A. L. EDWARDS.

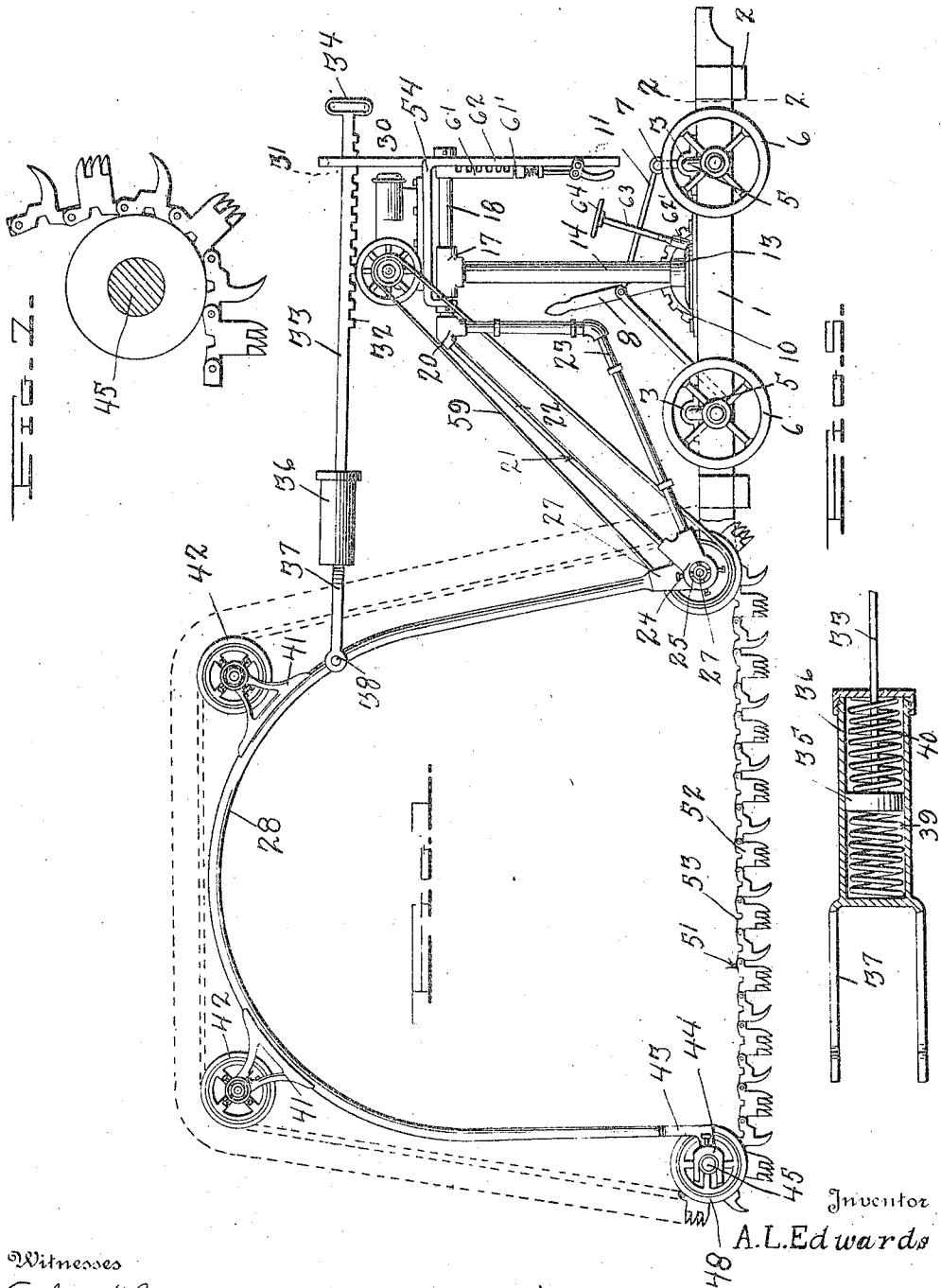
SAWING MACHINE.

APPLICATION FILED OCT. 13, 1914.

1,190,739.

Patented July 11, 1916.

