No. 703,992. Patented July 8, 1902.

L. W. CAMPBELL.

LOOM SHUTTLE.

(Application filed Nov. 24, 1900.)

(No Model.)

FIG. 1.

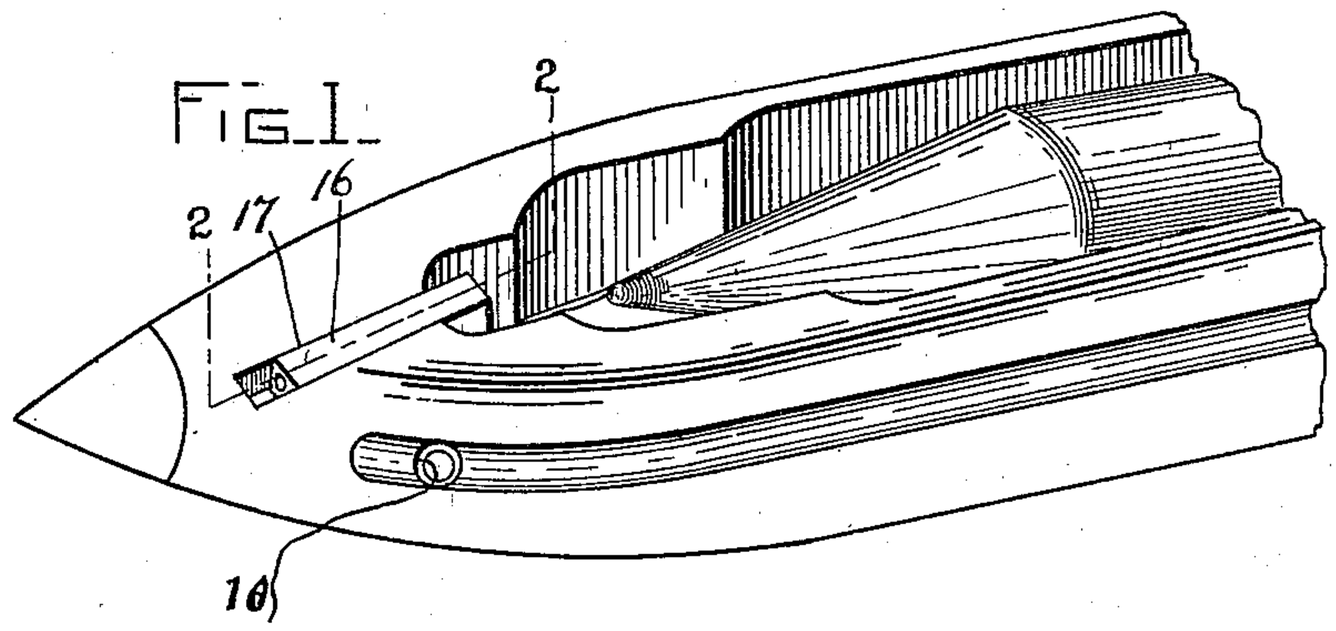


FIG. 2.

