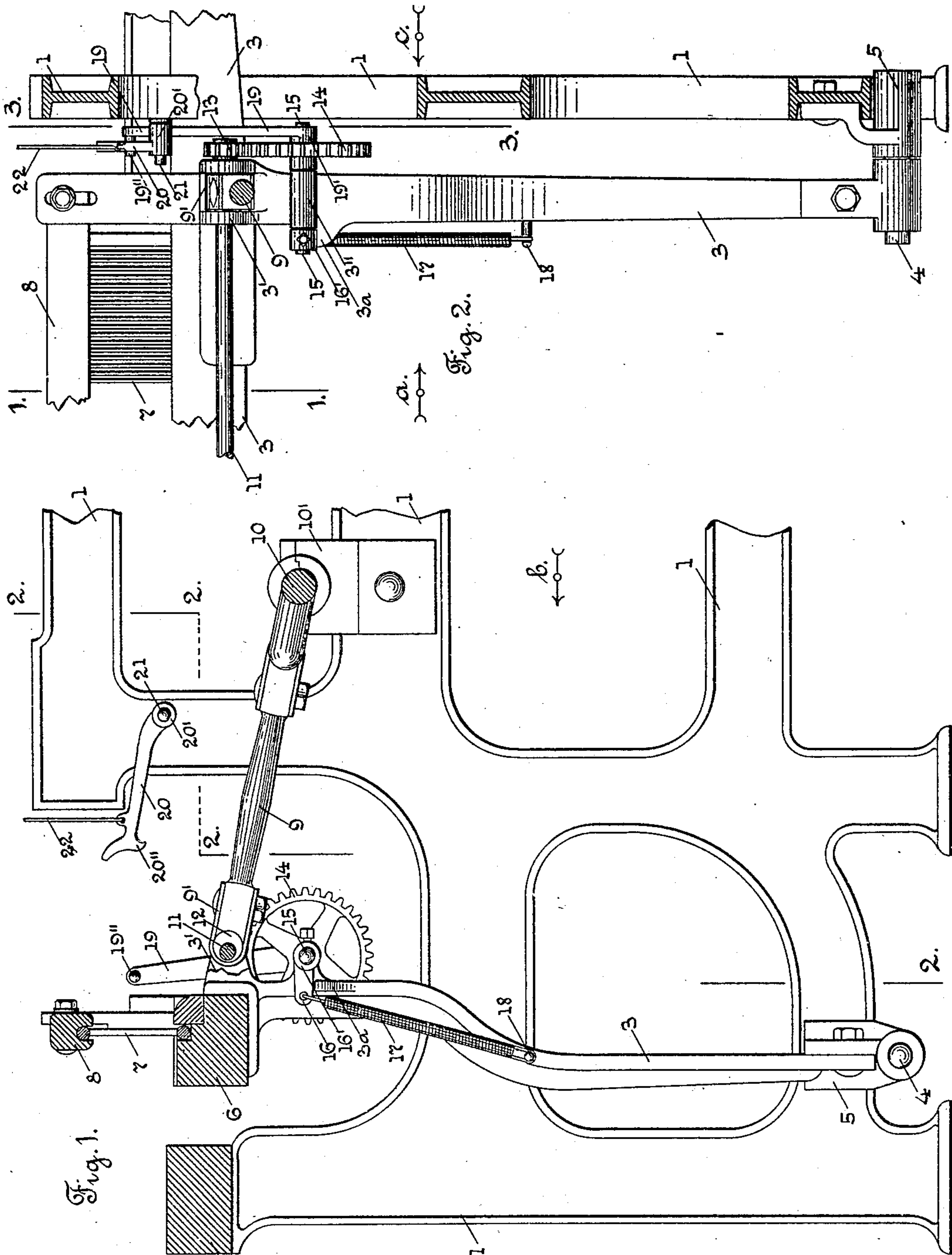


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2 SHEETS—SHEET 1.



