

No. 764,717.

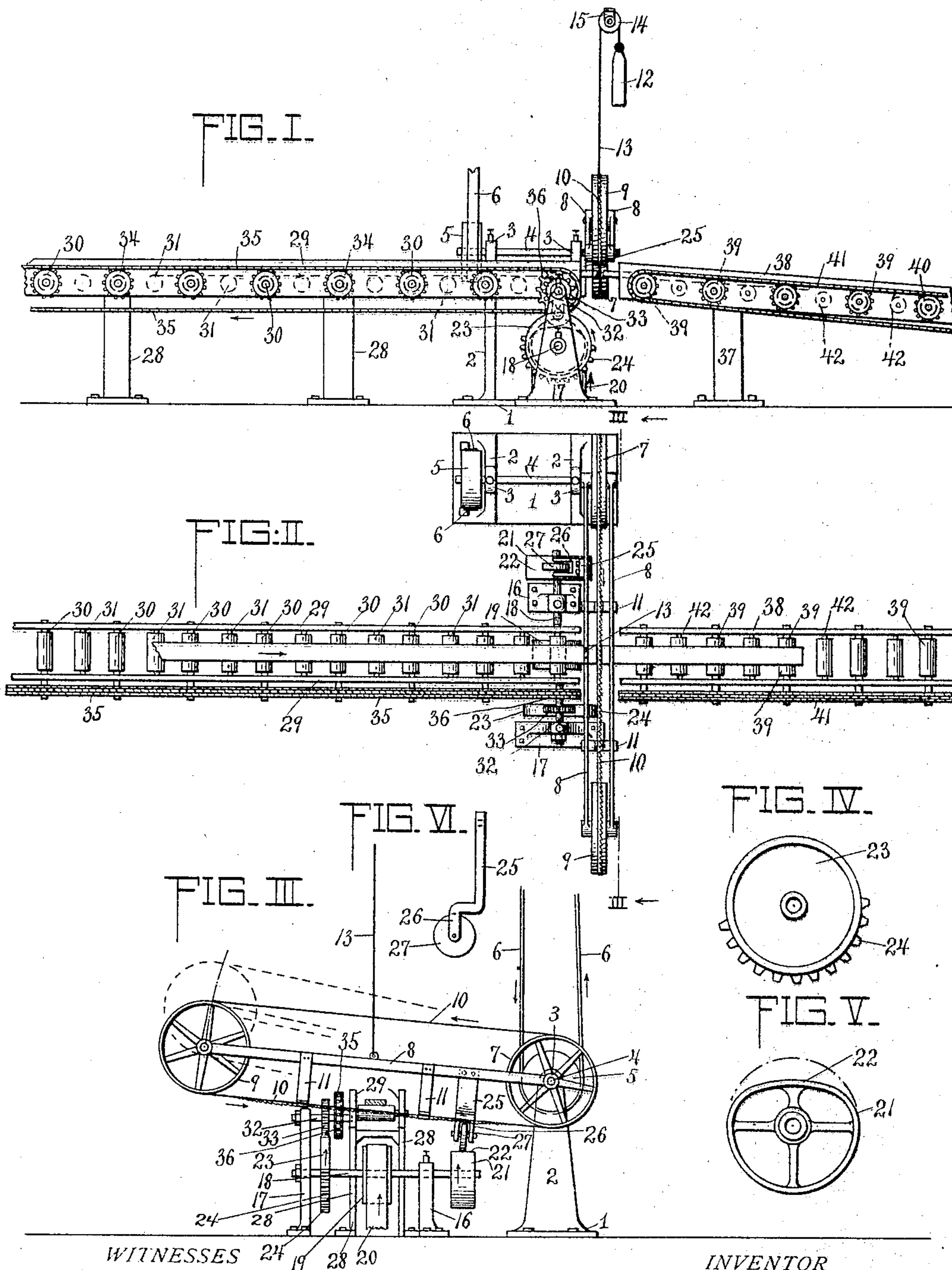
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M. FOSHEE.
BOLT SAWING MACHINE.

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NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES 24 19 28 20

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BOLT-SAWING MACHINE.

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To all whom it may concern:

Be it known that I, MASON FOSHEE, a citizen of the United States of America, and a resident of Chapman, in the county of Butler and State of Alabama, have invented certain new and useful Improvements in Bolt-Sawing Machines, of which the following is a specification.

My invention relates to bolters or slab-slashers whereby the refuse of sawmills is cut so as to be utilized for different purposes.

It is well known that in all sawmills there are great quantities of bolts, slabs, and other refuse from cutting lumber, which are generally used for fuel, and much of this refuse can be used when cut into proper lengths for staves, pickets, laths, posts, &c.

