

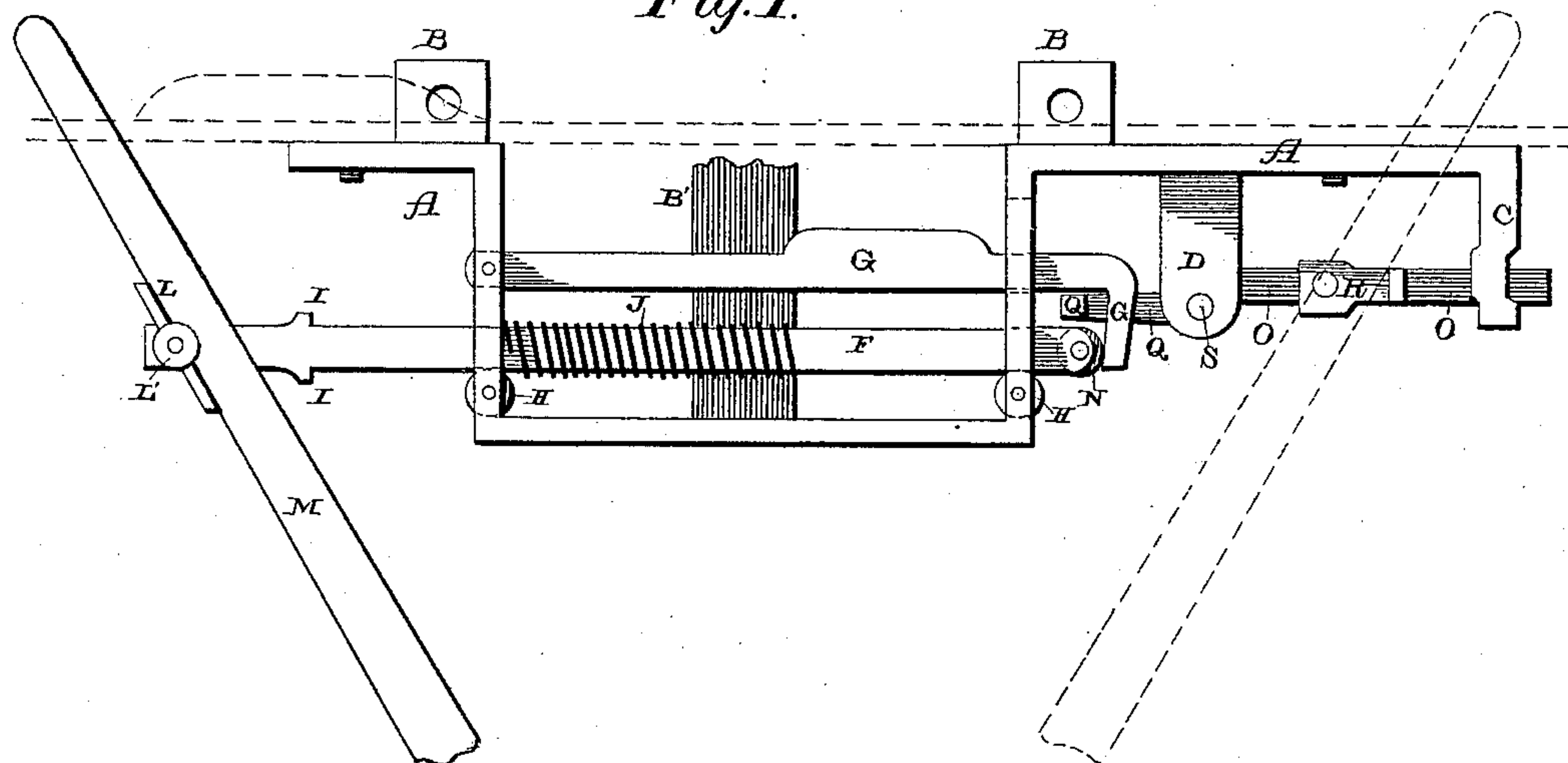
(No Model.)

