

No. 858,662.

PATENTED JULY 2, 1907.

J. E. LEMYRE.  
LOOM SHUTTLE.

APPLICATION FILED OCT. 24, 1906.

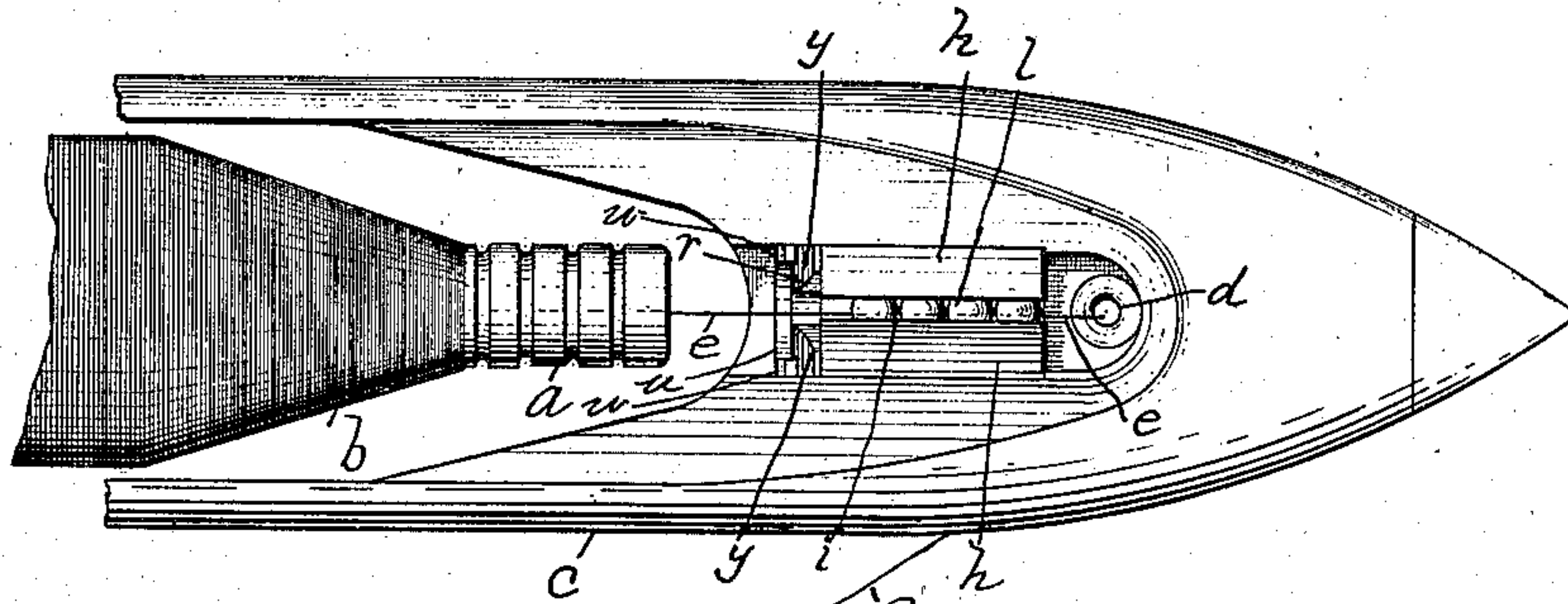


Fig. 1.

