

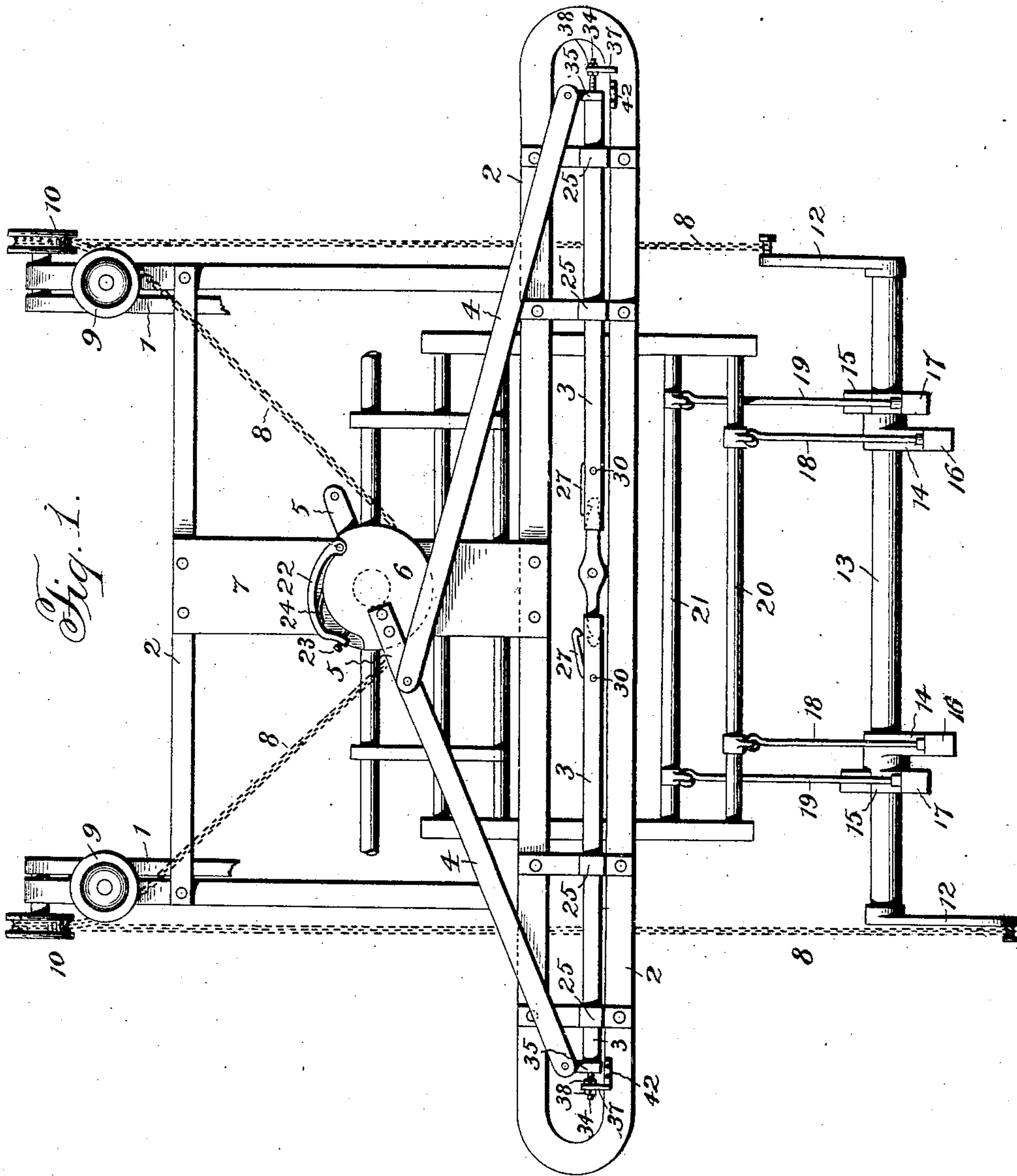
No. 785,958.

PATENTED MAR. 28, 1905.

