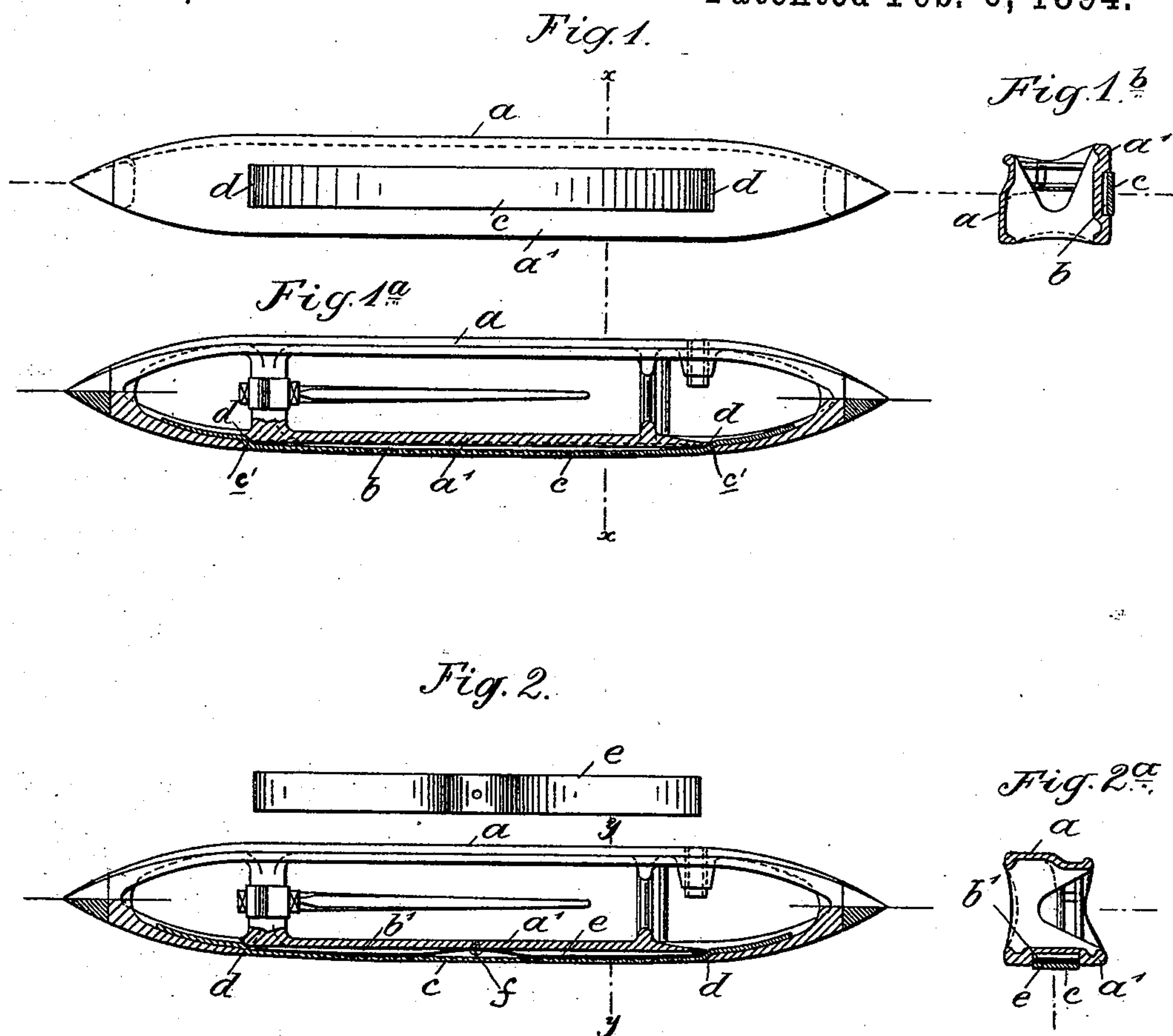


(No Model.)

