

(No Model.)

O. W. SCHAUM.
LOOM.

No. 497,824.

Patented May 23, 1893.

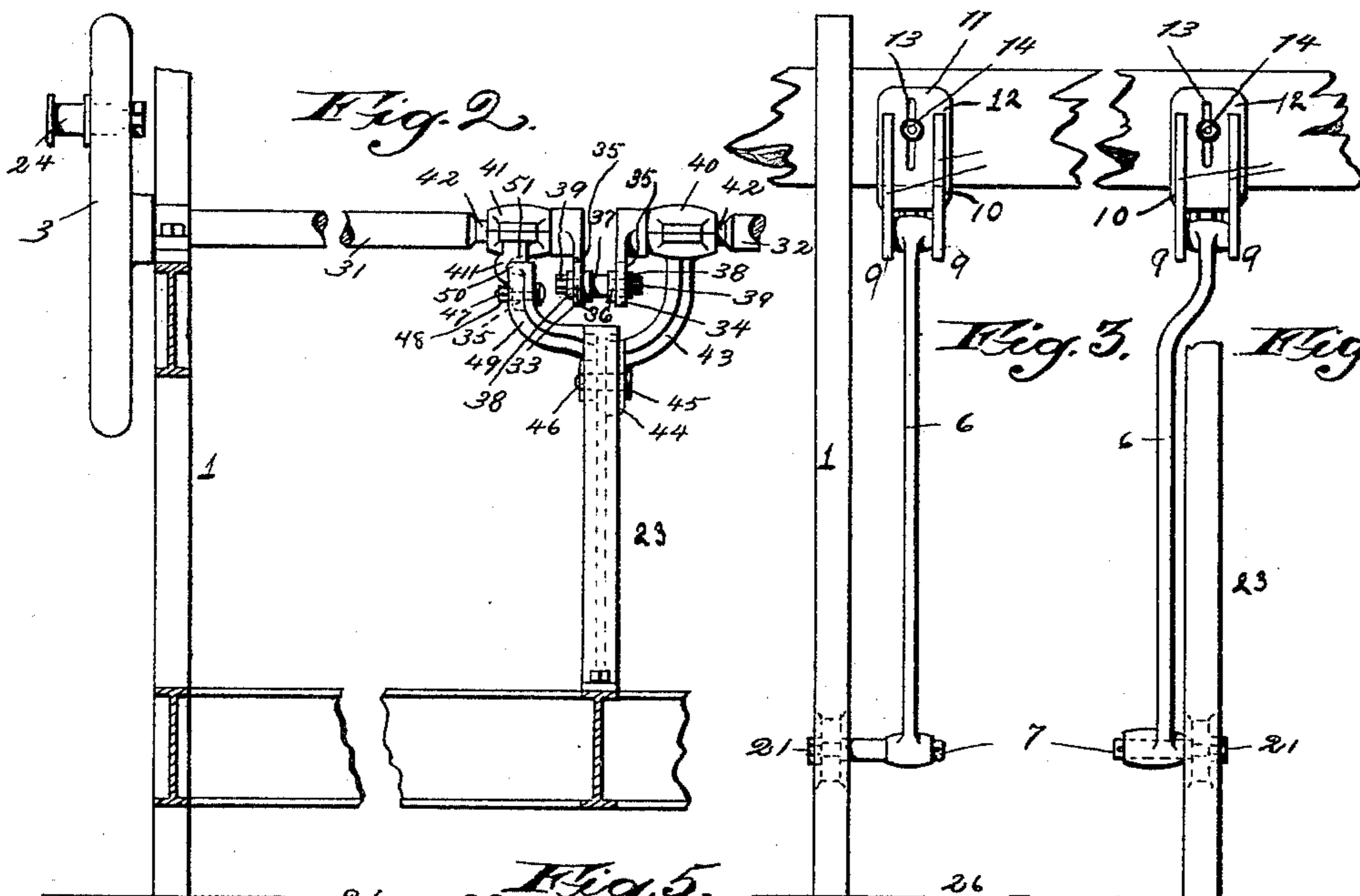