W. F. KINTZING.
SHUTTLE MOTION FOR LOOMS.

APPLICATION FILED MAR. 2, 1903.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

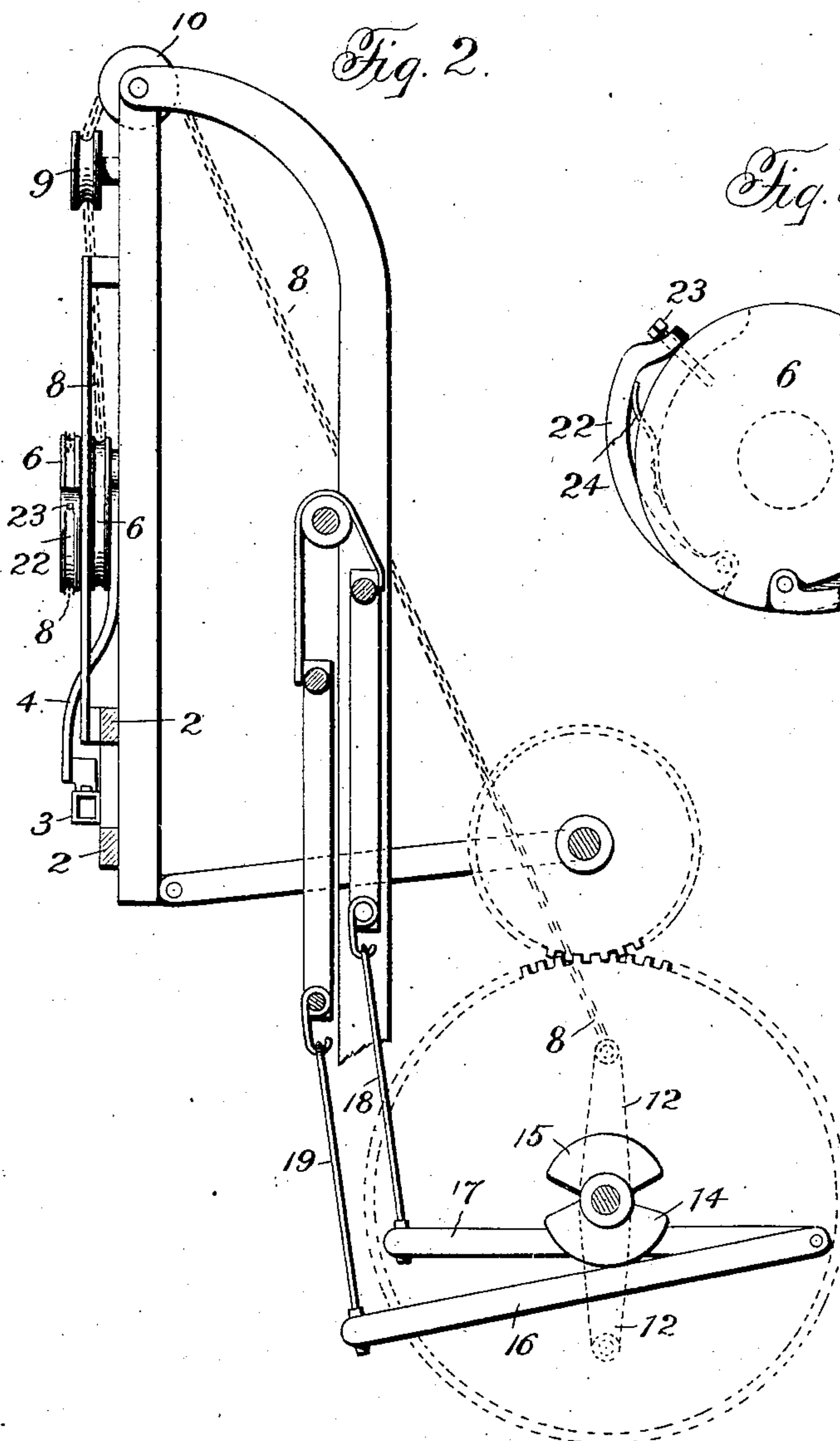


Fig. 3.

