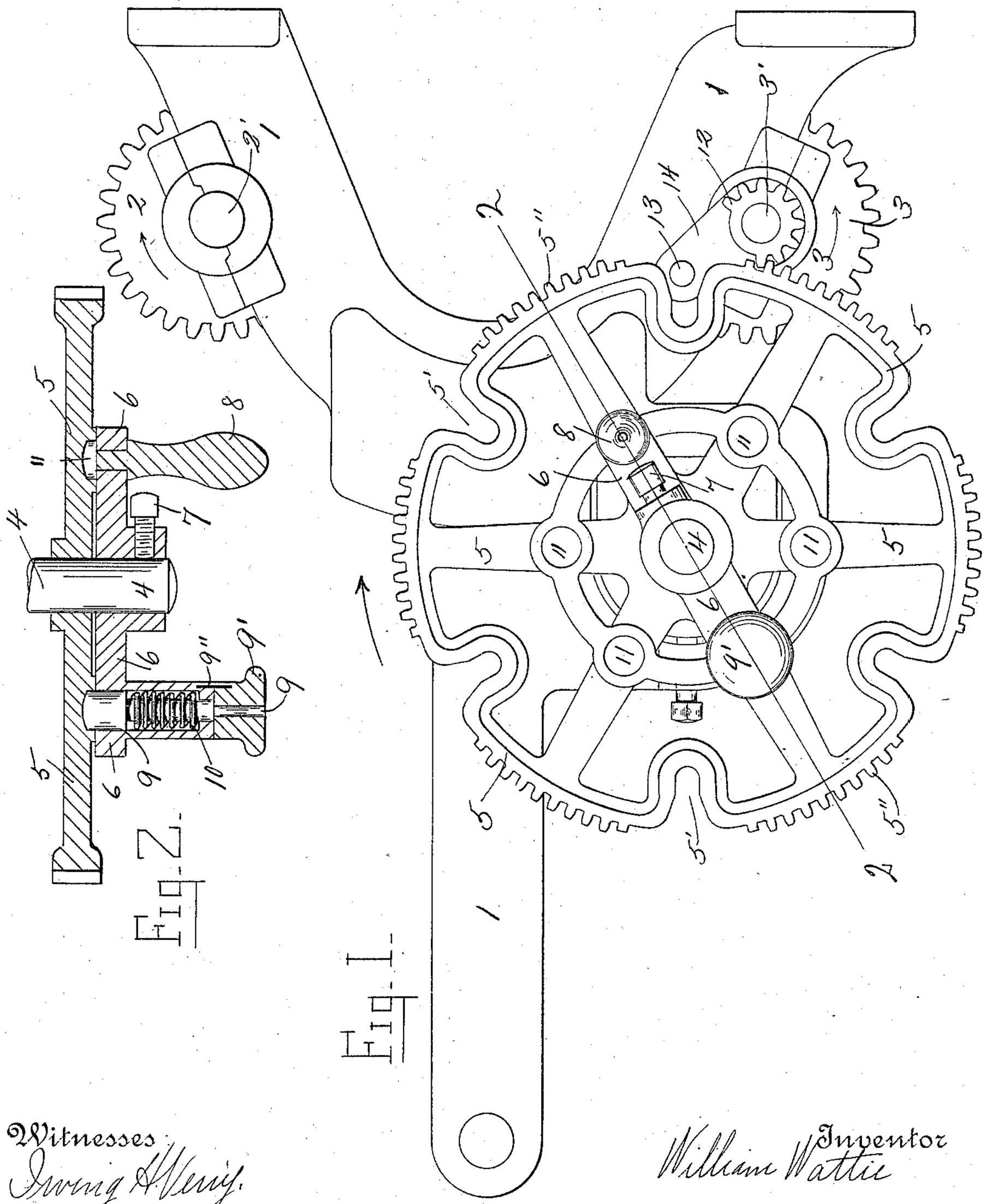
(No Model.)

W. WATTIE.

PATTERN MECHANISM FOR LOOMS.

No. 533,257. Patented Jan. 29, 1895.



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UNITED STATES PATENT OFFICE.

WILLIAM WATTIE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO THE KNOWLES LOOM WORKS, OF SAME PLACE.

PATTERN MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 533,257, dated January 29, 1895.

Application filed October 26, 1894. Serial No. 527,027. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WATTIE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Pattern Mechanism for Looms; and I do hereby declare that the following is a full, clear, and exact description thereof, which, in connection with the drawings making a part of this specification, will enable others skilled in the art to which my invention belongs to make and use the same.

My invention relates to pattern mechanism for looms, and more particularly the pattern mechanism of the well known Knowles loom shown and described in the United States Reissue Letters Patent No. 7,784, of July 3, 1877.

The object of my invention is to provide mechanism for communicating a continuous fast and slow motion to the pattern chain cylinder, and to simplify as much as possible, and reduce the number of parts of such mechanism.

In my previous application for Letters Patent, filed May 18, 1894, Serial No. 511,654, to which reference is hereby made, I have shown and described my improvements for communicating a continuous fast and slow motion to the pattern chain cylinder, combined with a system of reverse gears, to automatically reverse the pattern cylinder and chain.

