

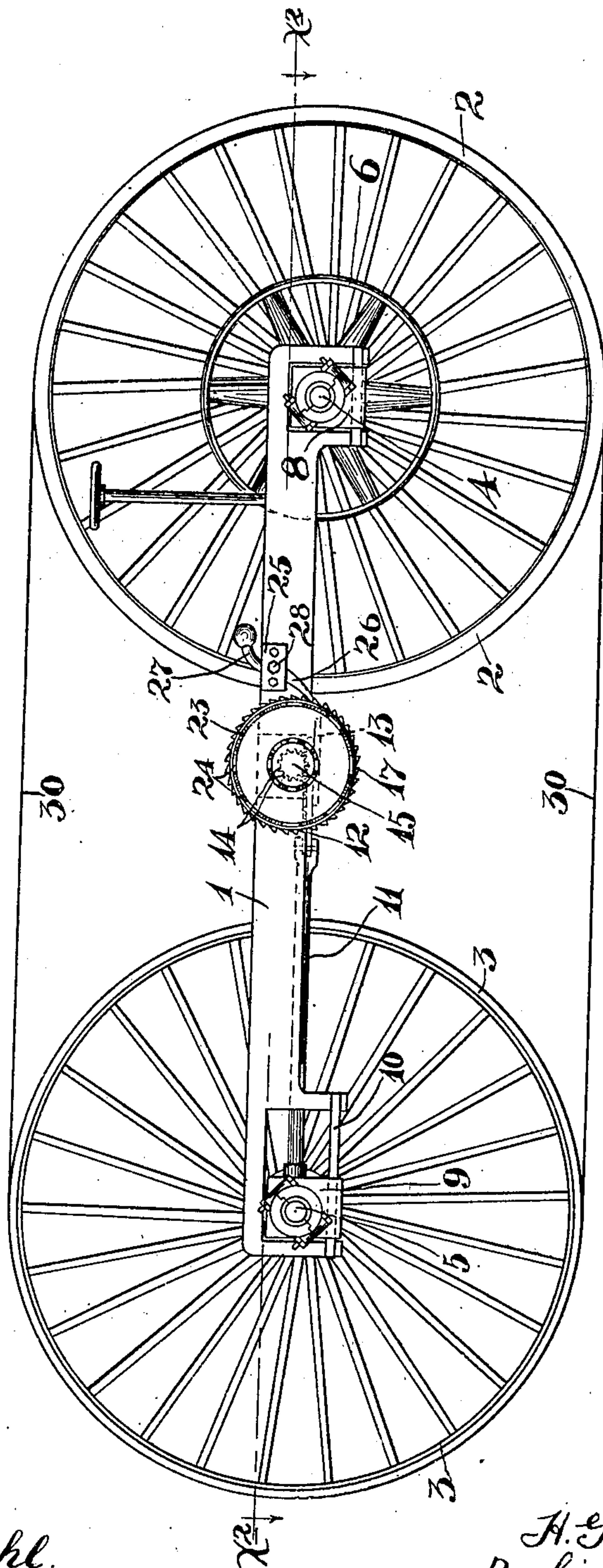
H. G. DITTBENNER.
BAND SAW TENSION DEVICE.
APPLICATION FILED MAY 18, 1908.

920,035.

Patented Apr. 27, 1909.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
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W. H. Souta.

