

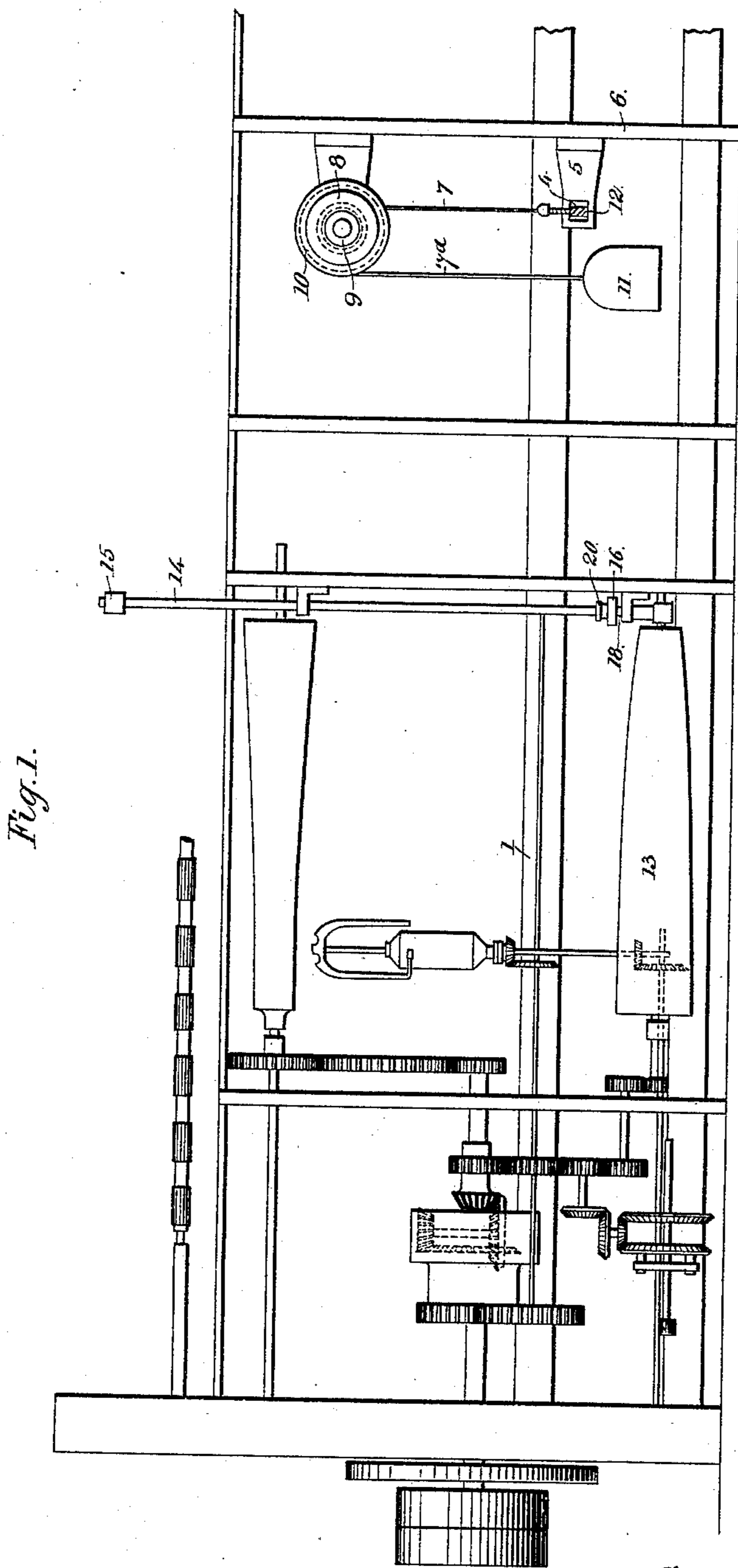
(No Model.)

4 Sheets—Sheet 1.

S. TWEEDALE.
ROVING FRAME, &c.

No. 396,718.

Patented Jan. 22, 1889.



Witnesses.
H. C. & D. M. & S. O.
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Samuel Tweedale
Inventor.
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(No Model.)

