

(No Model)

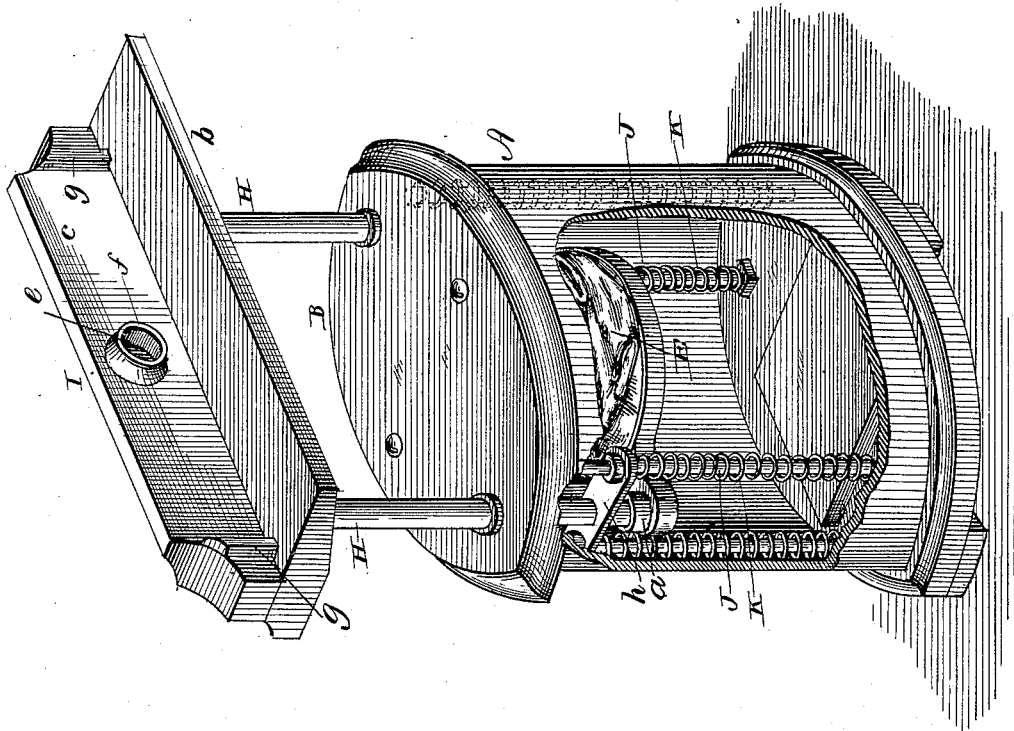
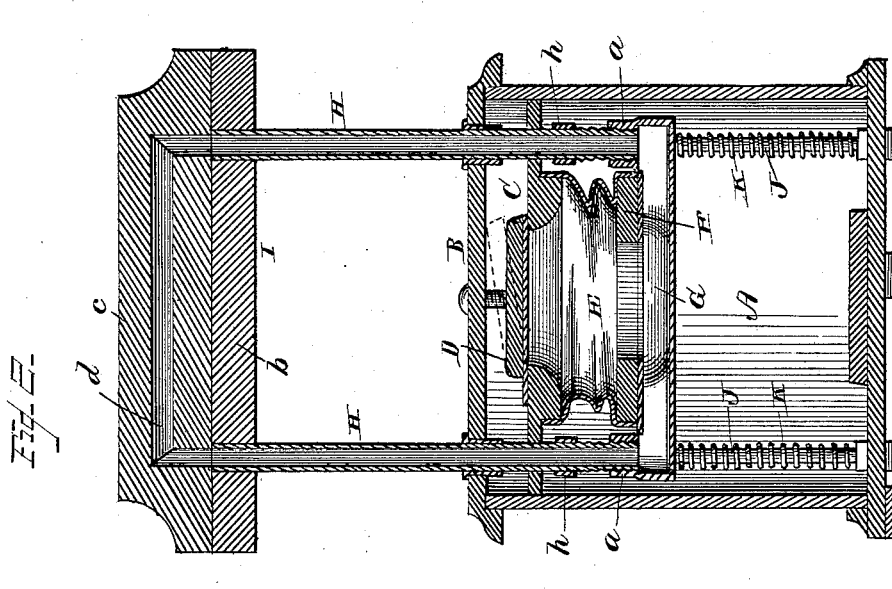
2 Sheets—Sheet 1.

