

Improvement in Loom Shuttles and Stop Mechanism.

No. 122,745.

Fig. 1.

Patented Jan. 16, 1872.

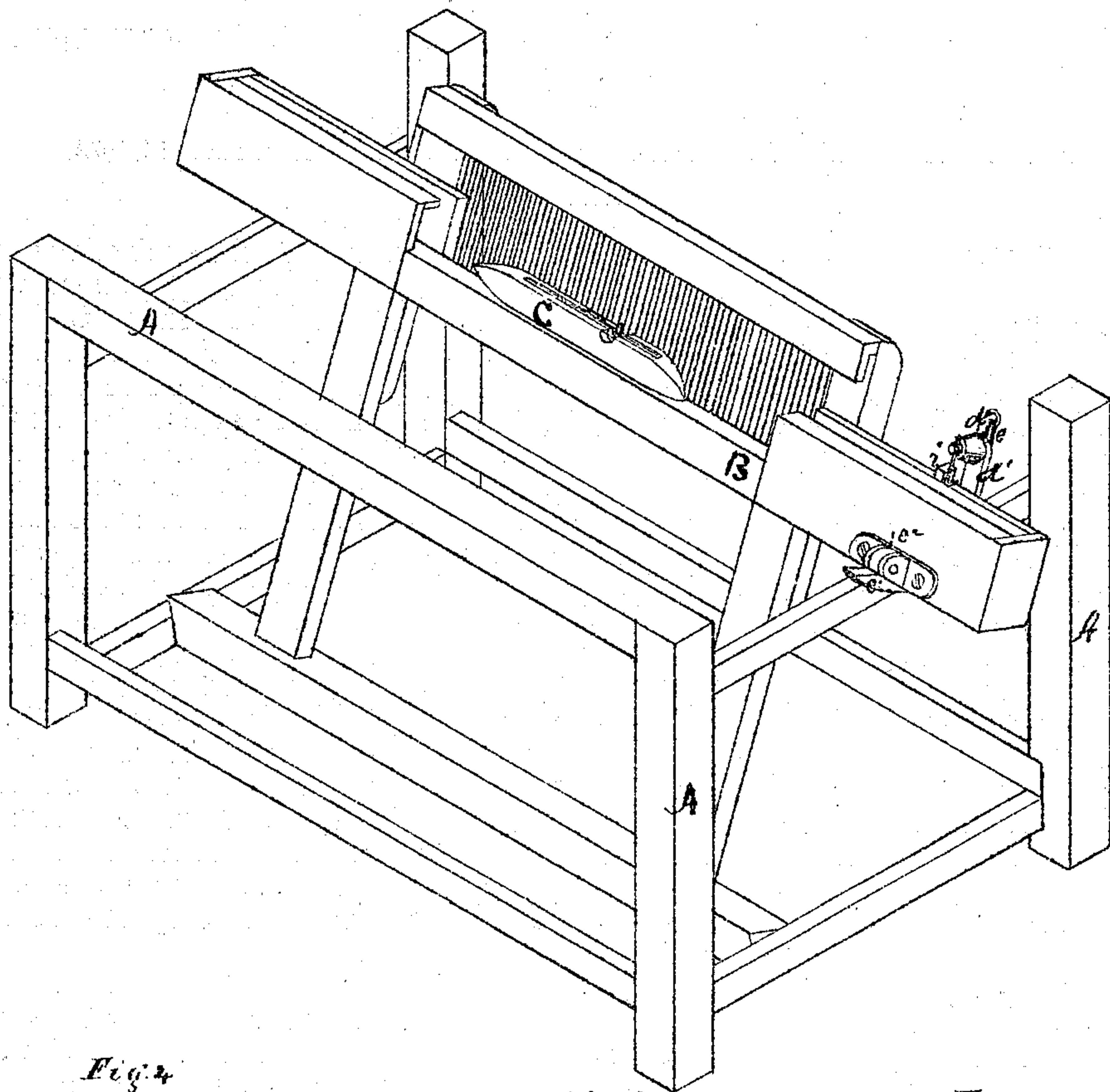


Fig. 2.