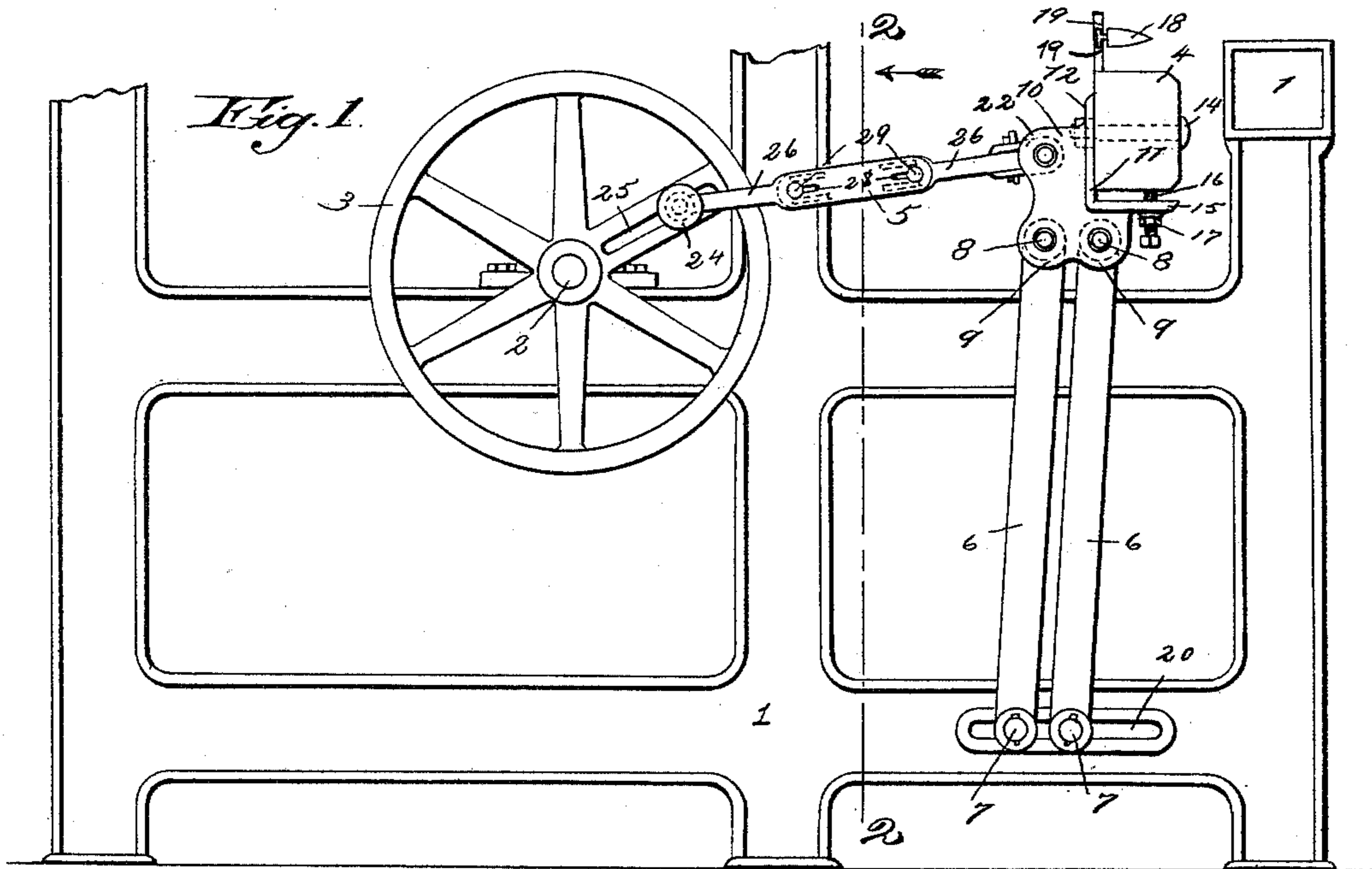
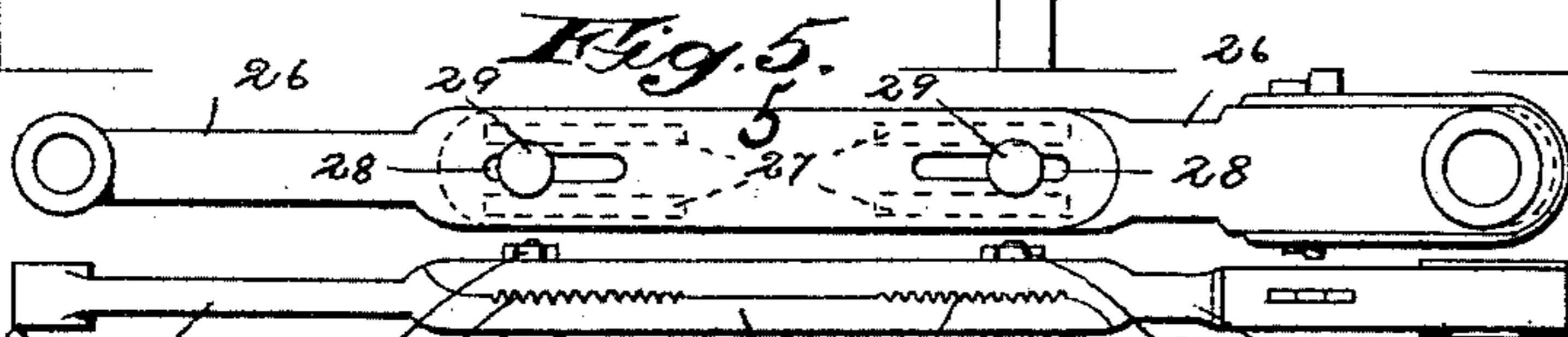


