

(No Model.)

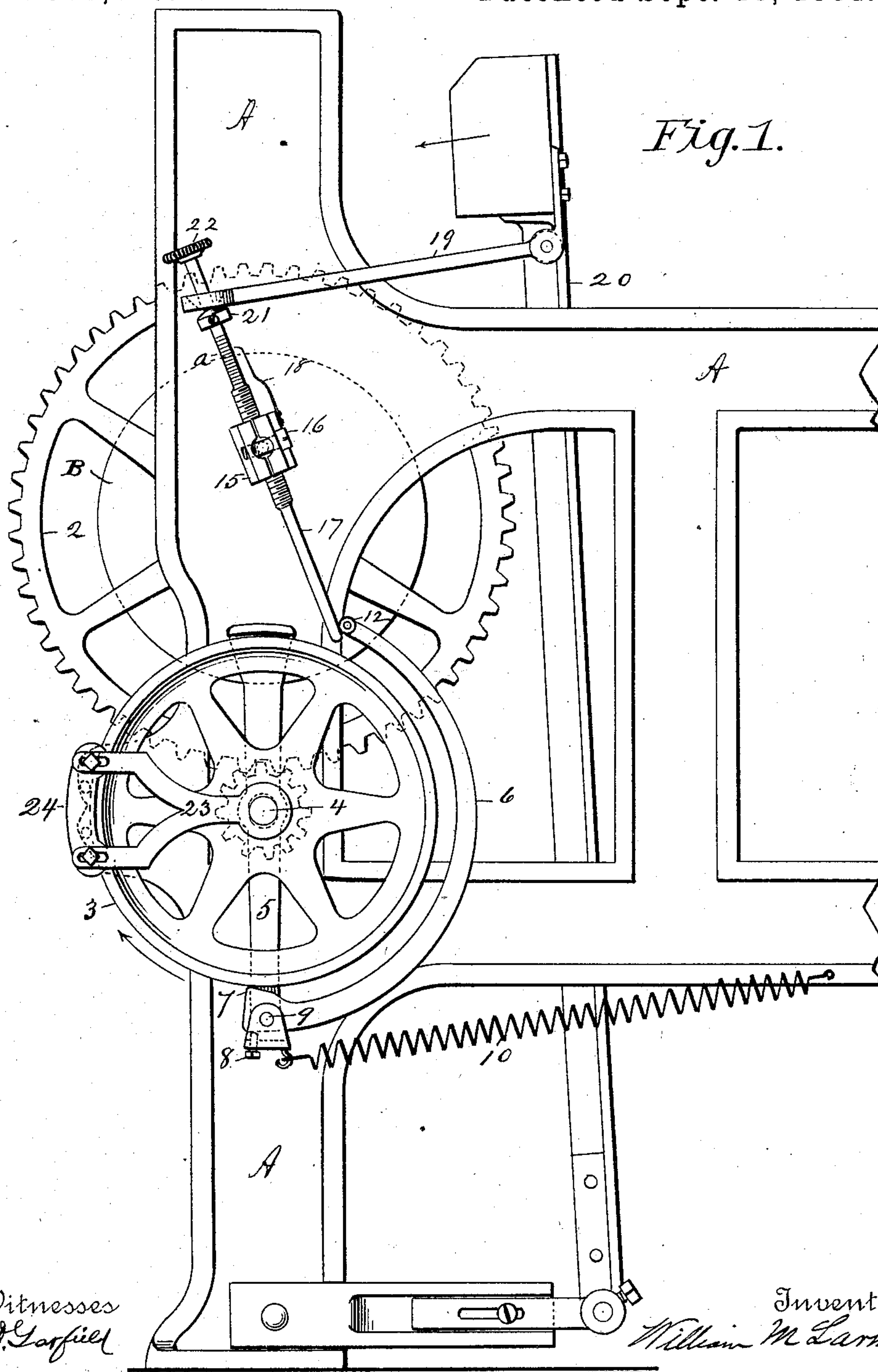
2 Sheets—Sheet 1..

W. M. LARNED.

## TAKE-UP MECHANISM FOR LOOMS.

No. 389,846.

Patented Sept. 18, 1888.



Witnesses  
J. D. Garfield  
Wm H Chapin

Inventor  
William M Larned

By His Attorneys *Chapin &*

(No Model.)

