

(No Model.)

J. ELSAS & H. WEISSENBURGER.  
LOOM SHUTTLE.

No. 411,097.

Patented Sept. 17, 1889.

Fig. 1.

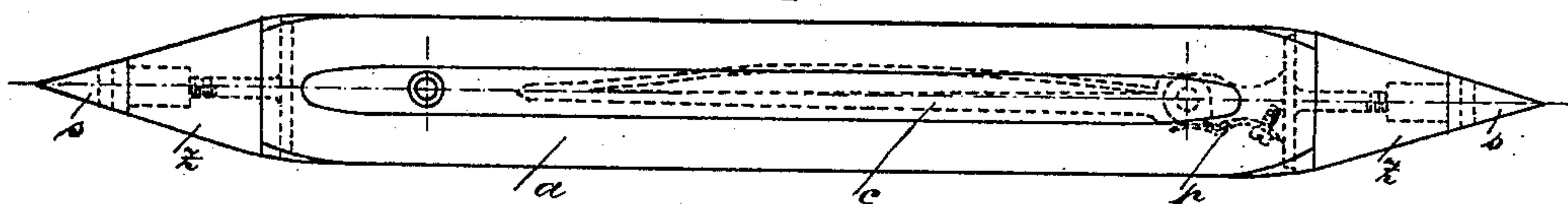


Fig. 2.

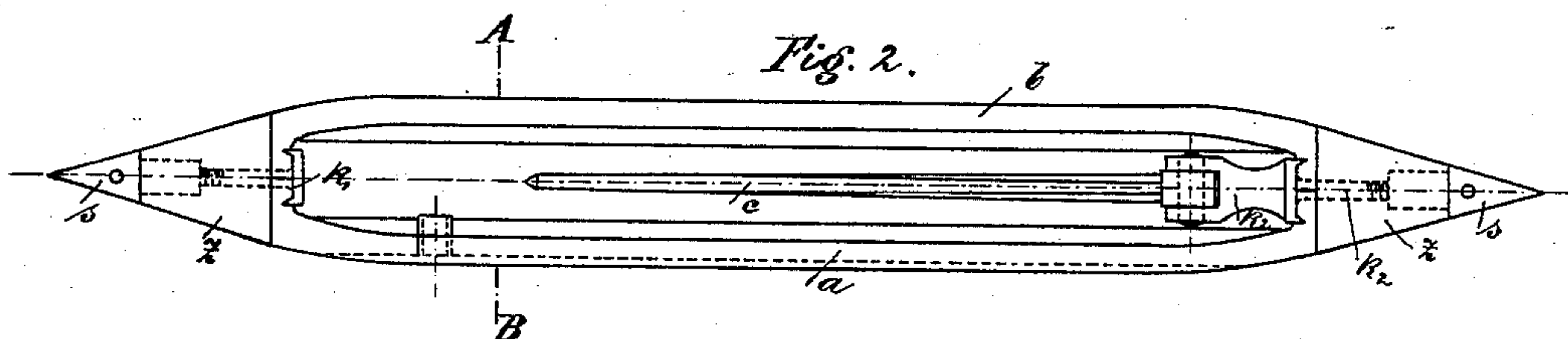


Fig. 3.

