G. C. MILLS.

Loom-Shuttle.

No. 200,745. Patented Feb. 26, 1878.

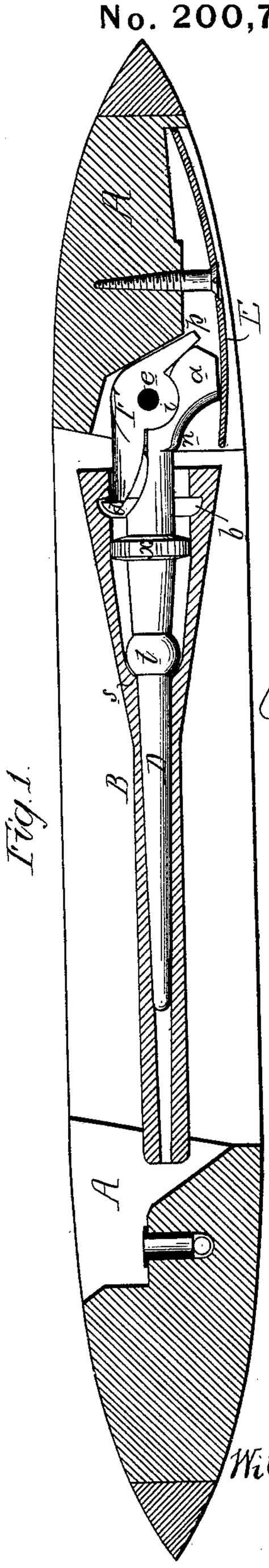

Fig. 1.

