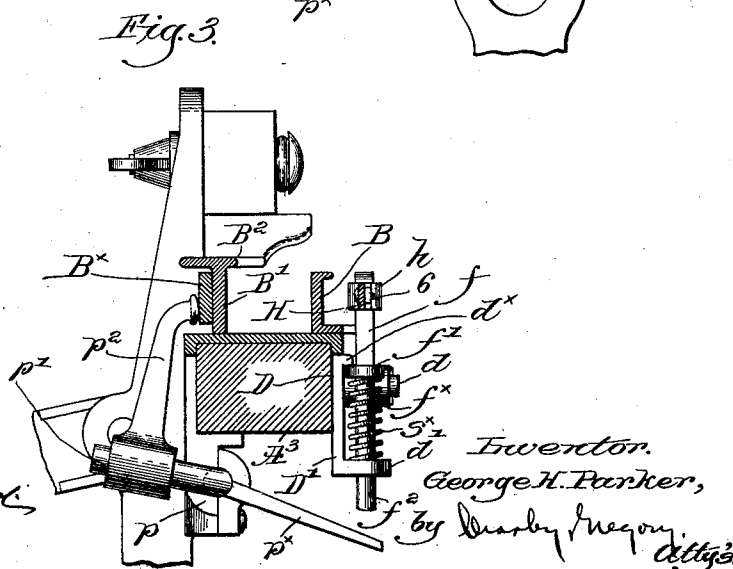
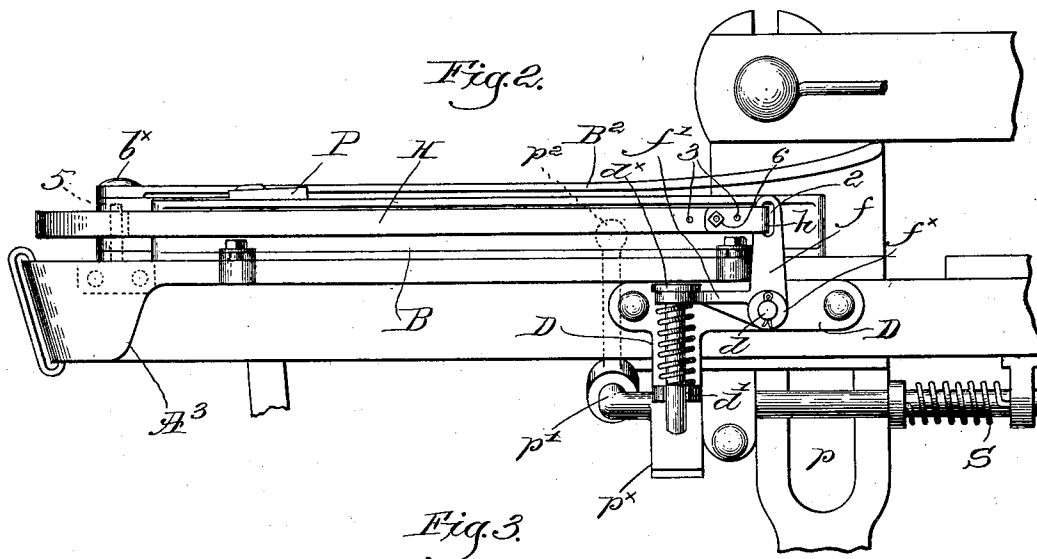
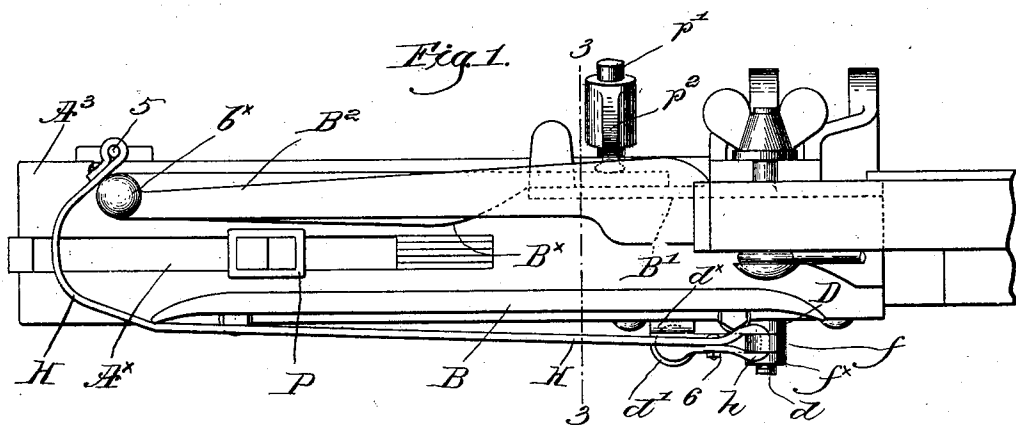