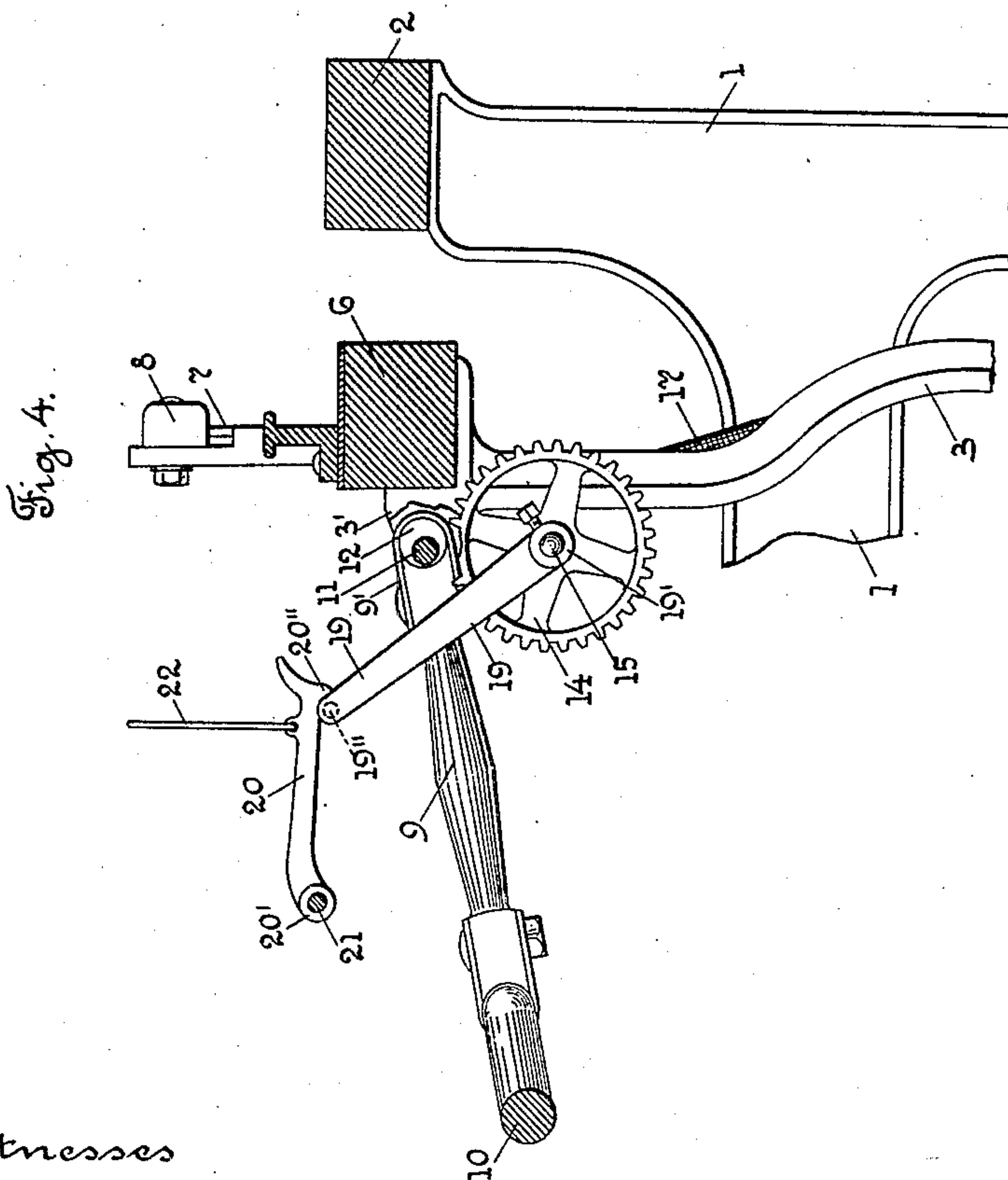
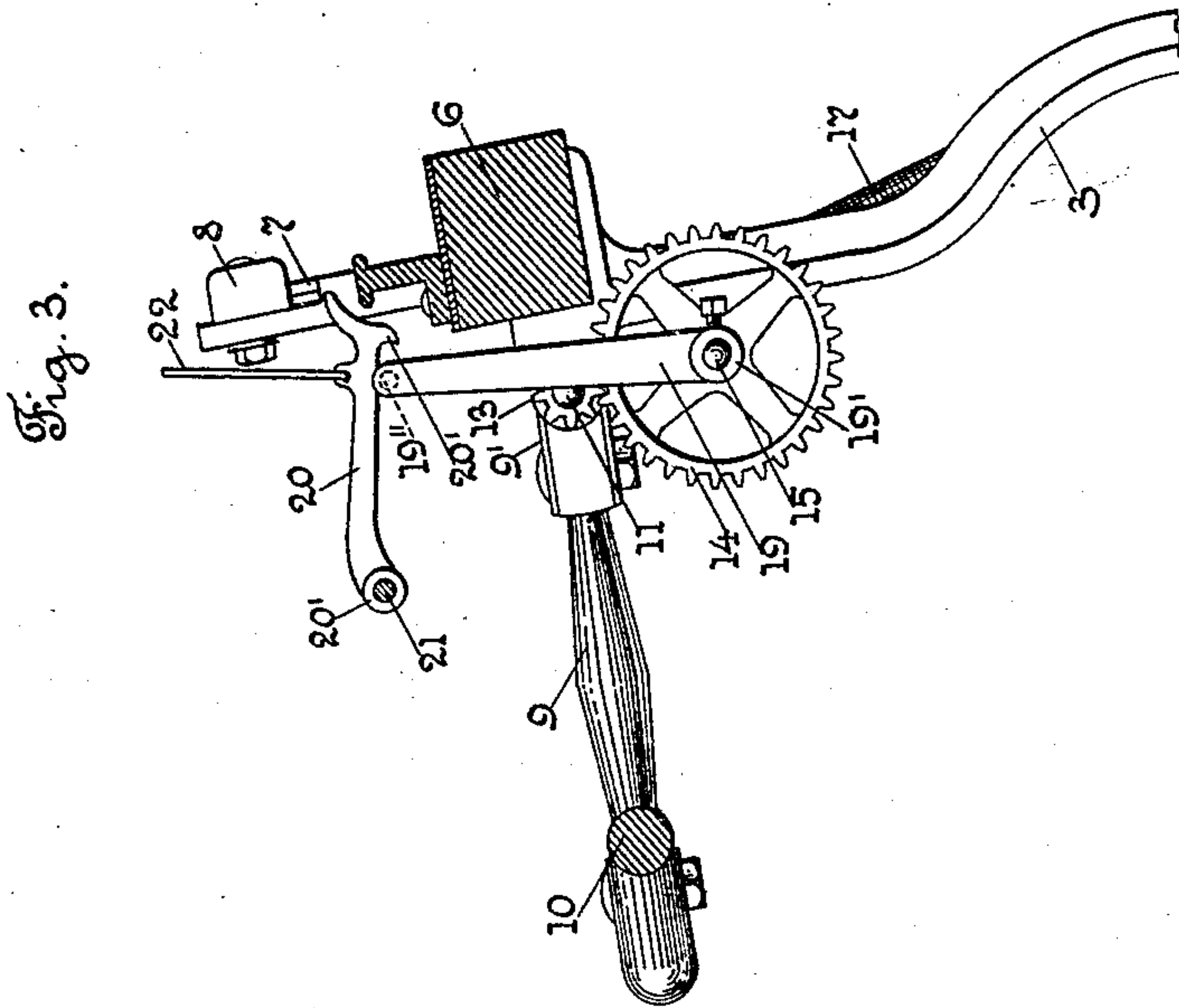
Witnesses  
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# UNITED STATES PATENT OFFICE.