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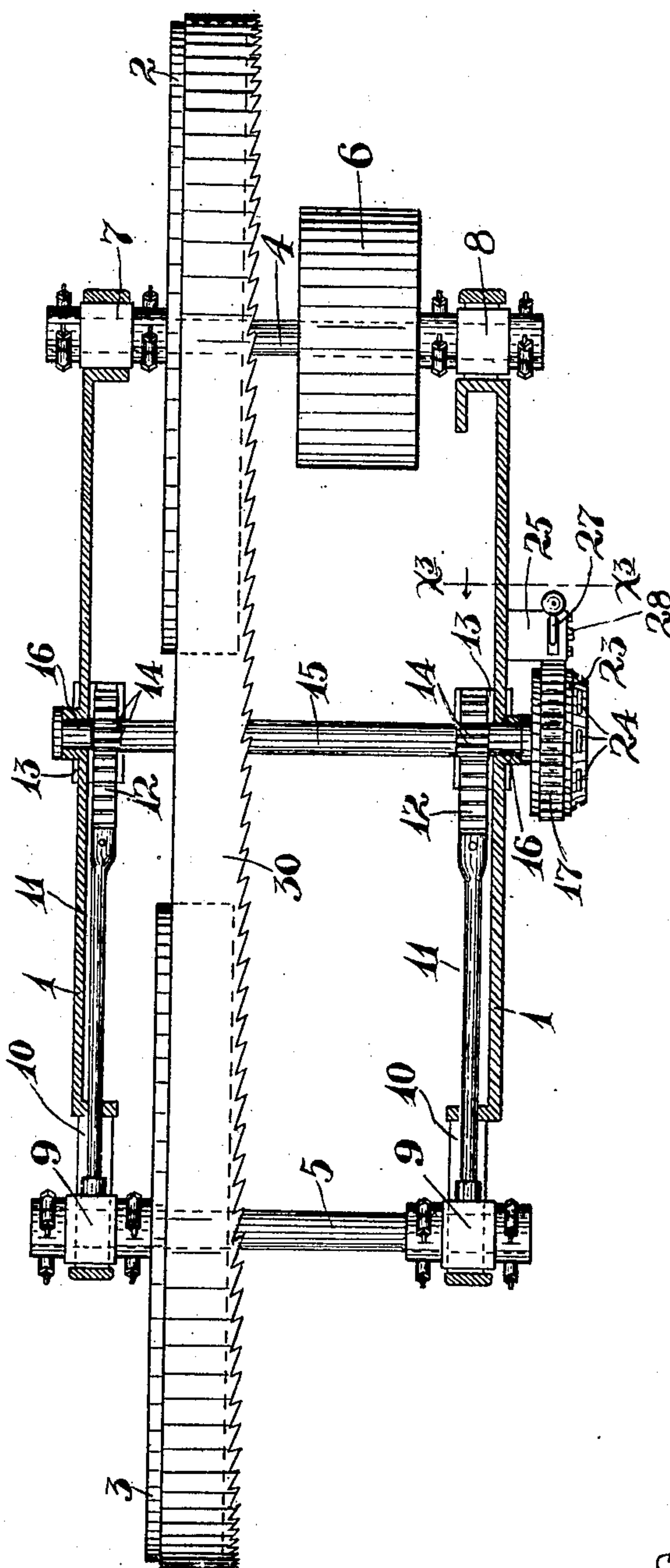
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4 SHEETS—SHEET 2.

Fig. 2.



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4 SHEETS—SHEET 3.

Fig. 3.