G. H. PARKER.
SHUTTLE CHECKING MECHANISM FOR LOOMS.

APPLICATION FILED DEC. 22, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses.

Thomas Drummond,
Edward B. Allen.

Inventor.

George H. Parker,

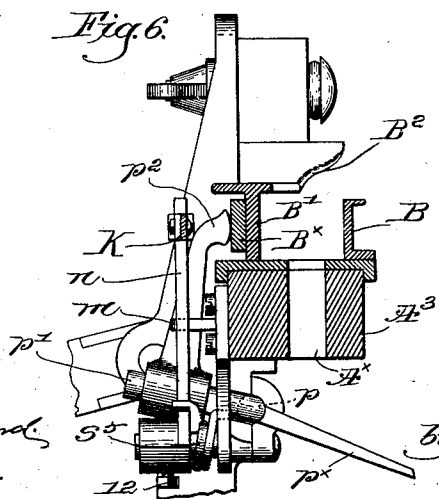
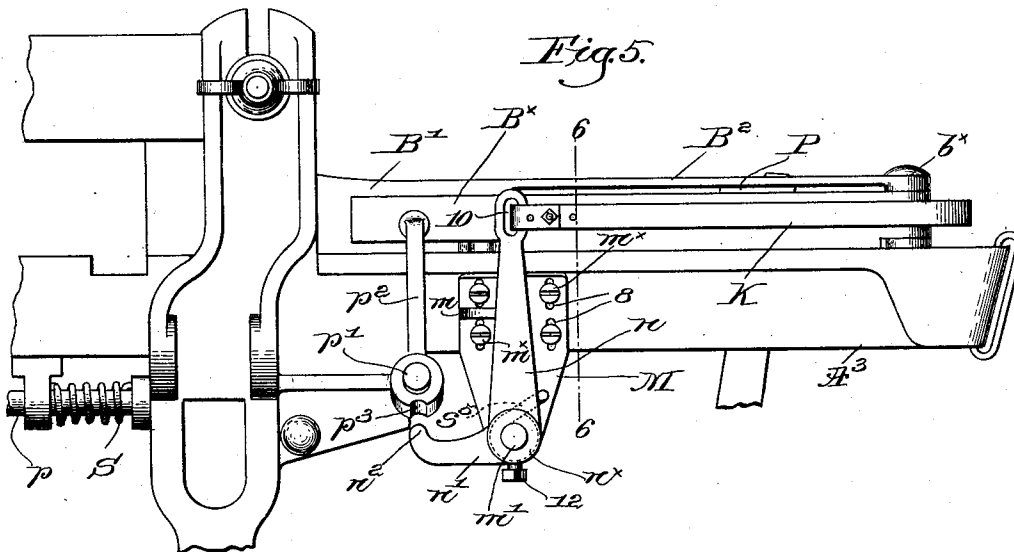
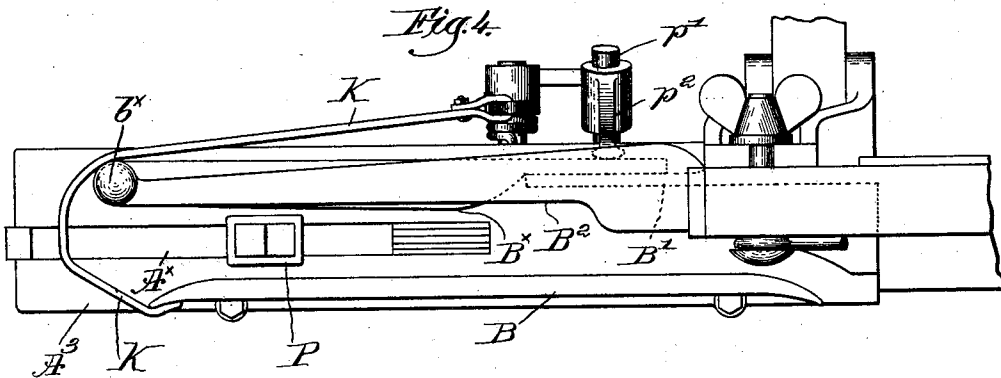
by Darby Gregory, atty.