P. L. KOBERTZ.
LOOM SHUTTLE.

No. 514,232.

Patented Feb. 6, 1894.



Witnesses:

M. J. Boyle
Charles R. Searls.

Inventor:

Peter Leonhard Kobertz
by his attorney
Thomas Drew Sutton

UNITED STATES PATENT OFFICE.

PETER LEONHARD KOBERTZ, OF AIX-LA-CHAPELLE, ASSIGNOR TO BASSE & SELVE, OF ALTENA, GERMANY.

LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 514,232, dated February 6, 1894.

Application filed August 12, 1893. Serial No. 482,965. (No model.) Patented in Germany April 26, 1892, No. 64,988, and in Belgium July 19, 1892, No. 100,567.

To all whom it may concern:

Be it known that I, PETER LEONHARD KOBERTZ, a subject of the Emperor of Germany, residing at Aix-la-Chapelle, Rhenish Prussia, Germany, have invented a certain new and useful Improvement in Loom-Shuttles, of which the following is a specification.

The invention was patented in Germany April 26, 1892, No. 64,988, and in Belgium July 19, 1892, No. 100,567.

Weavers' shuttles made of light material, aluminum or aluminium alloy, rapidly wear out by their friction on the reed, so that such shuttles, having great advantage by reason of their lightness, will endure constant use for only a short time. The present invention provides the shuttle with a protecting plate which receives the wear and serves for a guide. It preserves the shuttle from any direct contact with the reed. Such a lateral protecting plate may be provided on both sides of the shuttle, so that the shuttle may be introduced in any position. The plate may be made of any elastic and hard material, as raw-hide. Each plate is applied in a suitable groove on the side of the shuttle so held as to be easily detached or exchanged, and is slightly curved and set so as to have an elastic yielding action. It is furthermore reinforced by a spring.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is a side view of a shuttle containing one form of the invention. Fig. 1^a is a corresponding central horizontal section, and Fig. 1^b is a transverse section on the line $x-x$ in Figs. 1 and 1^a. Fig. 2 is a central horizontal section showing the invention in its most complete form. The figure immediately over it is a face view of the auxiliary spring detached. Fig. 2^a is a cross section on the line $y-y$ in Fig. 2.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

In each of the forms the shuttle body a is provided with a shallow longitudinal groove.

In each the protecting plate c is held by its ends, and caused to stand off elastically along its mid-length.

In the forms shown in Figs. 1, 1^a, and 1^b, and in Figs. 2 and 2^a, the protecting plate is formed with offsets at $c' c'$, and the ends are pushed through slits d at the ends of the groove b . The plate is easily applied and removed by temporarily increasing its curvature, the construction insuring that it is detachable, yet safely united to the shuttle.

In the most complete shuttle, shown in Fig. 2, a spring e is provided in a somewhat deeper groove b' over which the protecting plate c is placed. The spring is bent as shown, and is held reliably by a screw f . This allows the resilient force of this auxiliary spring e to be added to that of the protecting plate itself, making the elastic action correspondingly stronger.

The shuttle ends may be preserved from wear by steel points, and the shuttle will endure hard usage and remain in good condition for a long time.

I claim as my invention—

1. In a shuttle, a body a of light material, having two slits d and a groove in the exterior connecting them, in combination with a plate c having offsets c', c' , adapted to match in said slits and allow the ready insertion and removal of the plate, substantially as herein specified.

2. In a shuttle, a body a of light material, having two slits d and a groove in the exterior connecting them, in combination with a plate c having offsets c', c' , adapted to match in said slits and allow the ready insertion and removal of the plate, and with a spring e arranged under said plate and adapted to contribute to the resiliency thereof, as herein specified.

In testimony whereof I have hereunto set my hand, at Aix-la-Chapelle, Germany, this 29th day of June, 1893, in the presence of two subscribing witnesses.

PETER LEONHARD KOBERTZ.

Witnesses:

JOHN HAKMAMAS,
HARLIN HEUTHER.