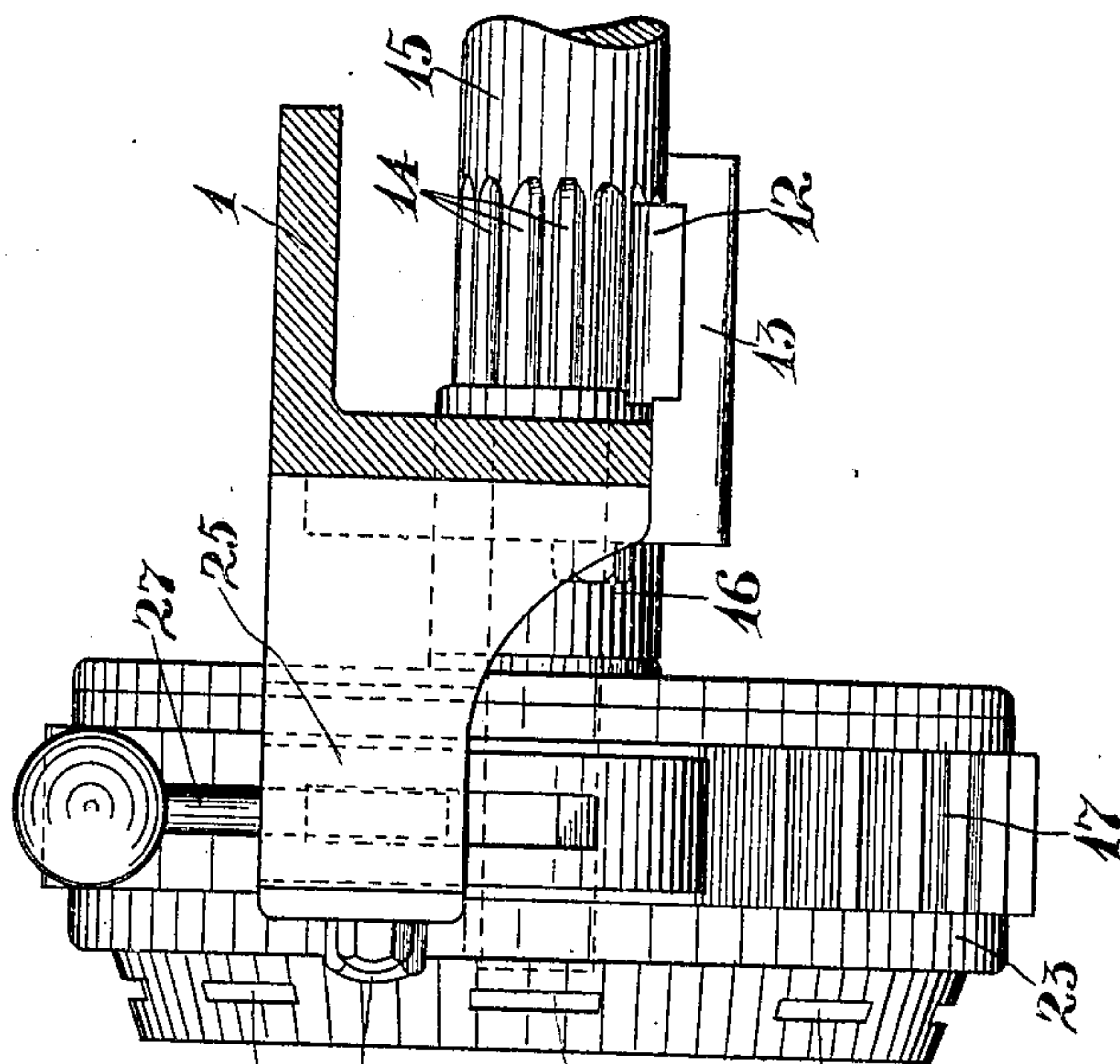
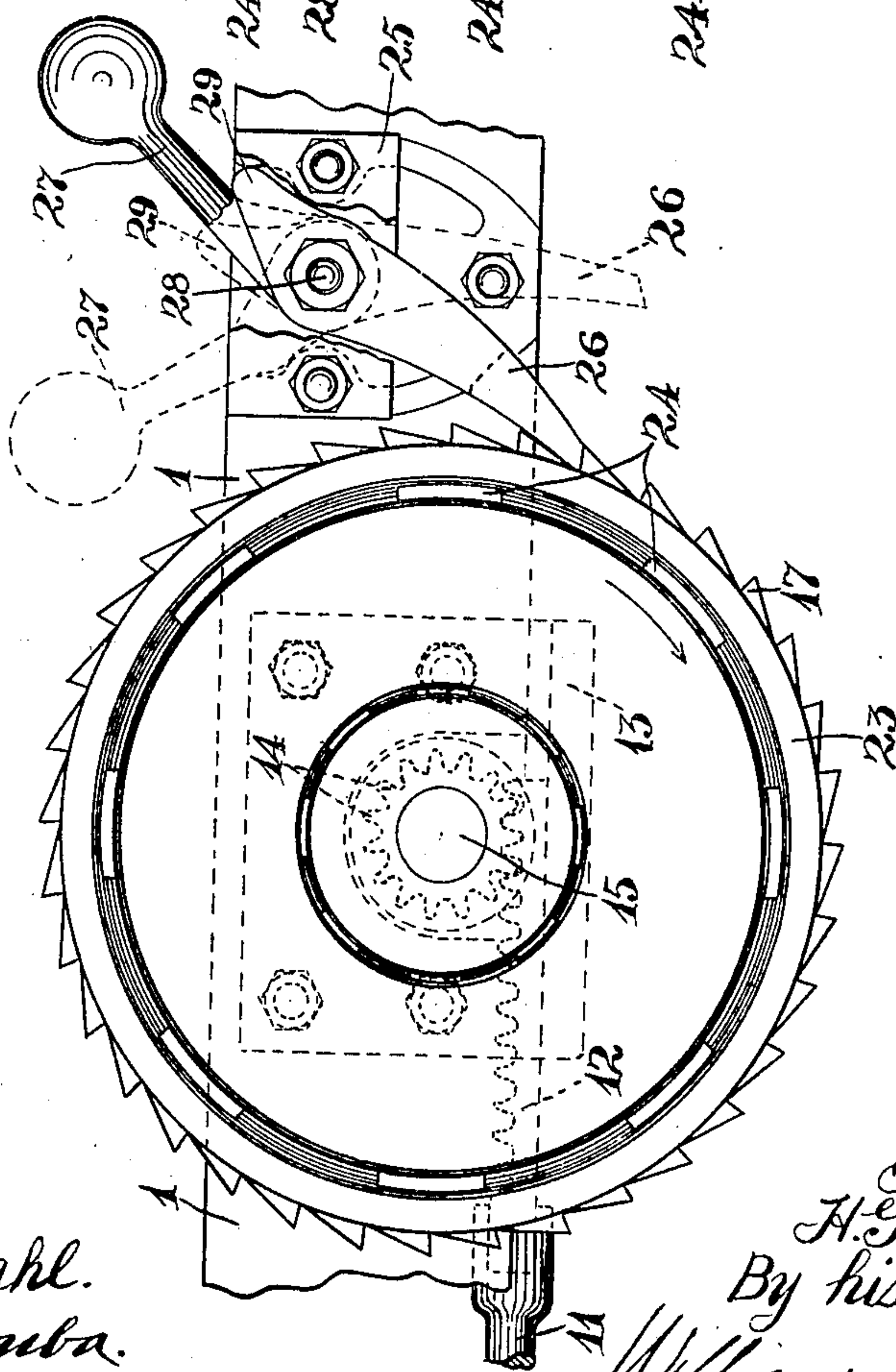


