S. KENDRICK.

SHUTTLE.

APPLICATION FILED JAN. 14, 1908.

904,538. **Patented Nov. 24, 1908.**

2 SHEETS—SHEET 1.

Fig. 1.

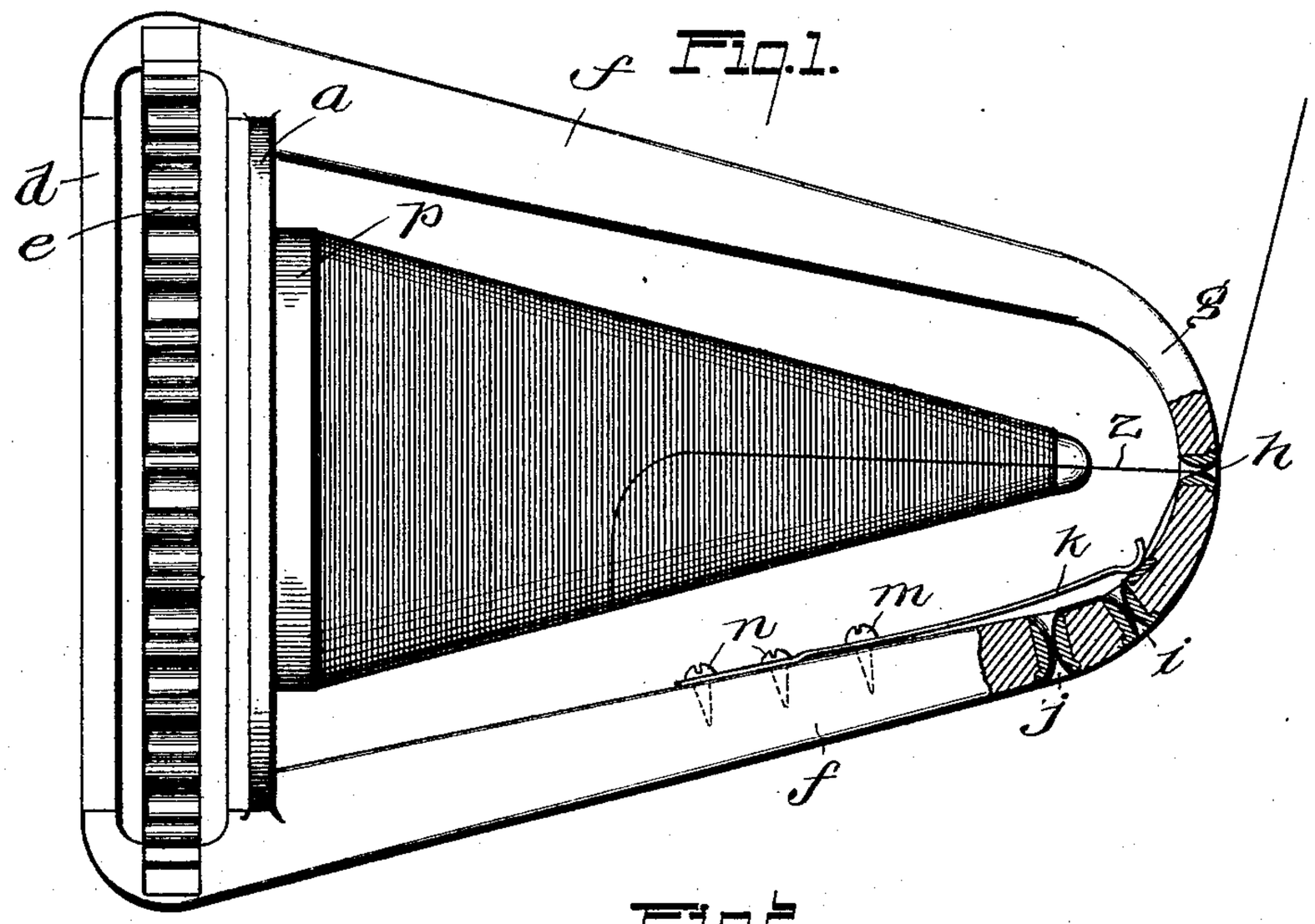

Fig. 2.