J. B. GILBERT.

SHUTTLE THREADING DEVICE.

No. 304,723.

Patented Sept. 9, 1884.



*WITNESSES*

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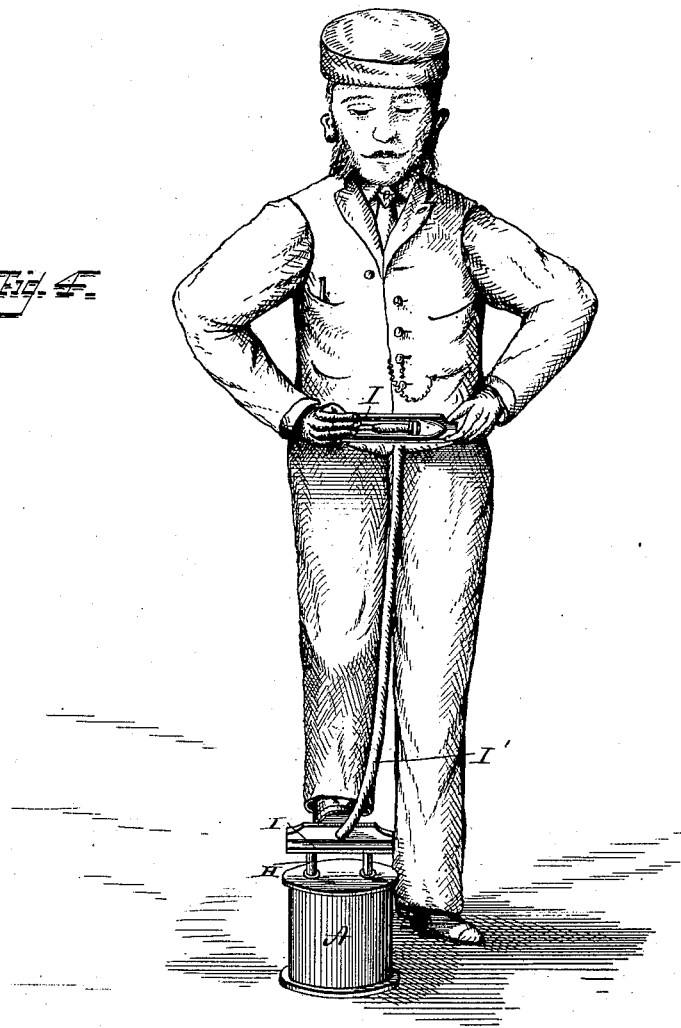
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SHUTTLE THREADING DEVICE.

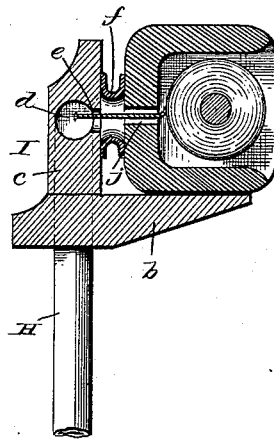
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*Fig. 4.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

JEAN B. GILBERT, OF ACTONVILLE, COUNTY OF BAGOT, CANADA.

## SHUTTLE-THREADING DEVICE.

SPECIFICATION forming part of Letters Patent No. 304,723, dated September 9, 1884.

Application filed November 30, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, J. B. GILBERT, of Actonville, in the county of Bagot and Dominion of Canada, have invented certain Improvements in Shuttle-Threading Devices, of which the following is a specification.

My invention relates to mechanical devices for threading shuttles by suction; and it consists in features and details hereinafter described and claimed.

In the drawings hereto annexed, Figure 1 represents a perspective view of my improved device, partly broken away to show the interior; Fig. 2, a vertical longitudinal section of the same; Fig. 3, a cross-section through the upper part, showing the operation of threading; and Fig. 4, a view showing a modified plan of operating the device.

