No. 799,280. PATENTED SEPT. 12, 1905.

T. W. TILLMAN & T. C. STEWART.

FILLING REPLENISHING LOOM.

APPLICATION FILED MAY 18, 1905.

Fig. 1.

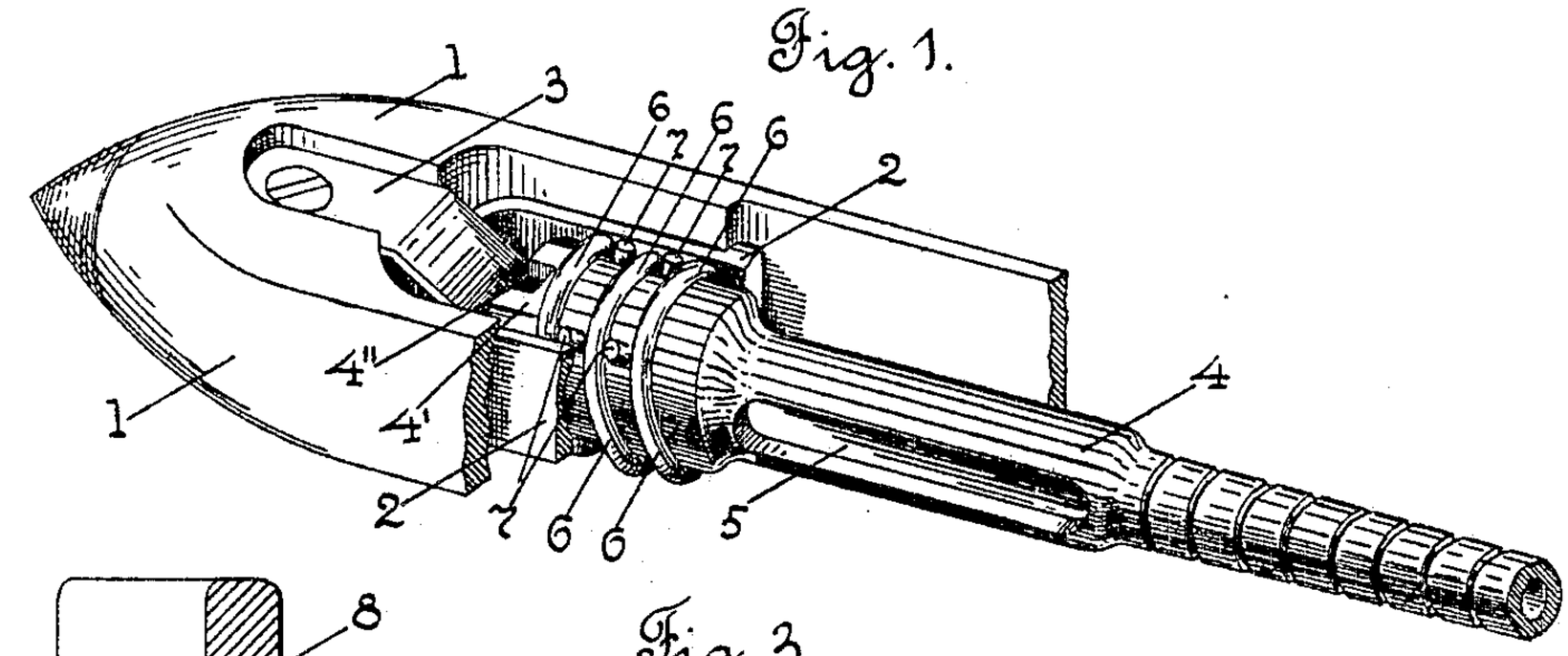


Fig. 3.