Fig. 4.



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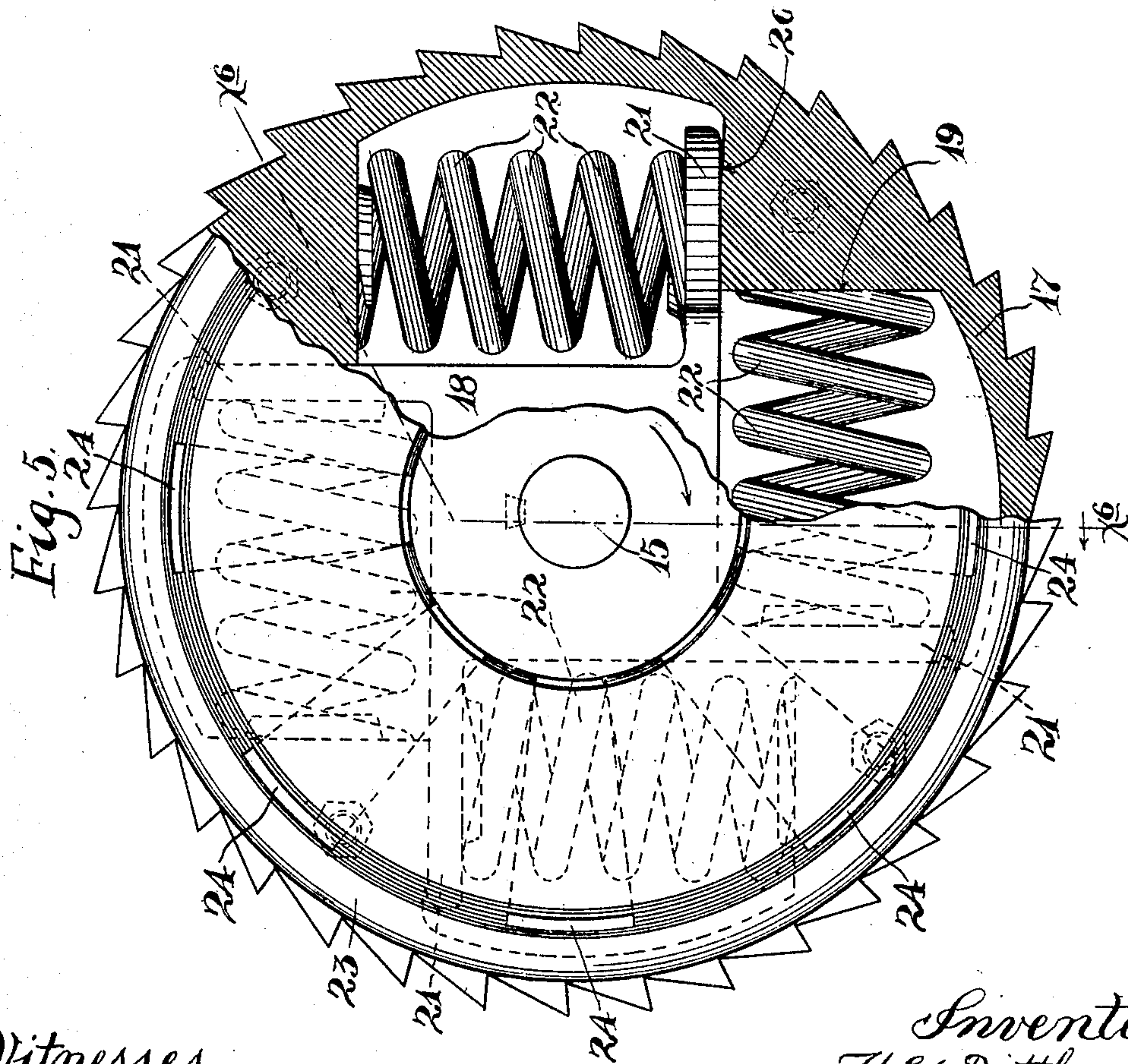
