No. 653,456. Patented July 10, 1900.

W. McMICHAEL.

LOOM.

(Application filed Oct. 13, 1898.)

(No Model.)

Fig. 1.

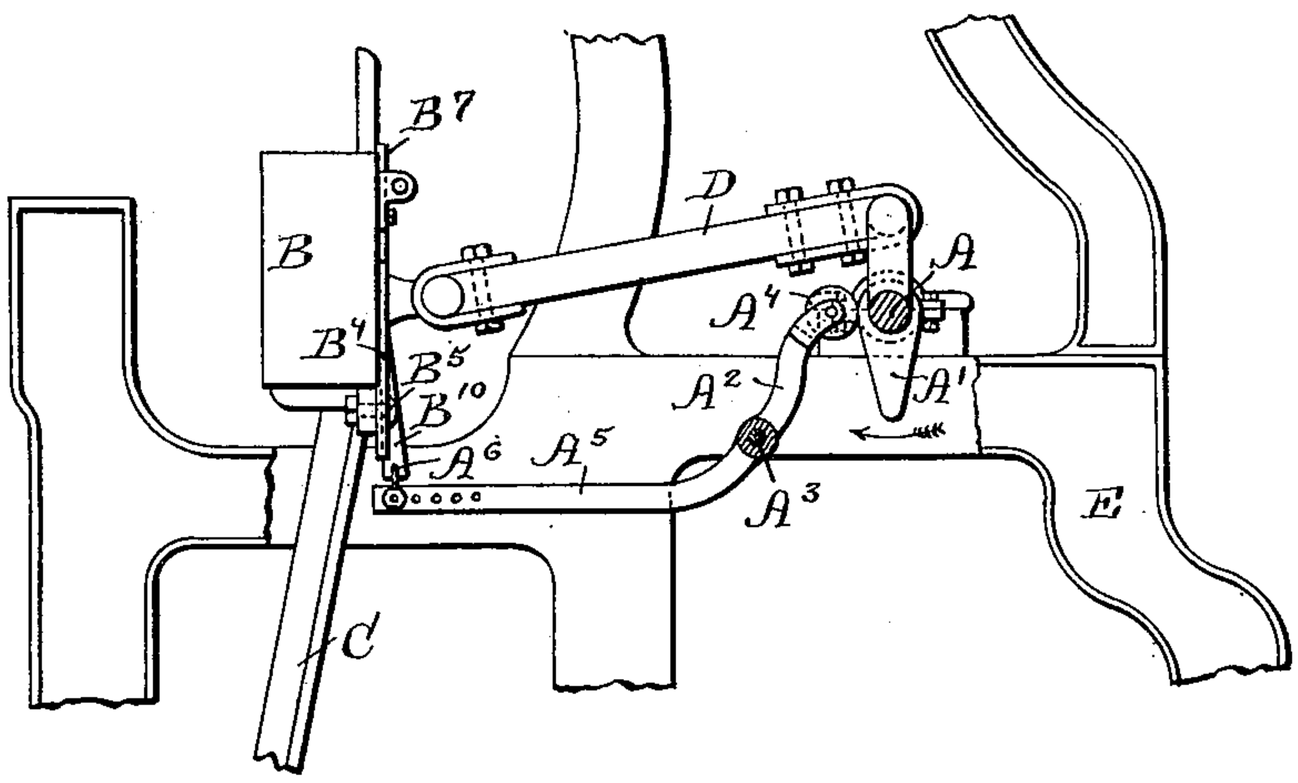
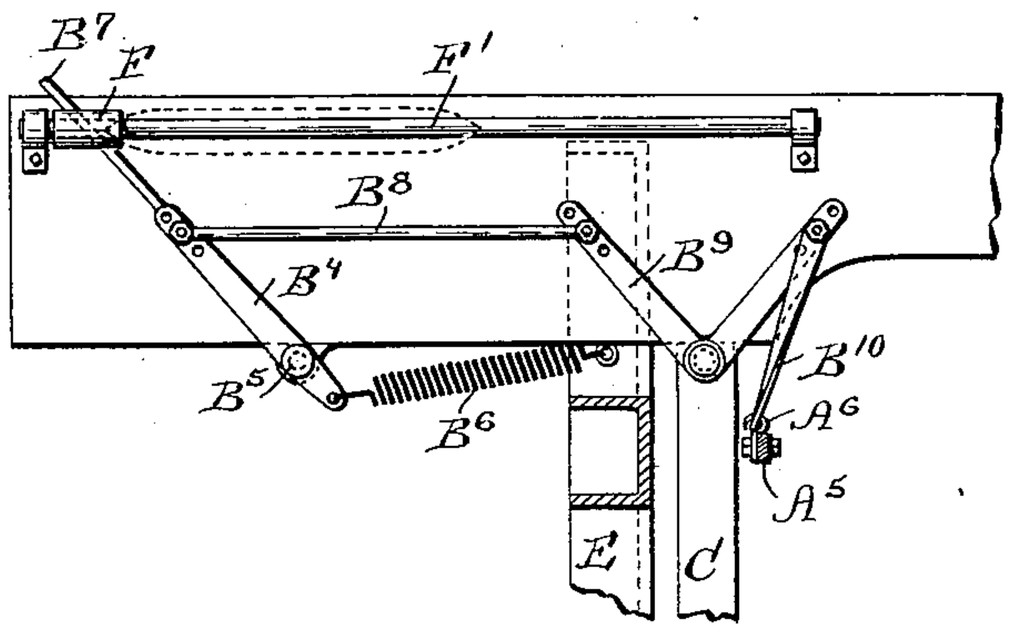


Fig. 2.