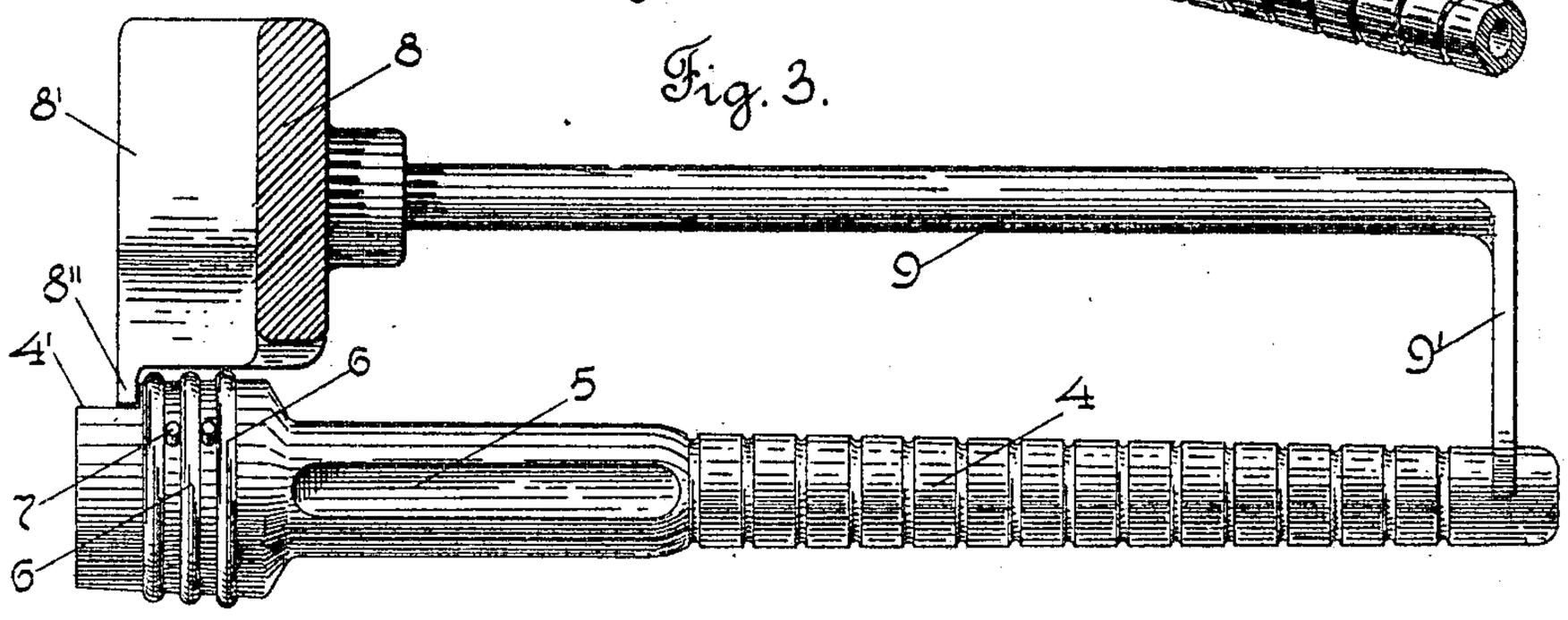


Fig. 2.

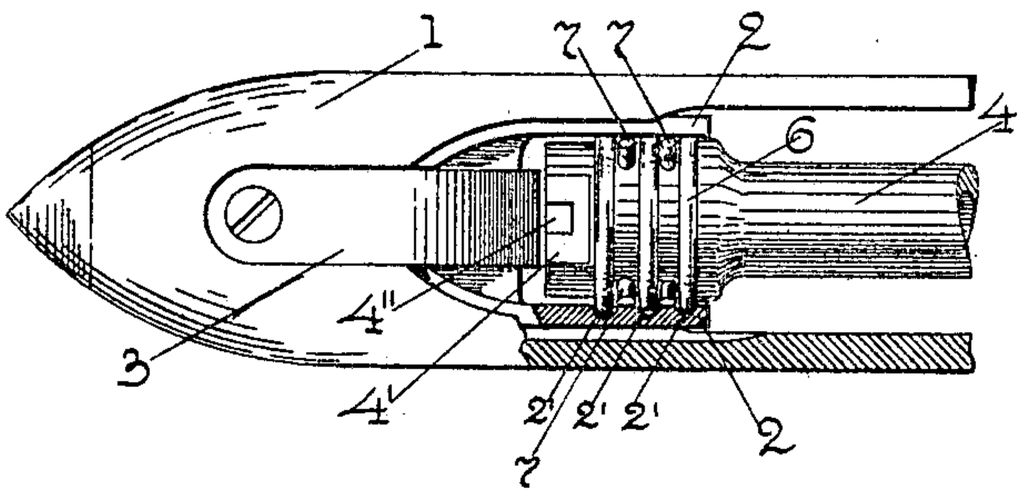
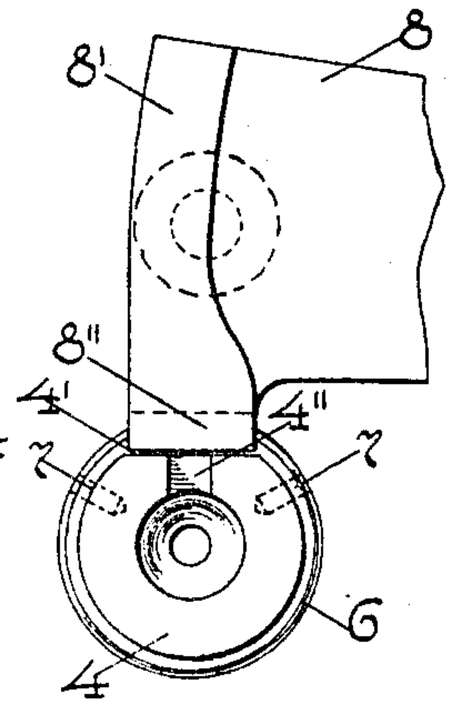