The main object of my invention is to provide an improved construction of bolt-sawing machine for this purpose in which the bolts, slabs, &c., are cut into desired lengths both economically and automatically and the machine can be so located as not to be in the way of other machinery, as are the ordinary bolt-sawing machines.

Another object of my invention is to provide a compact arrangement of parts whereby either a swinging band-saw or circular saw can be employed in connection with the means for raising and lowering the saw-frame with the saw and means for advancing the material to be operated upon intermittently.

Another object of my invention is to arrange the swinging saw-frame transversely of the conveyer while the cam-wheel for moving the saw-frame vertically and the segmental gear-wheel for operating the conveying mechanism can be both located on the same power-shaft at right angles and alongside of the saw-frame.

To this end my invention comprises a conveyer for feeding the material to the saw, a transversely-arranged swinging saw-frame on which the saw is carried, having a depending arm rigidly secured thereto, a power-shaft extending transversely of the conveyer, a cam-wheel having a rim formed with a flattened part and upon the periphery of which the saw-frame is supported by its depending

arm, so as to be raised and lowered alternately, a wheel having a part of its rim provided with a peripheral segmental gear and fixed to the power-shaft, and a countershaft located parallel with the power-shaft, having a gear-wheel fixed thereto and moved intermittently by the engagement of the segmental gear with the gear-wheel, so as to drive the conveyer to feed the material beneath the saw, all as hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure I is a side elevation of my improved bolt-sawing machine in which I employ a band-saw, the latter being in operative position, and a chain-driven roller conveyer. Fig. II is a plan view thereof. Fig. III is a vertical transverse section thereof, taken on the line III III of Fig. II looking in the direction of the arrows, the raised position of the saw-frame being shown in dotted lines. Fig. IV is a side elevation of the segmental gear-wheel for advancing the material intermittently. Fig. V is a side elevation of a cam-wheel for raising and lowering the saw out of and into position for work. Fig. VI is a detail view of the arm whereby the saw is supported on the cam-wheel. Fig. VII is a side elevation of my machine in which I employ a circular saw and the conveyer is driven by a train of gear-wheels instead of a chain. Fig. VIII is a side elevation of my machine in which the material is conveyed to the saw upon a chain having flights. Fig. IX is a vertical transverse section taken on the line IX IX, Fig. VII, looking in the direction of the arrows. Fig. X is a vertical transverse section taken on the line X X, Fig. VIII, looking in the direction of the arrows.

1 represents a suitable frame having standards 2, provided with bearings 3, in which is mounted a power-shaft 4, having fixed thereto at one end a driving-pulley 5, driven by a belt 6. Fixed to the other end of the pulley-shaft 4 is an inner pulley 7.

8 is a transversely-arranged swinging band-saw frame loosely mounted at its inner end

on the power-shaft 4 and embracing the inner pulley 7. Loosely mounted within the outer end of the saw-frame 8 is an outer pulley 9, and extending around both the inner and 5 outer pulleys 7 and 9 is a band-saw 10, driven by the inner pulley 7 over the outer pulley 9.

11 represents depending guide-brackets secured to the lower edge of the saw-frame for bringing the band-saw 10 into position for 10 cutting the material in a vertical plane.

The saw-frame 8 is supported in part by a counterbalance-weight 12, suspended from a flexible connection 13, secured at its inner end to the saw-frame 8 and passing from the latter over a sheave 14, journaled in a hanger 15.

16 is a rear standard, and 17 a front standard, in which is mounted another power-shaft 18, having a driving-pulley 19, driven by a belt 20. Fixed to the inner end of this power-shaft 18 is a cam-wheel 21, having its rim 20 formed with a flattened part 22, and fixed on the outer end of the power-shaft 18 is a wheel 23, having on the rim thereof a peripheral segmental gear 24.

25 is a depending arm secured to the saw-frame and having a bifurcated or forked lower end 26, in which is mounted an anti-friction-roller 27, working on the periphery of the cam-wheel 21, whereby the saw-frame 30 8 is supported and lowered and raised alternately as the cam-wheel 21 is rotated to place the saw into and out of operative position.

28 represents paired series of supports for a conveyer for feeding the material to the 35 saw. Secured to these supports 28 are side walls 29, in which are journaled, alternately arranged, live rollers 30 and dead rollers 31, on which the material is fed to the saw 10.

32 is a counter-shaft journaled in a support 40 28 at its inner end and in the front standard 17 over the power-shaft 18 at its outer end. Fixed to this counter-shaft 32 is a gear-wheel 33, intermittently rotated by the segmental gear 24 on the wheel 23 when the saw-frame 45 8 is raised from its working position.

