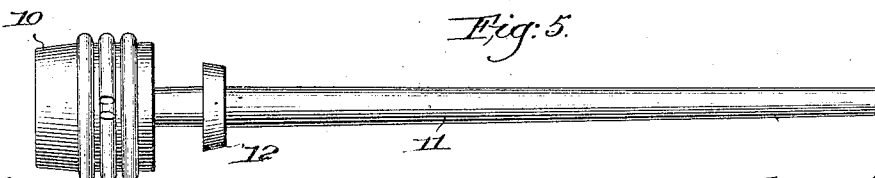
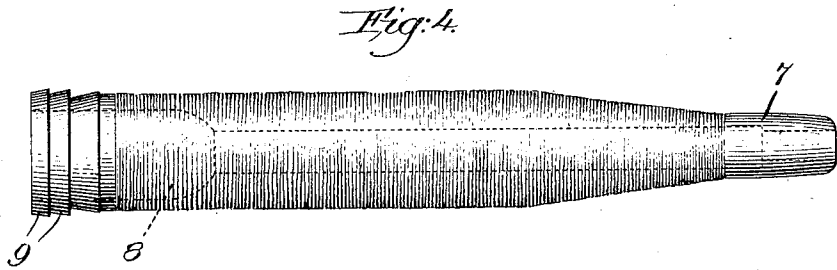
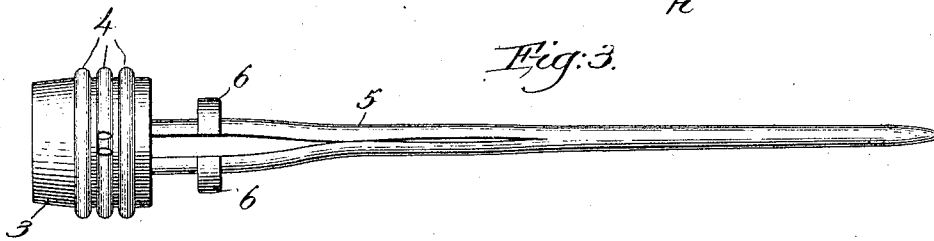
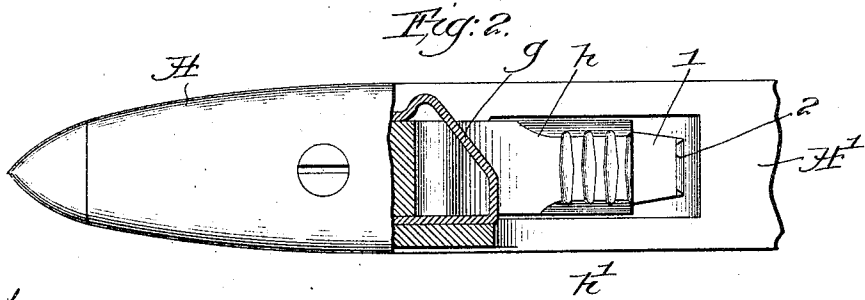
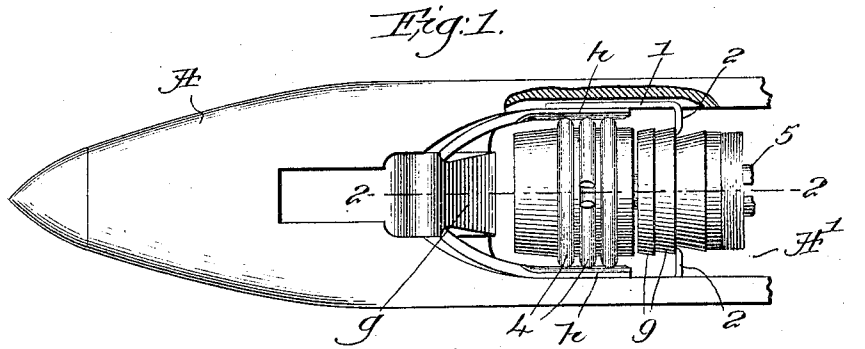


No. 793,621.