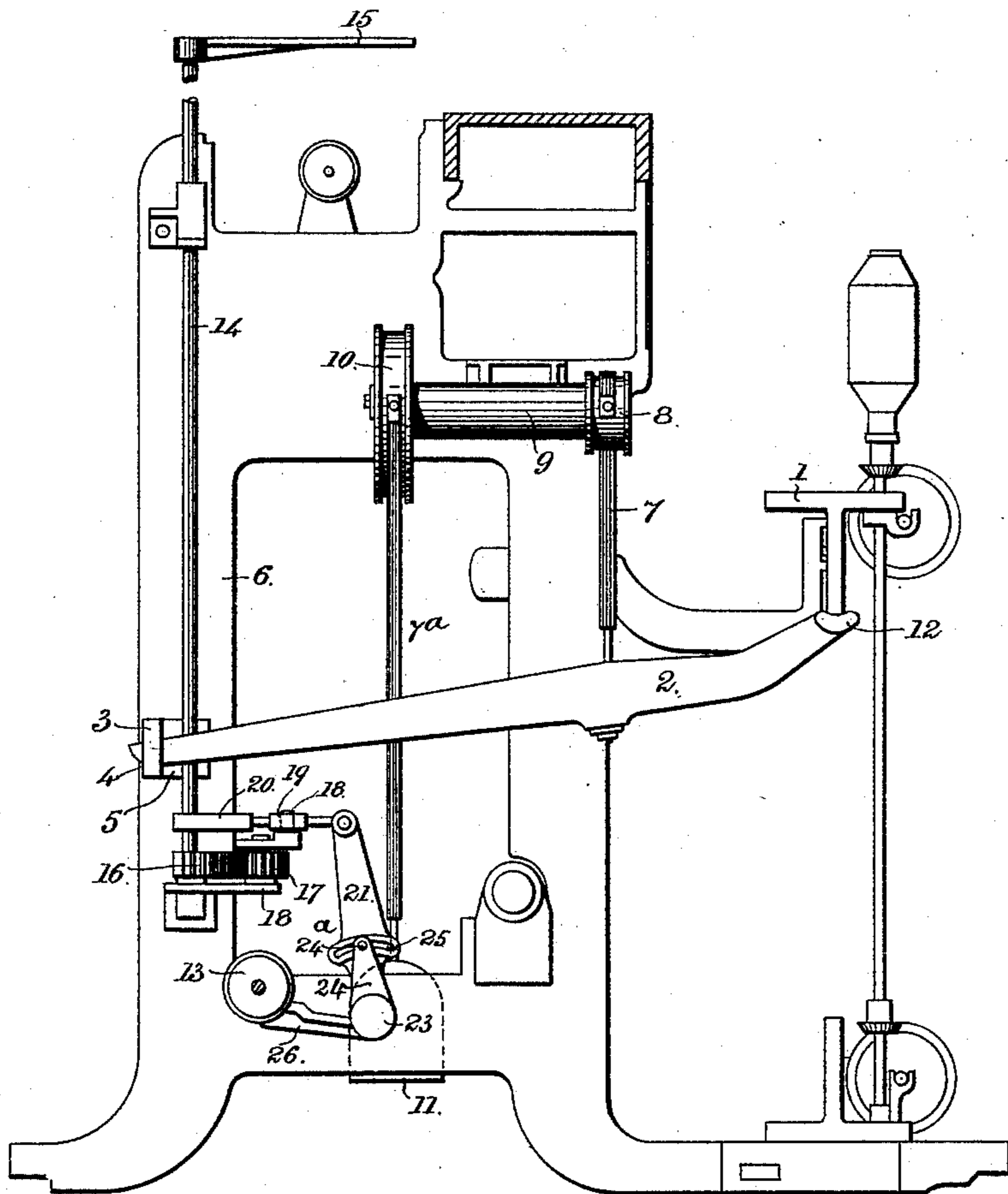
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Fig. 2.



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Fig. 4.