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FILLING-REPLENISHING LOOM.

No. 799,280. Specification of Letters Patent. Patented Sept. 12, 1905.

Application filed May 18, 1905. Serial No. 260,951.

To all whom it may concern:

Be it known that we, THOMAS W. TILLMAN and THOMAS C. STEWART, citizens of the United States, residing at Columbus, in the county of Muscogee, in the State of Georgia, have jointly invented certain new and useful Improvements in Filling-Replenishing Looms, of which the following is a specification.

Our invention relates to new and useful improvements in a filling-replenishing loom and in the filling-carrier therefor, and particularly relates to the class of filling-replenishing looms known as the "Northrop" loom, shown and described in United States Letters Patent No. 529,940, in which the filling-carriers are held in a revolving magazine.

In the class of looms referred to, in which filling-carriers or bobbins are used having a channel or recess in the base portion, over which the filling-thread is wound, so that when the carrier is filled the said channel is entirely concealed or covered, as shown and described in United States Letters Patent No. 596,441, it is necessary for the proper operation of the filling-detector mechanism to detect substantial exhaustion of filling on the bobbin in the active shuttle that the channel or recess in the bobbin should be directly opposite and in line with the opening in the side wall of the shuttle and with the engaging end of the filling detector or feeler.

In a weft-replenishing loom of the class referred to as ordinarily constructed, in which bobbins or filling-carriers of the class referred to are used, a bobbin or filling-carrier as it is transferred from the magazine to the shuttle in the operation of supplying fresh filling to the shuttle is apt to rotate or turn slightly, so that after it has been placed in the shuttle by the transferrer the channel or recess in the base of the bobbin will not be directly opposite and in alinement with the opening in the shuttle-box wall or in the binder and with the engaging end of the filling detector or feeler which enters through said opening.

The object of our invention is to provide a bobbin or filling-carrier of the class described of improved construction, and having means to cause the bobbin to properly position itself as it enters the shuttle when it is transferred from the magazine and to hold it in proper position in the shuttle, and also to provide an extension or lip on the rocking arm of the transferrer adapted to engage a flat surface on the base of the bobbin when the bobbin is in proper position to be transferred into the shuttle.

A bobbin or filling-carrier embodying our improvements may be used in shuttles of the ordinary construction which are used in the class of Northrop loom referred to, in which shuttles there are two metal holding-jaws, which have grooves on their inner surfaces to receive the metal rings on the end or base of the bobbin in the usual and well-known way.

We have only shown in the drawings a detached portion of a shuttle of ordinary and well-known construction and a bobbin or filling-carrier embodying our improvements combined therewith, and also a detached portion of a transferrer embodying our improvements for a magazine of the Northrop type.

Referring to the drawings, Figure 1 is an isometric view of the inner end or base of a bobbin or filling-carrier embodying our improvements and of the end of a shuttle in which the bobbin is secured. Fig. 2 is a plan view and partial section of the parts shown at the left in Fig. 1. Fig. 3 is a side view of a bobbin or filling-carrier embodying our improvements and of a transferrer embodying our improvements; and Fig. 4 is an end view of the filling-carrier arm and the bobbin shown in Fig. 3 looking in the direction of arrow *a*, same figure.