PATENTED JUNE 27, 1905.

O. BENSON.
LOOM SHUTTLE AND FILLING CARRIER THEREFOR.

APPLICATION FILED FEB. 13, 1905



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UNITED STATES PATENT OFFICE.

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LOOM-SHUTTLE AND FILLING-CARRIER THEREFOR.

SPECIFICATION forming part of Letters Patent No. 793,621, dated June 27, 1905.

Application filed February 13, 1905. Serial No. 245,375.

To all whom it may concern:

Be it known that I, OMAR BENSON, a citizen of the United States, and a resident of New Bedford, county of Bristol, State of Massachusetts, have invented an Improvement in Loom-Shuttles and Filling-Carriers Therefor, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of a loom-shuttle and filling-carrier for use in connection therewith whereby a very cheap wooden or similar bobbin without rings or annular projections on its head can be utilized in automatic filling-replenishing looms of the Northrop type, such as shown in United States Patent No. 529,940.

At the present time all of the filling-bobbins in a mill equipped with such looms must be provided with rings on their heads for engagement by the holding-jaws in the running shuttle, involving considerable expense. There are also certain bobbins of peculiar shape which in certain cases it would be desirable to use, but on which it would be difficult to put the rings properly and effectively.

In my present invention I utilize a skewer-like member for carrying the rings of such construction that the rings are readily applied and which can be much less in number than the bobbins, thereby decreasing the expense.

In practice the bobbin of suitable shape will be pushed onto the skewer and the latter placed in the filling feeder or hopper, forming a part of the filling-replenishing mechanism. The bobbin and skewer, constituting a compound filling-carrier, are transferred as a unit from the hopper to the running shuttle by the usual transferring means, and in order to prevent the bobbin from working loose or flying off the skewer when in the shuttle I have provided the latter with retaining means,

which automatically cooperate with the bobbin when a transfer is effected.

The various novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the 50 claims appended thereto.

Figure 1 is a top plan view of the jaw or holding end of an automatically self-threading shuttle with a filling-carrier therein, embodying one form of my invention. Fig. 2 is a partial longitudinal section on the line 2 2, Fig. 1, through the longitudinal axis of the shuttle to show the bobbin-retaining means. Fig. 3 is a view of a skewer adapted to receive the bobbin. Fig. 4 is a view of a bobbin to be mounted on the skewer and provided with means with which the retaining device on the shuttle cooperates, and Fig. 5 is a view of a slightly different form of skewer.

Referring to Figs. 1 and 2, the shuttle A, 65 chambered at A' to receive the filling-carrier, the holding-jaws h, provided on their inner faces with upright notches h', and the inclined guide g, extended between the inner ends of the jaws, may be and are all of well-known construction for use in automatic filling-replenishing looms. A shuttle of substantially similar construction is shown in United States patent to Stimpson, No. 673,823, it being understood that the shuttle is of the automatically-self-threading type, the threading device *per se* forming no part of my present invention. I have herein shown each jaw provided at its free end with a spring or resilient extension 1, intumed at its extremity at 2 to form a lip or catch, the said extensions constituting means to retain in position the yarn-support or bobbin, as will more clearly appear hereinafter.

The compound filling-carrier comprises a 85 skewer and a removable yarn-support or bobbin, and in Fig. 3 I have shown one form of skewer, it having a substantially cylindrical head 3, provided with annular projections or rings 4 to enter the notches h' of the holding- 90

jaws in the shuttle, and a blade 5, shown as split and sprung apart near the head. The compressible split portion is provided with enlargements or lugs 6, which frictionally engage the interior of the yarn-support or bobbin 7, Fig. 4, preferably made of wood and chambered at 8 to receive the enlargements.

Referring to Figs. 1 and 4, the butt of the bobbin is provided with annular ridges 9 for a purpose to be described.