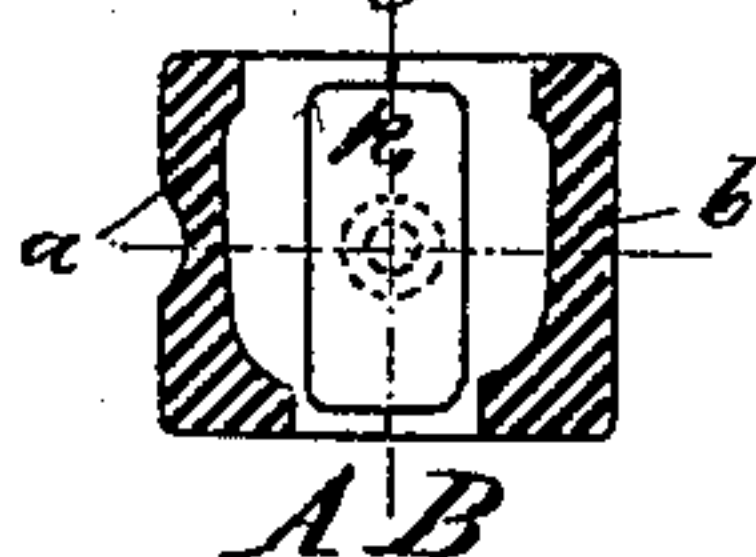
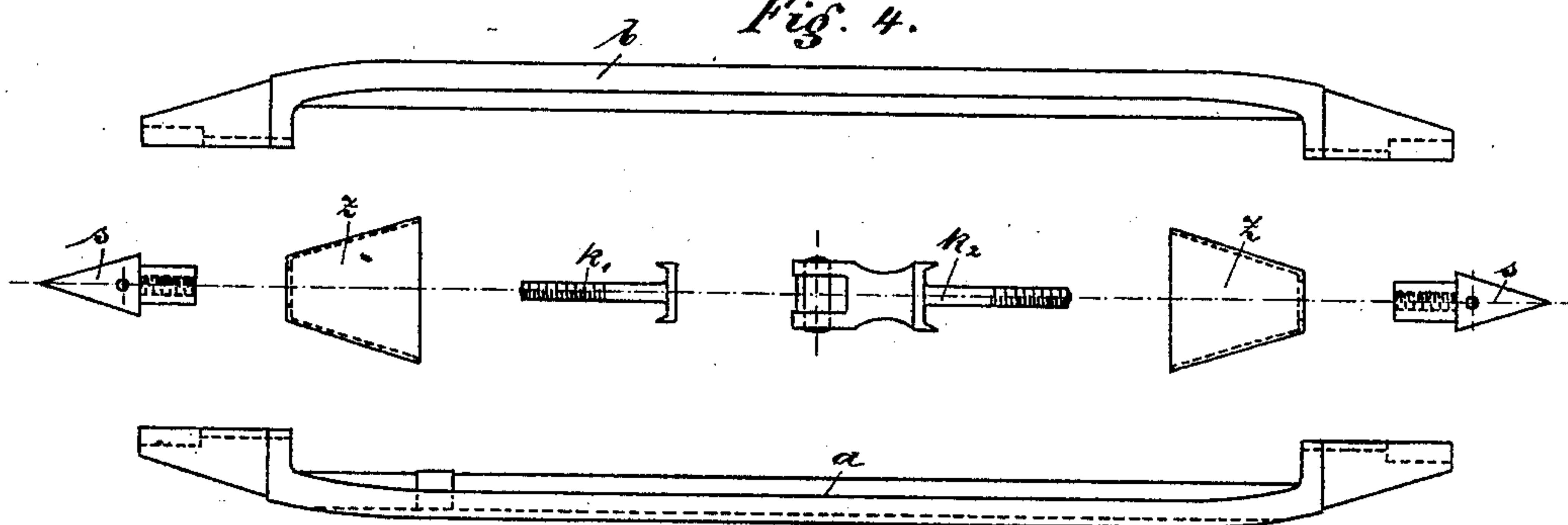


Fig. 4.



Witnesses:  
William Wayne  
Talbot Cheesman.

Inventors:  
Julius Elsas,  
Hermann Weissenburger,  
by  
Charles Huelsner,  
Attorney

# UNITED STATES PATENT OFFICE.

JULIUS ELSAS AND HERMANN WEISSENBURGER, OF CANNSTADT, WÜRTTEMBERG, GERMANY.

## LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 411,097, dated September 17, 1889.

Application filed June 19, 1889. Serial No. 314,870. (No model.)

*To all whom it may concern:*

Be it known that we, JULIUS ELSAS and HERMANN WEISSENBURGER, subjects of the King of Württemberg, and residents of Cannstadt, Württemberg, Germany, have invented a new and useful Improvement in Loom-Shuttles, of which the following is a specification.

This invention relates to improvements in loom-shuttles, and has for its purpose to allow any worn or destroyed parts thereof to be easily removed and replaced.

All wooden loom-shuttles hitherto employed are subject to the inconvenience that a splintering of or other injury to any part thereof renders the whole shuttle useless, owing to the body of the latter being made from one piece of wood, and also the points and spindle are so secured to this body that their removal is extremely troublesome and in most cases leads to the destruction of the shuttle-body, the recovered parts being of little value. The above drawback is intended to be obviated in our improved loom-shuttle without increasing the cost of manufacture.

Referring to the accompanying drawings, Figure 1 is a side elevation of a shuttle embodying our invention; Fig. 2, a plan, and Fig. 3 a cross-section along the line A B, Fig. 2, of the improved shuttle, while Fig. 4 represents the component parts thereof, with the exception of the spindle *c*.

The improved shuttle is composed in the

manner evident from Figs. 1 and 2 of nine different parts made of any suitable material, viz: two side pieces *a* and *b*, which may have any convenient cross-section; two points *s s*, serving also as nuts; two holders *z z*, adapted to laterally embrace the ends of the side pieces; two screw-threaded cramps *k'* and *k''*, the latter of which serves as a support for the spindle and has the spring *p* attached to its bottom, and, lastly, the spindle *c*. No cross-screws or rivets being employed in the construction of the improved loom-shuttle, it is obvious that in the event of any constituent thereof becoming broken or inoperative the shuttle can be easily taken to pieces and after replacing the injured part or parts returned to its use.

What we claim is—

A loom-shuttle adapted to be dismembered and consisting of two longitudinal pieces *a* and *b*, two holders *z z*, two points *s s*, with inner screw-thread, two screw-threaded cramps *k'* *k''*, the latter of which serves as spindle-support, and the spindle *c*, substantially as and for the purpose set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

JULIUS ELSAS.

HERM. WEISSENBURGER.

Witnesses:

THEODORE ABENHEIM,  
A. B. DRANTZ.