2 Sheets—Sheet 2.

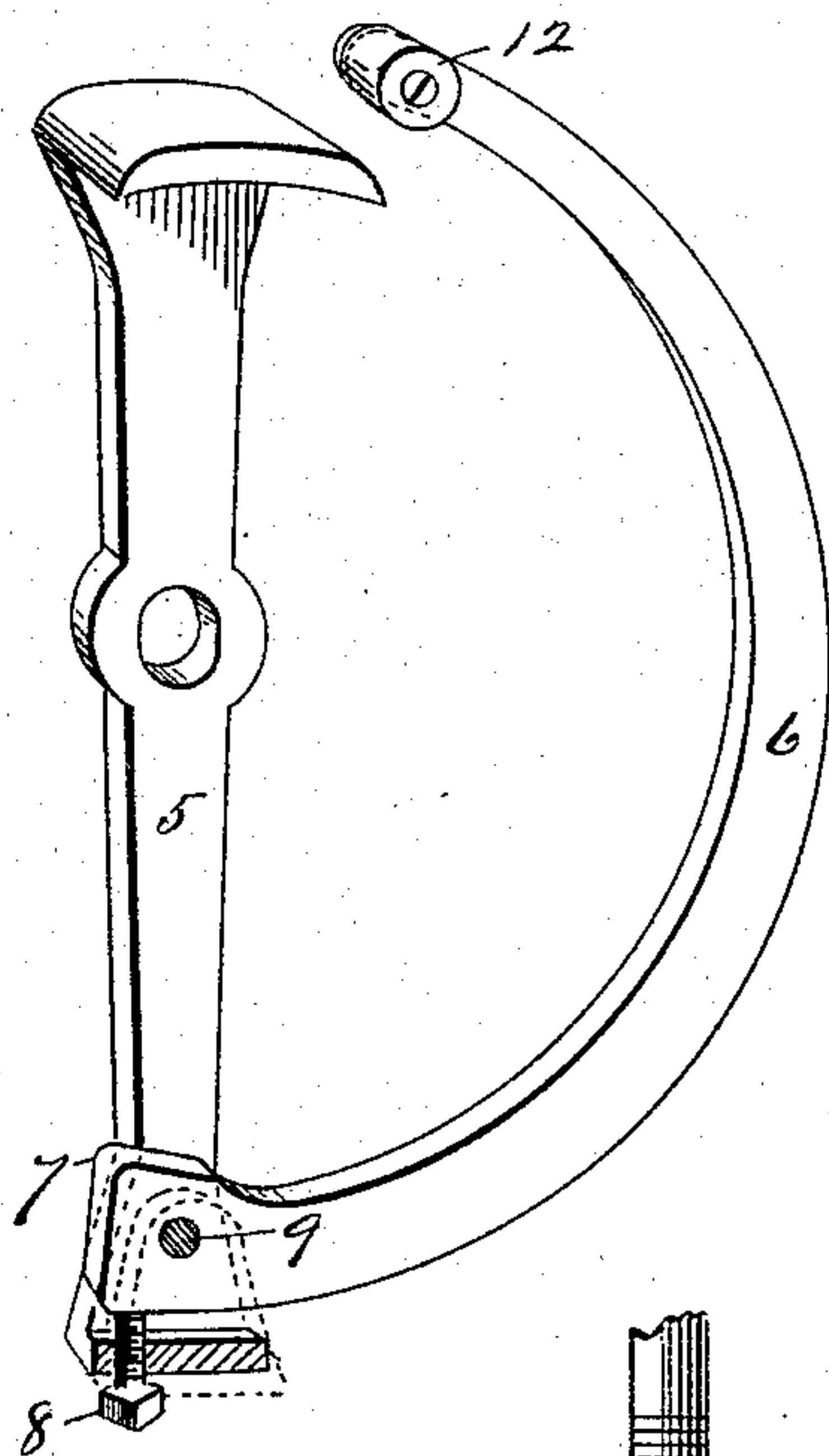
W. M. LARNED.

TAKE-UP MECHANISM FOR LOOMS.

