

(No Model.)

H. CRUSE.
SHUTTLE FOR LOOMS.

No. 553,302.

Patented Jan. 21, 1896.

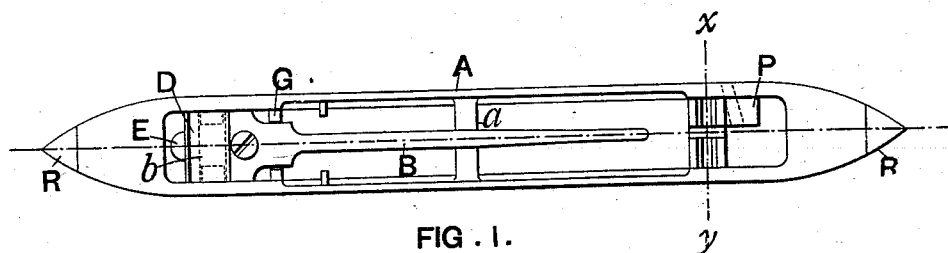


FIG. 1.

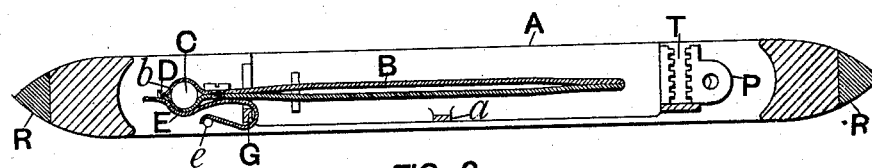


FIG. 2.

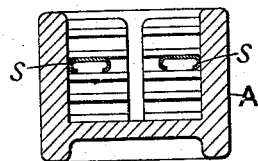


FIG. 3.

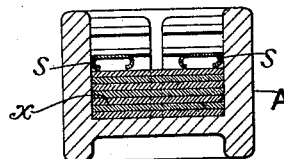


FIG. 4.

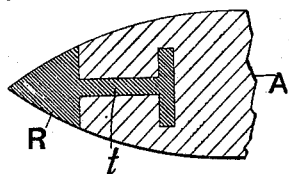


FIG. 5.

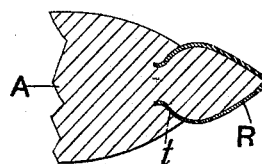


FIG. 6.

Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY CRUSE, OF MANCHESTER, ENGLAND.

SHUTTLE FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 553,302, dated January 21, 1896.

Application filed February 19, 1895. Serial No. 538,947. (No model.) Patented in England February 10, 1894, No. 2,925.

To all whom it may concern:

Be it known that I, HENRY CRUSE, a citizen of the United Kingdom of Great Britain and Ireland, residing at Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Shuttles for Looms, (patented in Great Britain, No. 2,925, February 10, 1894,) of which the following is a specification.

My invention relates to shuttles for looms; and it consists of the construction and arrangement of parts hereinafter described and claimed.

I will more particularly describe my said invention with reference to the accompanying drawings, in which—

Figure 1 is a plan; Fig. 2, a longitudinal section; Fig. 3, a transverse section along the line *xy*, Fig. 1. Fig. 4 is a similar section showing the tension device in position. Figs. 5 and 6 represent longitudinal sections through the tips of the shuttles and illustrate modifications in form.

A is the shuttle-body, which, being formed of metal, may have thinner walls than wooden shuttles, and consequently will take a larger cop, bobbin or pirn and involve less waste of time and material. It may be strengthened by the cross-piece *a* in the bottom of the shuttle.

B is the tongue, which is constructed of two slightly-bowed strips of steel, each having a curved cross-section, drawn out and united by brazing or otherwise to form the tip. The two strips are arranged with their concave parts opposed and are flattened at the butt-end to about the width of the shuttle inside. Each flat part of the butt has a semicircular concavity formed in it, the two concavities forming a tubular part *b*, which embraces two pivotal projections C, upon which the tongue can be turned in opening and closing. The two parts of the butt of the tongue can be secured together by a screw, rivet or the like. The butt extends beyond the tubular part at D to form an abutment for the spring E, which has one end fixed around the two internal projections *e* and which passes round the bridge G to the projection D. By this means the accidental opening and closing of the tongue is provided against, and its lateral movement is prevented. The tongue-

bridge is slotted for the reception of the tongue when closed, and to enable the spring to pass around it under the tongue.

The yarn-bridge, as preferred to be constructed and as illustrated by the drawings, consists of two parallel transverse partitions, which may be connected at the bottom so as to form a kind of transverse trough, the walls of which are slit or may be perforated for the passage of the yarn. If these walls are simply perforated, a narrow slit may be cut diagonally from the top of the wall into the perforation for the introduction of the weft. To produce any desired amount of drag or tension on the weft, the trough T may be packed with strips of felt *x* or other suitable material to a sufficient height to compel the weft to deviate from a straight line over it from the tip of the tongue to the eye, and thus produce the desired amount of drag. Various means may be adopted, if desired, for retaining the felt in the trough. For example, the inner walls of the trough may have horizontal grooves formed on their opposed faces in which the detaining spring-pieces *s* are fitted, one on each side of the weft-path. The eye of the shuttle is formed in the usual position through the wall of the shuttle and a pap P formed inside it to strengthen the part and to bring the inner end of the eye in line with the tongue-tip.

The tips R are cast in the ends of the shuttle, as represented by Figs. 5 and 6. The exposed parts of the tips may be of the usual conical form, and they are secured in place by a tail or equivalent part *t*, which may be bulbous, serrated, notched, or provided with a head. A very useful form is represented by Fig. 6. In this form the tip is hollow so that the metal runs into the inside, forming a perfect key, while it may have its tail transversely notched to prevent its turning.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

In a loom shuttle, the combination with the body part having a suitable eye and tongue therein, of a yarn bridge, consisting of a pair of parallel transverse partitions which are slit or perforated for the passage of the yarn and are horizontally grooved along their adjacent

faces, and means for creating a drag or tension on the weft by causing its deviation from a straight line from the tongue to the eye, consisting of a series of strips of felt or other
5 suitable material, and detaining spring pieces adapted to fit the grooves in said partitions, substantially as described.

In testimony that I claim the foregoing as

my invention I have signed my name, in presence of two witnesses, this 25th day of January, 1895.

HENRY CRUSE.

Witnesses:

WILLIAM E. HEYS,
ARTHUR W. PULMAN.