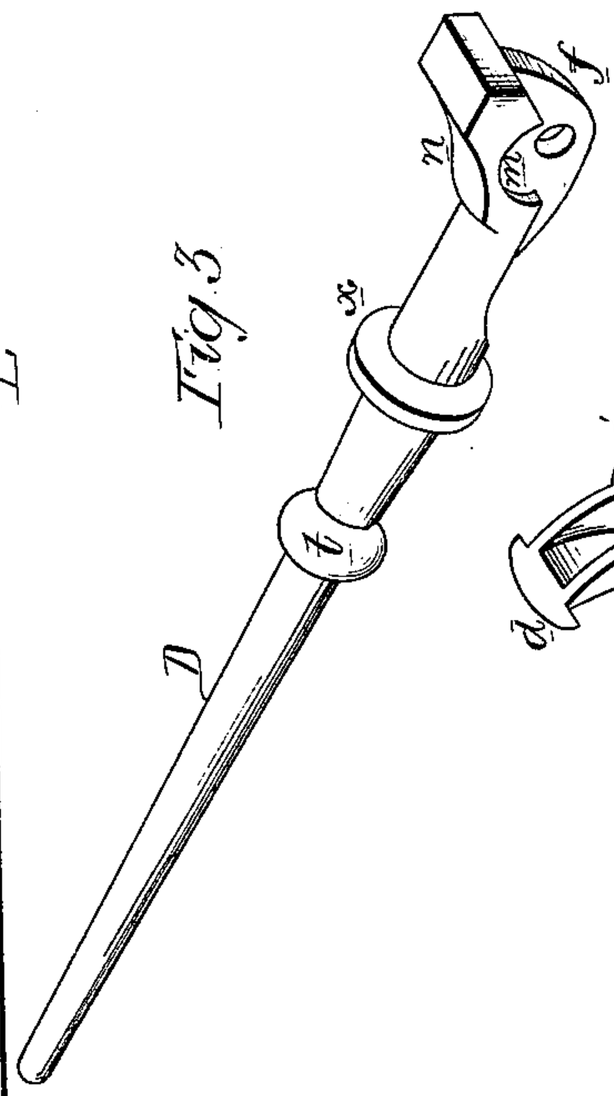

Fig. 3

Fig. 4

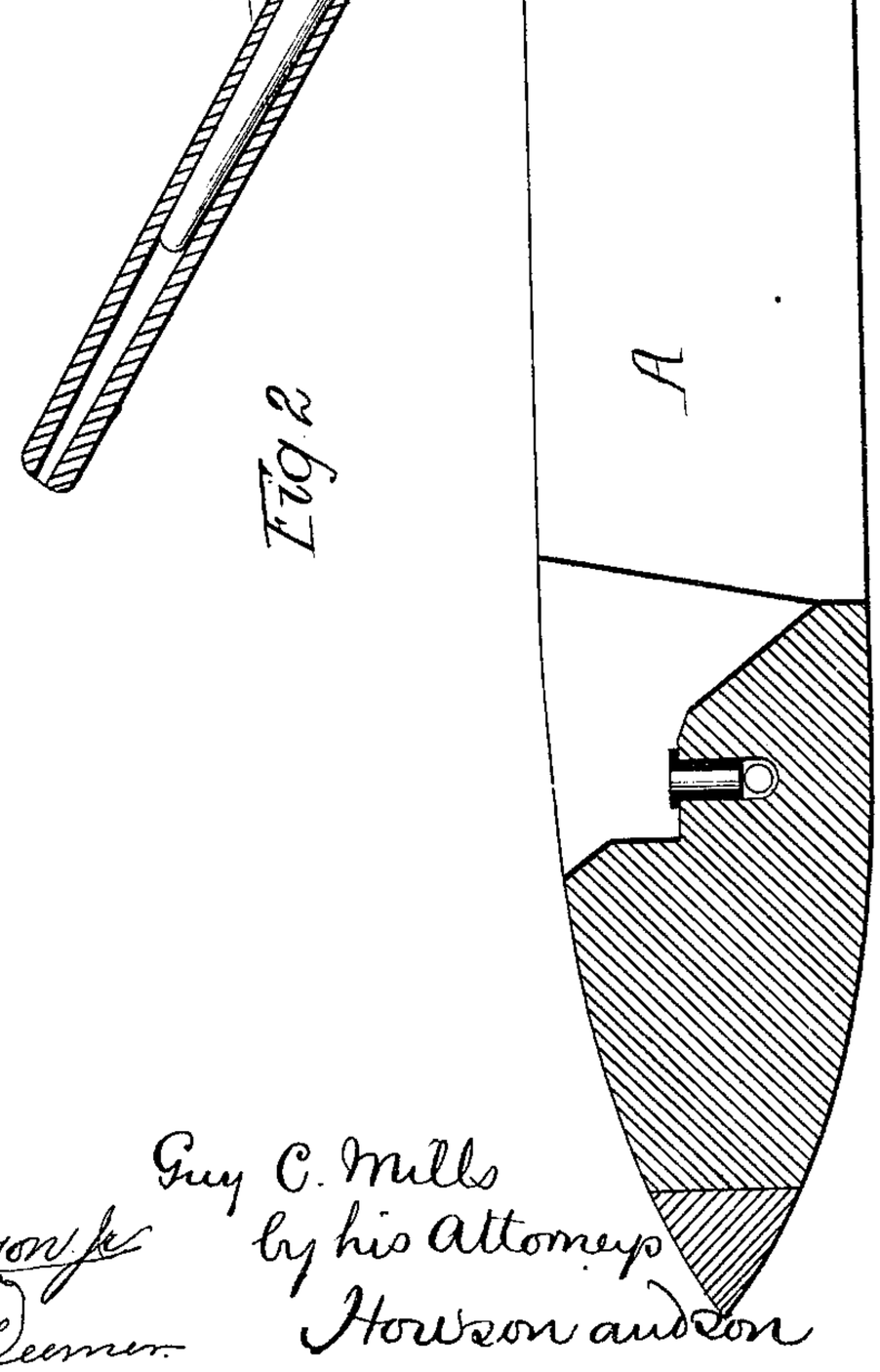

Fig. 2

Witnesses,
Henry Howson Jr.
John M. Deemer.

Guy C. Mills
by his Attorneys
Howson and Son

UNITED STATES PATENT OFFICE.

GUY C. MILLS, OF NASHUA, NEW HAMPSHIRE, ASSIGNOR TO EATON & AYER, OF SAME PLACE.

IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. **200,745**, dated February 26, 1878; application filed August 1, 1877.

To all whom it may concern:

Be it known that I, GUY CARLETON MILLS, of Nashua, New Hampshire, have invented a new and useful Improvement in Loom-Shuttles, of which the following is a specification:

My invention relates to improvements in that class of shuttles in which the bobbin is held in position on the spindle by a catch; the object of my improvements being to strengthen this catch and insure its proper operation. These objects I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a longitudinal section of my improved shuttle; Fig. 2, the same with the spindle and bobbin elevated; and Figs. 3 and 4, perspective views of the spindle and catch.

A is the body of the shuttle, which is slotted for the reception of the bobbin B, the latter being carried by a spindle, D, pivoted, as usual, to the shuttle near one end, and having an arm, *a*, a spring, E, tending to retain the spindle in the position shown in Fig. 1, without having strength sufficient to prevent the elevation of the spindle to the position shown in Fig. 2, when it becomes necessary to remove or replace the bobbin.

In the interior of the bobbin, near the lower end of the same, is formed a groove, *b*, into which, when the bobbin is in the position shown in Fig. 1, is inserted a projection, *d*, on the long arm of a bell-crank lever, F, which is hung to the pivot-pin *e* of the spindle D, and is recessed for the reception of a rib, *f*, on the spindle, curved ears *i i* on the lever being adapted to recesses *m* in the end *n* of the spindle.

Adjacent to this end the spindle is cut away, as shown, for the reception of the long arm of the lever F, this arm being retained in the position shown in Fig. 2, owing to the fact that the short arm *p* of the lever comes in contact with the spring E, and prevents any back movement of the lever.

In order to insure the bringing of the groove *b* of the bobbin into proper position for the admission of the projection *d* of the lever, I form in the central opening of the bobbin, at a given distance from the groove *b*, a shoulder, *s*, and on the spindle D, at the same distance from the end of the lever F, an enlargement, *t*, which, coming in contact with the said shoulder of the bobbin, so restricts the latter as to insure the proper operation of the catch-lever F. The spindle is also provided with a flange, *x*, for insuring the concentricity of the end of the bobbin in respect to the spindle.

Owing to the mode of constructing and applying the lever F, the retention of the bobbin firmly in position when the spindle is depressed, and its ready release when said spindle is raised, are assured.

I claim as my invention—

The combination of a bobbin, B, having a groove, *b*, and the spindle D, having a rib, *f*, with the lever F, provided with a projection, *d*, and lugs *i i*, adapted to the said rib, all substantially as described.

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

GUY CARLETON MILLS.

Witnesses:

NEWELL GREENWOOD,

ELMER W. EATON.