

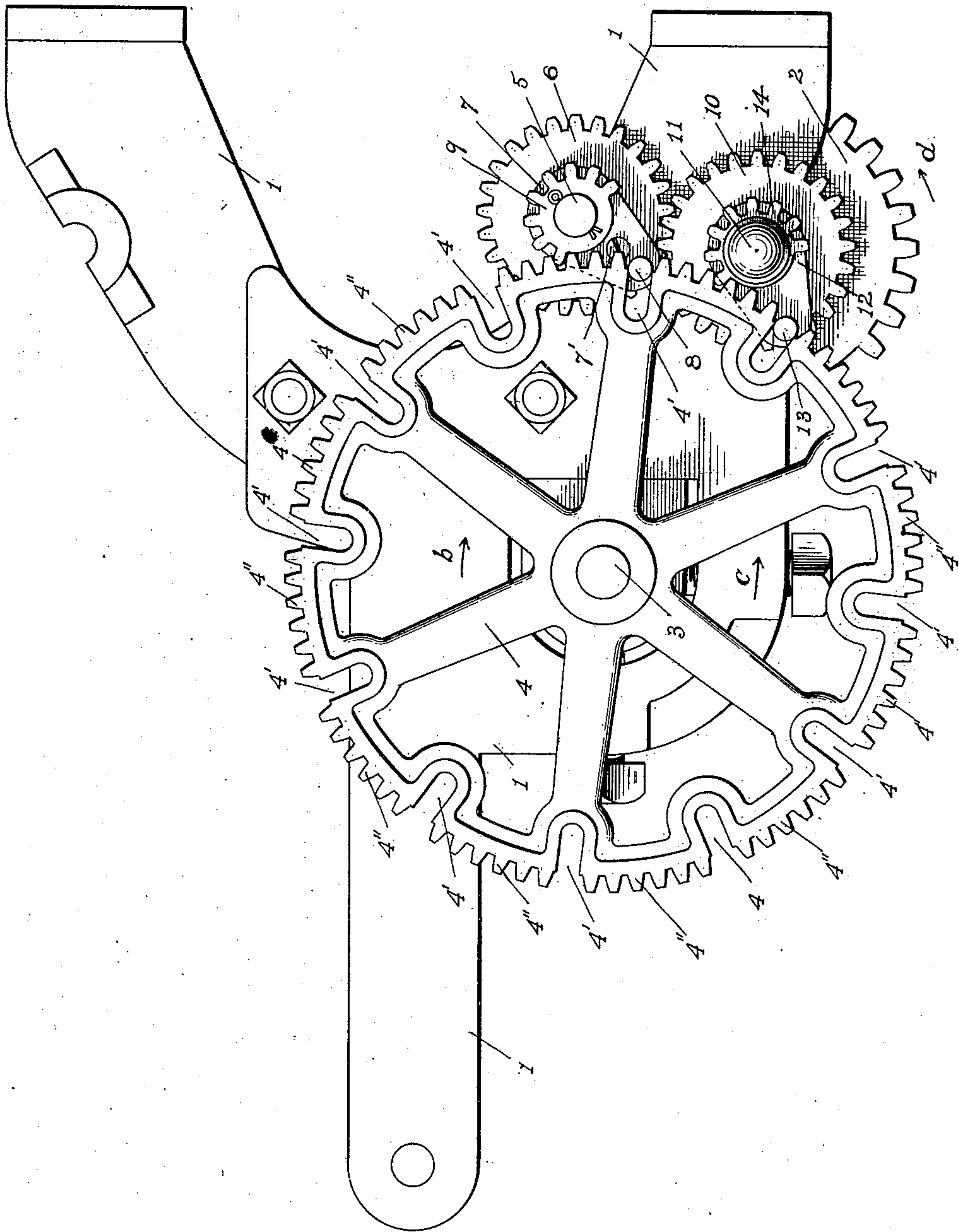
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C. ALVORD.
PATTERN MECHANISM FOR LOOMS.

(Application filed May 15, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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PATTERN MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 713,042, dated November 4, 1902.

Application filed May 15, 1902. Serial No. 107,394. (No model.)

To all whom it may concern:

Be it known that I, CLINTON ALVORD, 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, of which the following is a specification.

My invention relates to pattern mechanism for looms, and more particularly to an improved construction of the pattern mechanism for communicating a continuous fast-and-slow motion to the pattern-cylinder shaft and pattern-cylinder shown and described in United States Letters Patent No. 533,256, of January 29, 1895.

The object of my invention is to improve upon the construction of the pattern mechanism shown and described in said Letters Patent, and more particularly to simplify the system of the gears for rotating the gear on the pattern-chain cylinder either in a forward or reverse direction and do away with the intermediate set of gears and provide an additional mutilated pinion and driving-pin for reversing the pattern-cylinder gear.

My invention consists in certain novel features of construction of my improvements, as will be hereinafter fully described.

I have shown in the drawing a detached portion of the head of a loom similar to what is shown in the drawing of Letters Patent No. 533,256, above referred to, with my improvements applied thereto.

Referring to the drawing, a front elevation of a portion of the head of a loom with my improvements applied thereto is shown.