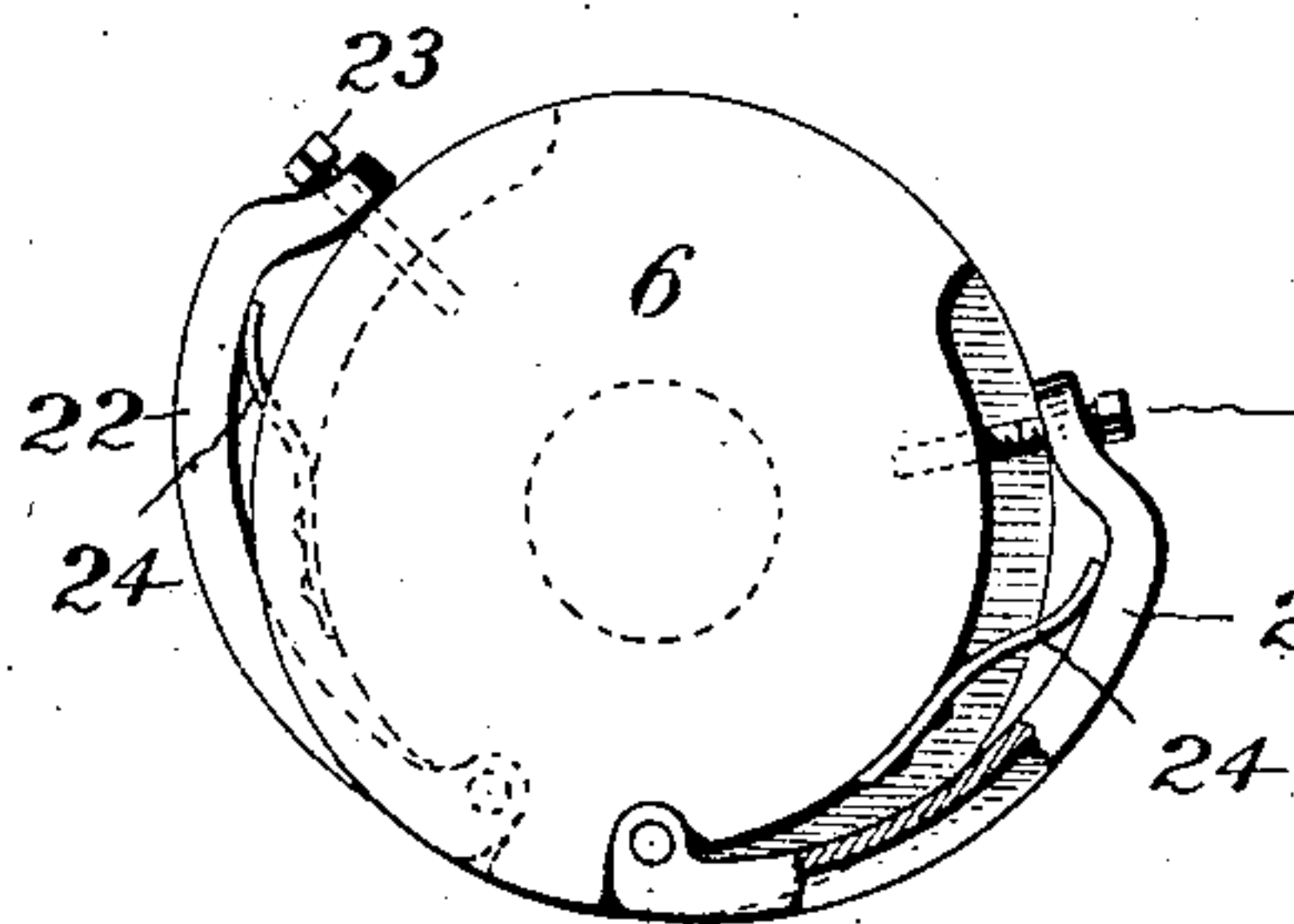


Fig. 4.