Fig. 3.

Fig. 4.



Witnesses
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Fig. 6.

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LOOM.

SPECIFICATION forming part of Letters Patent No. 497,824, dated May 23, 1893.

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To all whom it may concern:

Be it known that I, OTTO W. SCHAUM, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Looms, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to the lathes or battens of looms, more particularly those of narrow-ware looms, and to the devices which are concerned in actuating the same.

One object of my invention is to enable the beam of the lathe or batten of a loom to remain in one and the same position with relation to the vertical throughout the whole extent of the movement of the lathe or batten in the operation of the loom. Heretofore this object has been secured by the builders of looms, it is true, but usually it has been done by constructing and mounting the lathe or batten to reciprocate in a straight line, and in or upon fixed supporting guides or ways. This plan presents various practical defects and disadvantages which it is my aim to avoid.

Another object of my invention is to provide facilities for varying the position and inclination of the arc in which the lathe-beam swings, and for making desired adjustments in the height of the beam of the lathe or batten.

Another object of my invention is to provide by improved means for enabling the variation or change in the extent of the throw of the cranks on the crank-shaft, which is secured by radial adjustment of the cranks and which increases or decreases the swing of the lathe or batten, to be compensated for by such an adjustment of the connections between the lathe or batten and the crank-shaft as will permit the beating-up point always to remain the same, if desired.

Another object of my invention is to provide an improved center-crank and crank-shaft support.

My invention consists in certain novel features of construction and combinations of parts, all as first will be fully described with reference to the accompanying drawings, and then be particularly pointed out and distinctly defined in the claims at the close of this specification.

In the drawings, Figure 1 is a view in side elevation of part of a loom with my invention applied thereto. Fig. 2 is a view thereof in vertical transverse section on the dotted line 2—2 in Fig. 1, looking toward the rear of the loom. Fig. 3 is a view in rear elevation of part of the lathe-beam and the supports pertaining thereto. Fig. 4 is a view in rear elevation of the intermediate or center lathe-beam supports and the adjacent portion of the said beam. Figs. 5 and 6 are side and edge views, respectively, of the adjustable link or pitman.

At 1 is shown an end-frame of a loom, at 2 the crank-shaft of the loom, at 3 a hand-wheel or fly-wheel fast to said crank-shaft, at 4 is shown the beam of the lathe or batten, and at 5 one of the connecting rods, links, or pitmen by which the lathe or batten is connected with the cranks of the crank-shaft. The lathe-beam is pivotally supported at suitable points in the direction of its length by parallel-links or radius-bars 6, 6, which at their lower ends turn upon pins 7, 7, mounted on the loom-framing. At their upper ends each pair of the said links 6, 6, is hinged or pivoted by pins 8, 8 to lugs 9, 9 depending from a bracket 10 on which the lathe-beam is mounted.

