

James Lyall.  
Impt. in Shuttles for Looms.

116609

PATENTED JUL 4 1871

Fig. 1.

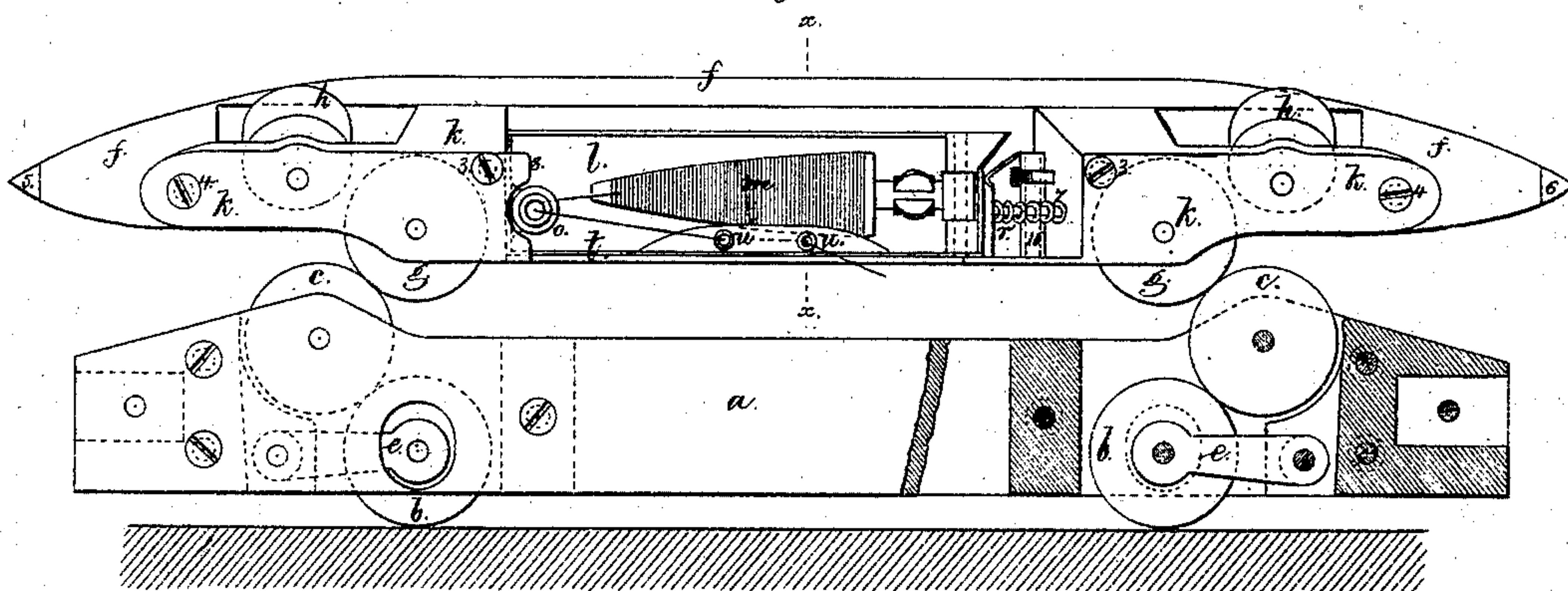


Fig. 2.