In my present improvement, I do away with the system of reverse gears, and drive the pattern cylinder gear directly from the shaft of the head motion cylinder gear, by a pinion and pin fast on said shaft, and I provide for turning the pattern cylinder and chain in a reverse direction, by mounting the pattern cylinder gear loose on the pattern cylinder shaft, and combining therewith a snap handle, fast on said shaft, and provided with a spring actuated pin which engages holes or recesses in the pattern cylinder gear, to cause said gear to revolve with the pattern cylinder shaft.

My invention consists in certain novel features of construction and operation of my improvements in pattern mechanism for looms, as will be hereinafter fully described, and the nature thereof indicated by the claims.

I have shown in the drawings a detached portion of the head of the Knowles loom, above referred to, sufficient to illustrate the nature of my improvements applied thereto.

Referring to the drawings:—Figure 1 is a front elevation of a portion of the head of said Knowles loom embodying my improvements, and Fig. 2 is a sectional detail, through the pattern cylinder gear and the snap handle, taken on line 2, 2, Fig. 1.

In the accompanying drawings, 1 is the head frame, 2 is the upper cylinder gear, and 3 the lower cylinder gear, the shafts 2′ and 3′ of which are journaled in boxes on the head frame 1, and 4 is the pattern cylinder shaft, journaled in the frame 1, in the usual way. On the front end of said shaft 4, is loosely mounted the pattern cylinder gear 5, which is provided with a series of equidistant notches 5′, in this instance six notches, and with gear teeth 5″ on the periphery of the gear, intermediate the notches. The teeth 5″ are left off for a predetermined distance on each side of the notches 5′, and these portions of the periphery of the gear, as well as the notched portions, are plain, and the outer ends of the notches 5′ are beveled or made flaring, to allow of the ready admission and withdrawal of the driving pin.

On the end of the cylinder gear shaft 4, outside of the cylinder gear 5, is a snap handle bar 6, secured to said shaft, in this instance by a screw 7. The snap handle bar 6 is provided with a handle 8, and also with a spring actuated pin 9, mounted and adapted to move out or in, in a boss 6′, on the bar 6. The pin 9 has an enlarged head 9′ and is actuated by a spiral spring 10, inclosed within a chamber in the boss 6′. The inner end of the pin 9 is adapted to extend into holes or recesses 11 in the arms of the pattern cylinder gear 5. The head 9′ is provided with a pin 9″ fast therein, which extends loosely into a hole in the end of the boss 6′, and when the pin 9 is withdrawn, it may be turned so as to cause the end of the pin 9″ to bear against the end of the boss 6′, to hold the pin 9 out of engagement with the holes 11.

If preferred the pin 9″ may be fast in the boss 6′, and extend loosely into a hole in the head 9′.

It will be seen that by withdrawing the pin 9, so that the inner end thereof will not engage with the holes or recesses 11 in the cylinder gear 5, that the pattern cylinder shaft 4 may be turned by the snap handle bar 6, to turn the pattern cylinder and chain, without turning the cylinder gear 5.

The pattern cylinder gear 5 is driven directly from the shaft 3′ of the lower cylinder gear 3, by a pinion 12 fast thereon, and meshing with the gear teeth 5″ on the pattern cylinder gear 5, to communicate a slow motion thereto, and by a pin 13 on an arm or plate 14, secured to, or made integral with the pinion 12, which pin engages the notches 5′ in the cylinder gear 5, to communicate a fast motion thereto. It will thus be seen that by means of the pin 13 and the pinion 12, a continuous fast and slow motion is communicated to the pattern cylinder gear 5, and in this instance from the shaft of the lower cylinder gear.

When it is desired to disconnect the pattern cylinder gear 5, so that the pattern cylinder shaft 4, and pattern chain, may be turned without turning said gear, the spring actuated pin 9 is withdrawn from engagement with the cylinder gear 5, and the pattern cylinder shaft 4 turned by means of the handle 8, on the snap handle bar 6.

My improvements in pattern mechanism for looms, shown and described in this application, are designed to be used on ribbon, and other narrow ware looms, in which reverse gears are not used.

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

1. In a loom, the combination with the pattern cylinder gear, provided with a series of notches in its periphery, and teeth thereon intermediate of the notches, of the head motion cylinder gear, and a pinion fast on the shaft thereof, which pinion engages the teeth on the periphery of the pattern cylinder gear, to communicate a slow motion thereto, and a pin which moves with said pinion, and engages the notches in said pattern cylinder gear, to communicate a fast motion thereto, substantially as shown and described.

2. In a loom, the combination with the pattern cylinder gear loose on the pattern cylinder shaft, and provided with a series of notches in its periphery, and teeth thereon intermediate said notches, and the head motion cylinder gear, and a pinion fast on the shaft thereof, which pinion engages the teeth on the periphery of the pattern cylinder gear, to communicate a slow motion thereto, and a pin which moves with said pinion, and engages the notches in said pattern cylinder gear, to communicate a fast motion thereto, of a snap handle bar fast on the pattern cylinder shaft, and provided with a spring actuated pin which engages holes or recesses in the pattern cylinder gear, to cause the same to revolve with the shaft, substantially as shown and described.

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