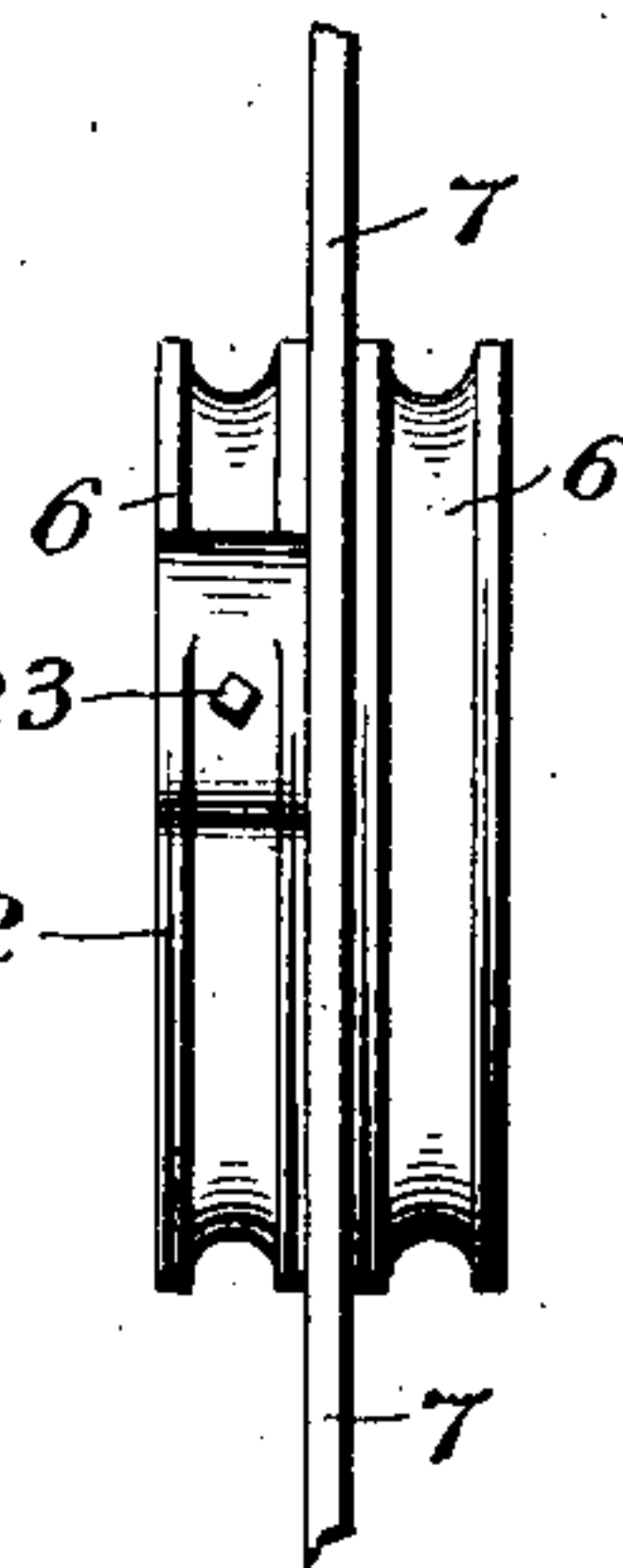


Fig. 5.

