H. LE DOUX & E. H. RYON.

SHUTTLE.

APPLICATION FILED APR. 2, 1909.

955,119. Patented Apr. 12, 1910.

Fig. 1.

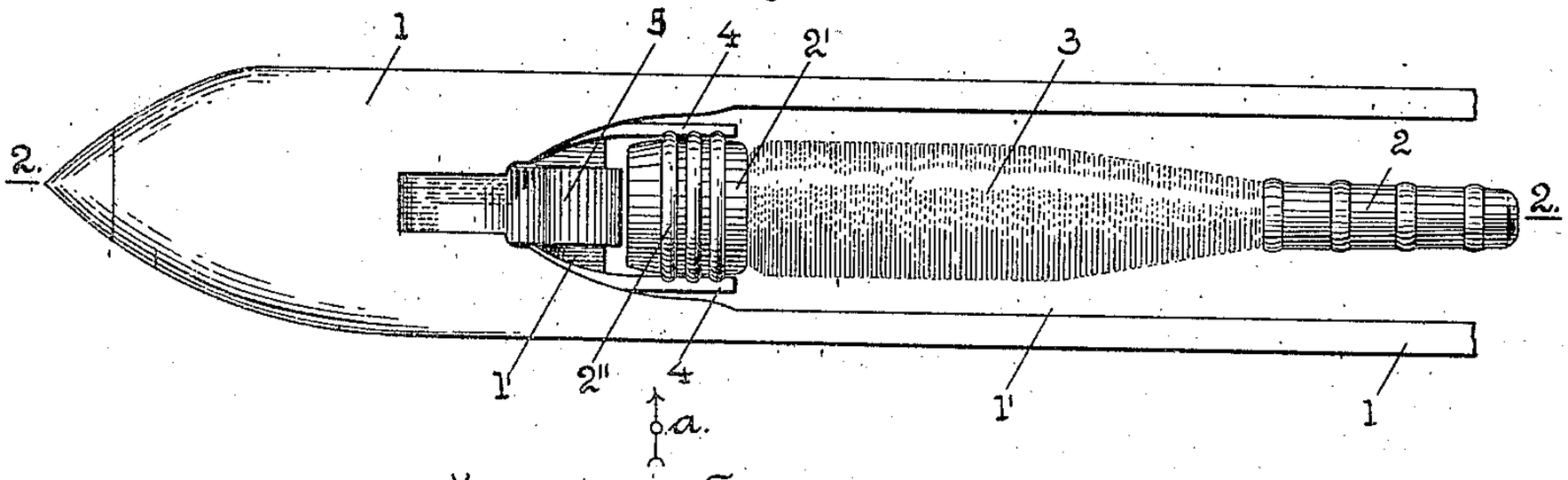


Fig. 2.