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SHUTTLE CHECKING MECHANISM FOR LOOMS.

APPLICATION FILED DEC. 22, 1902.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses.

Thomas Drummond,
Edward G. Allen.

Inventor.
George H. Parker,
by Henry Gregory
Atty.

UNITED STATES PATENT OFFICE.

GEORGE H. PARKER, OF NEW BEDFORD, MASSACHUSETTS, ASSIGNOR TO
DRAPER COMPANY, OF HOPEDALE, MASSACHUSETTS, A CORPORATION
OF MAINE.

SHUTTLE-CHECKING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 732,437, dated June 30, 1903.

Application filed December 22, 1902. Serial No. 136,112. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. PARKER, a citizen of the United States, and a resident of New Bedford, county of Bristol, State of Massachusetts, have invented an Improvement in Shuttle-Checking Mechanism for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to mechanism for checking the shuttle when it enters the shuttle-box of a loom; and it has for its object the production of novel means for preventing rebound of the shuttle when it enters the shuttle-box.

The various novel features of my invention will be described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a top or plan view of the left-hand end of a loom-lay and shuttle-box thereon with one embodiment of my invention applied thereto. Fig. 2 is a front elevation thereof. Fig. 3 is a transverse section on the line 3-3, Fig. 1, looking toward the right. Fig. 4 is a view similar to Fig. 1, but showing another form of my invention. Fig. 5 is a rear elevation thereof; and Fig. 6 is a transverse section on the line 6-6, Fig. 5, looking toward the left.

The lay A^3 , having a shuttle-box thereon, comprising a front plate or wall B , back wall B' , overhanging top or shuttle-guard B^2 , a binder B^x , pivotally mounted at b^x near the outer end of the lay, and the picker P , whose staff plays in the longitudinal slot A^x in the lay, may be and are all of well-known or usual construction. So, too, the protector rock-shaft p , its controlling-spring S , the dagger p^x , rocker-arm p' on the rock-shaft, and the upturned binder-finger p^2 thereon to bear against the free end of the binder are of usual construction and operate in a manner familiar to those skilled in the art.

The high rate of speed of the shuttle as it enters the box causes such a blow to be delivered upon the binder-swell that the binder B^x is thrown out against the spring S of the protector mechanism, and before the binder

can return to firmly engage the shuttle and hold it the shuttle hits the picker and frequently bounds back.

In my present invention I have provided means whereby the impact of the shuttle upon the picker is utilized to quickly bring the binder against the side of the shuttle with a force and rapidity very largely proportional to the speed of the incoming shuttle, whereby the latter is properly checked and its rebound is prevented.