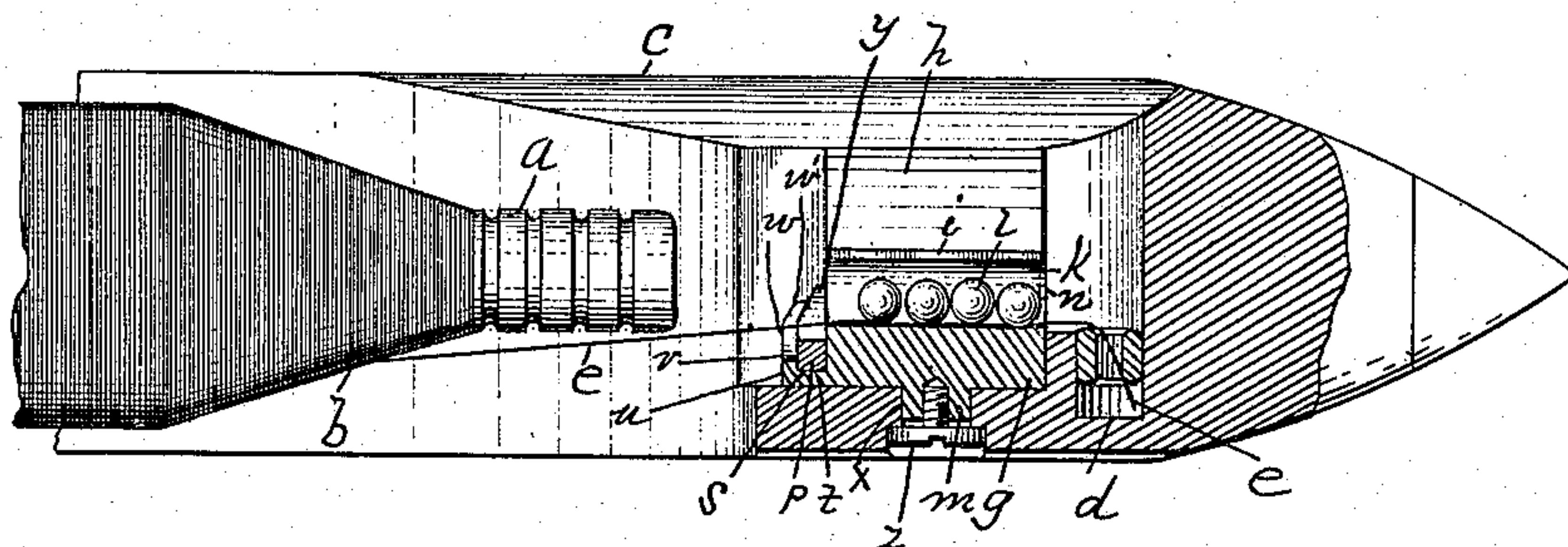


Fig. 2.

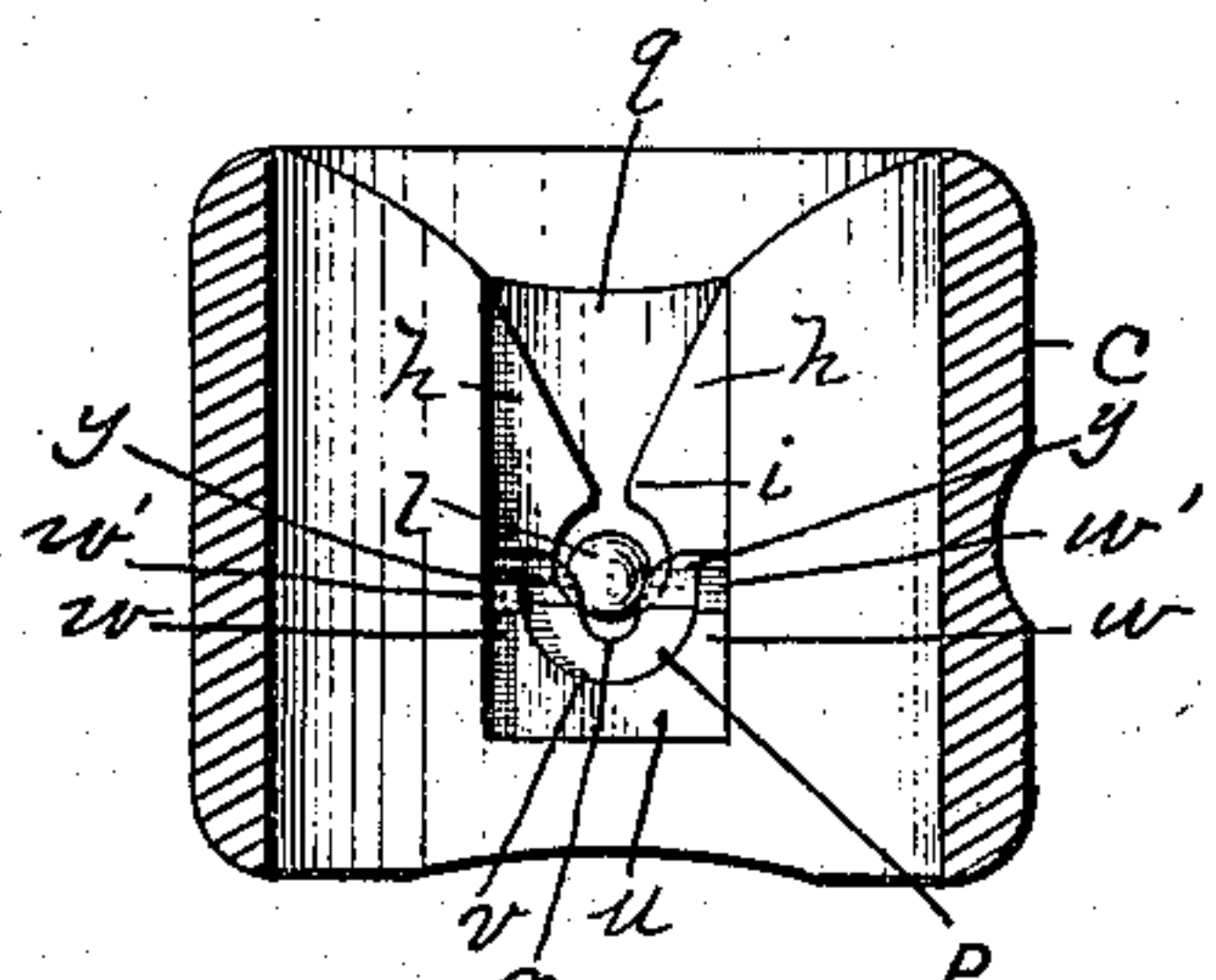


Fig. 3.