WITNESSES:

B. M. Simms.

Chas. H. Luther Jr.

INVENTOR:

William McMichael

by Joseph A. Miller & Co.

Attys.

UNITED STATES PATENT OFFICE.

WILLIAM McMICHAEL, OF WOONSOCKET, RHODE ISLAND.

LOOM.

SPECIFICATION forming part of Letters Patent No. 653,456, dated July 10, 1900.

Application filed October 13, 1898. Serial No. 693,440. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM McMICHAEL, of Woonsocket, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Looms; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improvement in the picker motion of looms, whereby the shuttle is thrown across the open shed of the warp to lay the weft or filling.

The invention consists in the peculiar and novel construction of the picker mechanism operated by a wiper secured to the crank-shaft whereby the shuttle is thrown, as will be more fully set forth hereinafter.

Figure 1 is a side view of part of a loom; and Fig. 2 is a rear view of one end of the lay, showing the picker-stick operated through a bell-crank lever.

Similar marks of reference indicate corresponding parts in both figures.

In the drawings, A indicates the usual crank-shaft of the loom; B, the lay; C, the lay-sword, and D the pitman connection of the lay with the crank-shaft.

E indicates the end frames of the loom.

To each end of the crank-shaft, near the cranks, is secured a wiper A'. These wipers extend from the crank-shaft, both in the same direction, so that at each revolution of the crank-shaft both wiper motions operate to throw the shuttle, if present, as the lay approaches the end of the rearward swing. The lever A^2 is pivoted on a stud A^3, secured to a bracket projecting from one of the end frames at a point below the crank-shaft and forward beyond the path of the crank. The upper end of the lever A^2 is provided with the roller A^4, which bears on the wiper A'. The other and longer part A^5 extends toward the lay and is provided with a series of holes, in one of which the hook A^6 is secured. The picker-stick B^4 is pivoted on the stud B^5, connected with the lay B. The lower end of the picker-stick B^4 is connected with the lay by the spiral spring B^6. The upper end B^7 of the picker-stick extends through the picker F, which, sliding on the picker-rod F', extends, as usual, into the shuttle-box and operates the shuttle. The picker-stick is connected by the rod B^8 with one arm of the bell-crank B^9, pivotally supported on the lay B, and the other arm of the bell-crank lever is connected by the flexible strap B^{10} with the end A^5 of the lever A^2, as is shown in Figs. 1 and 2 of the drawings.

In Fig. 1 the lay is shown in the center of its reciprocation moving toward the rear, while the wiper A' moves toward the front of the loom. At this point the wiper acts on the lever A^2 and the roller A^4 follows the inclined face of the wiper and is moved upward with increasing rapidity. This movement is imparted to the end A^5 of the lever A^2 through about double the distance, and by it the picker, and the shuttle, if present, is started slowly with rapidly-increasing velocity to throw the shuttle through the shed across the loom. The rapidly-increasing velocity in the throwing of the shuttle by this device is an important feature in the operation of my improved picker motion.

The wiper A' may be secured to the crank-shaft to operate the lever A^2 at any desired point, so that by adjusting the wiper the shuttle may be thrown before the lay reaches the limit of its backward movement, or the wiper may be secured on the crank-shaft so that the lever A^2 will exert the final quick movement and operate the picker to send the shuttle through the shed of the warp at the instant the lay reaches the extreme limit of its outward movement. This opportunity of adjustment by which the throw of the shuttle may be regulated is an important feature of my invention.

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

In a loom, the combination with the lay, the crank-shaft, the connections between the crank-shaft and the lay, and the picker, of the wiper A' secured to the crank-shaft, the lever A^2 pivotally supported in front of and below the crank-shaft the short arm of said lever bearing on the wiper, the picker-stick B^4 pivotally connected with the lay, the bell-crank lever B^9 pivoted to the lay, the rod B^8 connecting the bell-crank lever with the picker-stick, the flexible strap B^{10} connecting the

bell-crank lever with the long arm A^5 of the lever A^2, and the resilient coiled spring B^6 connecting the heel of the picker-stick with the lay; whereby, at each rotation of the crank-shaft, the picker motions on the ends of the lay are operated to throw the shuttle when present, as described.

In witness whereof I have hereunto set my hand.

WILLIAM McMICHAEL.

Witnesses:
JOSEPH A. MILLER, Jr.,
B. M. SIMMS.