In Fig. 5 the skewer has a ringed head 10 and a continuous blade 11, provided with an annular enlargement 12 near the head to frictionally engage the interior of the bobbin. The bobbin, with its load of yarn, is pushed onto the skewer and frictionally held thereon by the device described, and the compound filling-carrier is placed with others of like character in the filling feeder or hopper of the loom in usual manner. Said filling-carriers are transferred automatically from the hopper one by one to the running shuttle as called for in well-known manner, the rings on the head of the skewer being engaged and held by the holding-jaws of the shuttle. At such time the lips 2 of the retaining means on the shuttle project inward and cooperate with one of the ridges 9 on the bobbin, as shown in Fig. 1, and retain said bobbin in proper position on the skewer, preventing the bobbin from working loose and flying off. The cooperation between the retaining means on the shuttle and the bobbin is effected automatically when the filling-carrier is inserted in the shuttle and offer no obstacle to the automatic ejection of a filling-carrier by the insertion of a fresh one. I prefer to make a plurality of annular ridges on the bobbin to accommodate variations in the position of the skewer-head in the holding-jaws—that is, the rings on the skewer-head might enter the inner three notches or the outer three; but by providing two ridges on the bobbin the retaining-lips 2 will cooperate with one or the other in either position of the skewer.

A comparatively small number of skewers will be sufficient for each loom, while a large number of bobbins will be required for the necessary spinning-frames, and as the skewers only are provided with rings it will be manifest that the expense of applying rings is greatly reduced, while various forms of bobbins may be used.

My invention is not restricted to the precise construction and arrangement herein shown and described, for the same may be modified in different particulars without departing from the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A loom-shuttle, a compound filling-carrier adapted to be automatically inserted and detachably held in the shuttle and comprising a skewer and a removable yarn-support, and means on the shuttle to cooperate automatically with the yarn-support and retain it on the skewer when the filling-carrier is inserted in the shuttle.

2. A loom-shuttle having notched holding-jaws, a compound filling-carrier adapted to be inserted and detachably held in the shuttle, comprising a skewer having a head provided with annular projections to be engaged by the jaws, and a removable yarn-support, and means on the shuttle to cooperate automatically with the yarn-support and retain it on the skewer when the filling-carrier is inserted in the shuttle.

3. A loom-shuttle having notched holding-jaws, a compound filling-carrier adapted to be inserted and detachably held in the shuttle, comprising a skewer having a head provided with annular projections to be engaged by the jaws, and a removable yarn-support, and spring-acting means on the shuttle to cooperate automatically with the yarn-support and retain it on the skewer when the filling-carrier is inserted in the shuttle.

4. A loom-shuttle having spring holding-jaws, combined with a filling-carrier comprising a skewer adapted to be automatically inserted and detachably held in said jaws, and a removable yarn-support, and means on the shuttle to automatically cooperate with said yarn-support and retain it in position on the skewer when the latter is engaged by the holding-jaws.

5. A loom-shuttle having notched holding-jaws, a compound filling-carrier adapted to be inserted and detachably held in the shuttle, comprising a skewer having a head provided with annular projections to be engaged by the jaws, and a removable yarn-support, having annular ridges adjacent its butt, and oppositely-located spring-acting catches on the shuttle to cooperate with the ridged portion of the yarn-support and retain the latter in position on the skewer when the filling-carrier is inserted in the shuttle.

6. A compound filling-carrier for loom-shuttles, comprising a skewer having a head adapted to be detachably engaged and held by a part of the shuttle when the filling-carrier is in operative position, a friction device on the skewer to internally engage the bobbin, whereby the skewer and bobbin may be inserted in or removed from the shuttle as a unit, and a removable bobbin adapted to receive the skewer and chambered to receive the friction device.

7. A compound filling-carrier for loom-shuttles, comprising a skewer having a head adapted to be detachably engaged and held by a part of the shuttle when the filling-carrier is

5 inserted therein in operative position, a removable bobbin, means on the skewer to internally engage and frictionally connect the bobbin and skewer, whereby they may be inserted in or removed from the shuttle as a unit, and external means on the bobbin adapted to be engaged by retaining means on the shuttle.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OMAR BENSON.

Witnesses:

HENRY WILKINSON,
CLAUDE E. BENSON.