

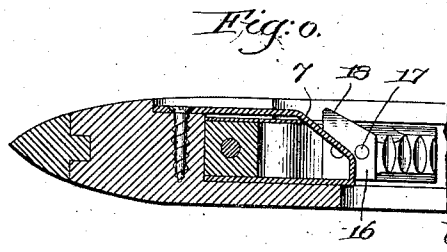
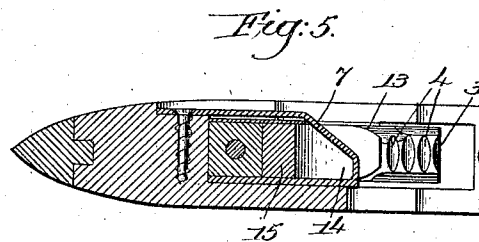
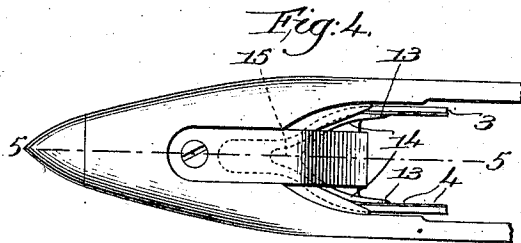
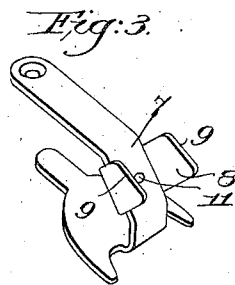
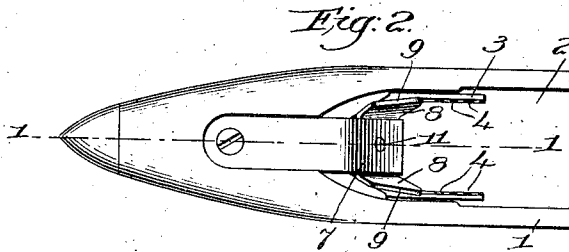
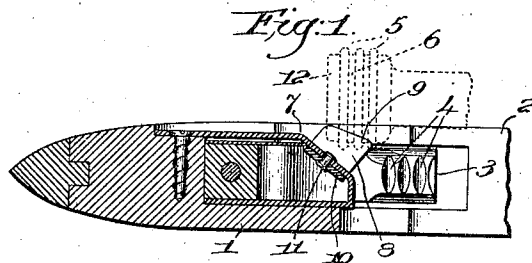
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O. JANELLE.

SHUTTLE FOR AUTOMATIC FILLING REPLENISHING LOOMS.

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Witnesses  
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# UNITED STATES PATENT OFFICE.

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## SHUTTLE FOR AUTOMATIC FILLING-REPLENISHING LOOMS.

SPECIFICATION forming part of Letters Patent No. 782,505, dated February 14, 1905.

Application filed December 14, 1904. Serial No. 236,787.

*To all whom it may concern:*

Be it known that I, OSCAR JANELLE, a citizen of the United States, and a resident of Manchester, county of Hillsboro, State of New Hampshire, have invented an Improvement in Shuttles for Automatic Filling-Replenishing Looms, of which the following description, in connection with the accompanying drawings, is a specification, like figures on the drawings representing like parts.

In the Northrop type of automatic filling-replenishing loom, an example of which is shown and described in United States Patent No. 529,940, the heads of the filling-carriers 15 are provided with metallic annular projections or rings which enter upright notches formed in the inner faces of spring-acting holding-jaws mounted in the shuttle at one end of the chamber in which the filling-carrier enters. 20 The loom is provided with mechanism to automatically remove the filling-carriers one by one from a feeder and transfer them to the running shuttle whenever a change of filling is called for, the operation of the replenishing 25 mechanism being very rapid and forcible in order to properly insert the head of the incoming filling-carrier in the jaws and eject therefrom the filling-carrier then held by the jaws. The shuttle used in such looms is provided with an inclined guide located between 30 the bases of the jaws to engage the butt of the incoming filling-carrier when the notches of the jaws are not in the proper position to receive the rings and effect relative longitudinal movement of shuttle and filling-carrier 35 to bring the rings and notches into proper co-operating position. At such times the butt of the filling-carrier or bobbin strikes the guide with great force, the blow tending to split, 40 crush, or otherwise injure the butt, it being remembered that owing to the chamber in the head the walls of the butt are relatively thin and ill adapted to resist the shock due to such initial impact.

My present invention has for its object the 45 production of means to receive the impact of the incoming filling-carrier by or through engagement with the rings on the head, whereby the force of the blow is taken up by the

rings independently of the butt, thereby protecting the latter from injury.

The novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following 55 claims.

Figure 1 is a longitudinal sectional view on the line 1 1, Fig. 2, of the holding end of a loom-shuttle with one embodiment of my invention applied thereto, the head of an incoming filling-carrier being shown in dotted lines 60 to illustrate the manner in which the invention operates. Fig. 2 is a top or plan view of the portion of the shuttle shown in Fig. 1. Fig. 3 is a perspective view detached of the impact members or buffers and their support. 65 Fig. 4 is a top or plan view of a portion of a shuttle, showing another form of my invention. Fig. 5 is a longitudinal section thereof on the line 5 5, Fig. 4; and Fig. 6 is a similar view showing the impact members or buffers 70 attached directly to the holding-jaws.