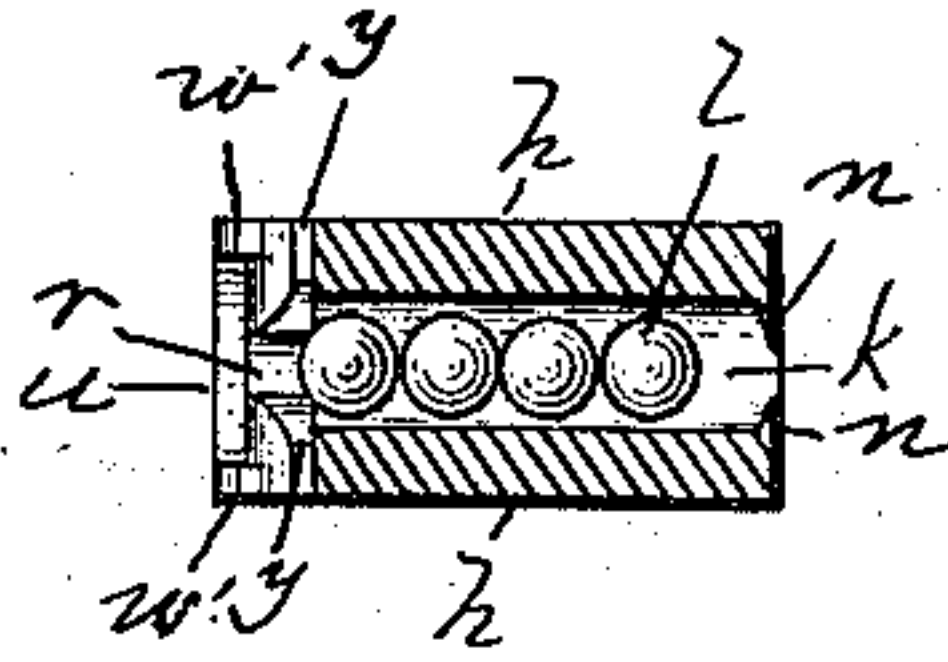


Fig. 4.

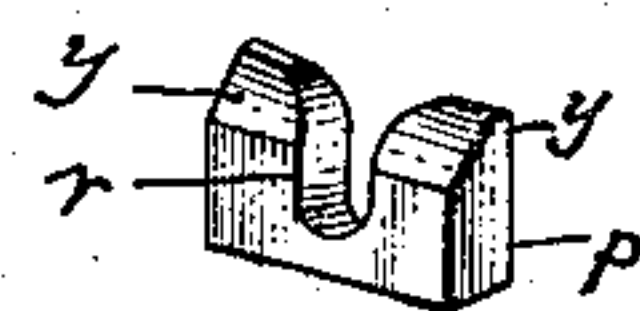


Fig. 5.

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# UNITED STATES PATENT OFFICE.

JOSEPH E. LEMYRE, OF MANCHESTER, NEW HAMPSHIRE.

## LOOM-SHUTTLE.

No. 858,662.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed October 24, 1906. Serial No. 340,348.

*To all whom it may concern:*

Be it known that I, JOSEPH E. LEMYRE, a citizen of the United States, residing in Manchester, in the county of Hillsboro and State of New Hampshire, have invented a new and useful Improvement in Loom-Shuttles, of which the following is a specification.

It is the object of this invention to provide a new and improved construction or mechanism whereby friction is applied to the yarn or thread as it passes out from the bobbin through the shuttle, such construction or mechanism being intended as a substitute for and an improvement on the felt lining which is now in common use for that purpose and is applied to the passage through which the yarn or thread passes from the bobbin through the shuttle at that end. The principal objection to the use of felt at this point and for this purpose is that it quickly becomes worn out, cut, or smooth and hence is too easily destructible or too quickly loses its frictional quality.

My invention consists in a certain novel construction whereby a friction-mechanism is produced which is exceedingly lasting, retains its frictional quality, and has other advantages, said construction being fully described in the accompanying drawings, in which:—

Figure 1 is a top view or plan of a sufficient portion of a loom-shuttle to illustrate my invention. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a cross section of the shuttle looking toward the right and showing my improved friction-mechanism in end elevation. Fig. 4 is a horizontal section taken through the passage containing the balls. Fig. 5 is an elevation of the slide removed.