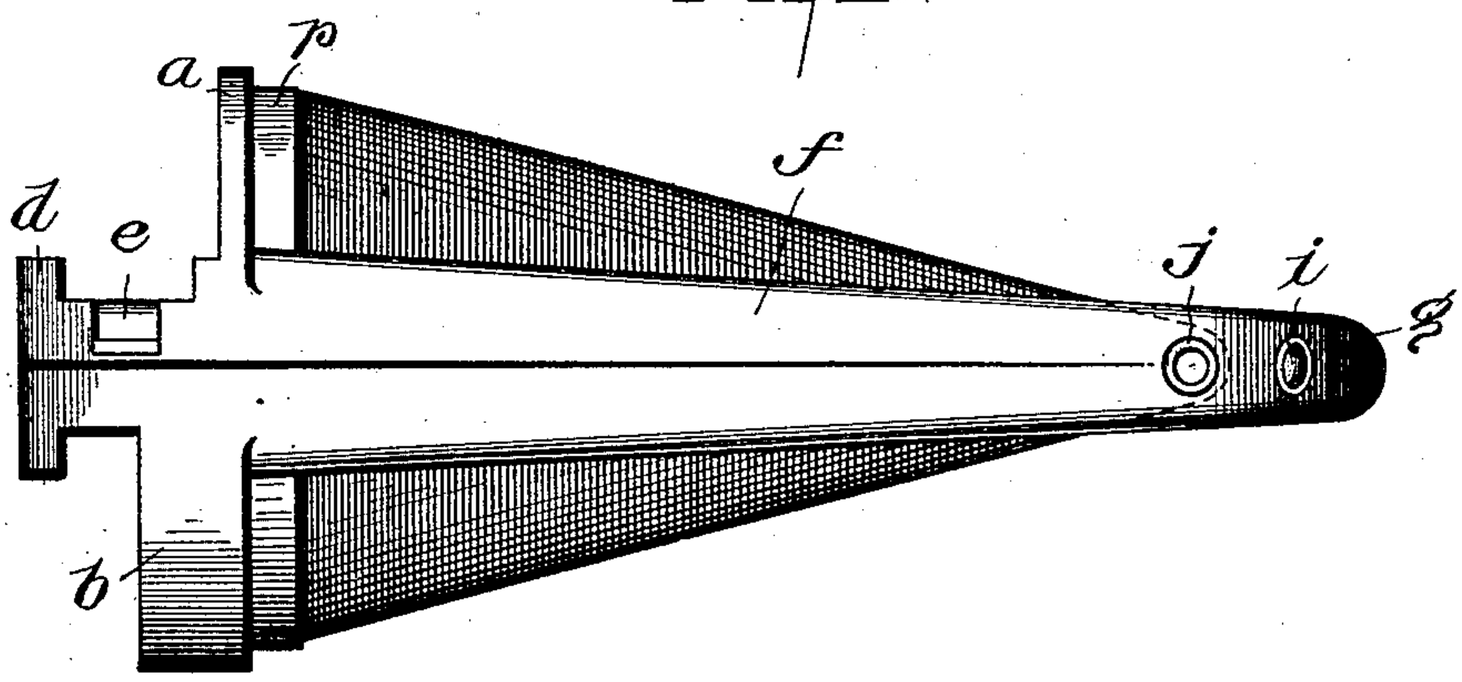

Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 4.