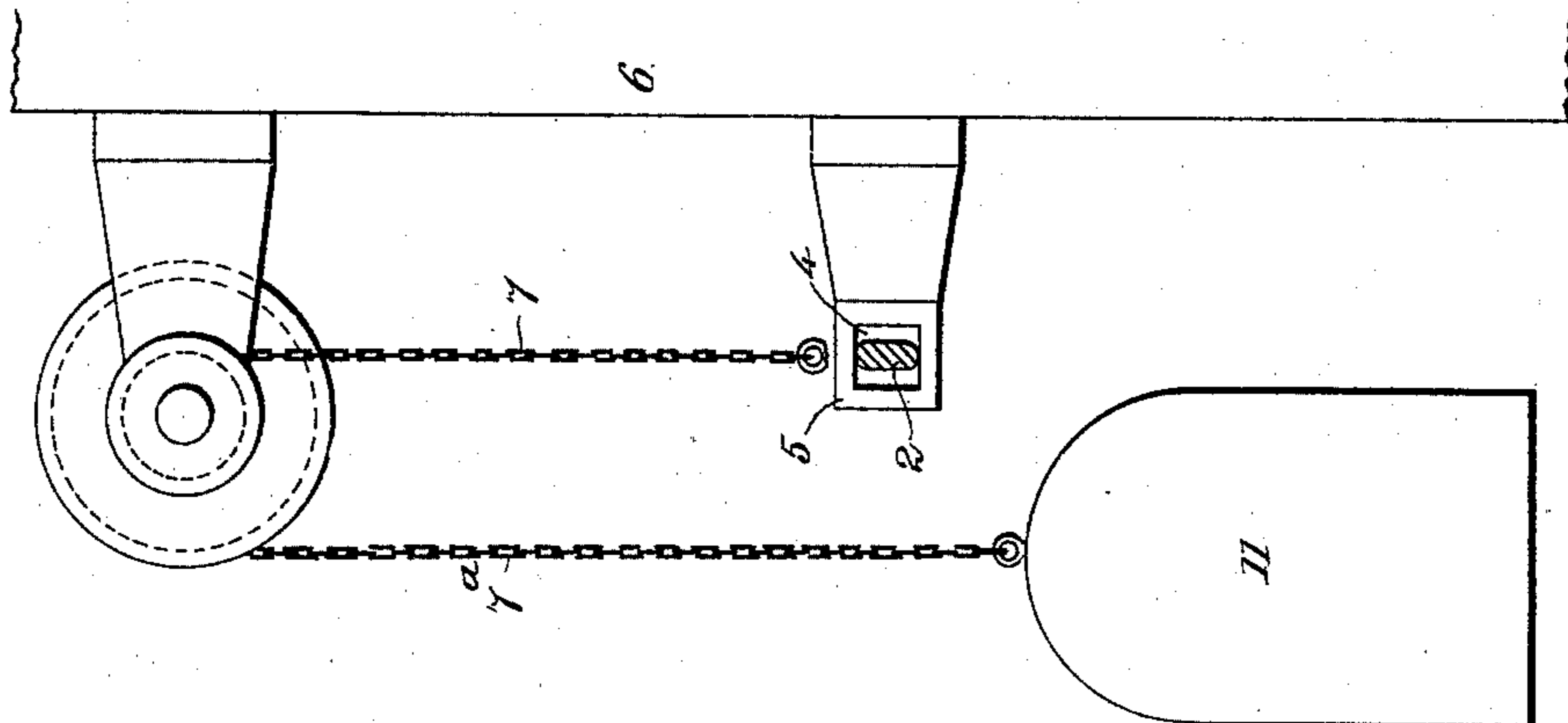