On the journals of the live rollers 30 are mounted sprocket-wheels 34, which are engaged by a driving sprocket-chain 35, operated by a sprocket-wheel 36, fixed to the 50 counter-shaft 32 at the inner side of the gear-wheel 33.

The material when it has been cut is passed to a conveyer, comprising supports 37, side walls 38, live rollers 39, journaled in the walls 55 and having sprocket gear-wheels 40, whereby they are driven by a sprocket-chain 41.

42 represents dead rollers alternating with the live rollers 39.

60 Instead of the band-saw 10, (shown in Figs. I, II, and III,) I may employ a circular saw 10^a, (shown in Figs. VII, VIII, IX, and X,) in which 8^a is a saw-frame loosely mounted on a power-shaft 4^a between bearings 3^a on standards 2^a. 5^a is a driving-pulley fixed to

one end of the power-shaft 4^a and driven by 65 a belt 6^a, and 7^a is an inner pulley fixed to the power-shaft 4^a adjacent to the saw-frame 8^a. Fixed to the shaft 10^b of the circular saw 10^a is an outer pulley 9^a, connected by a belt 7^b with the inner pulley 7^a for rotating the saw. 70

In Figs. VII and IX, I show the live rolls of the conveyer driven by a train of gearing 34^a, and in Figs. VIII and X, I show a chain conveyer 30^a, having flights 31^a. The driving sprocket-chain 35^a in this instance is 75 led off under idle sprocket-wheels 35^b beneath the receiving-conveyer. This is a convenient arrangement in connection with those saw-mills which have one long continuous chain, as my sawing-machine can be installed by in- 80 serting a section of conveyer over the main conveyer, as shown in Fig. VIII.

The operation of my improved sawing device will be readily apparent. The power-shafts 4 and 18 of the saw and feed-conveyer, 85 respectively, being rotated in the direction indicated by the arrows and the cam-wheel 21 having its flattened part 22 uppermost and the wheel 23 having its peripheral segmental gear 34 lowermost, the saw is in its lowest opera- 90 tive position for cutting the material. As soon as the flattened part 22 of the cam-wheel 21 leaves the arm of the saw-frame the latter is raised out of the path of the material. At the same time the cogless part of the wheel 95 23 passes from beneath the gear-wheel 33 and the peripheral segmental gear 24 advances and engages the gear-wheel 33, thus rotating the counter-shaft 32 in the opposite direction to operate the conveyer and pull it the required 100 distance to advance the bolt beyond the delivery side of the saw. When the segmental gear 24 has passed beyond the gear-wheel 33, the conveyer is stopped, and as soon as the flattened part 22 of the cam-wheel 21 reaches 105 the depending arm 25 of the saw-frame the saw is lowered onto the bolt, which is quickly cut, and the receiving-conveyer removes the severed part. The distance the bolt is advanced is gaged by the comparative sizes of 110 the gear-wheel 33 and sprocket-wheel 36 and the number of cogs in the segmental gear 24.

It will be observed that the saw-frame works up and down between the feeding and 115 receiving conveyers.

This bolt-sawing machine is simple in construction, of considerable strength, and not complicated in its arrangement.

Having thus described my invention, the following is what I claim as new therein and 120 sire to secure by Letters Patent:

1. A bolt-sawing machine comprising a conveyer, a transversely-arranged swinging saw-frame having a depending arm, a power-shaft, a cam-wheel fixed to the power-shaft and upon 125 the periphery of which the saw-frame is supported by its depending arm, a wheel having a peripheral segmental gear and fixed to the

power-shaft, a counter-shaft, and a gear-wheel fixed to the counter-shaft and rotated intermittently by the segmental gear and driving the conveyer to feed the bolts beneath the saw-frame.

2. A bolt-sawing machine comprising a conveyer, a transversely-arranged swinging saw-frame having an arm provided with a roller, a power-shaft, a cam-wheel fixed to the power-shaft and upon the periphery of which the roller of the arm of the saw-frame is adapted to play to raise and lower the saw-frame, a wheel having a peripheral segmental gear and fixed to the power-shaft, a counter-shaft, and a gear-wheel fixed to the counter-shaft and rotated intermittently by the segmental gear and driving the conveyer to feed the bolts beneath the saw-frame.

3. A bolt-sawing machine comprising a conveyer, a transversely-arranged swinging saw-frame having an arm, a power-shaft, a cam-wheel fixed to the power-shaft and upon the periphery of which the saw-frame is supported by its arm, a wheel having a peripheral segmental gear and fixed to the power-shaft, a counter-shaft, means whereby the counter-shaft is connected with the conveyer, and a gear-wheel fixed to the counter-shaft and rotated intermittently by the segmental gear and driving the conveyer to feed the bolts beneath the saw-frame.

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Witnesses:

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