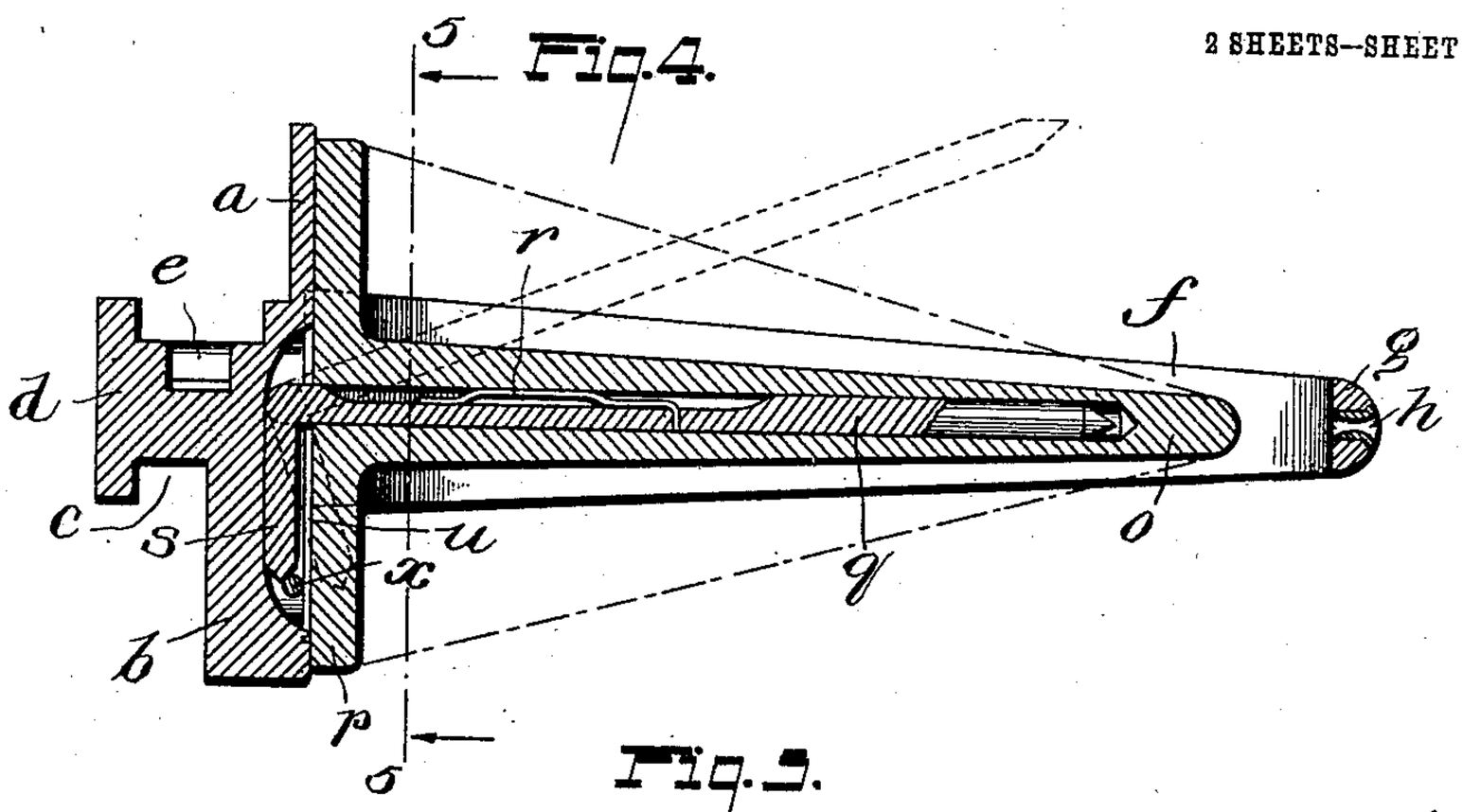


Fig. 5.