In the accompanying drawing, 1 is a portion of the head-frame, on which the several parts of my mechanism are supported.

2 is the lower cylinder-gear, journaled in the lower portion of the head-frame 1 in the usual way.

3 is the pattern-cylinder shaft, journaled in the frame 1 in the usual way.

4 is the pattern-cylinder gear, fast on the front end of the shaft 3. The pattern-cylinder gear 4 has on its periphery a series of recesses or open-end slots 4'—in this instance twelve in number—at equal distances apart.

Gear-teeth 4''—in this instance six in number—are formed on the periphery of the gear 4 between each pair of recesses 4'. The teeth 4'' extend substantially to the outer edges of the recesses 4', which edges are preferably square-cornered, so as to leave the open end of the recess of substantially the same width as the diameter of the driving-pins 8 and 13, hereinafter described. The inner ends of the recesses 4' are curved or rounded.

On a stud 5, fast in the frame 1, is loosely mounted a gear 6. Also mounted on the stud 5 is a plate 7, having a driving-pin 8 thereon. The plate 7 is secured to the gear 6 to rotate with it—in this instance by a screw 7'. The plate 7 has a mutilated pinion 9 secured thereto or made integral therewith, the teeth of which mesh with the teeth 4'' on the gear 4 to communicate a slow motion to said gear 4. The driving-pin 8 on the plate 7 enters the recesses 4' in the gear 4 to communicate a fast motion to said gear 4. Meshing with the gear 6 is a corresponding gear 10, which is loosely mounted on the extended journal of the lower cylinder-gear 2 and connected therewith to rotate with said lower cylinder-gear by the sliding key 11 in the ordinary way. Also loosely mounted on the extended journal of the lower cylinder-gear 2 is a plate 12, having a driving-pin 13 thereon and a mutilated pinion 14 secured thereto or made integral therewith, the teeth of which mesh with the teeth 4'' on the gear 4 to communicate a slow motion to said gear 4. The driving-pin 13 on the plate 12 enters the recesses 4' on the gear 4 to communicate a fast motion to said gear 4. The plate 12 and mutilated pinion 14 are connected with the journal of the lower cylinder-gear 2 to rotate with it by the sliding key 11, which in this instance is in its outer position when the plate 12 and pinion 14 rotate with the journal of the cylinder-gear 2.

The operation of my improvements above described will be readily understood by those skilled in the art. In the ordinary operation of the loom the revolution of the cylinder-gear 2 in the direction of arrow *d* will through the sliding key 11 cause the plate 12, carrying the driving-pin 13 and the mutilated pinion 14, to rotate with said gear 2 and

through pin 13 and pinion 14 communicate a continuous fast-and-slow motion to the pattern-cylinder gear 4 in a forward direction or in the direction of arrow *b*. The engagement of the teeth 4" on the gear 4 with the teeth on the mutilated pinion 9 will rotate said pinion and also the gear 6, loosely mounted on the stud 5, and the gear 10, loose on the journal of the cylinder-gear 2. In case it is desired to reverse the movement of the pattern-cylinder gear 4 or move it in the opposite direction, as indicated by arrow *c*, the sliding key 11 is pushed in to disconnect the plate 12 and the mutilated pinion 14 from the journal of the cylinder-gear 2 and leave them loose on said journal and connect the gear 10 with said journal to cause it to rotate with the cylinder-gear 2. The revolution of the gear 10 will rotate the upper gear 6, with which it meshes, and with it the plate 7 and pinion 9, and cause the pattern-cylinder gear 4 to rotate in the reverse direction or in the direction of arrow *c*.

The advantages of my improvements will be readily appreciated by those skilled in the art. By providing an additional plate and driving-pin and mutilated pinion, by means of which the pattern-cylinder gear is moved in a reverse direction, I do away with the gears intermediate the upper gear 6 and lower gear 10, which intermediate gears are employed in the construction shown in Letters Patent No. 533,256, above referred to.

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

1. In the pattern mechanism of a loom, the combination with the pattern-cylinder gear

having a series of recesses or open-end slots in its periphery, and teeth on its periphery intermediate said recesses, and the head-motion cylinder-gear, and a pinion and driving-pin, and means for rotating the same to communicate a fast-and-slow motion to the pattern-cylinder gear in one direction, of a second pinion and driving-pin, and means for rotating the same to communicate a fast-and-slow motion to the pattern-cylinder gear in the opposite direction, substantially as shown and described.

2. In the pattern mechanism of a loom, the combination with the pattern-cylinder gear having a series of recesses or open-end slots in its periphery, and teeth on its periphery intermediate said recesses, and the head-motion cylinder-gear, of a system of gears intermediate said pattern-cylinder gear and said head-motion cylinder-gear, said system comprising two loosely-mounted gears meshing with each other, one of said gears having a driving-pin and pinion attached thereto to rotate the pattern-cylinder gear in one direction, and the other of said gears connected by a sliding key with the rotating shaft or journal of the cylinder-gear, to act as a driver for the first-mentioned gear and driving-pin and pinion, and a second driving-pin and pinion loosely mounted and connected by a sliding key with the rotating shaft or journal to rotate the pattern-cylinder gear in the opposite direction, substantially as shown and described.

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