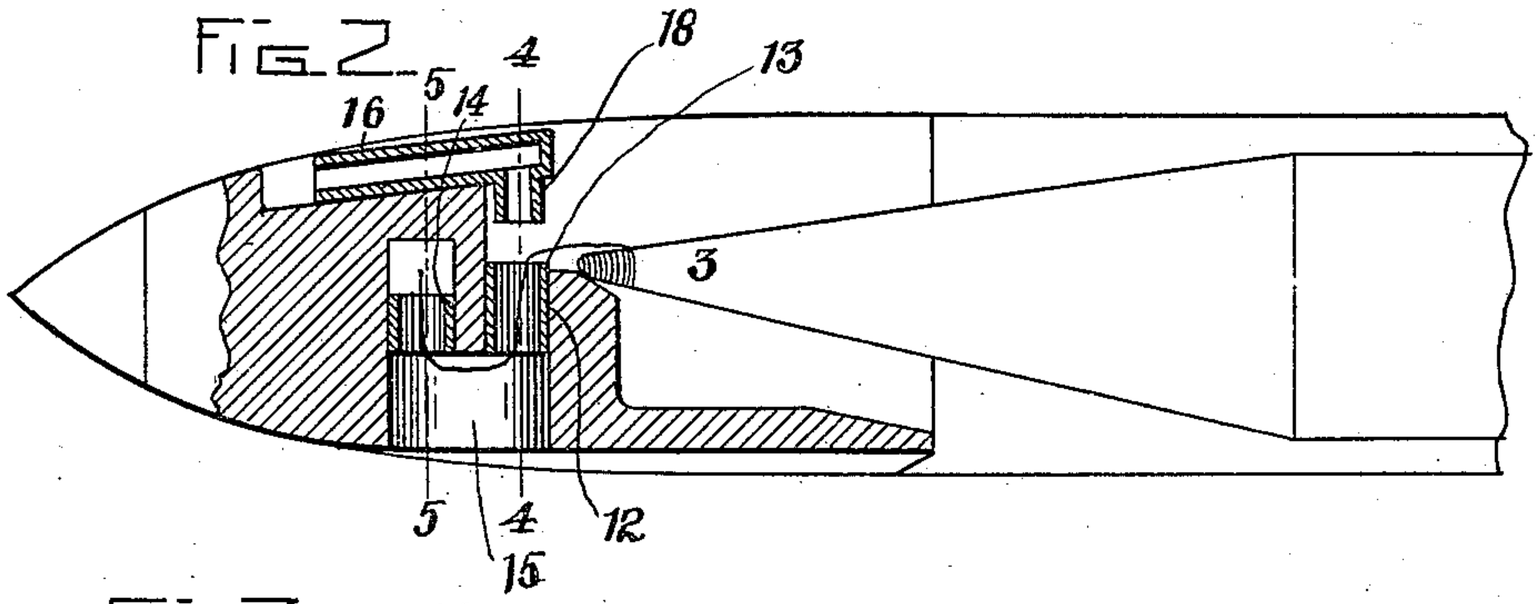


FIG. 3.

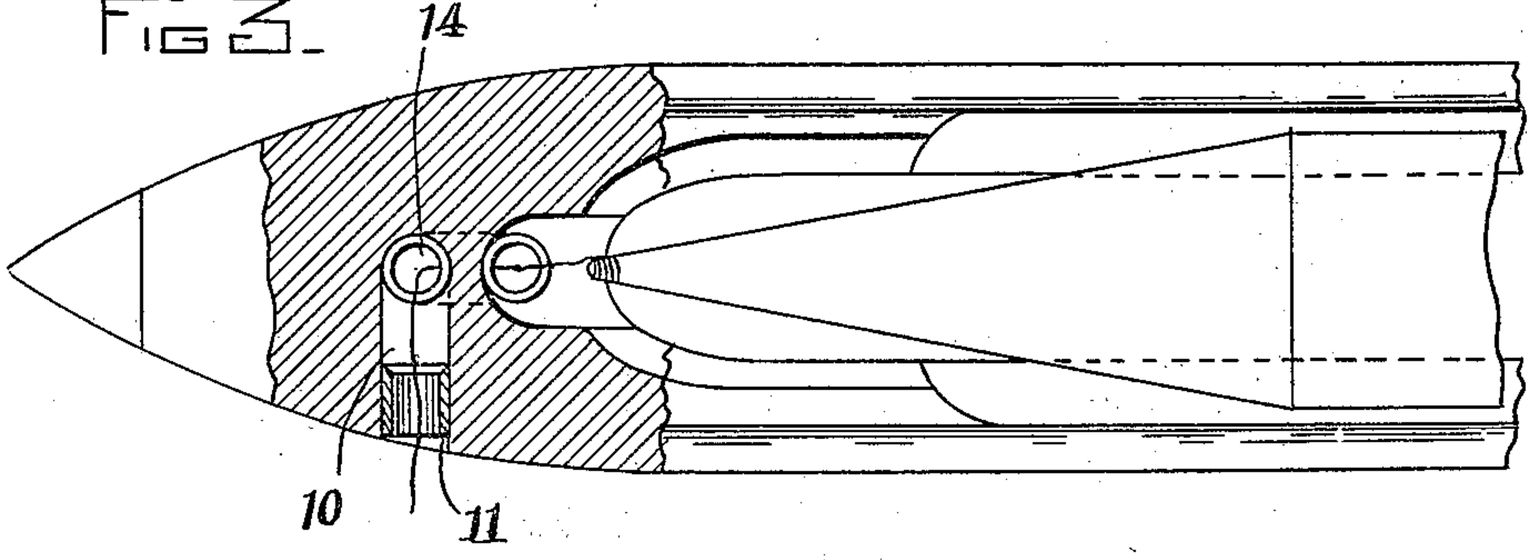


FIG. 4.