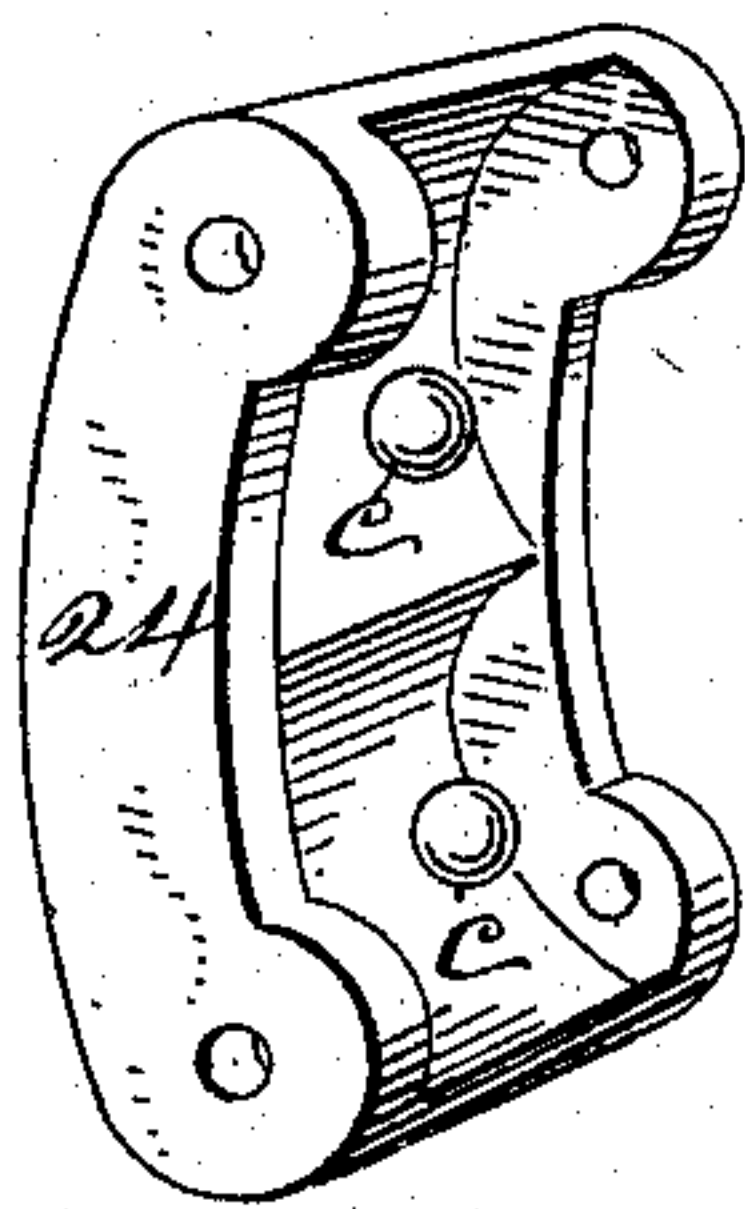
No. 389,846.

Patented Sept. 18, 1888.