Hitherto two different plans have been commonly adopted for threading shuttles of this class, the first being by means of a bent wire inserted through the eye, and the second and probably more common plan consisting in the loom-operative placing the eye of the shuttle to his lips and inhaling air to produce a suction through the shuttle-eye, which causes the filling to pass through the eye. This latter plan, while simple and expeditious, is very injurious to the operatives because of the particles of lint, dust, and like foreign matters taken into the lungs, and especially is this so in case the materials have been kept or stored in any place infected with disease, because of the great danger of transmission thereof in this way. To overcome these objections I provide means for artificially producing the required suction, and also adapt it for instantaneous application to or connection with the shuttle in a manner similar to that of applying the shuttle to the lips under the former plan. Besides these two plans a third one has been proposed, consisting in providing a mechanical suction device to take the place of the lips and lungs of the operators. My invention relates to this latter class of devices and apparatus, and is shown in the drawings, wherein—

A represents a suitable case or shell provided with a suitable base and a head or top, B, and with an internal horizontal diaphragm,

C, containing an upwardly-opening valve, D. To the under side of the diaphragm is secured the upper end of a flexible bag, E, of leather, rubber, or other suitable material impervious to air, which bag has at its lower end or bottom a wooden bottom, F, perforated as indicated in Fig. 2, and provided with a concave metal plate, G, extending across the bottom and to the sides thereof, where it is formed into tubular extensions *a*, which connect with the lower ends of vertical tubes H, thus establishing communication between the tubes and the interior of the bag, as will be readily understood. At their upper ends the tubes H support and carry a shelf, I, consisting of a horizontal ledge, *b*, and a vertical back, *c*, the latter being formed with a passage, *d*, communicating with the tubes, as in Fig. 2, and having a mouth or opening, *e*, as shown in Figs. 1 and 3. This opening is surrounded by a flexible mouth-piece, *f*, which is preferably made of rubber, but which may be conveniently made of leather, felt, or other flexible material. The mouth *e* is at such height from the ledge *b* as to cover the eye of the shuttle when the latter is laid thereon, and the back *c* is furnished near each end with a guide-strip or rib, *g*, by which the shuttle may be quickly, easily, and with certainty placed in position to bring its eye directly opposite the opening *e* and within the limits of the mouth-piece *f*. The tubes H are furnished with laterally-projecting ears *h*, perforated to slide upon guide-rods J, which are encircled by spiral springs K, resting at their lower ends upon the bottom of the shell or case A, and bearing at their upper ends beneath the ears *h*. These springs serve to elevate the tubes, and with them the bottom F of the bag E, thereby keeping the bag normally in a state of collapse, the valve D rising to permit the air to escape freely therefrom when the bottom is suddenly raised by the springs. If now the shuttle, with its filled cap or bobbin in place, be laid upon the ledge *b* with its eye *j* within the mouth-piece *f*, the end of the web lying over the eye of the shuttle on the inside thereof, the shuttle being pressed closely against the mouth-piece to prevent air from entering between them, and if then the shuttle and shelf be quickly pressed

downward, the bag E will be elongated and expanded, causing air to pass inward through the mouth or opening *e*, thence through passage *d* and tubes H, between the concave plate G and bottom F, and through the opening in the latter to the interior of the bag, to fill the partial vacuum produced by its sudden elongation or extension. The shuttle being pressed firmly against the mouth-piece *f*, with its eye opposite the opening *e*, air can pass in only through said eye, and as the eye is small and a considerable volume is required to supply the vacuum, it will flow through the eye with considerable force and velocity, carrying with it the light free end of the yarn or filling in the same manner essentially as has hitherto been done by the mouth and lungs.

The device, as shown in Figs. 1 and 2, is intended to be placed upon a suitable shelf or bracket attached to, or close to, the loom or like machine; but it is obvious that the suction mechanism may be placed upon the floor so as to be operated by the foot, and a flexible

tube, I', carried to the proper point and there furnished with a shelf, I, in all essential respects similar to the shelf I of Figs. 1, 2, and 3, and provided with a similar mouth-piece surrounding a mouth or opening with which the tube communicates, so that the device is practically the same as that shown in Figs. 1, 2, and 3, differing therefrom only in that the flexible tube I' is interposed between the suction device and the shelf or shuttle support.

Having thus described my invention, what I claim is—

A shuttle-threading device consisting of shell A, provided with head or diaphragm C, having upwardly-opening valve D, collapsible bag E, perforated bottom F, concave plate G, tubes H, shelf I, provided with mouth *e*, guide-rods J, and springs K, substantially as described.

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Witnesses:

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