THOMAS ISHERWOOD.

Improvement in Loom-Shuttles.

No. 115,614. Patented June 6, 1871.

Fig. 1.

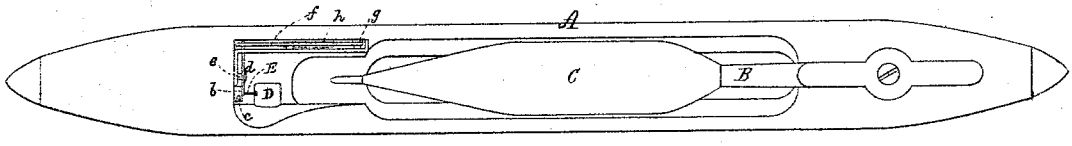


Fig. 2.

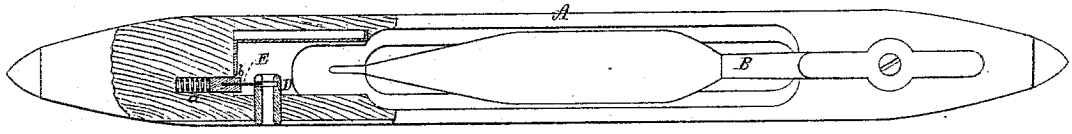


Fig. 3.

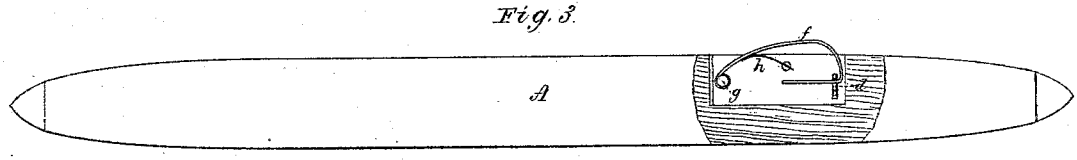


Fig. 4.

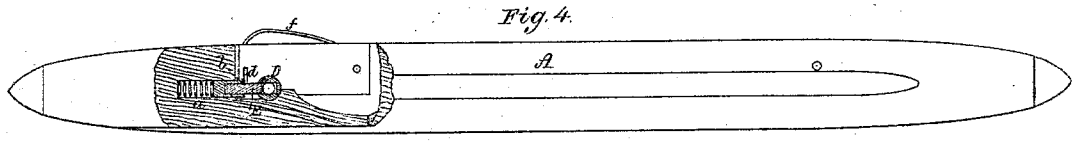
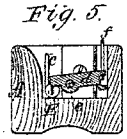


Fig. 5.



Witnesses.
S. N. Piper
L. N. Moller

Thomas Isherwood.
by his attorney.
R. H. Eddy

AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNES PROCESS.)

UNITED STATES PATENT OFFICE.

THOMAS ISHERWOOD, OF STONINGTON, CONNECTICUT.

IMPROVEMENT IN LOOM-SHUTTLES.

Specification forming part of Letters Patent No. 115,614, dated June 6, 1871.

To all persons to whom these presents may come:

Be it known that I, THOMAS ISHERWOOD, of Stonington, of the county of New London and State of Connecticut, have made a new and useful invention having reference to Shuttles for Looms, and being for the prevention of the formation of "floats" in cloth during the process of weaving the same; and I do hereby declare the said invention to be fully described in the following specification, reference being had to the accompanying drawing making part thereof, of which—

Figure 1 is a top view of a shuttle with my "float-motion" or "float-preventive;" Fig. 2 is a horizontal section; Figs. 3 and 4, longitudinal sections; and Fig. 5, a transverse section of the said float-preventive and that part of the shuttle to which it is applied.

By the word or technical term "float," as used by weavers, is meant the defect which results in the weaving of a piece of cloth when a shuttle, while being thrown, carries the weft either over or underneath any of the upper warps of a shed, or underneath any of the lower warps of a shed. This defect may be caused by the breakage of a warp-thread and it getting between the other warps, so as to prevent a proper crossing of any portion of them to make a shed for the passage of the shuttle; or such defect may be caused by waste or extraneous matter getting between the warps, so as to prevent them, when crossed by the harness, from forming a proper shed. In either of these cases the shuttle, while passing across the race-beam of the loom, will either cross over or go under the estopped warps. Scarcely a piece of cotton cloth is woven without more or less of such defects or faults, they frequently requiring much loss of time and labor to pick out the badly-woven weft. In carrying out my invention I combine with the loom-shuttle a mechanism which, during an imperfectly-formed shed, due to a cause as stated, will either cut the filling or weft-thread or stop it from flowing from the shuttle. On stopping the weft from flowing from or being drawn out of the shuttle the thread, as a natural consequence, will be broken by the shuttle, or the draft on such thread by the shuttle, during its flight. If the weft-thread be thus broken or cut an immediate stoppage of the loom will follow through the operation of what is termed its stop-motion, all of which will be well understood by weavers.

In the drawing, A denotes the shuttle-body; B, the spindle; and C, a cop on the latter. D is the thread-eduction tube, arranged in the shuttle-body and opening through one side of it. A knife or clamp, E, is arranged to slide laterally into the tube D and across the bore thereof, such knife or clamp being provided with a spring, *a*, for impelling it forward. The knife or clamp also has a shoulder, *b*, and is provided with an arm, *c*, the latter being extended upward from or near the shoulder, as shown. The said arm is to enable the knife or clamp to be readily retracted by the finger of an operative applied to the arm. A furcated lever, trigger, or catch, *d*, formed as represented, is arranged in the shuttle in manner as indicated by the figures, and is supported on a fulcrum or pivot, *e*. A wire, *f*, bent and arranged as exhibited in the drawing, turns on the pivot *g*, enters the fork of the latch *d*, projects above the shuttle-body, and is provided with a spring, *h*, all as shown in the drawing, the said spring being fixed to the shuttle-body and serving to press the wire upward.

While the entire shed of the warps may be correctly formed, the shuttle, on being thrown, will go through the shed without there being any interruption to the free flowage of the weft from the shuttle, the knife or clamp being supposed to be held back by the trigger; but should, from the cause hereinbefore mentioned, a false shed be made in any part of the series of warps, the angle of intersection of the warps will be so reduced as to cause the wire *f* to be depressed during the flight of the shuttle. On such a movement of the wire *f* taking place, the trigger-latch will be moved so as to set free the clamp or knife E, which, by means of its spring, will be driven forward into the bore of the eduction-tube and against the weft-thread so as either to cut or bind the thread in a manner to cause it to be broken by the shuttle during its further movement. On the weft-thread leading from the shuttle to the selvage of the cloth being broken, a stoppage of the loom, through the action of the stop-motion or mechanism, necessarily will follow immediately.

Thus it will be seen that, with my addition to the shuttle, the loom will be stopped in time

to prevent the formation of a float in the cloth, the attendant being thereby enabled to subsequently remove the obstruction or repair the warps, as the case may require.

I claim—

The combination of the float-preventive, as described, with a shuttle, such float-preventive consisting of the knife or clamp E, its operative spring *a*, shoulder *b*, the trigger *d*, and the bent wire *f* and its spring *h*, all arranged in and applied to the shuttle-body A and its eduction-tube D, substantially in manner and so as to operate as specified.

THOMAS ISHERWOOD.

Witnesses:
R. H. EDDY,
J. R. SNOW.