Referring to Figs. 1, 2, and 3, a bracket D is bolted to the front of the lay near the inner end of the shuttle-box, said bracket having a depending foot D' , provided with a slotted projection or guide d' at its lower end substantially above the dagger, and a stud d projects from the bracket at right angles thereto. A bell-crank lever $f f'$ has its hub f^x mounted upon the stud as a fulcrum, the arm f being upturned and shown in Fig. 2 as slotted at 2 to receive one end of a check-strap H , the latter extending from said arm outward around the outer end of the shuttle-box across the path of the picker and being fixedly secured at its other end to a pin 5 on the lay. The strap is looped through the slot 2 and fastened by a suitable bolt 6, which can be moved into different holes 3 in the strap to adjust the operative length of the latter when necessary. The arm f' of the bell-crank is extended toward the outer end of the shuttle-box and is provided with a downturned finger f^2 , which passes loosely through the slotted projection or guide d' and projects below it. A spring s^x , interposed between the extension and the arm f' and shown as coiled around the finger, maintains the parts normally in the position shown, with the arm f' against a stop-lug d^x on the bracket. When the shuttle enters the box, its impact upon the swell of the binder swings the inner free end of the latter out against the force of the protector-spring S , rocking the shaft p and elevating the dagger more or less, but sufficiently to clear the frog. As the shuttle passes into the box it strikes the picker and throws it against the check-strap H , the latter thereupon turning the bell-crank lever $f f'$ and pressing the finger f^2 against the dagger. Such downward pres-

sure on the dagger instantly acts through the binder-finger p^2 to force the binder inward against the shuttle, checking the latter in the proper position in the box without any chance for rebound. The faster the shuttle speed the harder will be the auxiliary pressure exerted on the binder by the means described and the more rapidly will the binder be moved against the shuttle, the pressure and rapidity of movement of the binder decreasing proportionally to a decrease in the shuttle speed, as it should be. As soon as the shuttle is thrown the tension on the check-strap is released, the spring s^x expands, and the parts are thereby returned to normal position.

In Figs. 4, 5, and 6 I have shown another form in which my invention is embodied, the additional pressure upon the binder being effected through the protector mechanism substantially as has been described, but without operating through the dagger. A bracket M is secured to the back of the lay by suitable screws m^x , which extend through vertical slots 8 in the bracket to provide for vertical adjustment, the bracket projecting below the lay near the inner end of the shuttle-box and having a rearwardly-extended rocker-stud m' mounted thereon. The hub n^x of a bell-crank lever n is fulcrumed on said stud, the arm n being upturned above the lay and having a slot 10, Fig. 5, while the arm n' extends toward the center of the lay and has an upturned tip n^2 below and adapted to at times enter a groove p^3 made in the hub of the binder-finger p^2 . A spring s^5 surrounds the stud between the bracket and the hub n^x , one end of the spring being fixed by the bracket and the other end bearing against the bell-crank to normally hold it in the position shown in Fig. 5, with the arm n against a stop m on the bracket. The hub n^x is secured to the rocker-stud m' by a suitable set-screw 12. A check-strap K is looped through the slot 10 of arm n and carried outwardly and around the outer end of the shuttle-box across the path of the picker, the end of the strap being secured to a fixed part, as the front wall B of the box. When the shuttle enters the box, it throws the binder outward, and the shuttle, passing on into the box, strikes the picker and throws it against the strap K. The tension on the latter thereby produced rocks the bell-crank lever and lifts its arm n' , bringing its upturned end n^2 into the notch p^3 and lifting the outer end of the rocker-arm p' . The binder-finger is thereby pressed against the binder, forcing it inward against the shuttle with a rapidity and force proportional to the speed of the shuttle as it entered the box. By this additional pressure upon the shuttle, exerted when the latter is fully boxed, the rebound of the shuttle is prevented, and it is checked in the box in proper position.

