

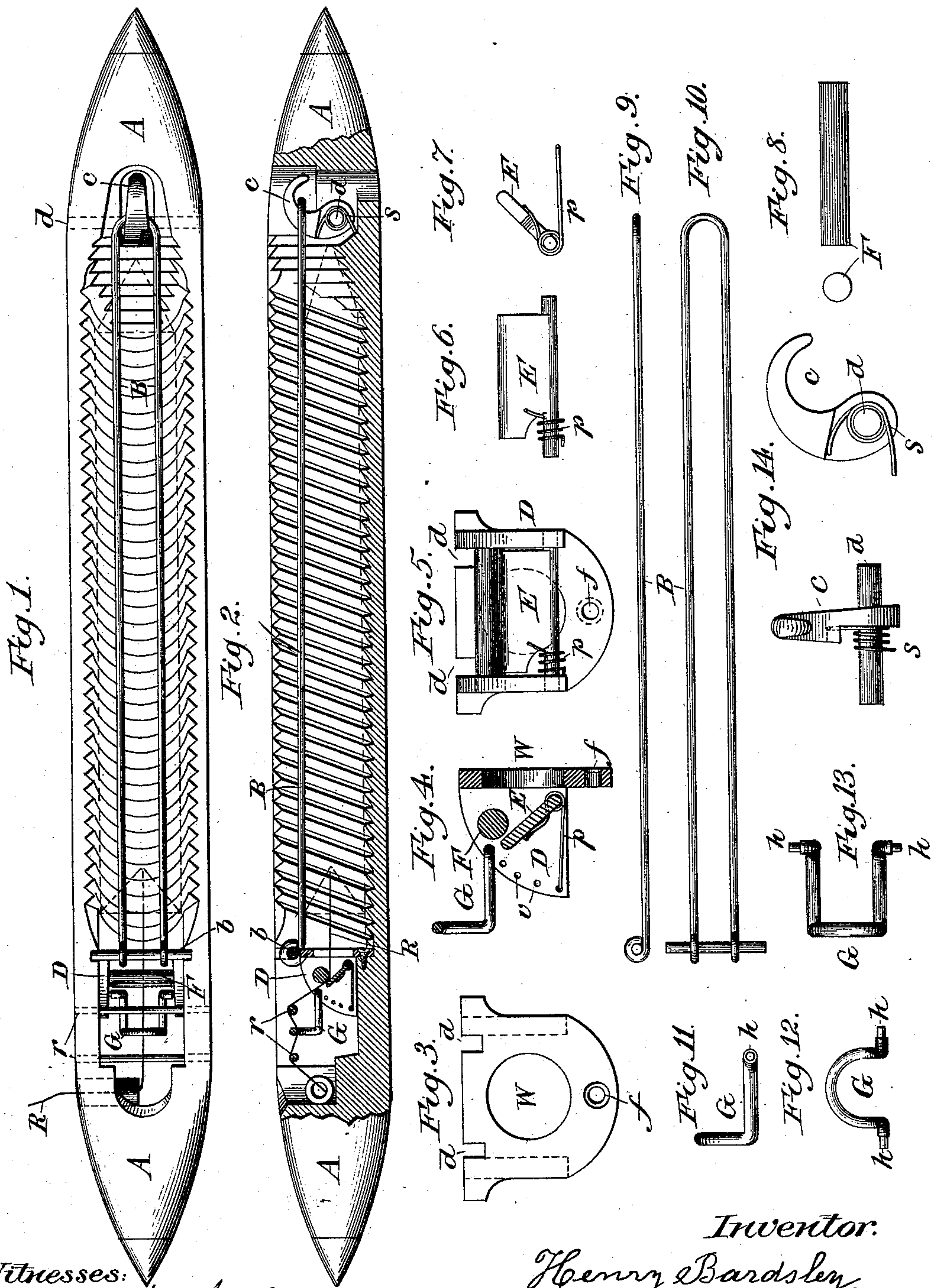
(Model.)

H. BARDSLEY.

LOOM SHUTTLE.

No. 393,958.

Patented Dec. 4, 1888.



Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY BARDSLEY, OF PHILADELPHIA, PENNSYLVANIA.

LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 393,958, dated December 4, 1888.

Application filed September 13, 1887. Serial No. 249,600. (Model.)

To all whom it may concern:

Be it known that I, HENRY BARDSLEY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Loom-Shuttles, of which the following is a specification.

The first part of my invention relates to that class of loom-shuttles which receive the weft wound in the form of a cop, and in which said weft or cop is placed in the shuttle without a skewer or spindle, the inner sides of the shuttle being corrugated and the cop being held in place by a binder.

The second part of my invention relates to the tension or friction regulating devices for regulating the friction on the weft-yarn as it runs out of the shuttle.

My invention consists of, first, a wire binder, formed in a long loop, in combination with a spring-actuated yielding hook; second, in the combination of a frame, a fixed bar, a spring-actuated yielding latch, two supporting-rods, and a weighted drag, as will be hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a top view of a shuttle embodying my improvement. Fig. 2 is a side view of the shuttle with one of the sides removed to show the interior. Fig. 3 is a front view, Fig. 4, a side view, (partly in section,) and Fig. 5, a back view, of the frame for holding the friction and drag mechanism. Figs. 6 and 7 are views of the friction-latch. Fig. 8 shows views of the friction-bar. Figs. 9 and 10 are views of the wire binder. Figs. 11, 12, and 13 are views of the drag-weight. Fig. 14 shows views of the binder-hook.

Similar letters refer to similar parts throughout the several views.

A represents the body of an ordinary shuttle having internal corrugated sides.

B is the binder, which is made of wire, in form of a long loop, at the ends of the prongs of which are formed eyes *a* for the pin *b*.

C is a hook made to work freely on pin *d*. At the base of this hook and bearing on it is a spiral spring, S, coiled around the pin *d*.

D is a metal frame, in which is fixed the friction device and drag.

F is a round bar of steel made as hard as it can be made by tempering.

E is a latch made of steel, also made hard by tempering.

G is the drag, and is made of steel wire and hard by tempering.

r r are two rods of hardened steel wire.

The binder B is connected to the shuttle-body by the pin *b*, which passes through the sides of the shuttle-body and over the top of the frame D. The frame is held in its place by this pin and by a small wood-screw through the holes *f*, (shown in Figs. 3 and 5,) the eyes *a a* on the binder B fitting in the notches *d d*. (Shown in Figs. 3 and 5.) In the frame D are fitted bar F, latch E, and drag G. On that part of latch E which serves as its trunnions is coiled a small spiral spring, *p*, one end of this spring bearing against the latch and the other end being inserted in one of the holes *v* in the end of frame D. (See Fig. 4.) By means of these holes and by shifting this end of the spring more or less friction can be put on the weft. The drag G is fitted in the sides of the frame D, so that it will freely work on the ends *h h*. (See Figs. 11, 12, and 13.)

The operation of the improvement is as follows: The weft or cop is placed in the shuttle, the loop end of the binder B is pressed over the spring-catch C, and thus holds the cop in the shuttle. The weft-thread is passed through the opening W of frame D, between the bar F and latch E, over one of the bars *r*, under the drag G, over the other bar *r*, and out through the shuttle-eye, as is shown in Fig. 2. The drag G rests on the weft, and if there be any slack in the weft-thread between the selvage and the friction-latch the drag will drop, so as to draw the weft tight at the sel-

vage of the cloth that is being woven. This is much desired when fine weft is being used, and it will insure a good selvage.

A cop-binder of wire I do not claim, as the same is shown, described, and claimed by me in Patent No. 325,721, of September 8, 1885; but

What I claim is—

1. The combination, with the shuttle-body and the transverse pivotal pins *b* and *d*, of the wire cop-binder B, of loop form, pivoted

upon said pin *b*, the retaining-catch C, pivoted upon said pin *d* and engaging in the end of said cop-binder, and the spring S.

2. The combination of a fixed bar, F, latch E, spring *p*, frame D, drag G, bars *r r*, and body of a loom-shuttle, as shown, described, and for the purpose set forth.

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Witnesses:

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