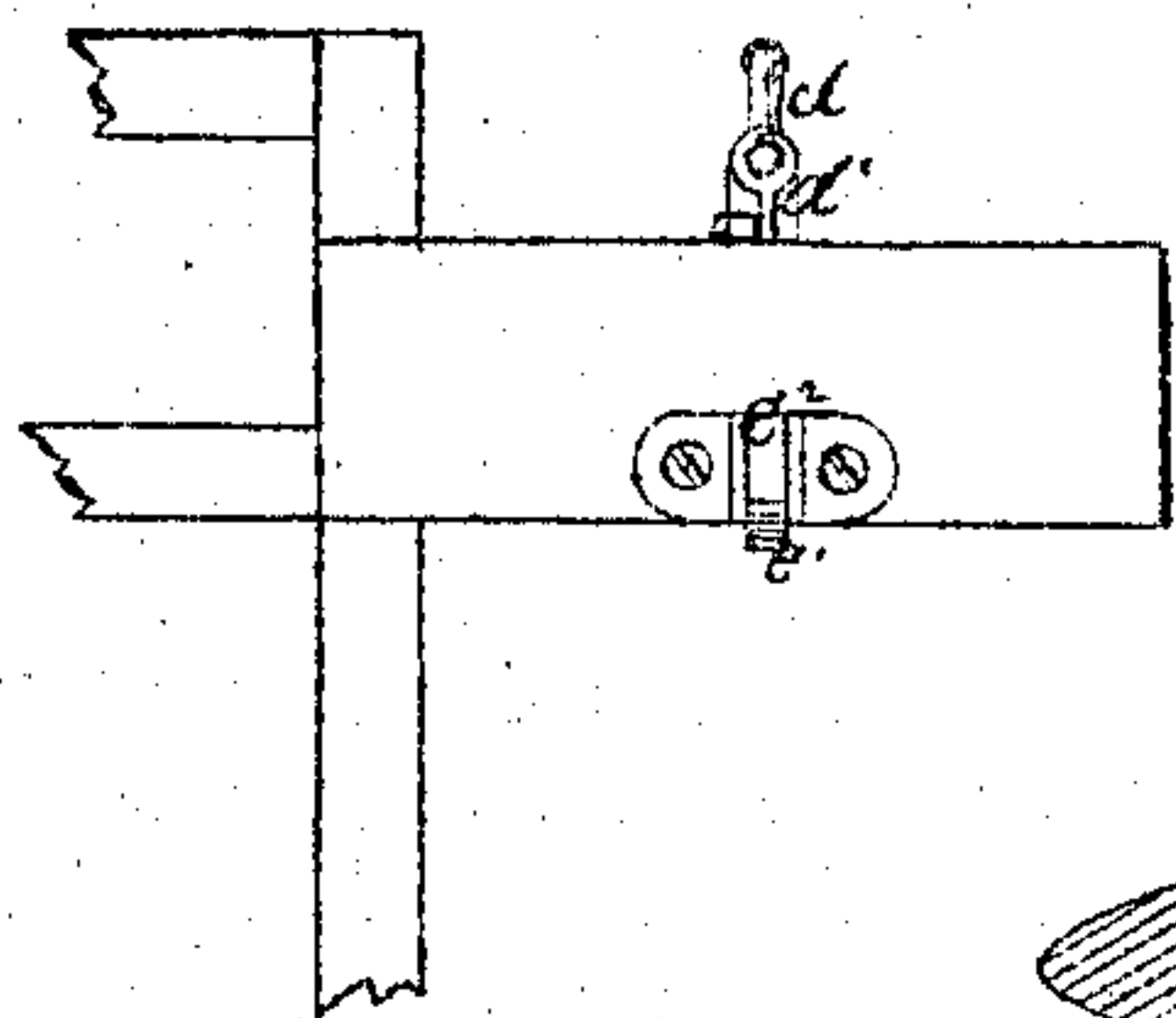


Fig. 3.