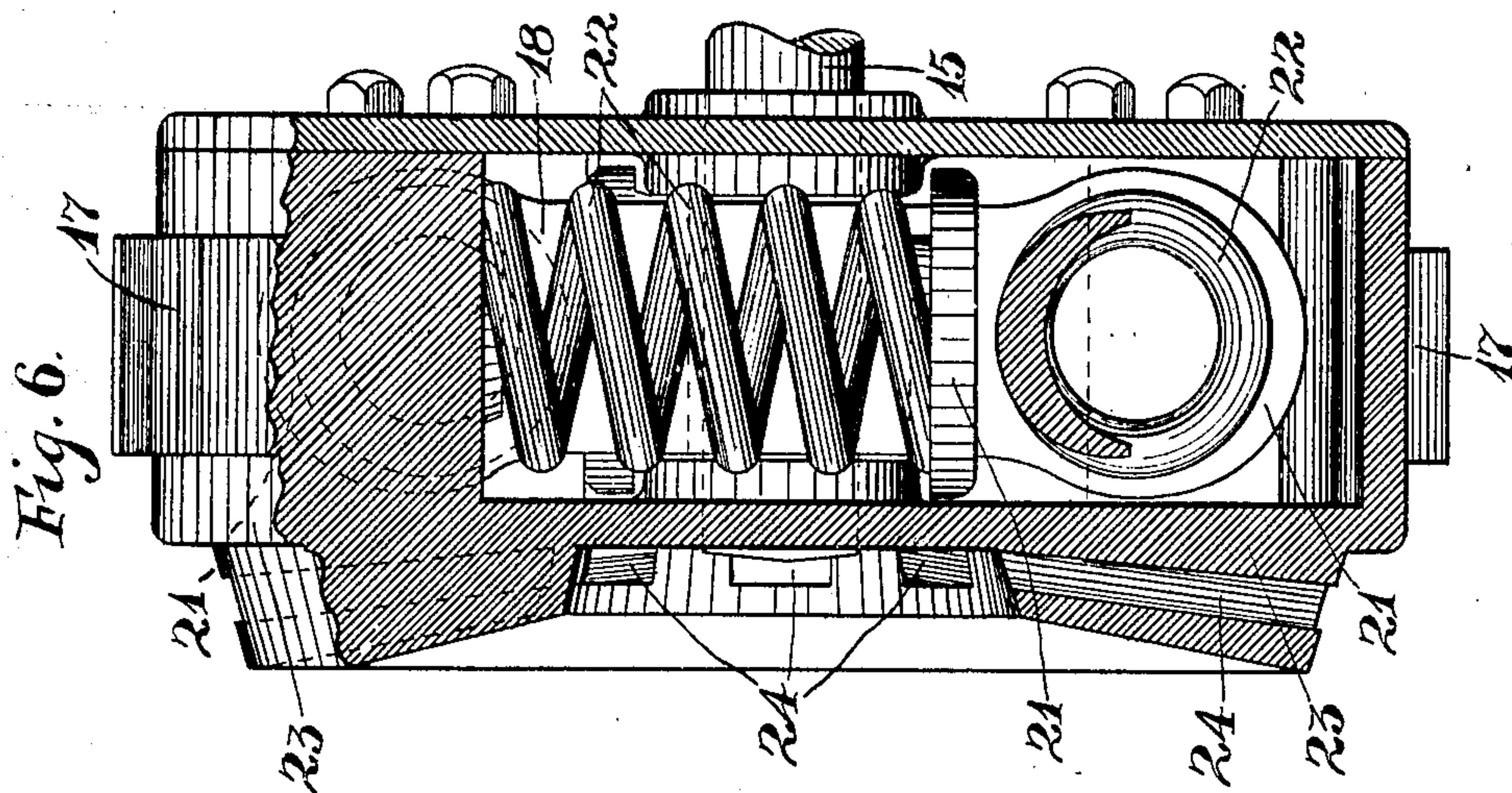
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4 SHEETS—SHEET 4.



