(No Model.)

R. CAVENAUGH.

LOOM SHUTTLE.

No. 342,065. Patented May 18, 1886.

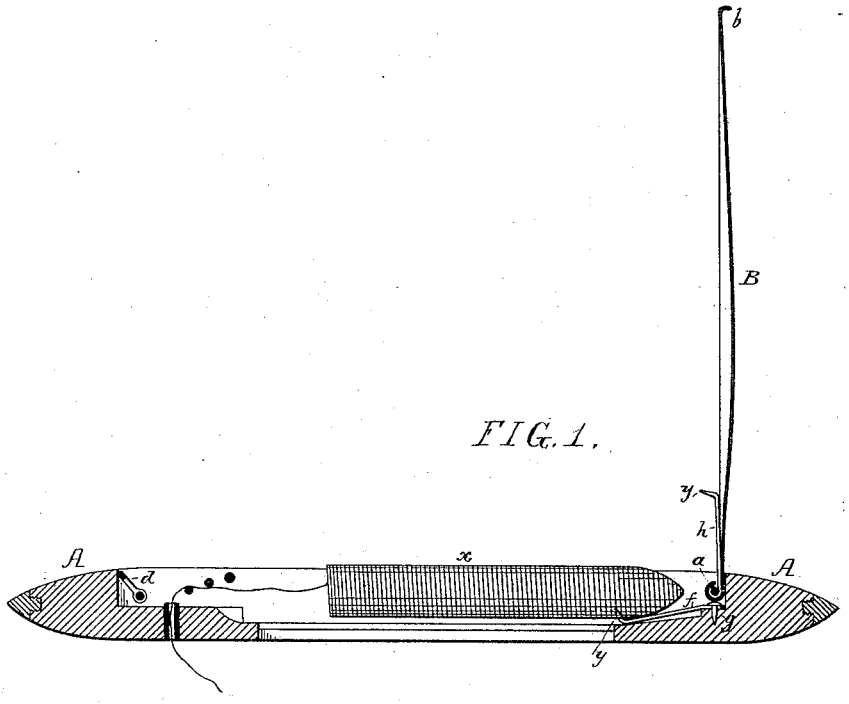

FIG. 1.

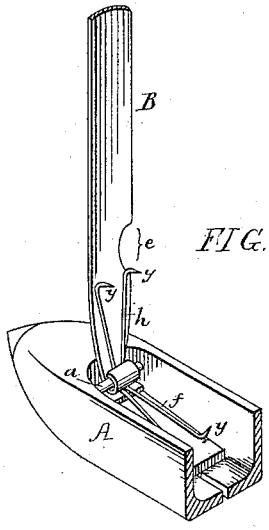

FIG. 2.

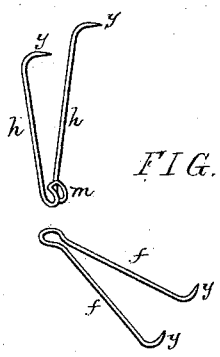

FIG. 3.

Witnesses:
John E. Parker
William F. Davis

Inventor
Robert Cavenaugh
by his Attorneys
Howson & Sons

UNITED STATES PATENT OFFICE.

ROBERT CAVENAUGH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO CHARLES SEVILL SCHOFIELD, OF SAME PLACE.

LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 342,065, dated May 18, 1886.

Application filed February 24, 1886. Serial No. 193,056. (No model.)

To all whom it may concern:

Be it known that I, ROBERT CAVENAUGH, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Loom-Shuttles, of which the following is a specification.

My invention relates to that class of loom-shuttles in which the cop is placed directly in a recess in the shuttle-body and is retained therein by a cover-plate, no spindle being used.

The object of my invention is to provide simple and efficient means for retaining the top or nose end of the cop in its proper position in the shuttle until all of the yarn in the body of the cop has been delivered. This object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of a shuttle provided with my improved cop-holder, the shuttle-retainer being lifted and the cop being shown in elevation. Fig. 2 is a sectional perspective view of part of one end of the shuttle, also showing the retainer elevated; Fig. 3, a detached perspective view of the cop-holding claws detached from the shuttle.