In both forms herein shown as embodying my invention it will be seen that the additional pressure exerted upon the shuttle

through the binder is due to the speed of the incoming shuttle, the force of the blow being in both cases transmitted to the binder through the check-strap and the binder-finger of the protector mechanism.

The spring controlling the bell-crank lever operates to normally draw the bight of the strap inward to move the picker inward from the outer end of the lay as the shuttle is thrown from the box, and by regulating the length of the spring and the length of the check-strap the necessary adjustment can be effected with ease.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A shuttle-box, a picker, a binder, a binder-finger, a rocking member pivotally mounted adjacent the box independently of the binder, a strap fixed at one end and passing around the shuttle-box and connected at its other end with said rocking member, and transmitting means between said member and the binder-finger, impact of the shuttle on the picker acting through the strap to rock said member and thereby through the transmitting means to augment the pressure upon the binder through the binder-finger.

2. A shuttle-box, a pivoted binder, protector mechanism to cooperate therewith, a rocking member mounted independently of the binder and operatively connected with the protector mechanism, and means governed by or through impact of the incoming shuttle to rock said member and act through the protector mechanism to augment the pressure upon the binder, to check the shuttle and prevent rebound.

3. A shuttle-box, a picker, a pivoted binder, a bell-crank pivoted adjacent the box independently of the binder, a binder-finger, transmitting means between the latter and the bell-crank, and a strap passing around the shuttle-box and having one end fixed and the other end connected with the bell-crank, rocking of the latter acting through said means upon the binder-finger to augment the pressure upon the binder.

4. A lay, a shuttle-box thereon, a binder and a binder-finger, a picker, a check-strap movable by engagement with the picker to rock a normally inoperative lever pivotally mounted on the lay, said lever, and an extension or arm on the lever to move the binder-finger and thereby accelerate the inward movement of the binder into checking position and to augment its pressure upon the shuttle.

5. A shuttle-box, a picker, a pivoted binder, protector mechanism to cooperate therewith, a spring-controlled lever pivotally mounted adjacent the shuttle-box to cooperate directly with and act through the protector mechanism to augment the pressure of the binder, and means governed by impact of the incoming shuttle upon the picker to operatively rock the bell-crank against the action of its controlling-spring.

6. A shuttle-box, a picker, a pivoted binder, protector mechanism to cooperate therewith, a spring-controlled lever pivotally mounted adjacent the shuttle-box to cooperate directly with and act through the protector mechanism to augment the pressure of the binder, and a check-strap fixed at one end and passing around the shuttle-box, the other end of the strap being attached to the bell-crank, to operate as and for the purpose set forth.

7. In a loom and in combination a shuttle-box, a picker, a pivoted binder, a cooperating binder-finger, a strap passing around the shuttle-box and fixed at one end, and a bell-crank pivoted adjacent the binder-finger, said bell-crank having an arm connected to the other end of the strap and a second arm adapted to effect forcible movement of the binder-finger against the free end of the binder, as and for the purpose set forth.

8. A shuttle-box, a picker, a binder, protector mechanism cooperating therewith, a strap passing around and connected at one end to the lay, a device pivotally mounted on the lay and connected with the other end of the strap and having an arm adapted to be forced with an impact-pressure against a part of the

protector mechanism, whereby the strap receives and imparts the force of the impact of the shuttle to the said pivoted device and thence to the protector mechanism and thereby augments the pressure upon the free end of the binder.

9. A shuttle-box, a picker, a binder, a cooperating binder-finger and a protector-shaft upon which it is mounted, a strap connected at one end to the lay, a bell-crank lever mounted upon the lay and having one arm connected to the other end of said strap, the other arm of said lever being adapted to turn the protector-shaft and effect forcible movement of the binder-finger against the free end of the binder, and means to adjust the length of the strap, to thereby render effective the locking pressure of the binder upon the shuttle at any point of its travel in the box.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. PARKER.

Witnesses:

GEORGE N. GARDINER.

MYRA C. HEYER.