

A. E. RHOADES.
 FILLING CARRIER FOR AUTOMATIC FEELER LOOMS.
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Fig. 1.

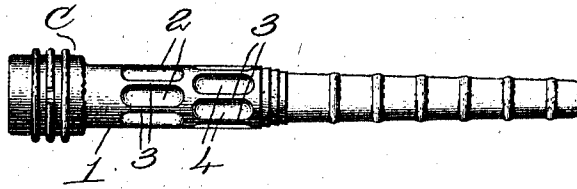
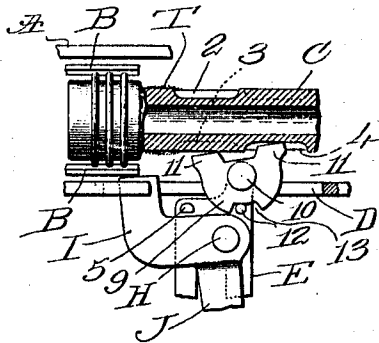


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

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FILLING-CARRIER FOR AUTOMATIC FEELER-LOOMS.

992,989.

Specification of Letters Patent.

Patented May 23, 1911.

Original application filed October 22, 1910, Serial No. 588,411. Divided and this application filed March 16, 1911. Serial No. 614,757.

To all whom it may concern:

Be it known that I, ALONZO E. RHOADES, a citizen of the United States, and resident of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Filling-Carriers for Automatic Feeler-Looms, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention, which is a division of an application Serial No. 588,411 filed by me the 22nd day of October, 1910, has for its object the production of a novel form of filling-carrier or bobbin more particularly adapted for use in connection with a loom equipped with filling-exhaustion indicating mechanism of the type shown and described in my above-mentioned application.

The filling-carrier forming the subject-matter of this application has its barrel provided with a plurality of series of axially-arranged depressions, the depressions of one series being arranged opposite the spaces between the depressions of the other series. When such a filling-carrier is properly mounted in the shuttle of the loom one series of the depressions will be opposite each impinging portion of the feeler of the filling-exhaustion indicating mechanism on each feeling pick, so that when the filling is woven off to expose the depressions one or the other of the impinging portions of the feeler will enter a depression and cause the feeler to swing laterally into abnormal position.

In order that the coöperation of the feeler with the filling-carrier may be properly understood I have herein illustrated a sufficient portion of the feeler mechanism as will suffice for the purpose.

Figure 1 is a side elevation of a filling-carrier or bobbin embodying my present invention, showing clearly the plurality of series of axially-arranged depressions in the barrel of the carrier; Fig. 2 is a detail view in plan of the feeler and some of its adjuncts, with which the filling-carrier is designed to coöperate, to illustrate the manner in which functional movement of the actuator is effected when the feeler is abnormally positioned by coöperation with the filling-carrier, the latter being shown partly in section.

Referring to Fig. 2 the shuttle A, sup-

posed to be boxed at the feeling side of the loom, has usual spring-jaws B to grasp the head of the removable filling-carrier or bobbin C, the side wall of the shuttle toward the front of the loom having an elongated slot D through which the feeler can enter the shuttle.

The elongated and cylindrical barrel 1 of the filling-carrier, Figs. 1 and 2, is herein shown as provided with two series of axially-arranged depressions 2, 4, the depressions being longitudinally extended and entering quite deeply into the wood of the barrel, Fig. 2.

The depressions 2 are separated by ribs 3, while similar ribs alternate with the depressions 4, and I preferably make the depressions considerably wider than the thickness of the intervening ribs at the surface of the barrel.

It will be seen that the depressions of one series are staggered with relation to the depressions of the other series. That is, a depression 2 is arranged with its longitudinal center opposite to the rib 3 between two of the depressions 4, and vice versa, so that no positioning of the filling-carrier in the shuttle can bring a rib of one series in alinement with a rib of the other series, nor can depressions of the two series be alined. This is important in connection with the feeler mechanism in connection with which the filling-carrier is particularly adapted for use.