In shuttles of the class to which my invention relates the cop *x* is retained in position laterally in the recess of the shuttle-body A by means of a spring-plate, B, pivoted at one end to a transverse pin, *a*, and having at the opposite end a hook, *b*, for engagement with a pivoted catch, *d*, at the opposite end of the shuttle. This retaining-plate has a notch, *e*, in one side adjacent to the pivot end, or is otherwise so recessed as to expose the cop at and near the nose or top end, so that the weaver can at a glance ascertain when the cop is almost exhausted, and can remove the shuttle and insert a fresh cop. The retainer B, however, does not prevent longitudinal movement of the cop in the shuttle-body, even when the cop-chamber has serrated or fluted sides, and it frequently happens that when the cop has been partially unwound the upper portion of the cop will be drawn down toward the delivery end of the shuttle and away from the notched or recessed portion of the retainer, so that the weaver has no means of knowing when the cop is exhausted, but must remove the shuttle and lift the retainer in order to ascertain the condition of the cop. This is a prolific source of waste, as the weaver will frequently discard the short end of a cop in order to avoid the trouble of readjusting it to its proper position. With the view of overcoming this objection I provide the shuttle with retaining claws or prongs *y*, which engage with the cop at some distance from the top end of the same, and thereby prevent any longitudinal movement of this portion of the cop in the shuttle-body under the influence of the pull upon the delivery end of the cop. The prongs or claws are preferably inclined toward the delivery end of the shuttle, so that they will not interfere with the delivery of the yarn when the cop has been unwound up to the holding-point.

I form the claws or prongs upon a bent wire, *f*, the looped end of which is secured to the shuttle by a tack, *g*, or other suitable retainer, the prongs engaging with the inner portion of the cop at some distance from the end of the same. I also prefer to provide similar prongs, *y*, for engaging with the outer portion of the cop, these prongs forming part of a bent wire, *h*, an eye, *m*, on which is adapted to the pivot-pin *a* of the retainer B, so that the upper claw rises and falls with said retainer, that end of the latter which is bent around the pivot-pin bearing upon the arms of the bent wire *h* and confining the latter to the retainer.

The prongs or claws for engaging with the outer portion of the cop may be dispensed with, although I prefer to use both sets of prongs in all cases.

By the use of a bent wire having upturned ends forming retaining-claws, and having also an eye whereby it is secured to the shuttle or to the pivot-pin of the retainer, I am enabled to readily apply the retaining-claws to an ordinary shuttle, whereas when pins are driven into the shuttle-body or secured to the retainer, as has been proposed, special tools are required, and more skill than is demanded by the simple application of the wires *f* and *h* in the manner shown in the drawings.

I therefore claim as my invention—

1. The combination of a shuttle-body, the wire *f*, bent to form an eye and having upturned ends, forming cop-holding claws or

prongs, constructed as described, so as to hold the cop without preventing the unwinding of the same, and a pin, *g*, adapted to the eye formed by said bent wire *f*, and serving to secure the same to the shuttle-body, all substantially as specified.

2. The combination of the shuttle-body, the pivot-pin, and the retainer having a bent end, with the wire *h*, having upturned ends forming cop-holding prongs or claws and having an eye adapted to the pivot-pin, said wire being confined to the retainer by the bent end of the same, all substantially as specified.

3. The combination, in a loom-shuttle, of the body recessed for the reception of a cop, a pivoted retainer, B, the bent wire *f*, secured to the shuttle and having its ends upturned to form cop-holding prongs or claws, and the bent wire *h*, hung to the pivot-pin of the retainer, and having its ends bent to form similar prongs or claws, all substantially as specified.

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

ROBERT CAVENAUGH.

Witnesses:
HARRY SMITH,
HENRY HOWSON.