E. J. ELLIS.  
PICKER STAFF CHECK FOR LOOMS.

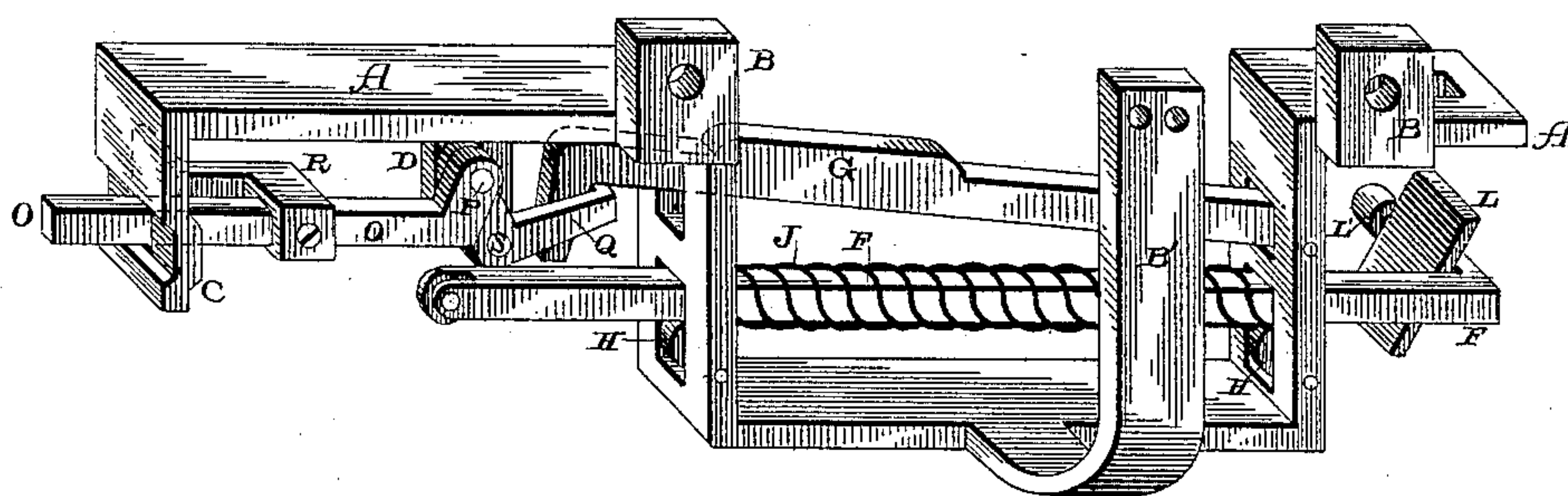
No. 452,265.

Patented May 12, 1891.

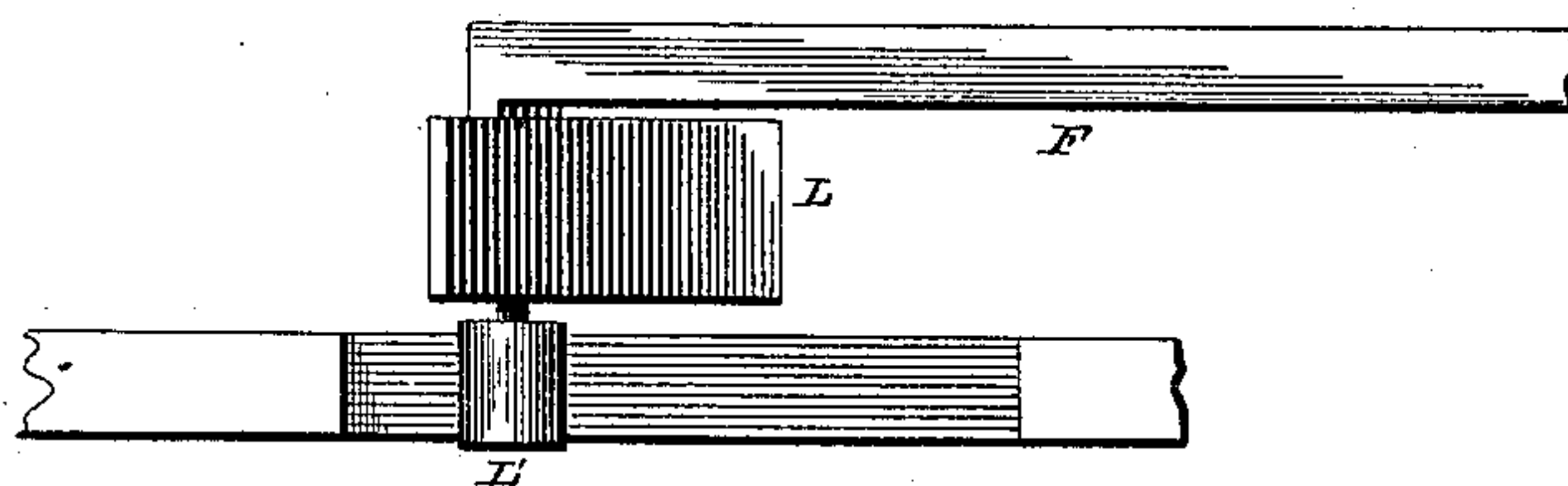
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:

E. J. Ellis,

J. M. Nesbit

Inventor:

Edw. J. Ellis,

per  
Lehmann & Patterson,  
attys.



# UNITED STATES PATENT OFFICE.

EDWARD J. ELLIS, OF CROMPTON, RHODE ISLAND.

## PICKER-STAFF CHECK FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 452,265, dated May 12, 1891.

Application filed August 27, 1890. Serial No. 363,203. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD J. ELLIS, of Crompton, in the county of Kent and State of Rhode Island, have invented certain new and useful Improvements in Picker-Staff Checks for Looms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in picker-staff checks for looms; and it consists in the combination and arrangement of parts which will be fully described hereinafter.

The object of my invention is to provide an attachment for looms whereby the movement of the shuttle can be checked and prevented from striking a blow which is liable to break the yarn or filling, or breaking the picker-sticks, or causing the picker-sticks to pound against the end of the lay, so as to injure either them or the lay.

Figure 1 is a side elevation of a mechanism which embodies my invention, taken from one side. Fig. 2 is a perspective taken from the opposite side. Fig. 3 is a detail view.

A represents the frame, which is to be attached to the under side of the lay just opposite the slot through which the picker-sticks move, and which may be secured thereto by means of screws passing through the ears B, or in any other way that may be preferred. Projecting downward from one end of this frame A are the two hangers C D, which stand at right angles to each other, and that portion of the frame A through which the spring-actuated rod F moves and in which the latch G is pivoted is made U-shaped, as shown, and is braced at its center by the brace B'. The rod F extends through slots made in the U-shaped portion of the frame A, and in the bottoms of the slots through which the rod F moves are placed suitable friction-rollers H, so as to lessen the friction and to prevent the rod F from becoming worn by its endwise movements. Around this rod F, which is provided with shoulders or stops I to limit its endwise movement in one direction, is wrapped the spring J, which has a constant tendency to force the rod F endwise through

the frame in the direction of the hangers C D, and which rod has the stop-plate L, provided with the roller L', secured or attached to its outer end. The picker-stick M strikes against the plate L and forces the rod F endwise through the slots in the frame A, thus compressing the spring J, as shown in Fig. 1. In the inner end of the rod F is journaled a roller N, behind which the downwardly-turned end of the latch G catches when the rod F is forced endwise by the picker-stick striking against the plate L and for the purpose of preventing the rod F from moving endwise until it is desired that it should do so. The latch G is pivoted at one end in the U-shaped portion of the frame A and has its other end to project through a slot in the opposite side of this U-shaped portion, and in this slot the free end of the latch has a vertical play or movement. When the rod F is moved endwise by the picker-stick, the free end of the latch drops behind the end of the rod F, and thus holds the rod in the position shown in Fig. 1.

The endwise-moving rod O has its outer end to pass through a slot in the hanger C and has its inner end turned upward, as shown in Fig. 2, so as to catch over the pin, stud, or projection P, projecting horizontally from the side of the upper end of the angular lever Q. Secured to this endwise-moving rod O is a suitably-shaped arm R, which, like the plate L, projects outward across the line of travel of the picker-stick, so that the picker-stick M, when moved to that side of the frame A, will strike against it, and thus move the rod O endwise. This arm R is made adjustable upon the rod O by means of a set-screw, so that the point at which the picker-stick end will strike against it is adjusted at will.

If desired, an arm which projects straight out may be used instead of the bent one here shown in case a short slot is used in the lay.