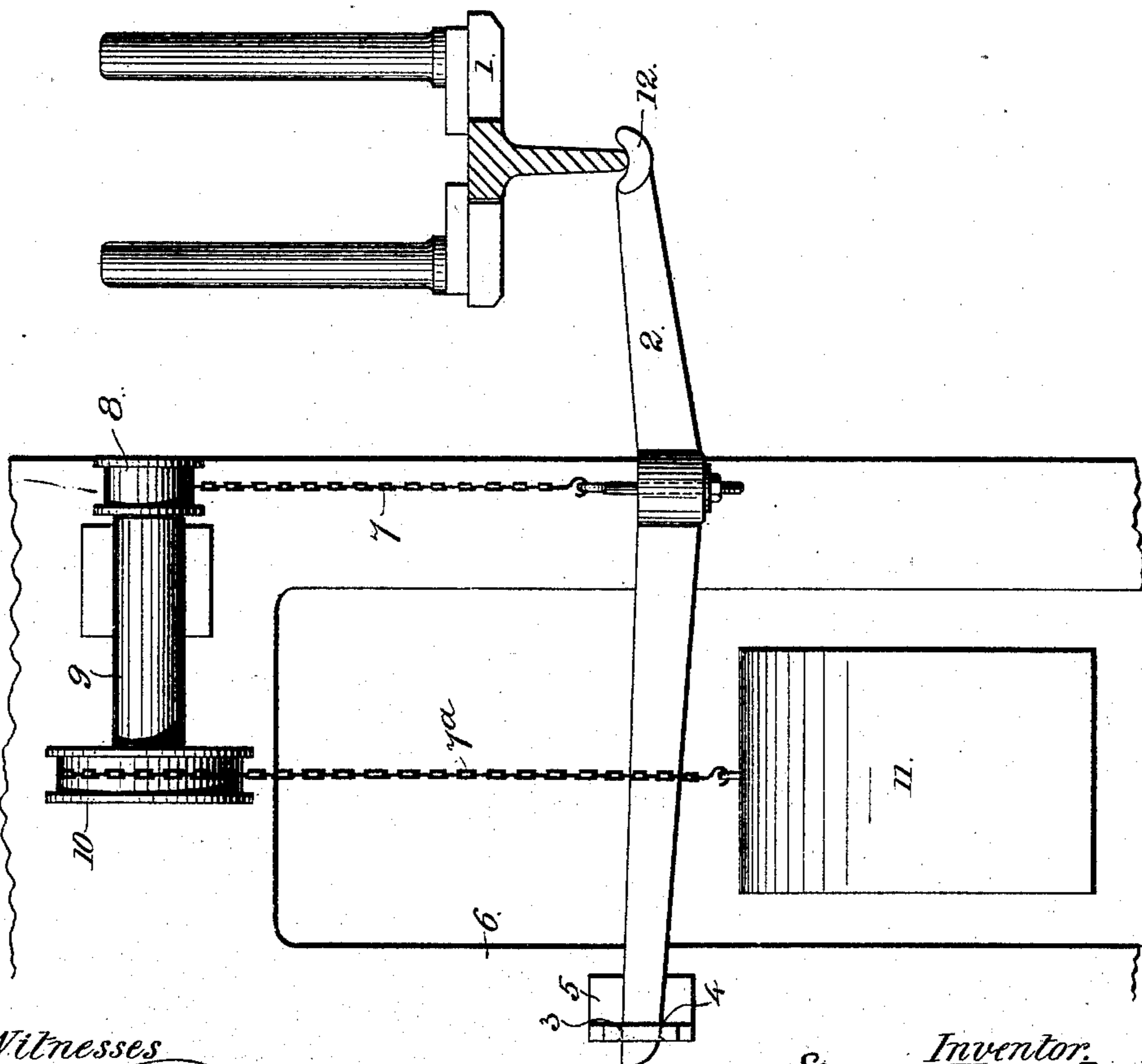