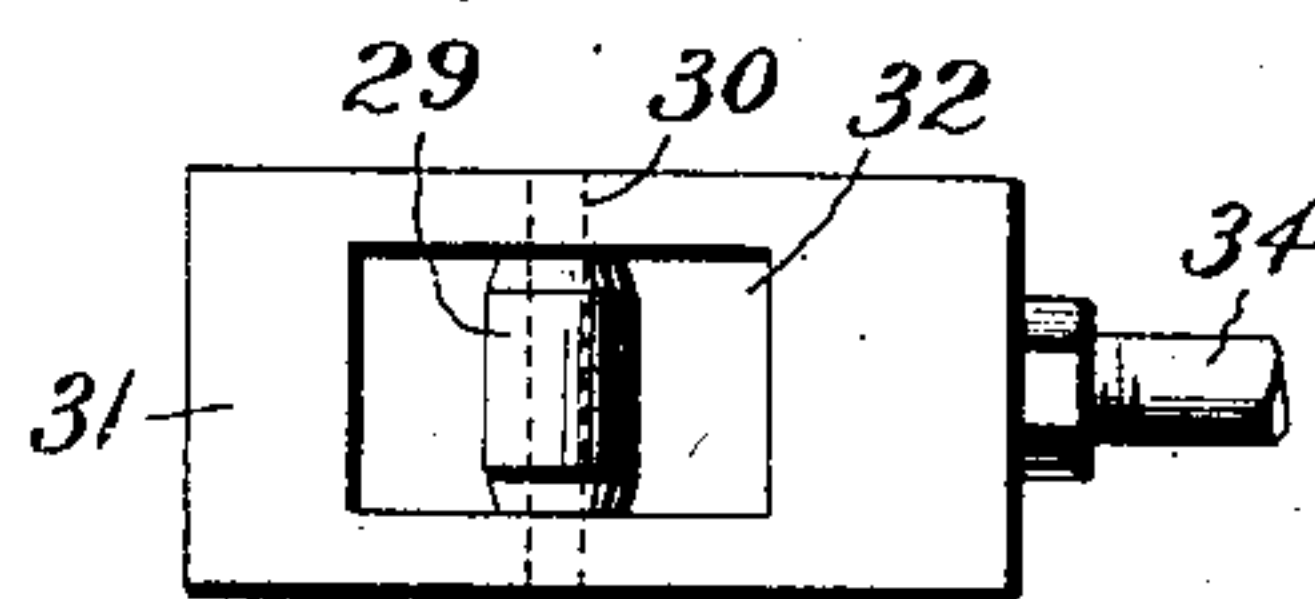
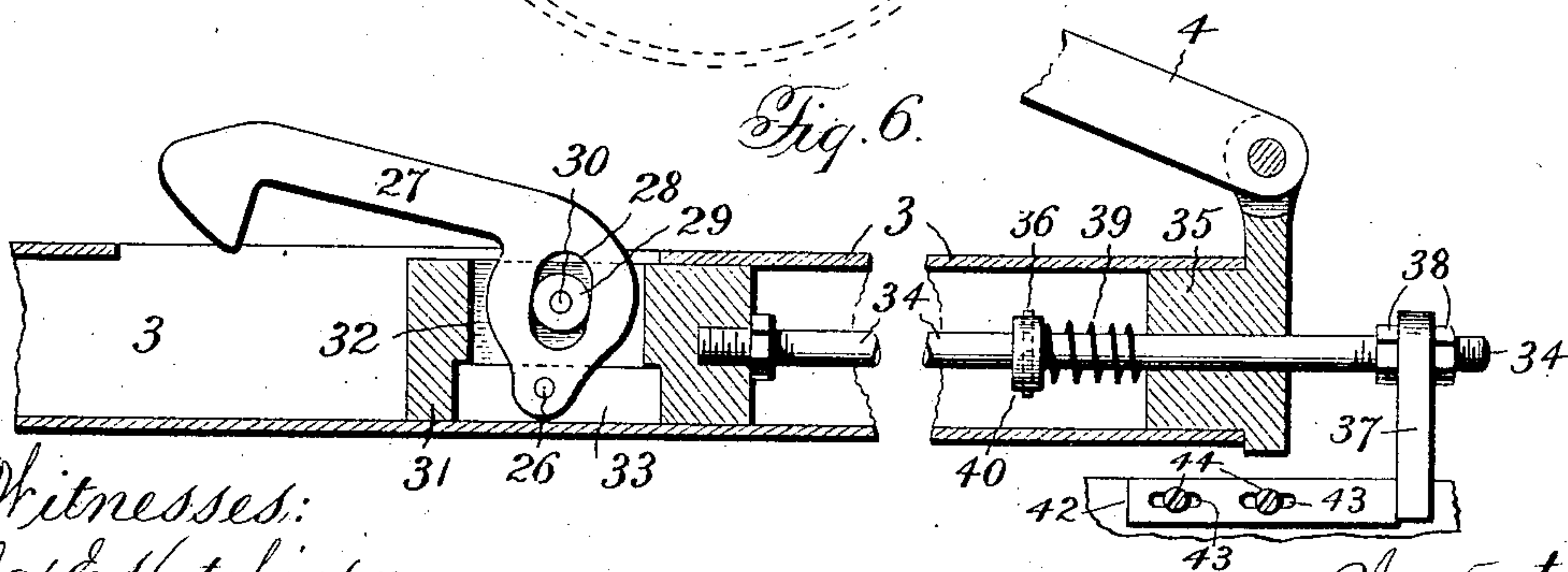