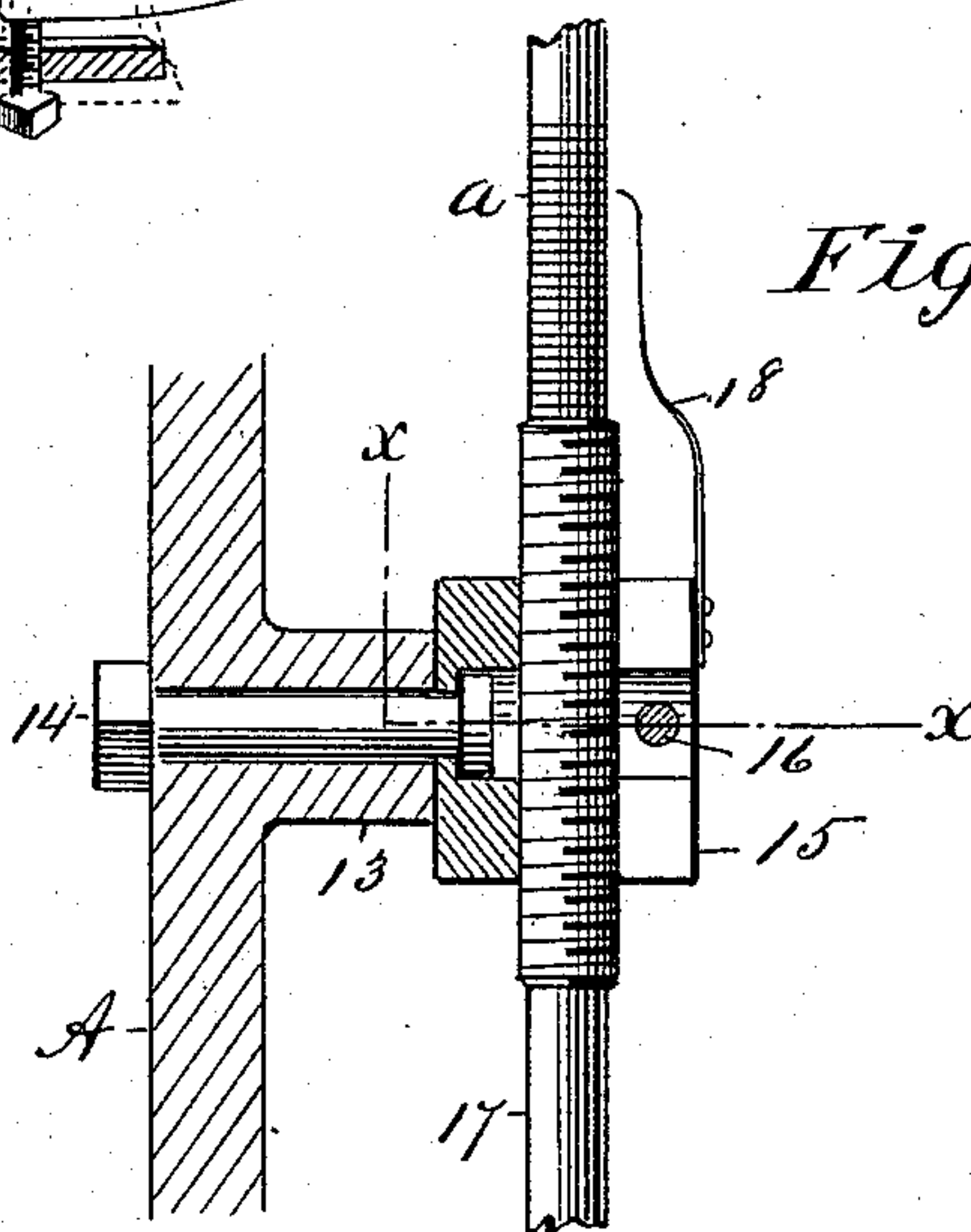
*Fig. 2.*



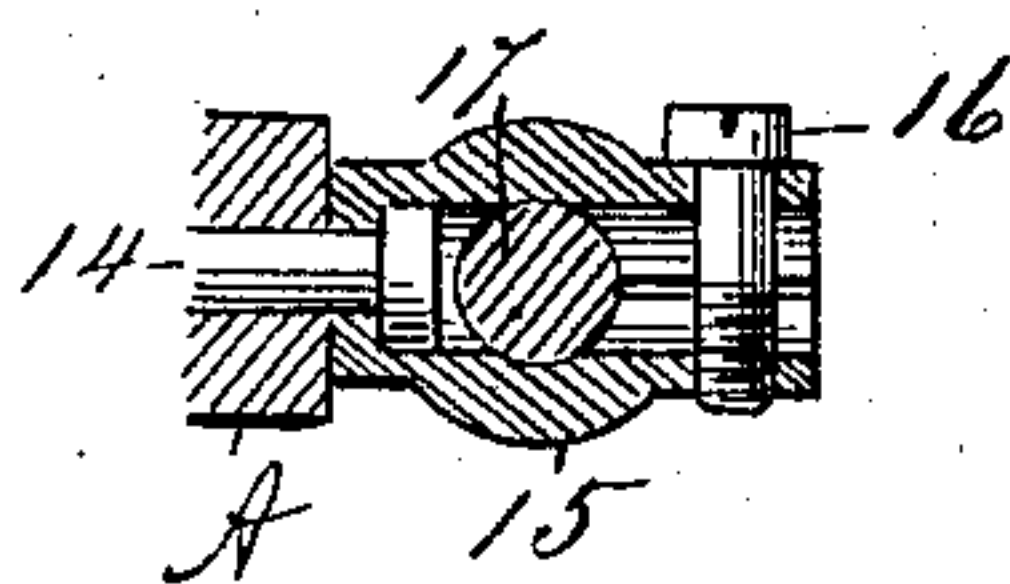
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses  
*J. D. Garfield*  
*Wm. H. Chapin*

Inventor  
*William M. Larned*

By his Attorneys *Chapin*



# UNITED STATES PATENT OFFICE.

WILLIAM M. LARNED, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO AMAZIAH S. WARNER AND ALLEN L. SKINNER, OF SAME PLACE.