Referring now to Fig. 2 the feeler-support or carrier E is in practice mounted to slide back and forth in a suitable stand, as in my co-pending application, in a manner well known in the art, and an actuator I, J, is pivoted at H on the carrier E, the free end of the arm I being turned rearwardly to enter the slot D of the shuttle opposite the adjacent spring-jaw B, the longer arm J of the actuator being extended frontward. In practice the arm J is arranged to coöperate at times with a device which governs the operation of the filling-replenishing mechanism and forming no part of this invention. Normally the actuator arm I is held against a stop lug 5 on the carrier E, and at such time the actuator as a whole is inoperative, the functional or active movement of the actuator to bring about filling replenishment being effected when said actuator is swung about its pivot H into the position

shown in Fig. 2, due to engagement of the free end of the arm I with the spring-jaw B. Such engagement is controlled as to the time of its occurrence by the feeler 9 pivoted at 10 on a prolongation of the carrier E and adapted to swing in a lateral plane at one side of the actuator arm I. The projecting rear portion of the feeler is bifurcated to present two aligned and laterally separated impinging portions 11, 11 equidistant from the fulcrum pivot 10. Swinging of the feeler is limited by a pin 12 on the carrier E, which enters a segmental notch 13 in the front edge of the feeler. So long as both portions 11 of the feeler impinge upon the filling in the shuttle on the beat-up of the lay on the feeling stroke there will be no pivotal movement of the feeler, and the feeler and its carrier E will be moved forward as a unit on the beat-up. When, however, the filling weaves off so that the impinging portions 11 are not pressed upon equally and simultaneously on the feeling stroke the feeler 9 will swing on its pivot 10 in one or the other direction, permitting the actuator arm I to impinge upon and be moved by the jaw B before the forward stroke of the feeler carrier E begins.

In Fig. 2 it is supposed that the filling has been exhausted to the small portion T, both series of depressions 2 and 4 in the barrel of the filling-carrier being exposed. As the lay advances on the feeling pick the left hand impinging portion 11 of the feeler engages one of the ribs 3 between two of the depressions 2 while the right portion 11 is opposite a depression 4, and manifestly the feeler will be swung on its pivot 10 as shown, thereby permitting the free end of the actuator arm I to impinge upon the jaw B, so that the actuator is swung into operative position. The functional movement of the actuator so effected will cause its arm J on the forward stroke of the carrier E as the lay beats up, to act upon suitable intervening devices, (not shown) and bring about the actuation of the filling-replenishing mechanism in a well known manner. The depressions in the filling-carrier permit a

very considerable swinging movement of the feeler into its abnormal position, as will be apparent, and the advantages of providing a plurality of series of depressions, staggered or offset with relation to each other, will be obvious, for no possible position of the filling-carrier in the shuttle can fail to locate a depression of one or the other series opposite one of the impinging portions 11 of the feeler. Hence when the filling weaves off to expose the depressions the feeler will be swung on its pivot in one or the other direction to bring about the described functional movement of the actuator of the feeler mechanism.

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

1. As new article of manufacture, a filling-carrier for looms, having a barrel provided with two series of axially-arranged depressions laterally separated at the surface of the barrel by ribs narrower than the width of the depressions, the depressions of one series being opposite the ribs between the depressions of the other series.

2. As a new article of manufacture, a filling-carrier for looms, having a barrel provided with a plurality of series of axially-arranged and alternating longitudinal ribs and depressions, the ribs of the one series being opposite the depressions of the next adjacent series.

3. As a new article of manufacture, a filling-carrier for looms, having an elongated, cylindrical barrel provided with two series of axially-arranged and alternating, longitudinally prolonged ribs and depressions, the ribs of the one series being opposite the longitudinal centers of the depressions of the other series.

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

ALONZO E. RHOADES.

Witnesses:

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