

(No Model.)

L. BRAND.

SHUTTLE OPERATING MECHANISM FOR LOOMS.

No. 419,818.

Patented Jan. 21, 1890.

FIG. 1.

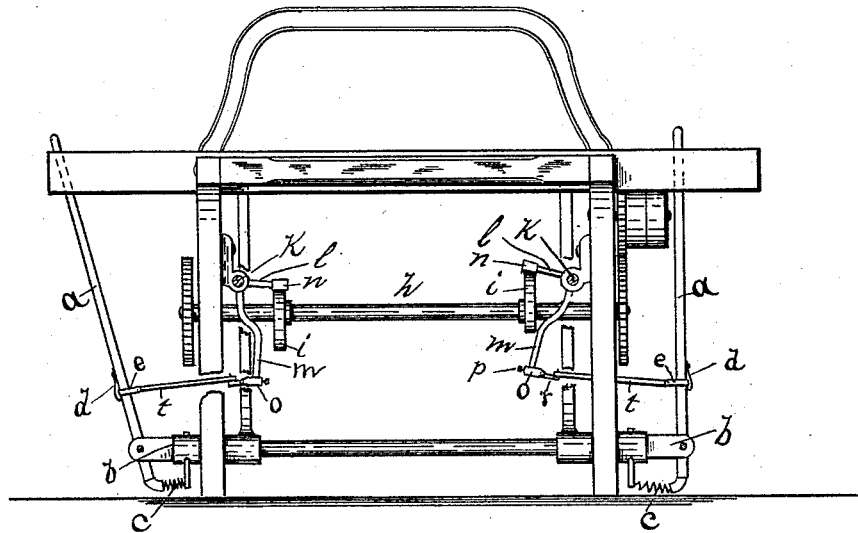


FIG. 2.

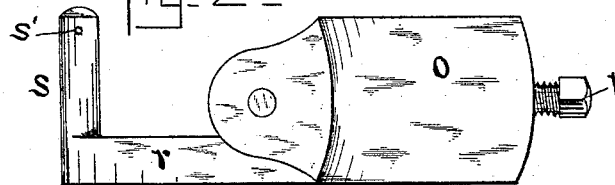
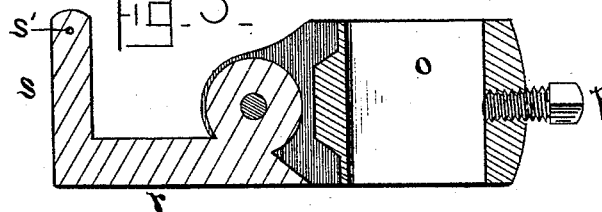


FIG. 3.



Witnesses

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LEWIS BRAND, OF BOZRAHVILLE, CONNECTICUT.

## SHUTTLE-OPERATING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 419,818, dated January 21, 1890.

Application filed September 27, 1886. Renewed November 30, 1889. Serial No. 332,072. (No model.)

To all whom it may concern:

Be it known that I, LEWIS BRAND, a citizen of the United States, residing at Bozrahville, in the county of New London and State of Connecticut, have invented a certain new and useful Improvement in Shuttle-Operating Mechanisms for Looms, which improvement is fully set forth and described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a front side elevation of the frame and so-called "lathe" of a loom having the picker-sticks and their actuating mechanism properly attached and the lay-swords broken out to show parts behind. As the other elements of the loom are well known and not directly connected with my improvement, I have thought it unnecessary to show them here. Fig. 2 is an enlarged side view of the jointed connection *o r*, and Fig. 3 is a longitudinal vertical central section of the same.

My invention relates particularly to the mechanism in cotton and woolen looms by means of which the picker-sticks are moved to throw the shuttle, my immediate object being to so improve said mechanism that I may dispense with the connecting-strap so long and commonly used, substituting therefor devices which are cheaply produced and are practically indestructible.

In the class of looms above referred to, in which straps of leather or rawhide are used, said straps are continually wearing and breaking, causing unnecessary expense and stopping the loom for a considerable length of time while undergoing repairs. My devices, when once applied, work equally as well as the straps and will wear as long as the other elements of the loom.

Referring to the drawings, the letter *a* represents the picker-sticks, said sticks being pivoted in brackets *b* and connected at their lower ends with an arm depending from said brackets by springs *c*. These springs *c* act with a constant tendency to throw the upper longer arms of the picker-sticks outward, and may be spiral springs, as shown, or of any of the many forms in common use. Secured to each picker-stick above bracket *b* is a loop *d*, provided to hold in place a strap *e*, formed, preferably, of rawhide.

*h* indicates a shaft arranged to rotate in suitable bearings within the main frame of the loom and carrying cams *i i*.

The letters *K* indicate rock-shafts, each having arms *l m*. The upper arm *l* has on its free end an idle pulley or roll *n*, which rests on the cam *i*, and the longer arm *m* extends downward to a point nearly on a level with the loop *d*.

My invention lies in the particular devices which connect the said arm *m* with the picker-stick strap *e*. Secured to the free end of arm *n* is a cast-metal clip *o*, held in position by a set-screw *p* and having pivoted in its outer slotted end a bracket *r*, whose outer end is formed as a stud *s*.

By referring to Fig. 3 it will be understood that the bracket *r* is practically hinged with in the clip *o*. Instead of the strap used heretofore, I provide a pitman *t*, of hard wood, one end of which is riveted to the rawhide strap *e*, the other end being bored to slip over stud *s*, being held in pivotal engagement with said stud by a pin *s'*. The pivot which fastens the outer end of pitman *t* to strap *e* is at a right angle to the stud *s*, and it will now be understood that the several jointed connections described allow a universal movement to the pitman when in use. As the cam *i* rotates, the arm *l* is thrown forcibly upward, thus drawing arm *m* and its several connected parts, including the picker-stick, inward. As the cam continues its round, spring *c* brings the picker-stick back to its normal position. The connection *o r* and pitman *t* are of such shape and material that they may be cheaply produced, and may also be applied to many of the forms of looms in common use without making other changes in said looms.

Having described my invention, I claim—

The combination, with the picker-sticks pivoted as described, of the pitmen *t*, the rock-shafts having arms *l m*, the cams *i*, the shaft *h* on which the cams are mounted, and the clips *o*, for connecting the arms *m* and pitmen *t*, the brackets *r*, pivoted to the clips and having ends *s*, to which the pitmen are secured, and the screws *p*, for holding the clips in their adjusted position on the arms *m*, substantially as described.

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mark

Witnesses:

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