Fig. 6.



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UNITED STATES PATENT OFFICE.

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SHUTTLE-MOTION FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 785,958, dated March 28, 1905.

Application filed March 2, 1903. Serial No. 145,720.

To all whom it may concern:

Be it known that I, WILLIAM F. KINTZING, a citizen of the United States, residing at New Freedom, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Shuttle-Motions for Looms; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to shuttle-motions for looms, and while particularly adapted to looms for weaving wire-cloth still it may be used in looms for weaving other material.

The invention has for its object to take up the slack in the chains employed in looms of the type illustrated and also has for its object to provide improved means for releasing the shuttle when it is to be transferred from one shuttle-bar to the other.

To the accomplishment of the foregoing and such other objects as may hereinafter appear the invention consists in the construction as well as in the combination of parts hereinafter particularly described and then sought to be clearly defined by the claims, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a front elevation of so much of a loom as is necessary to illustrate the application thereto of my invention; Fig. 2, an end elevation of the same; Fig. 3, a face view of the cam-wheel with a part broken away; Fig. 4, an end view of same; Fig. 5, a plan view of the shuttle-hook-actuating block, and Fig. 6 is a vertical longitudinal section through one of the shuttle-bars.

In the drawings the numeral 1 designates the loom-frame, from which is swung the lathe-frame 2, which carries the shuttle-movement, comprising generally the shuttle-bars 3, connected by the pitmen 4 to the crank-arms 5, attached to the chain-wheels 6, journaled in the plate 7, so that one will lie on each side thereof, from which chain-wheels pass the chains 8, which after passing over

the sheaves 9 and 10 are connected to the crank-arms 12 of the shaft 13, which shaft has cams 14 and 15 to bear against the levers 16 and 17, connected by the links 18 and 19 with the heddle-frames 20 and 21, which may be operated as usual in looms of this type—for instance, as illustrated in my United States Patent No. 673,839—or in any other suitable manner.

The feature for taking up the slack in the chains 8 under my present invention consists in providing each of the chain-wheels 6 with a peripheral cam 22, pivoted at one end to the chain-wheel and preferably having its free end limited in its movement by a bolt 23, passing through the end of the cam and having its bearing in the chain-wheel, each cam being held normally outward by a suitable spring, which may be a leaf-spring 24, connected at one end to the chain-wheel and having its other end bearing against the cam. These cams will be so positioned on their respective chain-wheels that in the rotation of the wheels in the direction that would produce slack in the chain the spring-influenced or yielding cam will take up the slack, and thus maintain a uniform tension upon the chain, as will be obvious to those skilled in the art.