## TAKE-UP MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 389,846, dated September 18, 1888.

Application filed October 17, 1887. Serial No. 252,587. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM M. LARNED, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Take-Up Mechanisms for Looms, of which the following is a specification.

This invention relates to looms, the object being to provide an improved take-up motion for the cloth-beams thereof; and the invention consists in the peculiar construction and arrangement of the devices for operating said take-up motion, all as hereinafter fully described, and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of a portion of the frame of a loom having applied thereto take-up-motion mechanism for rotating the cloth-beam intermittently embodying my improvements, said figure showing one end of said beam and a portion of the lay mechanism of the loom with which said take-up-motion devices are connected. Figs. 2 to 5, inclusive, illustrate detail parts of the said take-up mechanism, hereinafter fully described.

In the drawings, A indicates a portion of the frame of the loom on one side thereof and at the end in which the cloth-beam B is supported, and 2 indicates a gear attached to one end of said beam. A pulley, 3, having a pinion, 25, on its hub, (shown in dotted lines in Fig. 1,) which engages with said gear 2, is capable of a rotary motion on a stud, 4, projecting from the side of the loom-frame. On said stud 4, or on the hub of the pulley 3 at the rear side of the latter, is hung a bar, 5, which is capable of a vibratory movement in the rear of said pulley. A curved lever, 6, is pivoted by its lower end to one end of said bar 5, said lever 6 having a boss or projection, 7, on its lower pivoted end, which is adapted to engage intermittently with the periphery of said pulley 3. An adjusting-screw, 8, is placed in the lower end of said bar 5, and is adapted to be screwed against the under side of the lower end of the lever 6, to one side of its pivot-point

9, to provide means for adjusting the said lower end of the lever 6, so that it shall properly act to engage with the periphery of the pulley 3, as below described. A retracting-spring, 10, has one end connected to the lower end of said vibratory arm 5 and its other end connected to the frame of the loom. The said curved lever 6 extends partly around the periphery of the pulley 3, as shown in Fig. 1, and has a friction-roll, 12, thereon.

In Fig. 4 is shown a section of the frame, A, of the loom, on which is a laterally-projecting stud, 13, through which a bolt, 14, passes, having a head thereon which engages with a clamp-nut, 15, said clamp-nut being shown in section in Figs. 4 and 5 and in front elevation in Fig. 1. A clamp-screw, 16, passing transversely through said nut and through a slot therein, serves to contract or enlarge the screwed passage through the nut. A vibratory lever, 17, having a screw-thread engagement with said nut 15, is supported in the latter, said lever and nut being capable together of a vibratory motion on the end of said bolt 14. Said lever 17 has a series of graduating circular lines, *a*, formed thereon, as shown in Figs. 1 and 4, and a pointer, 18, is fixed by one end to one side of the nut 15, and its free end terminates opposite the side of the lever 17 and near said graduating circular lines.

The lever 17 is adjustable endwise in the nut 15, for the purpose below described, and said pointer 18 serves to indicate to the operator the degree of said adjustment. The upper end of the lever 17 passes through a suitably-formed perforation in a connecting-rod, 19, near one end of the latter, and the opposite end of said connecting-rod is pivotally connected to one end of the lay-frame 20. A collar, 21, on lever 17 supports the end of the connecting-rod 19 in proper position thereon, a thumb-nut, 22, on the extreme upper end of lever 17 serving to retain the end of the connecting-rod 19 on the lever, the lower end of which extends a little below and opposite the end of said curved lever 6 and engages with the said friction-roll 12 thereon, the spring 10 serving to hold the upper end of lever 6 con-