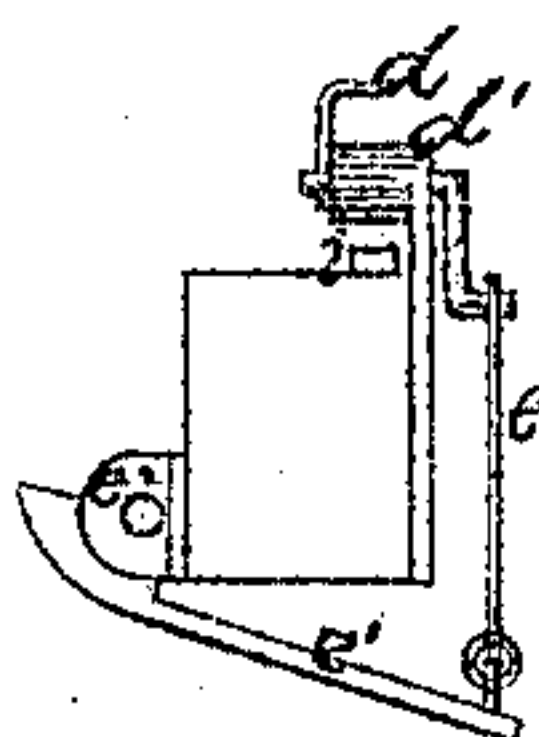


Fig. 4.