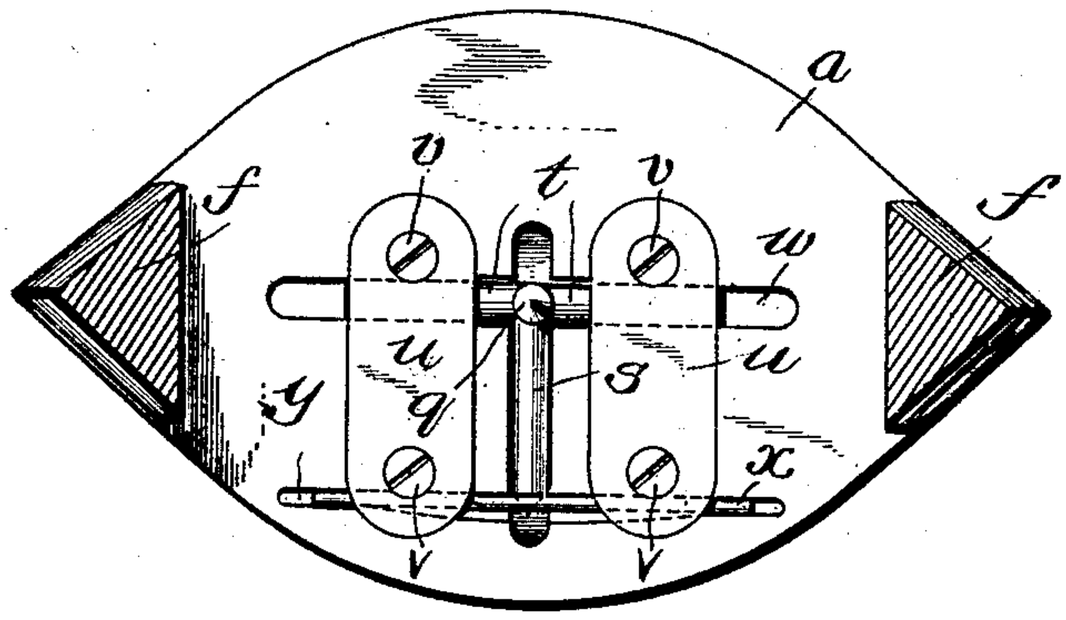
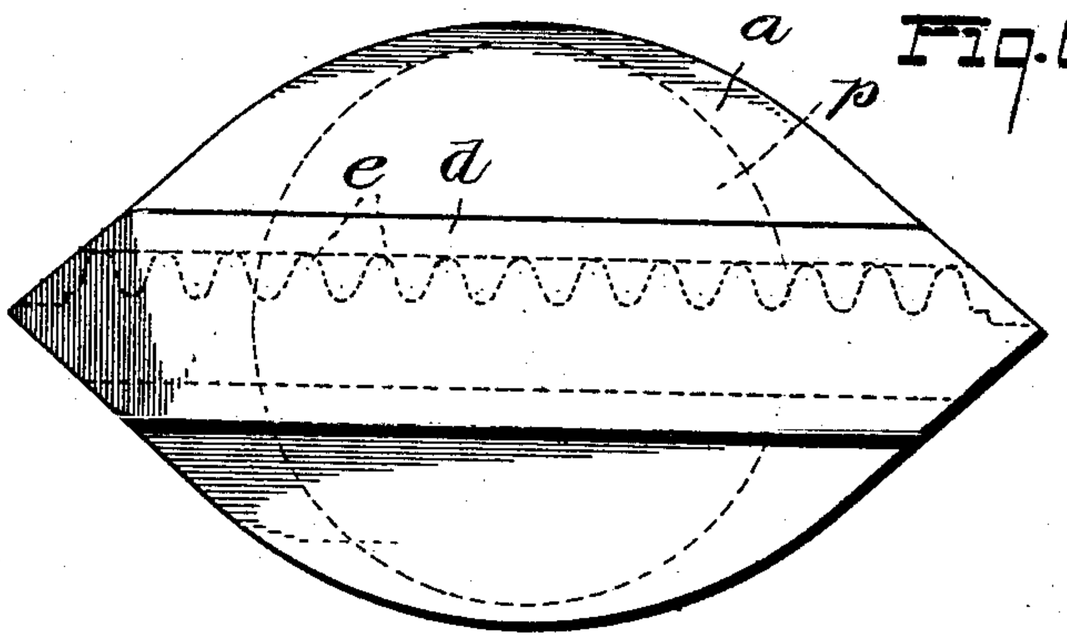


Fig. 6.



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UNITED STATES PATENT OFFICE.

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SHUTTLE.

No. 904,538. Specification of Letters Patent. Patented Nov. 24, 1908.

Application filed January 14, 1908. Serial No. 410,853.