Fig. 3.



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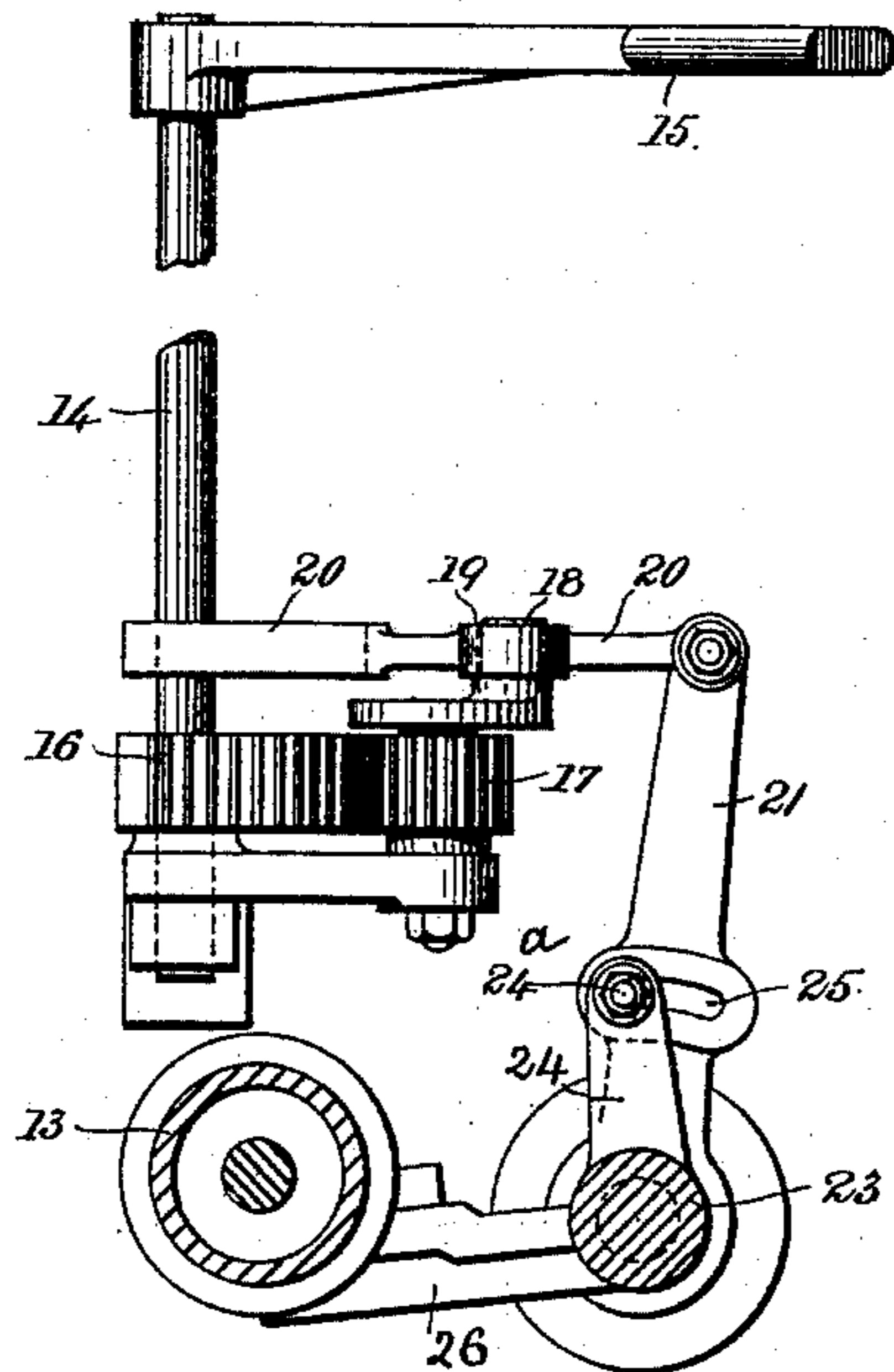


Fig. 5.