The other feature of my present invention relates to the means for releasing the shuttle at the proper time for its transfer from one shuttle-bar to the other. For this purpose the shuttle-bars 3 are made hollow and are guided in their movement by suitable bearings 25, carried by the loom-frame. Within each shuttle-bar there is pivoted at its heel end by a pivot-pin 26 a hook 27, the heel or shank of the hook being formed with a slot 28, in which fits a roller 29, supported upon a pintle 30, carried by a block 31, said block being formed with a recess 32, in which fits the shank of the hook 27, the lower face of the block 31 being formed with a recess 33, so as to permit the block 31 to be reciprocated without interference with the end of the shank at the point where the latter is pivoted to the shuttle-bar. The block 31 is provided with a rod 34, which extends through the plug 35, secured in the end of the shuttle-bar, and

said rod is provided at its outer end with an adjustable finger 37, held in place by nuts 38 or otherwise. Inside of the shuttle-bar the rod 34 is encircled by a spring 39, one end of which bears against the plug 35 and the other against a collar 40, secured by a pin 36 or otherwise to the rod. Each shuttle-bar is provided with one of the pivoted hooks and sliding blocks 31 and rods 34 and the other parts described, and a separate description is therefore unnecessary. Upon a suitable support—for instance, upon the part 41 of the lathe-frame—there are secured stops 42, which are formed with slots 43 and secured by set-screws 44, passed through the slots and into the part 41, so as to hold said stops at the adjustment desired. These stops are so positioned that at the proper time in the movement of the shuttle-bars for the release of the shuttle from one bar the finger 37, carried by the shuttle-bar from which the shuttle is to be released, will come in contact with the stop 42, so that the rod 34 will be retracted and move the block 31 so that its antifrictional roller 29 will press against the wall of the slot 28 in the hook 27, so as to turn the hook upon its pivot 26, and thus lift the hook and disconnect it from the shuttle, so that the latter when engaged by the corresponding hook of the other shuttle-bar will be carried by the latter bar in its travel. As soon as the shuttle-bar whose pivoted hook has been disengaged, as described, moves outward, so as to carry the finger 27 away from the stop 42, the spring 39, which was compressed in the retraction of the rod 34, will expand and restore the rod 34 and the hook 27 to their normal position. It will of course be understood that the several parts will be so proportioned and arranged one in relation to the other that the shuttle-bars will travel as ordinarily in looms of this character and bring the adjacent ends of the two shuttle-bars in such position one to the other that at the proper time the shuttle will be released from one shuttle-bar and grasped by the other shuttle-bar, and so on in alternation throughout the operation of the loom. In Fig. 1 of the drawings the shuttle-bars and other parts are shown in the relation which they bear one to the other at the time that the shuttle is to be released from one shuttle-bar and grasped by the other, the hook 27 to one of the bars being shown in its raised or releasing position.

While I have illustrated and described with particularity the preferred details of construction which I have found to give most satisfactory results, yet it is to be understood that changes may be made in the details and essential features of my invention still be retained.

Having described my invention and set forth its merits, what I claim is—

1. In a shuttle-motion for looms, the combination of the reciprocating shuttle-bars, pitmen for transmitting motion to said bars, rotatable chain-receiving wheels connected with said pitmen, each wheel having a pivoted cam, and chains connected with driving mechanism and attached to said rotatable wheels, the chain of each wheel passing over the pivoted cam, whereby slack in the chain is taken up and a uniform tension obtained, substantially as described.

2. In a shuttle-motion for looms, the combination of the reciprocating shuttle-bars, pitmen for transmitting motion to said bars, rotatable chain-receiving wheels connected with said pitmen, each wheel having a spring-influenced pivoted cam, and chains connected with driving mechanism and attached to said rotatable wheels, the chain of each wheel passing over the spring-influenced pivoted cam, whereby slack in the chain is taken up and a uniform tension obtained through the instrumentality of the spring-influenced cam, substantially as described.

3. In a shuttle-motion for looms, the combination of the reciprocating shuttle-bars, pitmen for transmitting motion to said bars, rotatable chain-receiving wheels connected with said pitmen, each wheel being provided with a cam pivoted at one end thereto and provided with means for limiting the movement of its free end, a spring acting upon each of said cams, and chains connected with driving mechanism and attached to said rotatable wheels, the chain of each wheel passing over the spring-influenced cam, whereby slack in the chain is taken up by the cam and a uniform tension obtained, substantially as described.

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

WILLIAM F. KINTZING.

Witnesses:

SPENCER D. WAREHEIM,
JACOB E. WEAVER.