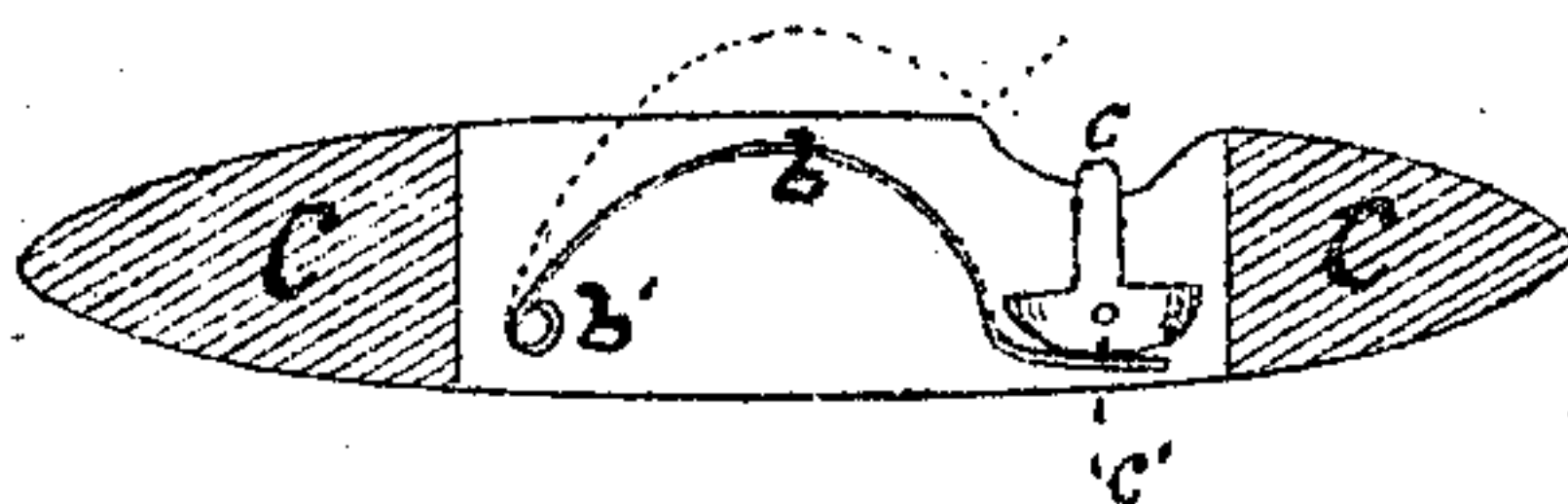
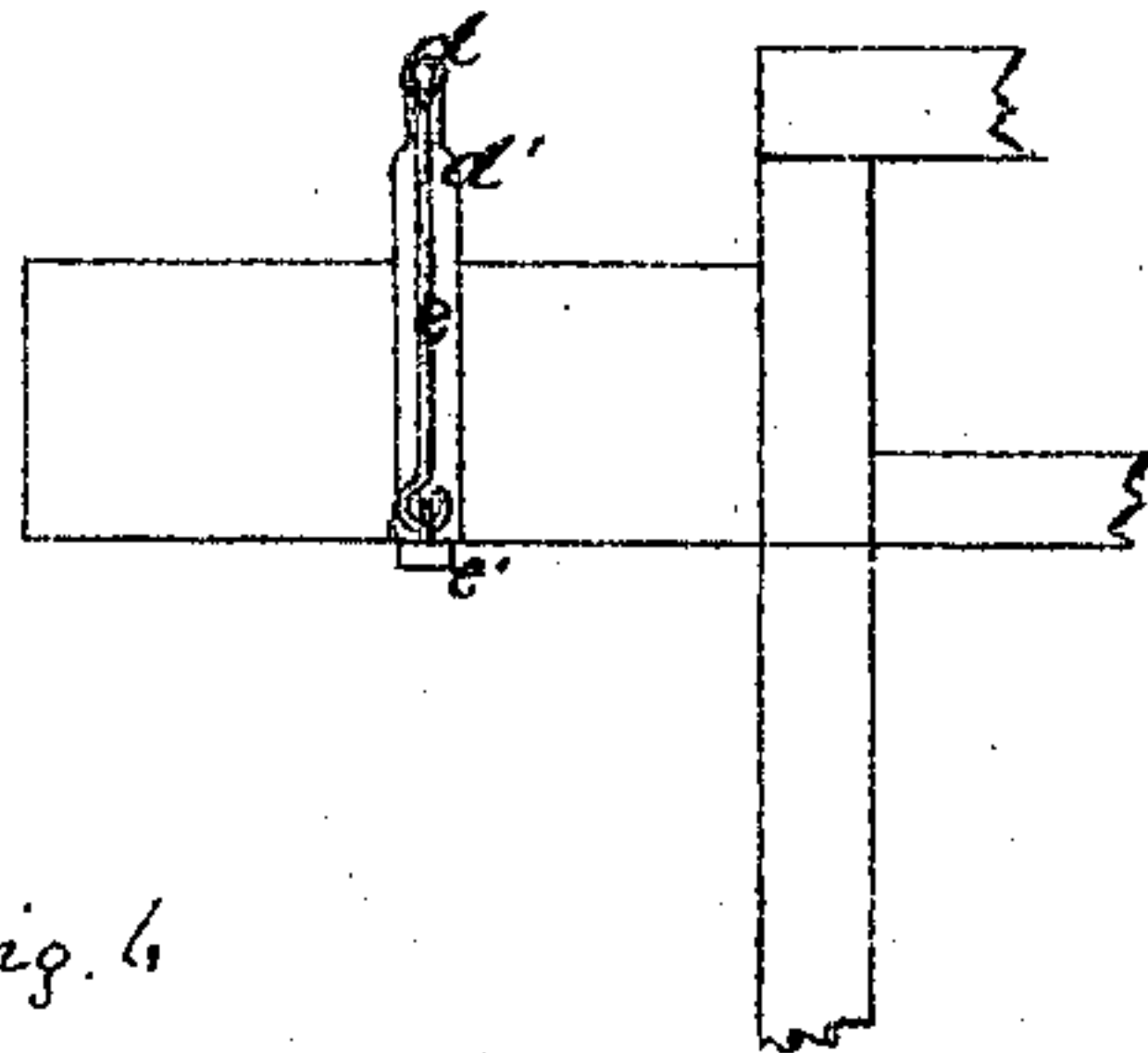
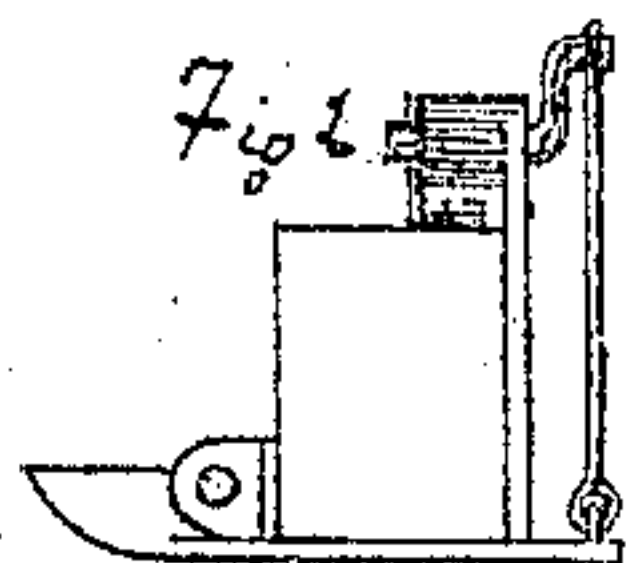


Fig. 6.



Witnesses.