stantly in engagement with the lower end of the lever 17. Two arms, 23, (one of which is shown in Fig. 1,) each having bifurcated ends, are fixed on said stud 4 on frame A, one in front of and one at the rear side of the pulley 3, and they extend laterally beyond the periphery of said pulley. The bifurcated ends of said arms are slotted, as shown. A ball-case, 24, of hardened metal, is supported between the outer ends of said two arms 23 by bolts passing through said slots in the latter, whereby the ball-case is supported near the periphery of the pulley 3 and is adjustable toward and from said periphery to cause the metal balls *c*, which are placed in curved recesses in the ball-case, as shown, to be brought into proper position relative to the periphery of pulley 3 as will insure their engagement between said periphery and the side of the ball-case opposite the latter, and thereby prevent the pulley 3 from turning backward, or in a direction opposite to that indicated by the arrow in Fig. 1, under the strain of the cloth while the latter has been wound on the cloth-beam.

The operation of the above-described take-up devices is as follows: The usual vibratory motion of the lay-frame 20, by its connection, as described, with the lever 17, imparts a like motion to the latter-named lever, the length of whose arms on opposite sides of its fulcrum, the clamp-nut 15, is made variable by means of its said endwise adjustment in said nut. The purpose of said adjustment is to provide for imparting more or less rotary take-up motion to the pulley 3, according to the grade of cloth which is being woven. After the lever 17 has been adjusted to the required position in nut 15, the latter is clamped on the lever by turning the screw 16 so that said lever is rigidly held in place. When said frame 20 swings backward in the direction the reverse of that indicated by the arrow at the upper end of said frame, the lower end of lever 17 inclines to swing away from the end of lever 6; but spring 10 swings the bar 5 and causes lever 6 to follow the end of lever 17, the boss 7 on the lower end of lever 6 not engaging with the pulley 3 during this movement of the bar. When, however, the motion of the lower end of lever 17 is reversed, it engages the end of lever 6, swings it slightly on the end of bar 5, and thus causes the boss 7 thereon to engage with pulley 3, and the continued movement of lever 17 causes the lower end of bar 5 and of lever 6 to swing in the direction indicated by the arrow opposite the periphery of pulley 3 and to rotate the pulley 3 and its pinion in the same

direction, thereby causing the gear 2 and the cloth-beam to which it is attached to rotate in the opposite direction. When lever 6 and the bar 5 retire for a fresh engagement with pulley 3, the balls *c* in the ball-case 24 drop and engage between the inner side of the latter and the periphery of pulley 3 and prevent any backward motion from the strain of cloth on the beam of the loom. By the said adjustment of lever 17 in the nut 15 the required degree of vibratory motion is given to the lever 6 to adapt its motions to properly taking up more or less of the woven fabric, according to the number of picks per inch which it contains.

What I claim as my invention is—

1. The cloth-beam of a loom, the pulley 3, having a geared connection with said beam, the bar 5, capable of a vibratory motion at the side of said pulley, a spring connected to one end of said bar and a fixed part of the loom, the lever 6, pivoted at one end of said bar and capable of engaging by one end with said pulley, the vibratory lever 17, having one end engaging with said lever 6, and the lay-frame 20, connected with said lever 17, combined and operating substantially as set forth.

2. In combination with the cloth-beam of a loom, the clamp-nut 15, capable of an oscillating motion on the loom-frame, the lever 17, having a screw-connection with said nut and adjustable longitudinally therein, the lay-frame 20, connected to one end of said lever, the freely-vibrating bar 5, the lever 6, pivoted to one end of said bar and engaging by its opposite end with said lever 17, a screw-bolt, 8, at the end of bar 5, engaging with said lever 6 to one side of its pivot-point, a spring connecting said bar with a fixed part of the machine, and the pulley 3, with which lever 6 engages, having a geared connection with the cloth-beam, substantially as set forth.

3. The cloth-beam of the loom, and the pulley 3, having a geared engagement with said beam, combined with the arms 23, the ball-case 24, held by said arms holding one or more balls *c*, in proximity to the periphery of said pulley, the bar 5, the spring 10, connected to one end of said bar, the lever 6, pivoted to said bar 5, the lay-frame 20, and the vibratory lever 17, connected to said frame and engaging with the end of said lever 6, whereby the latter and said bar 5 are given a vibratory motion, substantially as set forth.

WILLIAM M. LARNED.

Witnesses:

H. A. CHAPIN,  
G. M. CHAMBERLAIN.