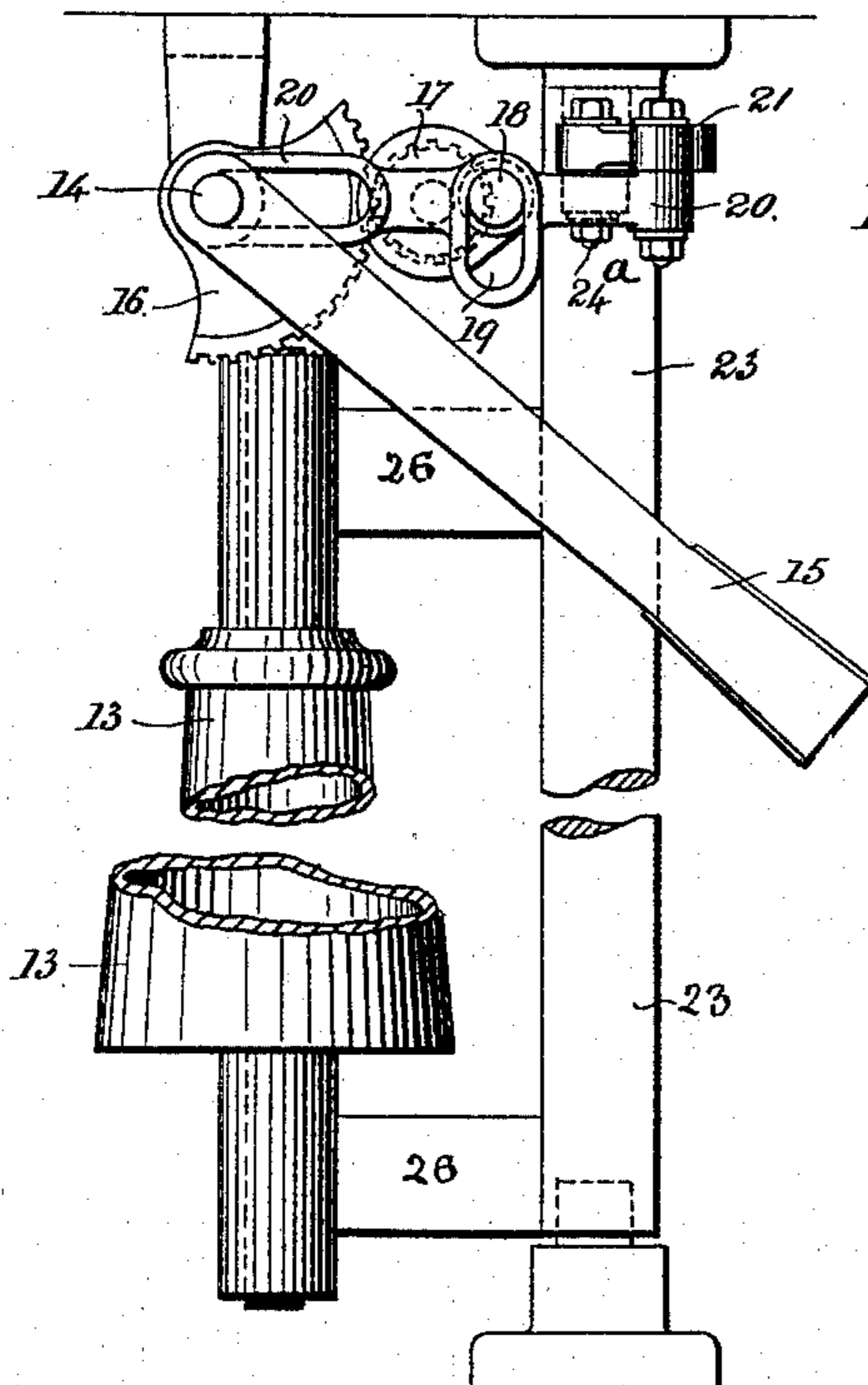


Fig. 6.

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UNITED STATES PATENT OFFICE.

SAMUEL TWEEDALE, OF ACCRINGTON, COUNTY OF LANCASTER, ENGLAND.

ROVING-FRAME, &c.

SPECIFICATION forming part of Letters Patent No. 396,718, dated January 22, 1889.

Application filed July 12, 1887. Serial No. 244,106. (No model.) Patented in England January 12, 1885, No. 395.

To all whom it may concern:

Be it known that I, SAMUEL TWEEDALE, a subject of Her Majesty the Queen of Great Britain, residing at Accrington, in the county of Lancaster, England, have invented new and useful Improvements in Roving and Slubbing Frames, (for which I have obtained Letters Patent in Great Britain under No. 395, dated January 12, 1885,) of which the following is a specification.

The invention relates to machines employed for roving and slubbing cotton fibers, and has for its object to provide means for insuring the balancing of the top or lifting rail, and also for raising and lowering the bottom cone of such machinery, so as to facilitate the transfer of the strap to the opposite end of the cone in order to alter the speed of the winding taking place on the bobbins.

To clearly explain the nature of my invention, reference is made to the accompanying drawings, in which—

Figure 1 is a rear elevation showing part of the framing and gear of an ordinary roving-machine having my improvements applied thereto. Fig. 2 is an enlarged view, partly in section, looking from the right-hand end of Fig. 1. Fig. 3 is an enlarged view of the lever and devices for balancing the top rail. Fig. 4 is an end view of the pulleys and weight, with the levers shown in section. Fig. 5 is an elevation, partly in section, of the arrangement employed for raising and lowering the bottom cone; and Fig. 6 is a plan view of the same.