In the construction which is represented in the drawings, the lugs 9, 9 are formed parallel to each other and the upper ends of the links 6, 6 fit between their inner faces. The bracket 10 is formed with an L-shaped portion 11 to conform to the rear side and under side of the lathe-beam, and in the vertical part 12 of this L-shaped portion 11 is formed a vertical slot 13 through which passes the stem of the bolt or screw 14 by which the lathe-beam is clamped to the bracket, while the horizontal part 15 of the bracket has a threaded hole therein, through which is passed vertically the set-screw 16 which bears by its point against the under side of the lathe-beam, said screw having thereon the clamping nut 17.

The slot 13 and set-screw 16 provide for enabling the lathe-beam to be secured at any required height on the bracket. This adjustment is useful in permitting the lathe-beam to be so adjusted vertically as that in narrow-ware looms the shuttle 18 moving on the tracks or ways 19, 19, carried by the lathe-

beam shall be prevented from rubbing against the warp-threads of either the upper plane of the open shed or the lower plane thereof, and that, in looms using fly-shuttles, the shuttle race-way at the upper side of the lathe-beam shall move beneath the lower plane of the shed in exactly the desired relations thereto.

I make provision for varying the position and inclination of the arc in which the lathe-beam moves, as follows. The pins 7, 7, are mounted in a manner to enable them to be adjusted toward or from the rear of the loom. One way of rendering them adjustable is shown in Fig. 1 of the drawings, in which figure the reduced ends of the pins 7, 7, pass through horizontal slots 20, 20, in the parts of the loom-framing by which they are supported, and receive upon the threaded extremities thereof nuts 21, 21, whereby they are clamped in adjusted position. By shifting the pins 7, 7 toward the front or the rear of the loom various changes may be made in the angle and position of the arc through which the lathe-beam oscillates. The forward ends of the connecting rods, links or pitmen 5 are jointed to the lugs 22 forming parts of the brackets 10. In some looms of considerable width an intermediate framing-piece, called a center-frame extends parallel to the side-frames of the looms. One of these center-frames is shown at 23 in Figs. 2 and 4. Intermediate supports for the lathe-beam are also provided in such looms, one of such intermediate supports being shown in Fig. 4. The intermediate support for the lathe-beam which I employ resembles in all essential respects those which are located nearer the ends of the lathe beam, and is of the construction which has been described. In these looms, however, inasmuch as I prefer to place or form the intermediate crank or cranks of the crank-shaft substantially in line vertically above or with the center-frame or frames, the upper parts of the intermediate links 6, 6 are bent or off-set laterally as shown in Fig. 4, in order to permit the bracket 10 to which a pair of such links are pivoted to be placed vertically above the center-frame, at the side of which the said links are pivoted.

To permit the extent of the sweep of the lathe-beam to be varied as desired, I connect the rear ends of the pitmen 5 to cranks of variable throw. Thus, as customary, I connect the rear-ends of said pitmen to pins 24 which are secured to parts carried by the crank-shaft with capacity for radial adjustment relatively to the said shaft.

In Fig. 1 I have represented one of the crank-pins as mounted in a slot 25 in one of the arms of the hand-wheel 3.

In order that when the throw of the cranks has been varied by making radial adjustment of the crank-pins the beating-up point may not be correspondingly varied, but, if desired, may be made to remain the same always. I provide as follows for varying the

operative lengths of the pitmen. Each of the said pitmen is made as shown in Figs. 5 and 6 in two parts 26, 26, which overlap and are formed on their contacting faces with intermeshing serrations 27 which hold the two portions from slipping endwise on each other. Matching slots 28, 28 are formed in the two parts 26, 26 and through these slots are passed headed bolts 29, 29, which receive on their threaded ends nuts 30, 30 and serve to hold the parts together in an adjusted position.