JOHN L. DAVIDSON, OF GRIFFIN, GEORGIA, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, A CORPORATION OF MASSACHUSETTS.

## TERRY-MOTION FOR LOOMS.

936,310.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed April 1, 1908. Serial No. 424,476.

*To all whom it may concern:*

Be it known that I, JOHN L. DAVIDSON, a citizen of the United States, residing at Griffin, in the county of Spalding and State of Georgia, have invented certain new and useful Improvements in Terry-Motions for Looms, of which the following is a specification.

My invention relates to looms, and particularly to that class of looms having thereon what is termed a terry motion for weaving what are termed terry fabrics, as Turkish toweling, etc.

The object of my invention is to improve upon the construction of looms of the class referred to, and more particularly to provide an improved terry motion automatically-operated of simple construction and operation, by means of which the lay has a shorter beatup for a predetermined number of picks of the filling, and is then moved forward to its full beat, to beat up the picks of filling.

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 part of a loom of the class referred to, with my improvements in terry motion combined therewith, sufficient to enable those skilled in the art to understand the construction thereof.

Referring to the drawings:—Figure 1 is a vertical sectional view on line 1, 1, Fig. 2, looking in the direction of arrow *a*, same figure, showing a portion of the loom side or end frame, and the lay operating mechanism, and my improvements combined therewith. Fig. 2 is a section, on line 2, 2, Fig. 1, looking in the direction of arrow *b*, same figure. Fig. 3 is a section, on line 3, 3, Fig. 2, looking in the direction of arrow *c*, same figure, showing the lay operating mechanism, detached, and the lay in its rear position. Fig. 4 corresponds to Fig. 3, but shows the lay in its forward position, and also shows a detached portion of the loom end frame, and of the breast beam; some parts shown in Fig. 3, are left off in this figure.

In the accompanying drawings, 1 is a portion of the loom side or end frame, 2 the breast beam, 3 the lay sword, pivotally mounted at its lower end on a stud 4 carried on a bracket 5 secured to the loom side; 6 is the lay, 7 the reed, 8 the hand rail, 9 the lay

crank connector to the crank shaft, and 10 the crank shaft, mounted in suitable bearings 10' secured to the frame 1, to operate the lay in the usual way. All of the above mentioned parts may be of the usual and well known construction in the class of looms referred to.

I will now describe my improvements in terry motion, automatically operated, and relating particularly to the beating up of the lay to form the pile or loops for the terry fabric.

In place of the crank connector pin or bolt for the crank connector 9, usually located in the rearwardly extending ears or extensions 3' on the lay sword 3, a rock shaft 11 is substituted, which has its bearings in the ears 3', and extends transversely across the loom to the opposite lay sword, not shown. The shaft 11 is loosely mounted in the ears 3', to rock therein, and has secured thereon, preferably at both ends an eccentric collar 12, over which extends the holding band 9' on the end of the crank connector 9. The extreme end of the rock shaft 11 has fast thereon a pinion 13, which meshes with and is driven by a gear 14 fast on a shaft 15. The shaft 15 is loosely mounted in a suitable bearing 3'' on the lay sword, see Fig. 2, and on the inner end of said shaft 15 is fast the hub 16' of an arm 16. A helically coiled contraction spring 17 is attached at one end to said arm 16 and at its other end to a pin 18 on the lay sword, and said spring acts to yieldingly hold said arm 16 in engagement with an extension 3<sup>a</sup>, see Figs. 1 and 2, on the lay sword 3. The extension 3<sup>a</sup> limits the downward movement of the arm 16 and the rotary movement of the shaft 15 in one direction, and holds the gear 14, pinion 13, and rock shaft 11, and the eccentric 12 on said shaft, in a position to cause an increase of the length of the crank connector 9 to beat up the lay to its full stroke, as shown in Fig. 1.