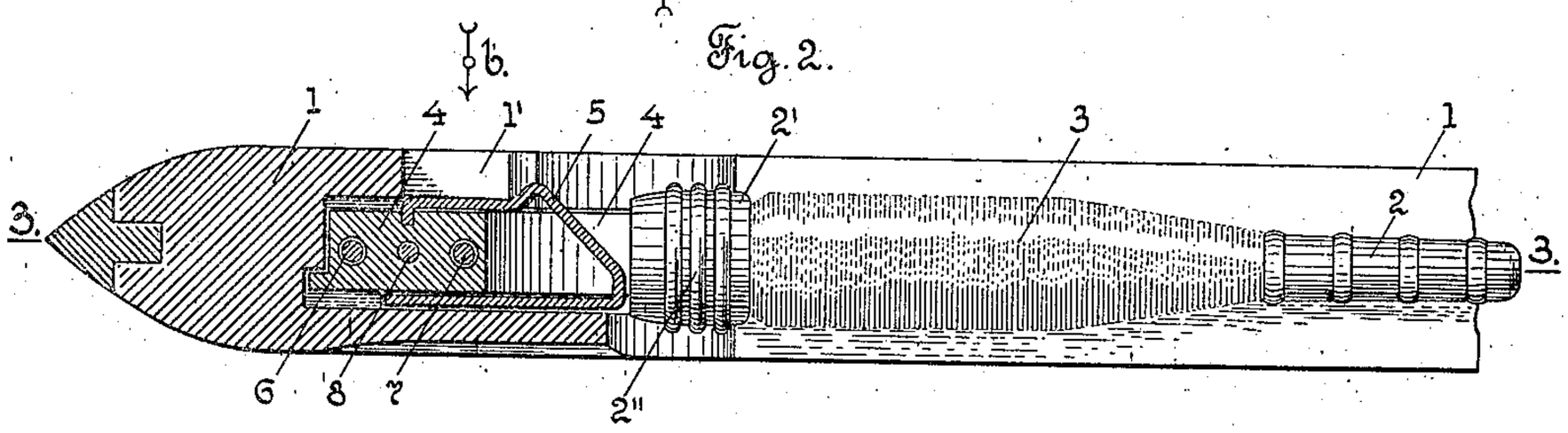
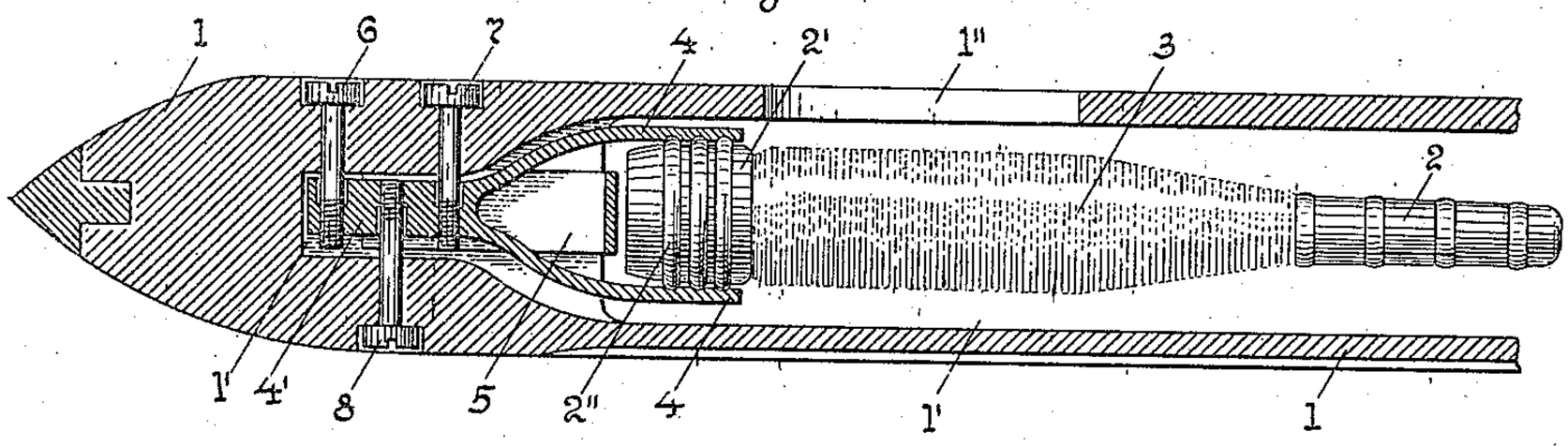


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SHUTTLE.

955,119. Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed April 2, 1909. Serial No. 487,511.

To all whom it may concern:

Be it known that we, HECTOR LE DOUX and EPPA H. RYON, citizens of the United States, both residing at Worcester, in the county of Worcester and State of Massachusetts, have jointly invented certain new and useful Improvements in Shuttles, of which the following is a specification.

Our invention relates to shuttles, and particularly to self-threading shuttles for weft replenishing looms.

The object of our invention is to improve upon the construction of the class of shuttles referred to, and particularly the type of shuttle shown and described in U. S. Letters Patent, No. 538,507, in which there are spring jaws for holding the head of the bobbin or filling carrier, which head has annular rings thereon.

In weft replenishing looms, the bobbin or filling carrier in the shuttle, of the class referred to, is adapted to be engaged by a filling feeler or detector which enters the shuttle through an opening in the wall thereof, and is adapted to feel or detect the practical or substantial exhaustion of filling on the bobbin in the shuttle, and on the substantial exhaustion of filling, to cause mechanism to operate the transferrer mechanism to supply a new bobbin in place of the substantially exhausted one. We have found in practice that the spring jaws in the shuttles of the class referred to, do not have exactly the same location in different shuttles, but vary in their position relative to the walls of the shuttle, so that the bobbin or filling carrier held in said jaws may be a little nearer, or a little farther away from the side of the shuttle which has the opening therein, through which the filling feeler or detector enters to engage the filling, and according to the position of the bobbin or filling carrier, relative to said opening, more or less filling is left on the bobbin which is to be exchanged. In order to overcome this objection, we have provided means for adjusting the position of the spring jaws which hold the head of the bobbin, so as to move the bobbin or filling carrier toward, or away from the side of the shuttle which has the opening therein through which the filling detector enters to engage the filling, so that the bobbins or filling carriers in different shuttles will have substantially the same location, and the distance from the bobbin or filling carrier to the side of the shuttle having the opening therein for the filling feeler, will be the same in each shuttle.