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IMPROVEMENT IN LOOM STOP-MOTIONS AND SHUTTLES.

Specification forming part of Letters Patent No. 122,745, dated January 16, 1872.

SPECIFICATION.

I, WILLIAM W. TUCKER, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Looms, and Shuttles for the same, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 is a view of the loom, certain parts being omitted, the same not being necessary to the understanding of my invention. Fig. 2 is a detached view of one end of the lay bearing one feature of my invention, an end view. Fig. 3 is a rear view of the parts shown in Fig. 2. Fig. 4 is a front view of the parts shown in Figs. 2 and 3. Fig. 5 is a view similar to that in Fig. 2, except that the device is "sprung," a term that will be definitely defined hereinafter. Fig. 6 is a central vertical longitudinal section of the shuttle.

Like letters indicate like parts in all the figures.

The object and purpose of this invention are the production of a loom which shall cease automatically to operate when the warp-shed becomes imperfect.

The letter A indicates the general frame of the loom, and B the lay, pivoted within the frame in the usual manner. At either end of the lay are the common shuttle-boxes. The letter C indicates the shuttle, whose construction and operation I will now describe. It is open along its center as common, and this opening contains the common bobbin, &c. At one side of this opening is attached my improvement, consisting of the wire spring *b*, fastened to the shuttle at *b'*, and its free end caught under the base of the trigger *c* when the device is set. This trigger is made of thin sheet metal, pivoted to the shuttle at *c'*. Both ends of the base of the trigger are beveled off (from the observer, in Fig. 6,) so that when the top of the trigger is canted to the right or left the spring *b* will escape over the bevel, and the curved part of the spring will fly up above the top of the shuttle. Such canting of the top of the trigger will take place when the warp-shed from any reason becomes imperfect, or if any extraneous matter gets into the warp-shed. At or near the end of the lay-beam is the double elbow *d* hung, and free to rotate in the

bearing *d'* affixed to the back of the beam, connected by the connecting-rod *e* with the lever *e'* pivoted at *e''* to the beam. Ordinarily this device is set in the position indicated in Fig. 2, the front end of the double elbow hanging straight down and resting against the stop *i*. The shuttle ordinarily, and while the curved spring *b* is held under the base of the trigger, will not interfere with the double elbow *d*; but when the warp-shed becomes imperfect and by acting on the trigger allows the curved part of the spring *b* to rise, then this spring will strike against the double elbow *d*, will carry its front elbow along a little way, and the weight of the long end of the lever *e'* will cause the parts to assume the position shown in Fig. 5, which is the position I have once before referred to as "sprung." This motion of the lever *e'* can be made available to shift the operating belt of the loom from the fixed to the loose pulley, and thus stop the loom, in a variety of ways.

In common looms the belt-shipper is upon the end of a pivoted lever with a spring, so attached to the lever as to hold the belt upon the loose pulley when not otherwise controlled; and the opposite end of the lever is confined against the action of the spring by a hook or latch taking hold upon it. One very feasible way to effect the stopping of the loom by the springing of the device described attached to the end of the lay, is to have this hook or latch attached to the frame of the loom near the front, so that while the lever *e'* is in the position shown in Figs. 1, 2, 3, and 4, its front end, when the lay moves to the front, will pass just under the latch, and will not interfere with it; but when the lever *e'* assumes the position shown in Fig. 5, then the front end thereof will be raised high enough to strike against the latch and free the shipper from its hold, which will then immediately transfer the belt to the loose pulley and thus stop the loom.

One great advantage of this stop-motion over others lies in the fact that when a loom is stopped by the other stop-motions it is necessary to examine where the fault lies, whether in the weft or the warp, while the stoppage by this invention always indicates trouble in the warp.

I claim as my invention—

1. In combination with a shuttle, the curved spring *b* and the trigger *c*, arranged, constructed, and operating substantially as described, for the purpose set forth.

2. The combination and arrangement, with the lay, of the pivoted double elbow *d*, the connecting-rod *e*, and the lever *e*¹, substantially as described, and for the purpose set forth.

3. The combination of a shuttle, having mechanism, substantially as described herein,

with the tripping mechanism, substantially as described, upon the end of the lay, the whole arranged and operated substantially as described, for the purpose set forth.

Dated September 25, 1871.

WILLIAM W. TUCKER.

Witnesses:

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