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UNITED STATES PATENT OFFICE.

HERMANN G. DITTBENNER, OF MINNEAPOLIS, MINNESOTA.

BAND-SAW-TENSION DEVICE.

No. 920,035.

Specification of Letters Patent.

Patented April 27, 1909.

Original application filed April 24, 1907, Serial No. 369,977. Divided and this application filed May 18, 1908.
Serial No. 433,537.

To all whom it may concern:

Be it known that I, HERMANN G. DITTBENNER, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Band-Saw-Tension Devices; and I do hereby 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.

My present invention has for its object to provide an improved band saw tension device for band saw mills; and to this end it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

This application is filed as a division of my pending application S. N. 369,977, filed April 24, 1907, entitled "Horizontal band saw mills."

In the accompanying drawings which illustrate the invention like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view in side elevation, with some parts sectioned and with many of the parts of the mill removed, illustrating my improved saw tension device applied to a horizontal band saw mill of the character disclosed and claimed in my said prior application above identified. Fig. 2 is a view partly in plan and partly in horizontal section on the line $x^2 x^2$ of Fig. 1. Fig. 3 is a transverse vertical section taken on the line $x^3 x^3$ of Fig. 2. Fig. 4 is a front elevation of the parts shown in Fig. 3. Fig. 5 is a view corresponding to Fig. 4, but with some parts section and some parts removed; and Fig. 6 is a transverse section taken on the line $x^6 x^6$ of Fig. 5.

All of the parts of the machine shown in the drawings of this application are supported by a framework made up of laterally spaced frame bars 1. This frame 1, as illustrated, corresponds to the so-called supplemental frame of my said prior application above identified. The band saw wheels 2 and 3 are secured, respectively, to shafts 4 and 5. The shaft 4 is provided with a driving pulley 6 and is journaled in bearing boxes 7 and 8, suitably mounted in the frame-work 1 but preferably subject to adjustment by means of the band saw lead adjuster disclosed and claimed in a companion application filed of

even date herewith as a further division of the said prior application above identified.