In the accompanying drawings, 1 is a portion of a shuttle, which may be of the ordinary construction used in the class of Northrop looms referred to, having two metal holding-jaws 2, with grooves or recesses 2′ on their inner surface, and a bridge 3, secured to the end of the shuttle in the usual way and as shown and described in United States Letters Patent No. 538,507.

We will now describe our improvements.

The bobbin or filling-carrier 4 has a longitudinal channel or recess 5 on one side and the metal rings 6, in this instance three in number, encircling its inner end or base, as is customary. Extending between the rings 6 are in this instance four outwardly-projecting pins 7, preferably of hardened steel, the outer ends of which are preferably in the same plane with the outer surface of the rings 6. The pins 7 are so placed in the base of the

bobbin 4 relatively to the jaws 2 and also relatively to the channel or recess 5 in the bobbin that when the channel or recess 5 is in its proper position, in direct alinement with the opening through the shuttle-wall or the shuttle-binder and with the inner engaging end of the filling feeler or detector, two of the pins 7, or one set of pins, will engage one of the jaws 2, as shown in Fig. 1, and the other two will engage the other jaw 2.

The pins 7 will act to rotate and position the bobbin or filling-carrier 4 when it is transferred into the shuttle 1 in case said bobbin is not in proper position by the pins 7 thereon engaging with the jaws 2, as will be readily understood. For example, if the channel or recess 5 is above its proper position as the bobbin is transferred into the shuttle the upper pair of pins 7 (shown in Fig. 1) as the bobbin passes into the shuttle will engage the jaw 2 and cause the bobbin 4 to rotate slightly until the lower set of pins 7 engage the top of the other jaw 2, as will be readily understood.

The head of the bobbin 4 has a flat portion 4′ on one side thereof and a notch or recess 4″ in said flat portion, which is adapted to receive a guide on one head or disk of the magazine (not shown) in the ordinary way to prevent any liability of the bobbin being rotated while in the magazine, as shown and described in United States Letters Patent No. 587,652.

The transferrer-arm 8, only the inner portion of which is shown, carries a transferrer 9 in the usual way, having the downwardly-extending engaging end 9′ to engage the tip of the bobbin. The transferrer-arm 8 has a rearwardly-extending projection 8′ thereon ordinarily used to engage the base of the bobbin. The projection 8′ has a downwardly-extending lip or extension 8″ thereon which is adapted to engage the flat portion 4′ on the base of the bobbin. By means of the flat projection or lip 8′ on the transferrer-arm 8 in the operation of the transferrer said projection will strike on the flat portion 4′ on the base of the bobbin, and therefore will not tend to revolve the bobbin.

The advantages of our improvements will be readily appreciated by those skilled in the art. By means of the pins 7 extending between the rings 6 the bobbin will be prevented from entering the shuttle in the wrong position, and by means of the projecting lip 8′ on the transferrer-arm 8 engaging the flat portion 4′ on the bobbin 4 the engagement of the transferrer with the bobbin will not tend to revolve the bobbin.

It will be understood that the details of construction of our improvements may be varied, if desired. Two or more pins 7 may be used, as desired.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A bobbin or filling-carrier having pins thereon, at its base which are adapted to engage the jaws in a shuttle, to position the bobbin, substantially as shown and described.

2. The combination with a bobbin having a longitudinal channel or recess therein, and one or more rings on its inner end or base, of two or more pins extending between the rings, substantially as shown and described.

3. The combination with a shuttle having bobbin-holding jaws therein with grooved inner surfaces, of a bobbin having a longitudinal channel or recess therein, with a ring or rings on its inner end or base, and two or more pins on its inner end or base, adapted to engage said jaws, to position the bobbin, substantially as shown and described.

4. A transferrer-arm having a downwardly-extending lip or projection thereon, adapted to engage a flat portion on the head or base of a bobbin, substantially as shown and described.

5. The combination with a transferrer-arm having a downwardly-extending projection or lip thereon, adapted to engage a flat portion on the inner end or base of a bobbin, of said bobbin, having a flat portion thereon to be engaged by the said lip or projection, substantially as shown and described.

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