To all whom it may concern:

Be it known that I, SOLOMON KENDRICK, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Shuttles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in shuttles, and the object of my invention is to provide a simple shuttle more especially to be used in looms for weaving narrow fabrics, and one for which the tension of the thread can be varied.

With this object in view, my invention consists in the construction and combinations of parts as hereinafter described and claimed.

In the accompanying drawings—Figure 1 is a top plan view of a shuttle embodying my invention, partly in section. Fig. 2 is a side view of the same. Fig. 3 is a view of the spool holding spindle detached. Fig. 4 is a longitudinal section of the shuttle. Fig. 5 is a cross section on the line 5—5 of Fig. 4, looking in the direction of the arrows, and Fig. 6 is an end view of the shuttle.

The shuttle consists of a substantially oval base *a*, one side thereof being enlarged, as shown at *b*, and provided with a central extension *d* having a slot *c* which engages with suitable guides on the loom, and a rack *d* for operating the shuttle. To the base *a* is attached a curved guard *f* terminating at a rounded end *g* and provided with three eyelets *h*, *i* and *j*. To the inside of one arm of the part *f* is fastened a spring *k* by means of screws *n*. The tension of this spring may be varied by operating the screw *m*, and this spring is used for giving the desired tension upon the thread.

The bobbin is provided with a hollow shaft *o* and a base *p*. This bobbin is held on the oval base *a* of the shuttle by the following means. *q* represents a spindle having a cut-away portion near its center, in which is mounted a spring *r* for yieldingly holding the bobbin on the spindle. This spindle is provided with a portion *s* at right-angles to the main part of the spindle, and other portions *t* at right-angles to the main portion of the spindle and to the part *s*. *u* represents flat metal spring clips fastened by screws *v* to the part *a*. The part *a* is grooved, as shown at *w*, for the reception of the projections *t*, and is also grooved for the reception of the part *s*. *x* represents a spring wire adapted to fit in the groove *y* underneath the clips *u*.

The parts *t* of the spindle are put in the groove *w*, and the clips *u* then screwed down. The spindle is then bent into the position shown in dotted lines in Fig. 4 and the bobbin slipped part way onto the spindle. The spindle is then bent back until it is horizontal, and the wire *x* slipped in under the ends of the clips *u* into the groove *y*. The bobbin is then pushed down until its enlarged end *p* comes in contact with the part *a*, being held in that position by the spring *r*. The thread *z* from the bobbin is first passed through the eyelet *h*, then over the rounded end of the bobbin and inwardly through the eyelet *i*, then down inside one of the arms *f*, out through the eyelet *j*, and then again in through the eyelet *i* under the spring *k* and out through the eyelet *h* to the loom.

Having thus described my invention, I claim:—

1. A shuttle comprising a base piece, projecting parts forming a guard and an operating rack, a spindle pivotally mounted in said base piece, means for yieldingly holding said spindle against said base piece, and removable means for holding said spindle perpendicular to said base piece, substantially as described.

2. A shuttle provided with a base piece, projecting arms forming a guard, an operating rack and a guide recess, a spindle pivotally mounted therein and comprising three parts at right-angles to each other, and means for yieldingly holding said spindle against said base, substantially as described.

3. The combination of a shuttle having a base piece provided with a rack, with an eyeleted guard extending out to form an open frame, a spindle pivotally carried by said shuttle, removable means for normally holding said spindle parallel to said guard, said spindle being provided with a spring, and a bobbin having a central perforation, and arranged to slide over said spindle and be engaged by said spring, substantially as described.

4. The combination of a shuttle having a base piece provided with slots, with a rack

and with a guide slot, an eyeleted guard projecting from said base piece and forming an open frame, a spindle composed of three parts at right angles to each other, means for securing said spindle pivotally in said base piece, means for normally holding said spindle parallel to said arms, said spindle being provided with a spring, and a bobbin having its central part cut away and adapted to be slid over said spindle and held by said spring, substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

SOLOMON KENDRICK.

Witnesses:
W. B. FARNHAM,
E. G. PFOHL.