressure upon the handle of the piston-rod is removed, the spring 15 serves to restore the latter and the piston to their normal position. The vertically-adjustable tube 9, which supports the cylinder 10, enables the latter to be easily and quickly adjusted to the height of the operator.

Having thus described our invention, what we claim is—

1. The combination of a cylinder, a piston mounted in the same, the upwardly-extending piston-rod having a knob or handle, an elbow-pipe attached to the upper end of the cylinder, and a cushion mounted in the outer end of said elbow-pipe and having a central opening or inlet, substantially as set forth.

2. The combination of a cylinder, a piston mounted to reciprocate in the same, the upwardly-extending piston-rod having a knob or handle, an elbow-pipe attached to the upper end of the cylinder and having a cushioned inlet, a discharge-opening in the bottom of the cylinder, and a spring arranged to force the piston automatically in an upward direction, substantially as described.

3. The combination of a tubular standard, a cylinder attached to and connected with the upper end of the tubular standard, a piston

mounted to reciprocate in said cylinder and having the piston-rod provided with a knob or handle, a spring to force the said piston and piston-rod automatically in an upward direction, an elbow-pipe attached to the top of the cylinder and having a cushioned inlet, and means for holding the shuttle with its eye in contact with the said cushioned inlet, substantially as set forth.

4. The combination of an air-exhaust cylinder, the piston, the upwardly-extending piston-rod having a knob or handle at its upper end, the elbow-pipe having a cushioned inlet, the brackets secured to the cylinder, the strap mounted on said brackets and having an upturned end forming a stop, and the holding-springs, substantially as set forth.

5. The combination, with an air-exhaust cylinder having a cushioned inlet, and means for supporting the shuttle in contact with said inlet, of a tubular standard forming an air-escape channel, substantially as set forth.

6. The combination, with an air-exhaust cylinder having a cushioned inlet, of a standard or supporting device comprising a tube connected with the bottom of the cylinder and mounted adjustably in a tubular standard, and means for securing said tube in adjusted position in said standard, substantially as set forth.

7. The combination of the base having an annular supporting rim or flange and provided with air-escape openings, the tubular standard rising from said base, a tubular supporting-pipe mounted adjustably in said standard, means for securing said tube in adjusted position in said standard, an air-exhaust cylinder attached to the upper end of said adjustable tube, the piston and piston-rod arranged to reciprocate in said cylinder, a spring arranged to force said piston and piston-rod automatically in an upward direction, a cushioned inlet-pipe for the said cylinder, and means for supporting the shuttle in contact with said cushioned inlet, substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

BENJAMIN S. H. HARRIS.  
GEORGE W. TAYLOR.

Witnesses:

L. D. HARRIS,  
R. A. LEWIS.