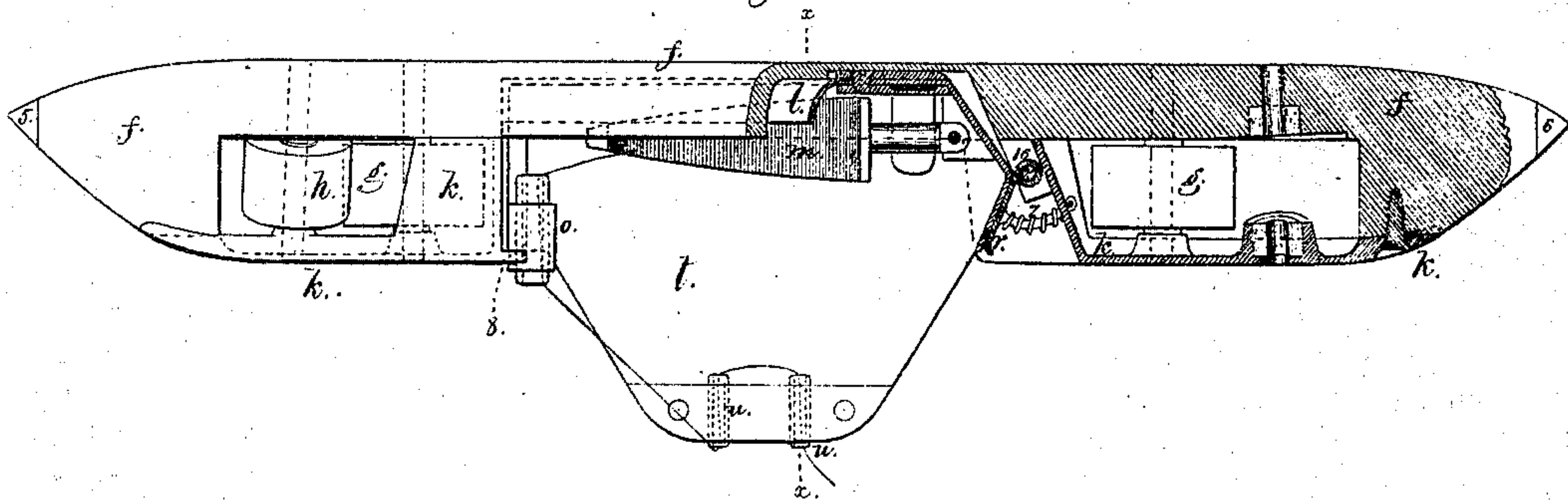
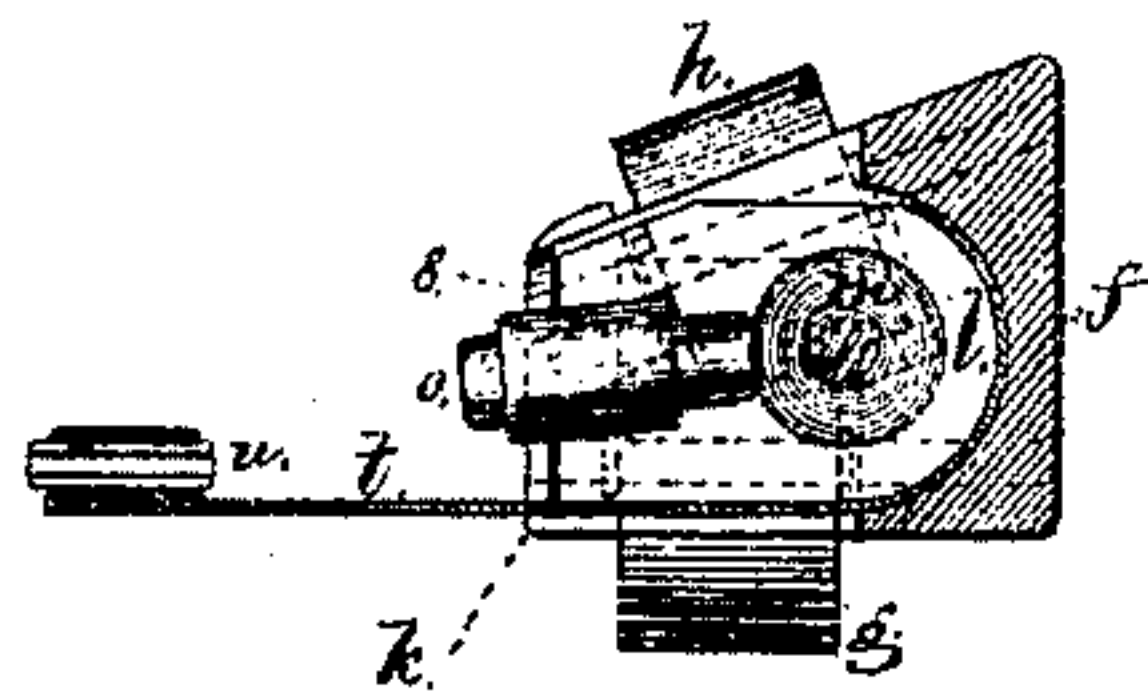


Fig. 3.



Witnesses

Chas H Smith

Geo. W. Porter

James Lyall

Lemuel W. Serrell

att'y.



# UNITED STATES PATENT OFFICE.

JAMES LYALL, OF NEW YORK, N. Y.