Our invention consists in certain novel features of construction of our improvements as will be hereinafter fully described.

We have only shown in the drawing a detached portion of a self-threading shuttle of the class referred to, with our improvements applied thereto, sufficient to enable those skilled in the art to understand the construction and operation of the same.

Referring to the drawing:—Figure 1 is a plan view of one end of a self-threading shuttle, showing the spring jaws, and a bobbin or filling carrier held therein. Fig. 2 is a longitudinal section, on line 2, 2, Fig. 1, looking in the direction of arrow *a*, same figure, and; Fig. 3 is a central horizontal section through the shuttle, taken at a point indicated by line 3, 3, Fig. 2, looking in the direction of arrow *b*, same figure.

In the accompanying drawing, 1 is the shuttle body, having a central longitudinal opening 1′ therethrough, and in this instance an opening 1″ therein, in the back wall of the shuttle, see Fig. 3, for the entrance of the filling feeler or detector, not shown.

2 is a bobbin or filling carrier having filling 3 wound thereon. The head 2′ of the bobbin 2 is provided with annular metal rings 2″ in the usual way.

4 are the two holding spring jaws which are grooved on their inner sides to receive the annular rings 2″ on the head 2′ of the bobbin 2, in the usual way, to hold the bobbin in position in the shuttle. An inclined bridge or bobbin-directing plate 5 is preferably combined with the holding jaws 4, in the usual way.

All of the above mentioned parts may be of the usual and well known construction in the class of shuttles referred to, and particularly shown and described in said Letters Patent, No. 538,507, above referred to.

We will now describe our improvements, which are shown in Figs. 2 and 3, and consists in means for adjusting the position of the spring jaws 4, and the bobbin 2 held between said jaws, to cause them to move toward or away from the side of the shuttle which has the opening 1″ therein. The two spring jaws 4 are in this instance made integral with a block or plate 4′, which is loosely located within a recess in the shuttle

body. The block 4′ has in this instance three threaded holes therein, extending in the direction of the width of the shuttle, and there are in this instance three adjusting screws 6, 7, and 8, two screws, as 6, and 7 on one side of the shuttle, and one screw, as 8 on the other side of the shuttle. Each adjusting screw extends through a hole in the body of the shuttle, which is enlarged at its outer end to receive the head of the screw, so that the same will not extend out beyond the edges of the shuttle. The inner end of each screw is screwed into a threaded hole in the block 4′. The three screws 6, 7, and 8 hold the block 4′, and also the spring jaws 4 in place in the shuttle.

When it is desired to adjust the block 4′ and the spring jaws 4, to move them toward, or away from the side of the shuttle having the opening 1″ therein, the two screws 6 and 7 are turned in one direction, and the screw 8 is turned in the opposite direction, according to the amount of adjustment.

It will be understood that the details of construction of our improvements may be varied if desired, and any suitable means may be employed for adjusting the position of the plate 4′ and the spring jaws 4, to move the spring jaws toward, or away from the side of the shuttle having the opening 1″ therein and also move the bobbin 2 held by said jaws.

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

1. In a shuttle having spring jaws for holding the head of a bobbin or filling carrier, the combination with a block or plate carrying said jaws, of means for adjusting the position of said jaws relative to the side of the shuttle, said means comprising adjusting screws extending in openings in the shuttle body, and in threaded openings in said block or plate.

2. In a shuttle having spring jaws for holding the head of a bobbin or filling carrier, and a block or plate carrying said jaws, and also having an opening for the entrance of the filling feeler or detector, means for adjusting the position of said jaws relative to the side of the shuttle having said opening therein, said means comprising adjusting screws extending through the sides of the shuttle, and through threaded openings in said block or plate.

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