No. 701,973. Patented June 10, 1902.

C. H. WARREN.

MEANS FOR DEFINING THE BEAT OF THE LAY OF LOOMS.

(Application filed Feb. 8, 1902.)

(No Model.)

Fig: 1.

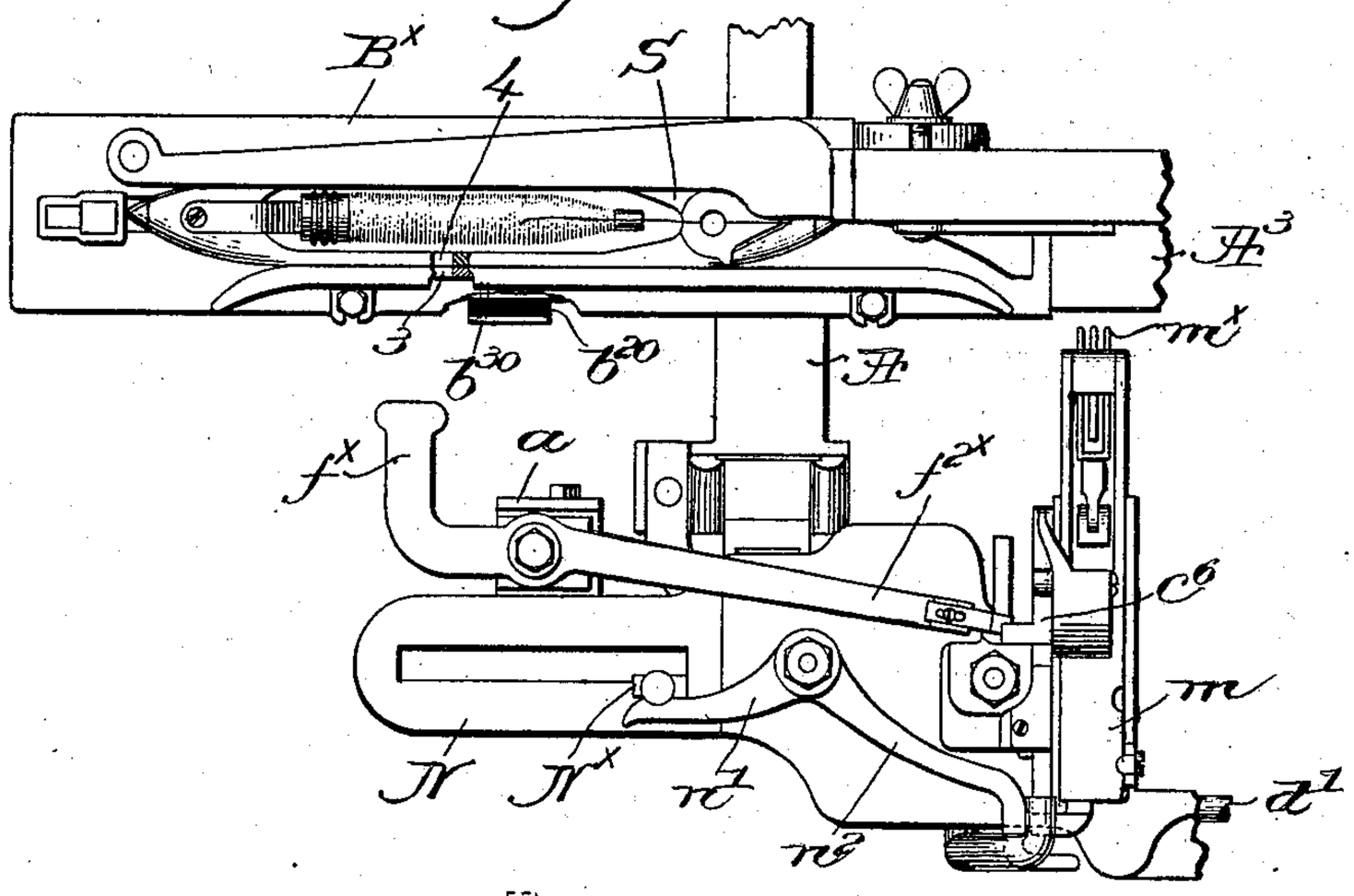
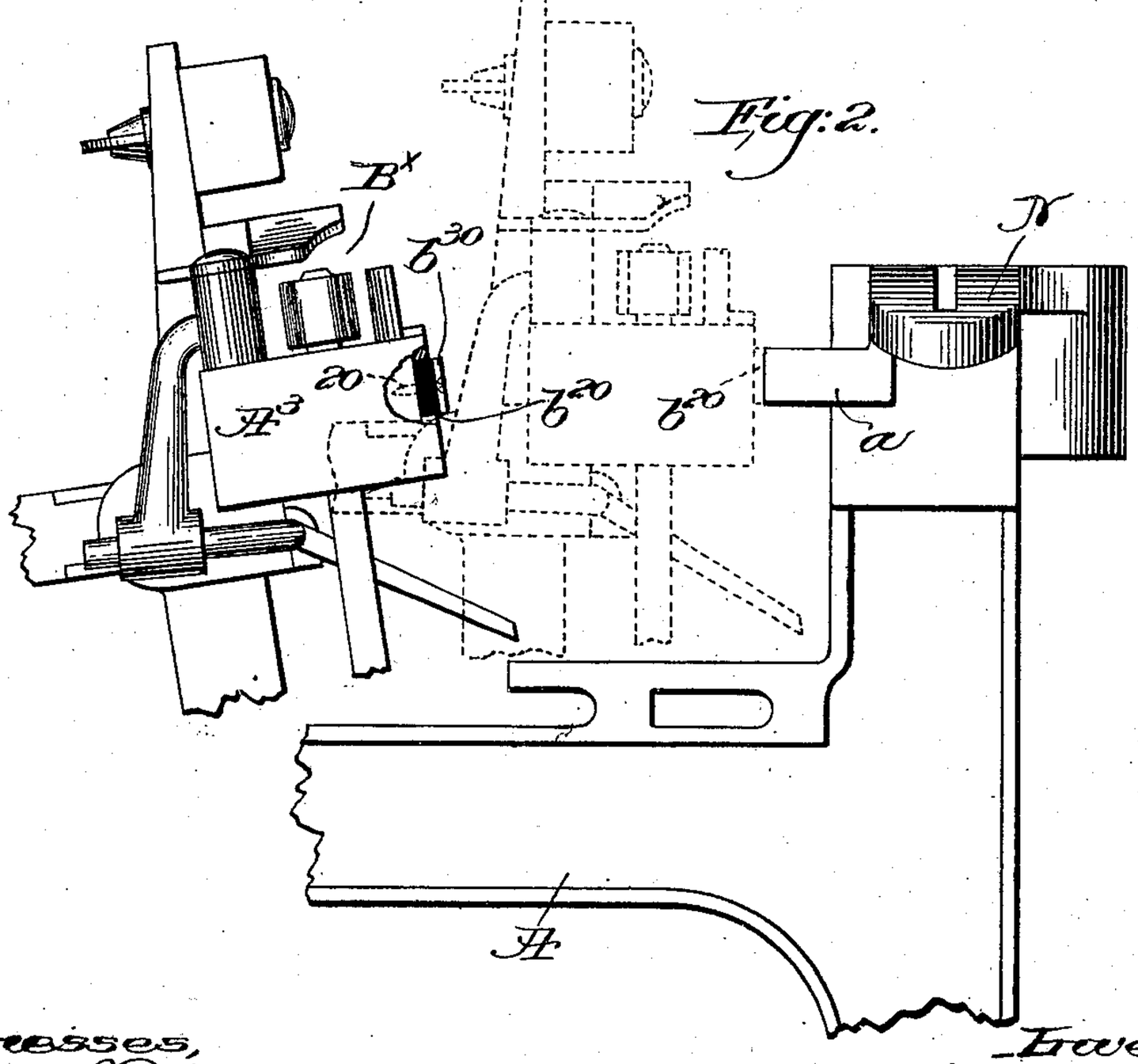