## IMPROVEMENT IN SHUTTLES FOR LOOMS.

Specification forming part of Letters Patent No. 116,609, dated July 4, 1871.

*To all whom it may concern:*

Be it known that I, JAMES LYALL, of the city, county, and State of New York, have invented an Improvement in Shuttles for Looms; and the following is declared to be a correct description thereof:

This improved shuttle is adapted to use in a loom such as that patented by me, August 11, 1868, and this present invention is made to facilitate the insertion of the bobbin-spool or cop. In the aforesaid patent the shuttle is moved by a driver or carrier below the warps, and the shuttle itself is not easily removable from the lay for the insertion of the spool or bobbin, and difficulty has existed in threading the weft-thread through the eyes, because said eyes have been fixtures in the said shuttle. I connect the eyes to a movable receiver which also carries the cop, bobbin, or spool, and said receiver is easily inserted into or removed from the shuttle whenever it is necessary to supply another weft-thread.

In the drawing, Figure 1 is an elevation of the shuttle and its carrier, part of the latter being in section; Fig. 2 is a plan of the shuttle, partially in section; and Fig. 3 is a cross-section at the line *x x*.

The shuttle-carrier *a* is mounted upon rollers *b*, that come in contact with the rollers *c*, as in aforesaid patent; but the rollers *b* are hung by links *e*, that receive at their moving ends the journals or center-pins of the rollers *b*. By this construction the rollers *b* and *c* are always in contact and revolve together, and any wear of the parts is allowed for by the swinging of the links *e*. The shuttle is made of the body *f*, with rollers *g* and *h*. These rollers *g* and *h* act in the same manner as in aforesaid patent; the rollers *h* run against the under side of the shuttle-rail, and the rollers *g* run upon the under shed of warps, and are pressed along, for propelling the shuttle, by the action of the rollers *c c*. In order to give access freely to these rollers I make use of the metallic caps *k* screwed to the body *f* of the shuttle, and forming the outer bearing for the axes of these rollers *g* and *h*. By removing the screws 3 and 4 the cap-plate *k* can be removed, together with the rollers *g h*.

I remark that the rollers *g h b c* may be made of box-wood, raw-hide, India rubber, vulcanite, metal, or other material, according to the character of the loom or the fabric that is being woven.

The points 5 and 6 of the shuttle should be made nearly in line with the back of the shuttle so as

to move closely to the reeds, and thereby enter the shed after it has opened partially, and thereby lessen the time during which the shuttle has to pause for the shed to open. The receiver *l* is made to receive or hold the cop, bobbin, or spool of weft-thread *m*, the same being held upon any suitable pin or support. The receiver *l* also carries the eye *o* through which the weft-thread is passed. The receiver and its eye are removable from the body *f* of the shuttle, the said body being recessed for the reception of the said receiver. To hold the receiver in place, I make use of a spring-catch or clamp, *r*: I have shown said clamp as swinging upon the hinge 16, and provided with the helical spring 7. The opposite end of the receiver sits behind the projection 8, and the end contiguous to the clamp or catch *r* is made as a double incline to press the catch or clamp back as the receiver is pressed in or drawn out. The lower part of the receiver is extended as a plate, *t*, near the edge of which is an eye or eyes *u*, for the weft-thread. This eye comes nearly to the edge of the fabric, so that the lay does not have to beat up the filling as far as usual; thereby there is less wear upon the warps in driving up the filling and the weft is laid with greater uniformity. A receiver, made removable from the shuttle as aforesaid, enables the attendant to easily substitute one receiver for another, and introduce a fresh spool, cop, or bobbin, and thread the weft through the eyes while the receiver is detached from the shuttle, and hence there is nothing to do but start the loom after the receiver has been introduced.

I claim as my invention—

1. The rollers *b* and links *e e*, in combination with the shuttle-carrier *a* and rollers *c c*, as and for the purposes set forth.

2. The receiver *l*, made removable from the shuttle, and containing the eye or eyes for the weft-thread, and adapted to contain the bobbin, cop, or spool, substantially as set forth.

3. The spring holding clamp *r*, in combination with the removable receiver and the shuttle, substantially as set forth.

4. The eye or eyes *u* and extension *t* upon the removable receiver *l*, substantially as and for the purposes set forth.

Dated January 24, 1871.

JAMES LYALL.

Witnesses:

HAROLD SERRELL,  
GEO. T. PINCKNEY.