2 SHEETS—SHEET 1.



Witnesses

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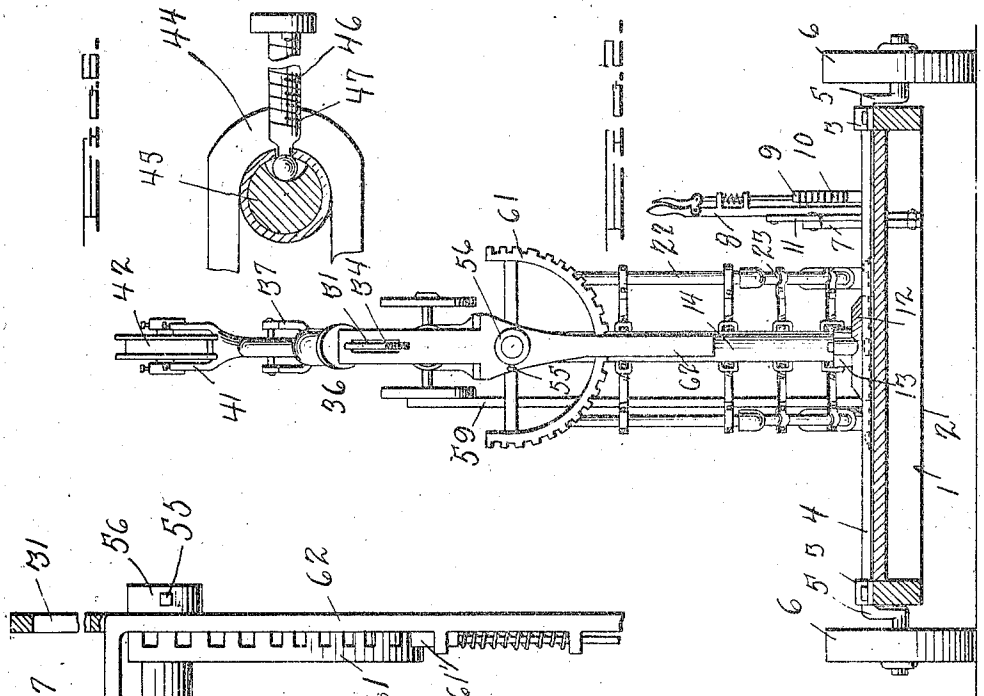
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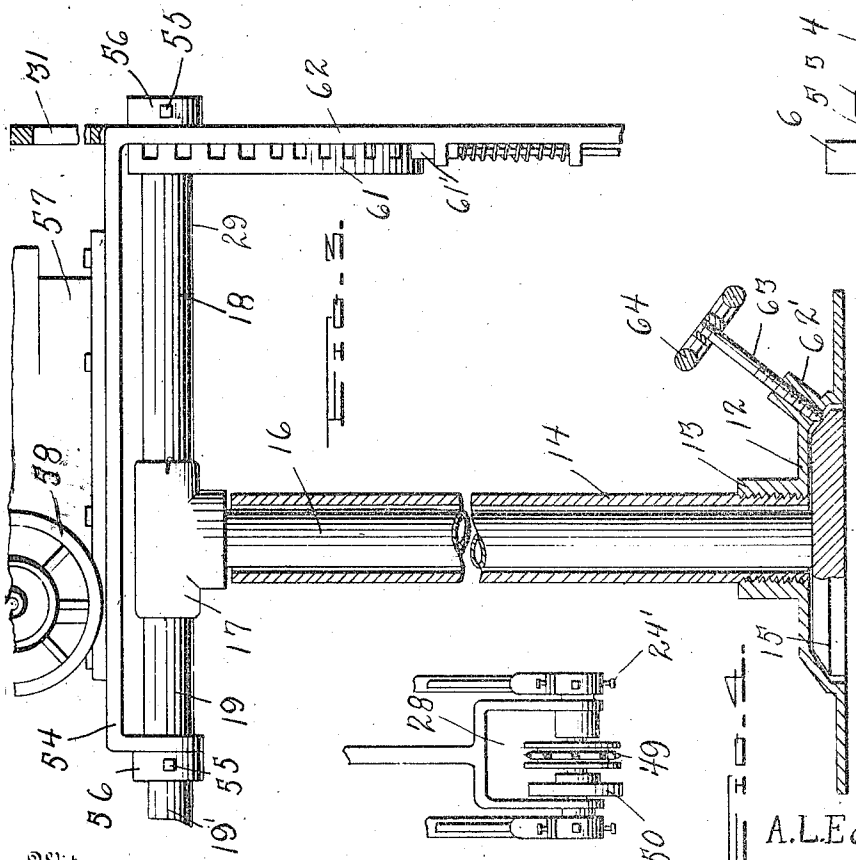
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UNITED STATES PATENT OFFICE.