In order to prevent the lay from beating up its full stroke, the eccentric 12 has to have half a rotation within the band 9' on the connector 9, and by this half rotation the length of the crank connector is decreased. To cause the rocking or half rotation of the eccentric 12 fast on the rock shaft 11, I provide in this instance an upwardly extending lever 19, having its hub 19' fast on the shaft 15, and its upper end in this instance pro-



vided with a pin 19'', which extends in the path of and is adapted to be engaged by a hook lever 20. The lever 20 has a hub 20' on one end, which in this instance is loosely mounted on a stud 21 on the loom frame, and is connected at its free end, through a wire or connector 22, with some pattern indicating mechanism on the loom, not shown, which automatically causes the raising and lowering of said hook lever 20 at predetermined intervals.

In the operation of the loom, when the lay moves to its rear position, as shown in Fig. 3, and the hook lever 20 is automatically lowered, the hook extension 20'' will be in the path of and engage the pin 19'' on the upwardly extending lever 19, and on the next forward stroke of the lay, the lever 19 will be held by the hook extension 20'' on the lever 20, and cause the partial rotation of the shaft 15, against the action of the spring 17, and also the partial rotation of the gear 14, and the pinion 13 in mesh with the gear 14, and the rotation of the shaft 11, and the eccentric 12 fast thereon, so that said eccentric 12 will be given a half rotation, from the position shown in Fig. 1 to the position shown in Fig. 4. With the eccentric 12 in this position, the amount of the forward movement of the lay will be diminished, and this diminished forward stroke of the lay may be continued for several picks as desired, and until, according to the indication of a pattern surface, the hook lever 20 is automatically raised to release the lever 19. When the hook lever 20 is raised to release the upright lever 19, said lever, through the operation of the spring 17, is caused to return to its normal forward position, by the partial rotation of the shaft 15, and through the partial rotation of the gear 14 and the pinion 13, the rock shaft 11 will be rotated, and the eccentric 12 thereon rotated to the position shown in Fig. 1, in which position the lay will move forward its full stroke, as shown in Fig. 1, to beat up the loops of the terry fabric, all as will be fully understood by those skilled in the art.

It will be understood that the details of construction of my improvements may be varied if desired.

Having thus described my invention, what

I claim as new and desire to secure by Letters Patent is:—

1. In a terry motion for a loom, the combination with the lay, of a rock shaft mounted thereon and moving therewith, an eccentric fast on said shaft, and connected with the crank connector, a pinion fast on said shaft and meshing with and driven by a gear, and said gear on a shaft, and said shaft, a spring for rotating said shaft in one direction, a lever fast on said shaft, and a device automatically operated for engaging said lever to rotate said shaft in the opposite direction.

2. In a terry motion for a loom, the combination with the lay, of a rock shaft mounted thereon and moving therewith, an eccentric fast on said shaft and connected with the crank connector, a pinion fast on said shaft and meshing with and driven by a gear, and said gear on a shaft, and said shaft, a spring for rotating said shaft in one direction, a lever fast on said shaft, a pin on said lever extending in the path of and adapted to be engaged by a hook lever automatically operated, and said hook lever to engage said pin to rotate said shaft in the opposite direction.

3. In a terry motion for a loom, the combination with the lay, of a rock shaft mounted thereon and moving therewith, an eccentric fast on said shaft and connected with a crank connector, a pinion fast on said shaft, and meshing with and driven by a gear, and said gear, a spring for rotating said gear in one direction, a lever connected with said gear, and a device automatically operated for engaging said lever to rotate said gear in the opposite direction.

4. In a terry motion for a loom, the combination with a lay, of a shaft mounted thereon and moving therewith, an eccentric fast on said shaft and connected with the crank connector, and means, automatically operated, for communicating a rotary motion to said eccentric relative to said crank connector, for the purpose stated.

JOHN L. DAVIDSON.

Witnesses:

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