Similar letters of reference indicate corresponding parts.

*a* represents the spindle; *b* the bobbin; and *c* the shuttle.

*d* represents the passage in the side wall of the shuttle through which the yarn or thread *e* passes out. Located in the shuttle, which is suitably chambered out for the purpose between said passage and that end of the bobbin from which the yarn is unloaded, is a case or frame, preferably metallic, and comprising the horizontal bottom wall *g* and the opposite longitudinal side walls *h*, said side walls being separated from each other by a longitudinal horizontal passage *k* curved in cross section and describing in said section almost a complete circle. This passage is intended to receive balls *l*. The side walls *h* extend up vertically until their upper ends are nearly or quite flush with the upper end of the shuttle at that point, as illustrated in the first three figures of the drawings; the inner surfaces or sides of said walls *h* flaring outward from the narrow longitudinal passage or slit *i* which connects with the passage *k*.

The outer end of the passage *k* is provided with any suitable means for retaining the balls in the passage at that end, such as slight projections *n* extending inward or radially, as shown in Figs. 2 and 4; and the front end

of the passage is closed, after the balls have been inserted, by means of a slide *p* whose upper edge is preferably provided with a centrally curved notch *r* corresponding approximately to the curvature of the passage *k*. This slide is adapted to be inserted in and moved horizontally in a slideway *s* which is produced by means of a horizontal extension *t* integral with the bottom *g* and provided at its inner end with an upturned lip *u* bifurcated at *v* whereby upwardly extending prongs *w* are produced, each of which is bent at *w'* to correspond with the beveled upwardly extending portions *y* of the slide formed by the notch *r*. Thus the slide *p* is prevented from vertical movement by the prongs *w*, *w'*, and from horizontal movement by the body of the shuttle itself, but is readily removable by lifting the case or frame *g h* out of the shuttle. This case is retained in position in the shuttle by means of a screw *z* which holds a downward extension *m* integral with the case in a vertical countersunk hole *x* in the bottom of the shuttle.

To remove the friction-mechanism, first remove the screw *z* and then lift the case *g h* out of the shuttle. To remove or insert any or all of the balls, draw out the slide *p* while the case is removed from the shuttle.

In practice the thread *e*, as it leaves the shuttle, passes through the passage *k* on its way to the passage *d* and the friction of the balls on or against the thread produces the proper tension. Inasmuch as the thread, of course, in leaving the bobbin passes continually around the end of the spindle, it enters the passage in a circular manner and is drawn under and among the series of balls in a constantly varying line, receiving all the time the frictional effect desired. The thread is retained in position by the circular shape of the passage and is applied by means of the beveled or flaring entrance *q* (Fig. 3) which guides the thread through the narrow slit or passage *i* into the passage *k*. It will readily be seen that these balls are not easily worn out or cut, and will retain their shape and effect indefinitely, thus rendering the friction uniform. The friction desired for yarns of different thicknesses can be increased or lessened by employing more or less balls or balls of smaller or larger diameter, thus producing more or less weight or pressure on the yarn as it passes through the passage among the balls.

It is apparent that this device is applicable to any ordinary shuttle by simply cutting away the stock to fit the case.

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

1. In a loom-shuttle, a case or frame located in the shuttle between the interior thereof and the outlet-hole through which the thread or yarn leaves the shuttle, said case or frame being provided with a passage through which the thread or yarn passes on its way to the outlet-hole, friction-balls located in said passage in the path of the thread or yarn, means at one end of said passage for preventing the escape of the balls without obstructing the



passage of the thread, and a removable slide located at the other end of said passage and provided with an opening smaller in diameter than the balls for the passage of the thread, for the purpose set forth.

- 5 2. In a loom-shuttle, a case or frame located in the shuttle between the interior thereof and the outlet-hole through which the thread or yarn leaves the shuttle, said case or frame being provided with a passage through which the thread or yarn passes on its way to the outlet-
- 10 hole, friction-balls located in said passage in the path of the thread or yarn, means at one end of said passage for preventing the escape of the balls without obstructing the passage of the thread, a slide located at the other end of

the passage and provided with an opening smaller in diameter than the balls, and an upturned lip extending from 15 the bottom of the case over the slide and preventing vertical movement thereof, said lip being provided with an opening for the passage of the thread, for the purpose set forth.

In testimony whereof I have signed my name to this 20 specification in the presence of two subscribing witnesses.

JOSEPH E. LEMYRE.

Witnesses:

J. A. BOIVIN,  
ERNEST L. DUCTIL.