The angular lever Q is pivoted upon the lower end of the hanger D, so as to turn freely upon the stud or projection S when the rod O is moved endwise by the picker-stick for the purpose of causing the lower end of the lever to fly up and strike against the under side of the downwardly-turned end of the latch G, and thus raise the latch so as to release the spring-actuated rod F and allow it



to move endwise through the frame A until checked by the shoulders I. The lever Q is caused to turn upon its pivot by the rod O, which is connected to the upper end of the lever, as shown in Fig. 2, so that the movement of the rod O in either direction will cause the lever Q to turn upon its pivot. As soon as the picker-stick leaves the rod O free to move, the weight of the latch G causes the lever Q to partially turn upon its pivot into the position shown in Fig. 1, so that the latch is left free to again drop behind the end of the rod F after the rod F has been moved endwise for that purpose.

The mechanisms described are secured on the under side of the lay-beam, one at each end of the beam, and on one side of the slots in the ends of the lay, the arm R, and the plate L, extending across the slots in which the picker-sticks move. The picker-stick drives the shuttle with the yarn or filling through the warp on the loom in the usual manner. This mechanism is intended to check the motion of the shuttle as it is driven by the picker-stick across the warp and prevents it from striking against the picker-stick at the other end of the lay with such force as to break the yarn or filling or break the picker-stick, or to cause the picker-stick to hammer against the lay, and thus injure both the lay and stick. When the shuttle strikes the stick M, this stick strikes against the plate L and forces the rod endwise against the tension of the spring J until the latch G drops down behind the end of the rod, as shown in Fig. 1. The tension of the spring J serves gradually to stop the motion of the picker-stick and to prevent it from being injured, as above described. When the shuttle makes its return movement and strikes against the stick M, the stick strikes against the arm R and forces the rod O endwise, thereby causing the lever Q to raise the free end of the latch G and release the rod F.

When the mechanism is in the position shown in Fig. 1 it is set, the picker-stick M being against the plate L, ready to be operated by the mechanism of the loom to throw the shuttle across the lay-beam. As the picker-stick moves into the position shown in dotted lines it strikes the arm R and, through the medium of the mechanism above described, lifts the latch G, which allows the rod F to move into the position shown in Fig. 2. When the shuttle is driven across the lay-beam from the opposite side thereof, it strikes the picker-stick and throws it into the position shown in solid lines in Fig. 1 against the tension of the spring-actuated rod F, and allows the latch G to drop and lock the rod until the picker-stick is again operated by the loom mechanism. One of these mechanisms being at each end of the beam, each picker-stick is checked gradually when struck by the shuttle.

Where no mechanism is used for checking the movement of the shuttle, the picker-sticks are driven against the end of the lay and strike a hard and heavy blow, which is liable to break the yarn or filling and to injure the sticks or lay. Leather straps have been attached to the lay to break the force of the blow; but these straps are constantly breaking and wearing out. This mechanism causes the sticks to receive the blow easily and gradually, beginning with the spring stretched to its full length, and this spring gradually stops the motion of the shuttle and allows the picker-sticks to travel freely and easily, and prevents the stick from rubbing on the side or striking against the plate on the side of the slot in the lay.

Having thus described my invention, I claim—

1. A picker-stick check for looms, comprising a spring-actuated rod with which the stick engages, a catch for locking the said rod, and a tripping device with which the picker-stick also engages for tripping the said rod, substantially as described.

2. A picker-stick check for looms, comprising a spring-actuated rod with which the picker-stick engages at one extreme of its movement, a catch for locking the said rod, and a tripping device at the other extreme of the picker-stick's movement for tripping the said catch and with which the picker-stick engages, substantially as shown.

3. A picker-stick check for looms, comprising a spring-actuated checking-rod with which the picker-stick engages at one extreme of its movement, a latch for locking the said rod, a lever which trips the latch, and a rod which operates the said lever and with which rod the picker-stick check engages at the opposite extreme of its movement, substantially as set forth.

4. The combination of the frame, the spring-actuated rod F, provided with a stop L at one end, the pivoted latch G, the angular lever Q for operating the latch, and the endwise-moving rod O, connected to the lever Q and provided with an arm R, substantially as shown.

5. A picker-stick check for looms, comprising a spring-actuated checking-rod with which the picker-stick engages at one extreme of its movement, a latch for locking the rod, a lever pivoted between its ends and having one end engage the latch for tripping it, and a rod which is engaged by the picker-stick at the other extreme of its movement and which operates the opposite end of the said lever, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD J. ELLIS.

Witnesses:

MOSES FIFIELD, Jr.

ROBERT BYRON TREAT.