In order to permit of the use of adjustable intermediate or center-cranks I provide as follows. The crank-shaft 2 I form in sections 31, 32, placed in line with each other, and upon the proximate ends of the sections I securely fix crank-arms 33, 34, each of which is radially slotted at 35. As shown clearly in Fig. 2, I fit into the slots 35, 35, at the required distance from the axis of the crank-shaft, the reduced ends 36, 36, of a crank pin 37, and secure the said crank pin in its position of adjustment by the washers 38, 38 and nuts 39, 39 which are placed upon the threaded extremities of such crank-pin. I support the proximate ends of the sections 31, 32 in bearings carried by the center-frame, the parts being so disposed, preferably, as that the center-frame and the center-crank shall be in line with each other vertically. The said bearings are formed in split boxes 40, 41 which receive reduced portions 42, 42 formed on the sections 31, 32. The lower part of the box 40 is formed in one with an upwardly extending curved arm or bracket 43, having a plate or web 44 which is secured by bolts 45 and nuts 46 to the web of the center-frame. The curved arm 43 projects laterally in one direction from the center-frame a sufficient distance to clear the crank-arm carried by the section of the crank-shaft which it supports. The under part of the split box 41 is formed with a web or plate 41' which is clamped by bolts 47 and nuts 48 to the curved arm 49 which is cast in one piece with the center-frame and projects to the side opposite to that toward which the curved arm 43 projects. The upper end of the curved arm 49 is formed with a flange or lip 50 which fits within a notch 51 that is formed in the depending plate or web 41' of the split-box 41. This construction of the supports for the proximate ends of the sections of the crank-shaft holds the same securely and fixedly in proper position relatively to each other, and the bearings are not liable to work loose. Moreover the strain and weight are uniformly distributed on both sides of the center-frame and the resistance which in the working of the loom is offered to the rotation of the center-crank is exerted in the vertical plane of the center-frame and is not likely to rack the parts loose.

I claim as my invention—

1. The combination with the lathe-beam, of the parallel-links whereon the said beam is

mounted, pivotal supports for the lower ends of said links, and means for adjusting the said pivotal supports relatively to the front and rear of the loom, substantially as described.

2. The combination with the lathe-beam, of the parallel-links whereon the said beam is mounted, pivotal supports for the lower ends of said links, a supporting piece having a slot in which the said pivotal supports are mounted, and means for securing the said pivotal supports in the desired position of adjustment in the said slot, substantially as described.

3. The combination with the lathe-beam, of the bracket 10 having the L-shaped seat portion provided with the slot and clamping screw to hold the beam thereto, and the set-screw whereby to effect vertical adjustment of the beam on the bracket as described, and also having lugs, and the parallel-links pivoted at their upper ends between the said lugs, substantially as described.

4. The combination with the lathe-beam, of the bracket 10 having the L-shaped seat portion provided with the slot and clamping screw to hold the beam thereto, and the set-screw whereby to effect vertical adjustment of the beam on the bracket as described, and also having depending lugs, the parallel-links pivoted at their upper ends between the said lugs, the supports to which the lower ends of the said links are pivoted, and means permitting adjustment of the said supports forwardly and rearwardly in a loom, substantially as described.

5. The combination with the lathe-beam, of a supporting bracket therefor having an L-shaped seat-portion provided with a slot and clamping screw to hold the beam thereto, and with a set-screw whereby to effect vertical adjustment of the said beam on the bracket, as set forth, all substantially as described.

6. The combination with the lathe or batten of a loom, and the crank-shaft carrying cranks of adjustable throw, of the connecting-links or pitmen made each in two over-lapping parts having intermeshing serrations and provided with means for clamping the two parts together, substantially as described.

7. The combination with the lathe or batten of a loom, and the crank-shaft carrying cranks of adjustable throw, of the connecting-links or pitmen made each in two overlapping slotted parts having intermeshing serrations and provided with clamping bolts passed through the slots and having clamping nuts, substantially as described.

8. The combination with the lathe or batten of a loom, and the connecting-rods or pitmen, of a crank-shaft provided with the usual adjustable cranks and also made in sections which are provided at their proximate ends with slotted crank-arms and with an adjustable crank-pin fitted to the slots in the said arms, split bearings to which the said proximate ends are fitted, the lower member of one of the said split bearings being formed integral with a curved arm, and the lower member of the other of the said split bearings being formed integral with a web or plate having a notch therein, and the loom-framing provided with a center-frame to one side of which is bolted the curved arm aforesaid, the said center-frame having formed integral there-with a second curved arm projecting oppositely to the first arm and provided with a lip or flange entering the notch aforesaid, and to which arm the notched web or plate is bolted, substantially as described.

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

OTTO W. SCHAUM.

Witnesses:

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