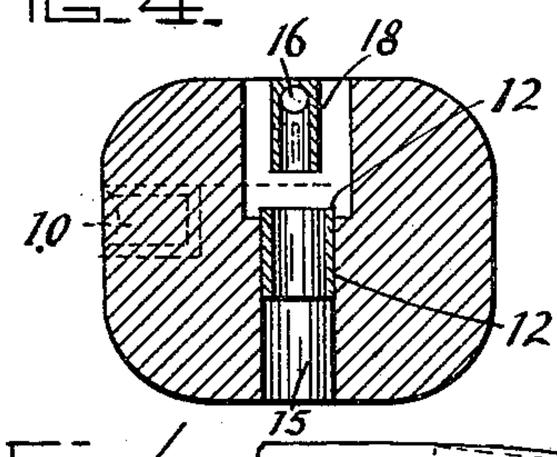


FIG. 5.

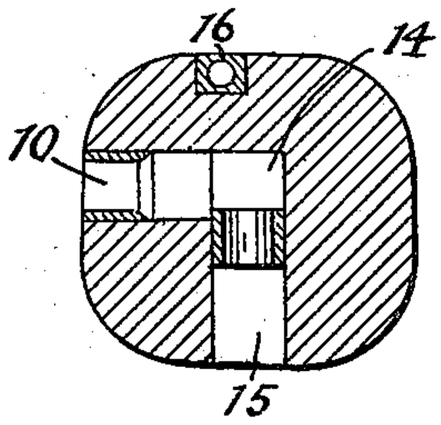
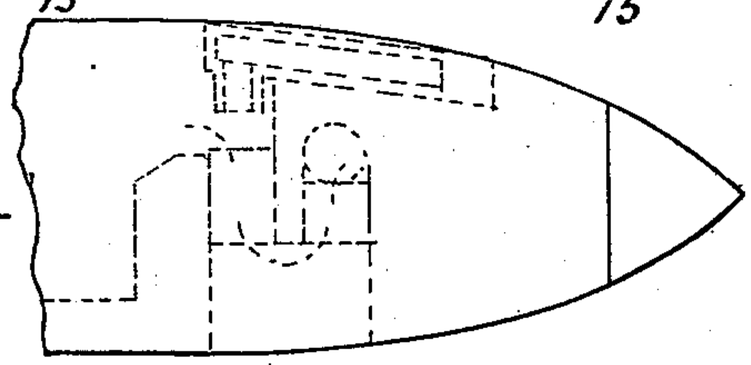


FIG. 6.



WITNESSES.
P. W. Pezzeth
E. Batchelder

INVENTOR.
Lem W. Campbell
by Wright, Brown & Quinby
Attys.

UNITED STATES PATENT OFFICE.

LEON W. CAMPBELL, OF WOONSOCKET, RHODE ISLAND, ASSIGNOR OF ONE-HALF TO MALCOLM CAMPBELL, OF BOSTON, MASSACHUSETTS.

LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 703,992, dated July 8, 1902.

Application filed November 24, 1900. Serial No. 37,618. (No model.)

To all whom it may concern:

Be it known that I, LEON W. CAMPBELL, of Woonsocket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Shuttles, of which the following is a specification.

This invention has relation to loom-shuttles, and more particularly to means whereby the filling may be drawn through the thread-eye without the inhalation of lint or dust.

In my previous patent, No. 659,435, dated October 9, 1900, I have illustrated and described means applicable to the ordinary shuttle for permitting the induction of a current of air through the eye, said means including a supplemental duct extending in through the side of the shuttle at an angle to the thread-aperture.