In Figs. 1 and 2 and 4 to 6 the shuttle-body 1, having a chamber 2 formed therein and extending from its top to its bottom to receive the filling-carrier or bobbin, the spring-holding 75 jaws 3, rigidly secured to the shuttle at one end of the chamber 2 and having upright notches 4 in their inner faces to receive the rings 5 on the head 6 of the filling-carrier, (see dotted lines, Fig. 1,) and the inclined guide 7, 80 located between the bases of the jaws, may be and are all of well-known construction in shuttles used in connection with looms of the type referred to.

In the embodiment of my invention illustrated in Figs. 1, 2, and 3 I provide 85 cam-shaped impact members or buffers 8, made of metal and having their upper edges 9 inclined forward and downward, the said members being connected by a cross-piece 10, passed under 90 the guide 7 and rigidly secured thereto in any suitable manner, as by a rivet 11. The buffers are slightly flared, as shown in Fig. 2, and lie close to the inner faces of the jaws back of the notches 4, the cam faces or edges 95 9 leading downward to the upper ends of the rearmost notches, Fig. 1. The buffers are so positioned that if the shuttle is not properly

positioned for the reception of the incoming filling-carrier, as in Fig. 1, the rings 5 thereof will initially engage the cam-surfaces 9 before the butt 12 of the filling-carrier strikes the guide 7. As a consequence the buffers take up the initial impact of the blow by engagement with the armored part of the head—viz., the rings 5—and all danger of injuring the butt by crushing, splitting, or jamming against the guide is obviated. After the initial impact the rings slide along the cam-surfaces 9 by relative longitudinal movement of the shuttle and filling-carrier, and the rings are directed into the proper holding-notches, in which guiding or directing movement the butt may cooperate with the guide after initial impact occurs.

In the modification shown in Figs. 4 and 5 the cam-surfaces 13 are formed on the ends of the arms 14 of a substantially Y-shaped support, the stem 15 of which fits into the space between the bases of the holding-jaws 3, the arms being held by their own resiliency in contact with the inner faces of the jaws back of the notches 4. The guide 7 extends between the arms 14, as clearly shown in Fig. 4, and the cam-surfaces 13 act through engagement with the rings of the incoming filling-carrier, as before described, to receive the initial impact, and thereby prevent injury to the butt.

In both of the forms of my invention thus far described the buffers or impact members are supported separately from the holding-jaws; but, if desired, the buffers may be secured directly to the jaws, as shown in Fig. 6, wherein the buffers are shown as metallic ears 16, riveted at 17 to the jaws and having cam-surfaces 18 to engage the bobbin-rings, and thereby take the impact of the blow. So far as I have been able to determine the initial impact of the butt of the bobbin on the inclined guide causes injury, due to the sudden hard blow, whereas if the initial impact of the incoming bobbin or filling-carrier is received by means independently of the butt the latter will not be injured if it afterward slides along the guide.

It will be manifest from the foregoing description, taken in connection with the drawing, that if the shuttle is properly positioned to receive the incoming filling-carrier the impact members or buffers will not be called into operation.

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

1. In a shuttle for automatic filling-replenishing looms, holding-jaws notched to receive the rings on the head of a filling-carrier, and means adjacent the rear ends of the jaws to receive the initial impact of the incoming filling-carrier through engagement with the rings thereof independent of the butt and thereby protect the butt from injury.

2. In a shuttle for automatic filling-replenishing looms, holding-jaws notched to receive the rings on the head of a filling-carrier, and means back of the notched portions of the jaws and separate therefrom to receive the initial impact of the incoming filling-carrier by engagement with the rings thereof and thereby prevent crushing or jamming of the butt.

3. In a shuttle for automatic filling-replenishing looms, holding-jaws notched to receive the rings on the head of a filling-carrier, and cam-shaped buffers adjacent the rear ends of the jaws and back of the notches thereof to receive the initial impact of the incoming filling-carrier by engagement with the rings thereof, to thereby protect the butt from injury and guide the rings into the notches.

4. In a shuttle for automatic filling-replenishing looms, holding-jaws notched to receive the rings on the head of a filling-carrier, an inclined guide between the bases of the jaws, and impact members at the sides of the guide back of the notched portions of the jaws to receive the initial impact of the incoming filling-carrier by engagement with the rings thereof prior to cooperation of the butt with the guide, to prevent fracture of the butt.

5. In a shuttle for automatic filling-replenishing looms, holding-jaws notched to receive the rings on the head of a filling-carrier, cam-shaped buffers adjacent the rear ends of the jaws and back of the notches, thereof, to receive the initial impact of the incoming filling-carrier by engagement with the rings thereof, and a support for the buffers separate from the jaws.

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

OSCAR JANELLE.

Witnesses:

JAMES C. MURDOCH,  
J. A. FRACKER.