Fig: 2.



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UNITED STATES PATENT OFFICE.

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MEANS FOR DEFINING THE BEAT OF THE LAY OF LOOMS.

SPECIFICATION forming part of Letters Patent No. 701,973, dated June 10, 1902.

Application filed February 8, 1902. Serial No. 93,179. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. WARREN, a citizen of the United States, and a resident of Pittston, county of Kennebec, State of Maine, have invented an Improvement in Means for Defining the Beat of the Lay of Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of means for limiting or defining the forward beat or stroke of the lay of a loom, so that the variation in its front-center position due to backlash or lost motion and speed variation will be substantially at a fixed point, such result being obtained without shock or jar of the moving parts. In accordance therewith I have provided a yielding buffer or cushion for the lay, operative at or about the instant the latter reaches front center.

So-called "feeler-looms" of the type wherein filling-replenishing mechanism is actuated by or through a feeler upon exhaustion of the shuttle-filling to a predetermined extent, are somewhat variable in operation at times, owing to the fact that the forward stroke of the lay on which the feeling of the filling is accomplished is not uniform, and with such looms my present invention is particularly useful, as the uniformity in the front-center position of the lay results in a more even and accurate operation of the feeler.

The novel features of my invention will be hereinafter fully described, and particularly pointed out in the following claims.

Figure 1 is a top or plan view of the left-hand end of a loom, showing a feeler device and illustrating one embodiment of my invention; and Fig. 2 is a partial left-hand side elevation of the loom shown in Fig. 1, the feeler and adjacent devices being omitted.

The loom-frame A, lay A^3, the operating or controlling rock-shaft d' to effect the operation of filling-replenishing mechanism of the well-known Northrop type—say, for instance, as shown in Patent No. 662,320, dated November 20, 1900—the shipper $N^\times$, its holding-plate N, the stand or bracket a, on which is fulcrumed the L-shaped feeler-arm $f^\times$, having an inner extension $f^{2\times}$ and controlling a latch-carrier c^6, the shuttle-box $B^\times$, having an aperture 3 in its front wall to receive the feeler $f^\times$ as the lay beats up, the automatically self-threading shuttle S, having a feeler-receiving slot 4 in its side wall, the filling-fork $m^\times$, its slide m, and the knock-off lever n' n^2 may be and are all substantially as shown and described in the patent referred to and operating substantially as therein set forth, it being understood that in the type of loom herein illustrated the feeler enters the shuttle on every alternate beat of the lay and feels the filling therein, the filling intermittingly moving the feeler until predetermined exhaustion of the filling, whereupon the rock-shaft d' is turned, as in the patent referred to, to operate the filling-replenishing mechanism (not herein shown) to provide the shuttle with a fresh supply of filling.

The high speed at which looms are frequently run imparts great momentum to the lay, so that the front-center position thereof varies, owing to wear of the parts and to more or less give of the loom, and consequently the movement of the lay is not as uniform as it should be in order to obtain the best results, and particularly is this true in feeler-looms where it is desired that the feeler mechanism shall "feel down," as it is termed, to an extremely fine point.

In my present invention I have obviated the non-uniformity of movement of the loom as to its position of front center by providing a buffer operative at or about the instant the loom reaches front center, the yielding character of the buffer taking up shock and also absorbing any lost motion due to looseness of parts or backlash and causing the loom to come to its front-center position at practically the same point on every forward beat.

In the present embodiment of my invention the buffer is shown as a block b^{20}, of rubber or other similar yielding and elastic material, suitably secured to the front of the lay, as by screws 20, (see Fig. 2,) the buffer being so located as to engage a fixed bumper on the forward beat of the lay, and herein the bracket or stand a constitutes such bumper.

In order to protect the material of the buffer from the wear due to constant intermittent engagement with the bumper, it may be

provided with a facing, as b^{30}, of leather or other suitable flexible material, which will not interfere with the cushioning action of the bumper.

The buffer operates to stop the lay at its front center at substantially the same point on every forward stroke or beat and yet without the jar or shock that would be occasioned by causing a rigid or unyielding part of the lay to impinge upon an equally rigid or unyielding bumper.

The wear and tear on the moving parts of a loom, particularly those parts connected with the actuation of a lay, is very great, as is well known to those skilled in the art, and by providing the cushioning device or yielding buffer the backlash or lost motion is taken up and compensated for and the front-center position of the lay accurately defined without shock or jar.

It will be manifest that to locate the cushion or buffer on a fixed part of the loom to impinge upon the lay as the latter beats up will be a mere reversal of the construction herein illustrated and falling within 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. In a loom, the lay, the breast-beam, and a yielding cushion on one to engage an unyielding part of the other as the lay reaches front center on each forward beat.

2. In a loom, the lay, and a yielding buffer therefor operative to take up lost motion and render the forward beat of the lay uniform.

3. In a loom, the lay, a yielding buffer thereon, and a rigid bumper mounted on a fixed part of the loom, to engage the buffer each time the lay beats up, reducing the jar and defining the forward stroke of the lay.

4. In a loom, the lay, a shuttle adapted to contain a supply of filling, a feeler to intermittingly engage the filling as the lay beats up, mechanism controlled by or through the feeler when the shuttle-filling is exhausted to a predetermined extent, and a yielding buffer for the lay, to define and render uniform its forward beat and reduce shock.

5. In a loom, the lay, an elastic rubber buffer mounted on the front thereof, and a fixedly-positioned rigid bumper in the path of and to engage the buffer as the lay reaches its front center on each forward beat.

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

CHARLES H. WARREN.

Witnesses:
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H. F. SEARLES.