The present invention has for its object to provide means whereby the filling may be carried through the tortuous passage of what is called a "color-shuttle"—that is to say, a shuttle employed for carrying a colored or highly-sized thread and having a tortuous thread-passage to act as a tension and prevent the thread from being drawn through the eye too freely. The thread-eye in such shuttles is usually located in the side extending transversely of the shuttle, while the inlet for the thread extends downwardly from the bobbin-cavity at substantially a right angle to the thread-eye. The thread-inlet may communicate directly with the eye; but in some cases angular ducts are interposed between them.

According to the present invention I provide an air-conduit having a nozzle arranged in alinement with the thread-inlet, so that by blowing through said conduit a current of air will be induced through the inlet and out through the thread-eye of sufficient force to carry the loose end of the filling through the thread-passage, and in order to arrange the conduit, with its inlet, in the most convenient position for the weaver the said inlet is located on the same side of the shuttle as the thread-eye, said conduit being shown upon the drawings as consisting of a tube having a nozzle at its end at right angles thereto and being inserted in a groove in the top of the shuttle and lying at an inclination to the median line of the latter.

Referring to the drawings, which illustrate one form of shuttle equipped with my invention, Figure 1 represents the thread-delivering end of the shuttle with the bobbin therein. Fig. 2 represents a section on line 2 2 of Fig. 1. Figs. 3, 4, and 5, respectively, represent sections on lines 3 3, 4 4, and 5 5 of Fig. 2. Fig. 6 represents a plan view of the shuttle with the thread-passages indicated in dotted lines.

The shuttle is provided with the thread-outlet 10, in which is placed a porcelain eye 11. The eye and the outlet extend inwardly from the side of the shuttle, being located in a plane parallel to the top of the shuttle and projecting inward at right angles to the median line of the shuttle. The thread-inlet is indicated at 12, and it is provided with the porcelain bushing 13. The inlet communicates with the interior cavity of the shuttle in the usual manner, and it projects downwardly to the bottom of the shuttle at an angle of ninety degrees to the thread-outlet 10. The thread-outlet communicates with a passage-way 14, which is parallel to the thread-inlet 12, as shown in Fig. 2, the inlet and the passage-way 14 communicating through the recess 15, formed in the bottom of the shuttle. The filling passes through the inlet 12, the recess 15, the aperture 14, and the outlet 10, the tortuous passage-way thus provided serving as a tension for the thread.

Hitherto it has been the custom in threading the bobbin to place the ball of the thumb upon the bottom of the shuttle, so as to close the mouth of the recess 15, and to quickly inhale the breath after placing the thread-eye to the mouth, the current of air being thus induced through the filling into the mouth of the weaver. It is well known that many cases of tuberculosis and bronchial affections are attributable to this inhalation of the breath, the throat and lungs becoming filled with lint and other kinds of foreign matter.

In order that the weaver may thread the eye by exhaling the breath, I provide a tubular conduit 16, which is placed in a groove 17 in the top of the shuttle. The groove extends

from the side of the shuttle near the point inward and away from said point until it terminates directly over the median line of the shuttle. The tube projects into the bobbin-aperture of the shuttle and is provided with a small inducing-nozzle 18, which is in exact alinement with the thread-inlet 12. The mouth of the tube is arranged, as shown in Fig. 1, at the junction of the sides and top of the shuttle, and it is on the same side of the shuttle as the thread-eye 11.

In order to thread the shuttle, the weaver holds the loose end of the filling over the inlet 11 and by placing the shuttle to his lips blows rapidly through the tube 16, at the same time holding the thumb of his right hand in such position as to close the recess 15. The current of air which is induced through the thread passage-way by means of the tube 16 carries the thread with it and delivers it through the eye.

Having thus explained the nature of the invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

A shuttle having a thread-aperture, the inlet of which extends out toward the bottom thereof, and the outlet of which extends toward the side thereof, with a communicating duct extending upward from the inlet to the outlet, said shuttle having a device consisting of an induction-tube located in the groove of the top of the shuttle, and having a nozzle located above the inlet of the thread-aperture.

In testimony whereof I have affixed my signature in presence of two witnesses.

LEON W. CAMPBELL.

Witnesses:

WALTER I. BALLOU,

WALTER R. RAY.