For the purpose of insuring the balance of the lifting-rail 1, I employ a lever, 2, the end 3 of which, forming its fulcrum, is free to move in a slot, 4, formed in a bracket, 5, attached to the back of the frame 6, and at a point as near the lifting-rail 1 as practicable. I attach to the said lever 2, by means of a pin passing through an opening in the lever and provided upon its lower end with a washer and nut, the end of a chain or strap, 7, which is from thence carried to a small pulley, 8, on the end of a short cross-shaft, 9, and on which shaft is also another pulley, 10, but of larger diameter than the one referred to, and from which pulley is suspended by a chain or strap, 7^a, a

balance-weight, 11, the other and inner end, 12, of the said lever 2 being immediately under the center of and serving to support the lifting-rail 1, which, by reason of the weight being attached to the larger pulley, 10, is thus capable of being balanced at any desired point.

In order to facilitate the return of the belt after the bobbins have been filled, I employ a vertical shaft, 14, at the back of the frame, which is operated by a handle, 15, from the front of same. Supported upon the lower end of the shaft 14 is a segment-wheel, 16, gearing with a pinion-wheel, 17, mounted in rear of the segment 16 on a bracket, as shown in Fig. 5. Above the wheel 17 and connected to it is a crank-pin, 18, the latter being received and working in a slot, 19, formed in the lever 20, which lever is connected with a carrying bracket or arm, 21, secured on the shaft 23, mounted in the end frame of the machine, by means of an arm, 24, the purpose of which will be hereinafter explained. This lever 20 is slotted at its opposite end and encircles the shaft 14. From this shaft project arms 26 26, which, as shown, carry the cone 13 and support it in position. When the vertical shaft 14 is turned, its segment 16 operates the pinion 17 and crank-pin 18, thus turning the slotted lever 20 connected therewith to an extent equal to the throw of the crank-pin 18, which is thus brought to a dead-center, and, through the parts 20, 21, 23, 24, and 26, raising the cone and locking it in that position, a reversal of the handle 15 placing the cone 13 in the lower and the several parts in their normal position.

In order to vary the position of the cone 13 for the purpose of tightening or slackening its driving-belt, the short arm 24, which is rigidly secured to the shaft 23, is bolted at its upper end by a bolt and nut, 24^a, in a slot, 25, formed in the arm 21. By adjusting the position of the arm 24 the position of the cone may be altered without interfering with the raising and lowering motion above described.

What I claim, and desire to secure by Letters Patent, is—

1. In combination, the rail 1, a pivoted lever supporting said rail directly beneath its cen-

ter, a supplemental shaft, pulleys thereon, a strap directly connected to the pivoted lever, and a counterbalance-weight, substantially as described.

5 2. In combination, the cone 13, the rock-shaft 23, having arms 26 for supporting the cone, the hand operating-shaft 14, provided with the handle 15, and connections between the hand operating-shaft 14 and the shaft 23,
10 for transmitting the motion from the former to the latter for moving the cone, said connections consisting of a lever, 20, a gear and crank-pin connection for operating said lever, and connections between the lever 20 and the
15 shaft 23.

3. In combination, the cone 13, the rock-shaft 23, having arms 26 for supporting the cone, the operating-shaft 14, a segment, 16, on the end of the shaft 14, a gear, 17, meshing
20 therewith, a lever, 20, a gear, 17, and crank-

pin for operating said shaft, and connections between the lever 20 and the shaft 23, substantially as described.

4. The combination, with the bottom cone, of devices for raising and lowering it, consist- 25
ing of the shaft 14, segment 16, pinion 17, crank-pin 18, and slotted lever 20, the slotted arm 21, operated by the said lever 20, the shaft 23, and the arm 24, adapted to operate the
30 said shaft 23 through the turning of the arm 21, and arms 26 26, adapted to lift and lock the cone 13, all substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing
35 witnesses.

SAMUEL TWEEDALE.

Witnesses:

LAYCOCK HARGREAVES,
WALTER BRIERLEY.