In applying my improved saw tension device, the shaft 5 of the wheel 3, which latter is the driven member of the two band saw wheels, is journaled in bearing boxes 9 that are mounted to slide in longitudinal seats 10 formed in the adjacent end portions of the frame 1. The sliding bearing boxes 9 are connected or subject to the outwardly projecting ends of laterally spaced and approximately parallel push rods 11, the inner ends of which are secured to or provided with rack bars 12. The push rods work through suitable bearings afforded by the side frames 1 and the racks 12 are guided for sliding movements by suitable keepers or bearings 13 secured to said side frames. The two rack bars 12 mesh with small spur pinions 14, the teeth of which, as shown, are cut directly on a transverse shaft 15 mounted in suitable bearings 16 on the side frames 1. A recessed ratchet wheel 17 is loosely mounted on one of the outer end portions of the shaft 15 and rigidly secured to said shaft, within the recess of said ratchet wheel, is a hub 18. The ratchet wheel 17 is provided with internal thrust lugs formed with thrust shoulders 19 and 20. The hub 18 is provided with projecting arms 21 that normally engage with the thrust shoulders 20 of the ratchet wheel. Strong coiled springs 22 are compressed between the arms 21 and thrust shoulders 19. The springs 22, as is evident, tend to maintain engagement between the arms 21 and cooperating stop shoulders 20. The ratchet wheel 17 is shown as provided with a projecting rim 23 which has radial slots 24, through which a bar or similar tool may be passed for the purpose of rotating the said ratchet wheel against the tension of the springs 22. Pivoted to a suitable bearing 25 on the adjacent frame bar 1 is a lock dog 26, the free end of which is adapted to engage the teeth of the ratchet wheel 17 to lock the said wheel in different set positions. As shown, the upper end portion of the dog 26 is bifurcated to receive the reduced lower end portion of a weighted arm 27. The dog 26 and arm 27 are pivotally connected to the bearing bracket 25 by a common pivot bolt 28. The weighted arm 27 is provided with a shoulder, which, when said arm is moved

into the position shown by full lines in Fig. 4, engages the end 29 of the dog 26 and yieldingly holds the dog 26 in an operative position for action on the teeth of the ratchet wheel 17. When the weighted arm 27 is moved into the position shown by dotted lines in Fig. 4 it is entirely out of action on the dog 26, so that when the said dog is relieved from pressure from the ratchet wheel 17 it will of itself, under the action of gravity, fall into an inoperative position, as shown by dotted lines in Fig. 4.

As is evident, under rotation of the ratchet wheel 17 and shaft 15 in the direction of the arrows marked on Figs. 4 and 5, the two thrust rods 11, and hence the two bearings 9 will be moved simultaneously outward or toward the left in respect to Figs. 1 and 2, so as to take up the slack of the band saw 30 which runs over the wheels 2 and 3. By rotation of the ratchet wheel 17 after the band saw has been drawn taut, the springs 22 will be compressed so as to put the saw under any desired yielding tension, it being, of course, understood that said ratchet wheel may be locked in any position in which it may be set, by means of the lock dog 26.

This improved saw tension device occupies but very little space, may be very easily adjusted, is strong and durable and of comparatively small cost; and furthermore, is highly efficient for the purposes had in view.

What I claim is:

1. In a band saw mill, the combination with saw guiding wheels and a band saw mounted to run over the same, of means for adjusting one of said wheels with respect to the other, comprising a pair of yieldingly connected rotatively mounted members one of which is connected to one of said wheels and means for holding the other of the said members in different adjustments, substantially as described.

2. In a band saw mill, the combination with saw guiding wheels and a band saw

mounted to run over the same, of means for adjusting one of said wheels with respect to the other and for varying the tension on the saw, comprising a ratchet wheel, a lock dog therefor, a cooperating hub member, one or more springs interposed between said hub member and said ratchet wheel, and an endwise adjustable connection between said hub member and the bearing for the said adjustable guide wheel, substantially as described.

3. In a horizontal band saw mill, the combination with guide wheels and a band saw mounted to run over the same, of means for adjusting one of said guide wheels with respect to the other and for varying the tension on the saw, comprising a thrust rod connected to the bearing of said adjustable wheel, a shaft geared to said thrust rod, a ratchet wheel loose on said shaft, a lock dog for adjustably setting said ratchet wheel, a hub member secured to said shaft, and one or more springs interposed between said hub member and ratchet wheel, substantially as described.

4. In a band saw mill, the combination with a pair of guide wheels and a band saw mounted to run over the same, of means for adjusting one of said guide wheels with respect to the other and for varying the tension on the saw, comprising a pair of thrust rods connected to the bearing of said adjustable guide wheel on opposite sides of said wheel, a shaft geared to said two thrust rods, a hub secured to said shaft, a ratchet wheel loose on said shaft, one or more springs interposed between said ratchet wheel and hub, and a dog for securing said ratchet wheel in different adjustments, substantially as described.

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

HERMANN G. DITTBENNER.

Witnesses:

HARRY D. KILGORE,
MALIE HOEL.