ARTHUR L. EDWARDS, OF LEWISTOWN, MONTANA.

SAWING-MACHINE.

1,190,739. Specification of Letters Patent. Patented July 11, 1916.

Application filed October 13, 1914. Serial No. 866,514.

To all whom it may concern:

Be it known that I, ARTHUR L. EDWARDS, a citizen of the United States, residing at Lewistown, in the county of Fergus, State of Montana, have invented certain new and useful Improvements in Sawing-Machines; 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.

The object of the invention is to provide a machine of this character wherein the saw will be of the endless type and which may be transported from one place to the other to facilitate the sawing of trees.

A further object of the invention resides in the provision of wheel truck means whereby the machine may be readily transported from one place to another, said truck being provided with means for rendering the wheels inoperative for their purpose, whereby the truck forms a secure and rigid support or base for the machine.

A still further object of the invention resides in the provision of a sawing machine including a saw carrying member adapted to be tilted and held in any desired angular relation to the truck, means also being provided for moving the saw carrying means vertically with relation to the truck.

A still further object of the invention resides in the provision of a sawing machine of the class described of a chain saw comprising elements forming saw teeth and adapted for engagement with sprocket wheels whereby they will be driven thereby.

A still further object of the invention resides in the provision of a sawing machine, of means whereby the saw carrying member is resiliently supported so that the saw may be yieldable when contacting with a knot or other hard substance within a tree and thus lessen or obviate the liability of the teeth becoming broken.

With these and other objects in view, such as will appear as the description progresses, my invention comprises the combination and arrangement of parts as herein set forth and subsequently claimed.

Referring to the drawing:—Figure 1 is a side elevation of my device. Fig. 2 is a section on line 2—2 of Fig. 1. Fig. 3 is an enlarged vertical longitudinal sectional view through the supporting post and mechanism connected therewith. Fig. 4 is a detail view of the sprocket and its support. Fig. 5 is a longitudinal sectional view through the shock absorber. Fig. 6 is a view of the saw tensioning means. Fig. 7 is a detail view of a portion of the saw.

Referring to the drawing wherein like parts are indicated by like characters throughout the several views:—My device comprises a suitable truck 1 having transversely extending skids 2 on which the machine is adapted to rest when the machine is in operation. Extending transversely of the truck and rotatably mounted in bearings 3 are axles 4 having downwardly extending L-shaped portions 5 on which are mounted wheels 6. Formed on these axles 4 and extending in opposite directions are crank portions 7 by means of which the axles may be turned about their pivots to lower or raise the wheels 6. A lever 8 is pivoted to the upper face of the truck 1 and has a spring pressed pawl 9 thereon which coöperates with a segmental rack 10 to maintain the lever in any of its adjusted positions. Secured to this lever and extending therefrom are links 11 which are connected to the crank portions 7 to adjust the axles 4 to raise and lower the wheels 6.

Secured to the upper face of the truck 1 is a socket member 12 having an upwardly extending shank 13 in which is secured an upwardly extending hollow post 14. In the socket member 12 is a plate 15 which is rotatable therein and to the upper face of which is secured a post 16 which is located within the hollow post 14 and has secured to its upper end a T joint 17 in which is secured a cross arm 18 which extends to both sides of said T joint. A rod 19′ is mounted in the arm 18 and extends from the forward end of the arm 19. Secured to the forward end of this rod 19′ is an elbow 20 to which are secured downwardly diverging supporting members 21,

which members comprise straight arms 22 and brace arms 23 secured together at their lower ends by a member 24. Secured to the member 24 by set screws 24′ are bearings 25.

Member 28 is an upwardly bowed, saw supporting frame and the bifurcated ends of member 28 are pivotally secured on the offsets of members 24; these offsets are hollow, and are large enough to receive axle 27 and bearings 25; the bearings 25 are adjusted by set screws 24′.

On the rearmost arms 29 of the cross arm 18 is an upwardly extending member 30 having an aperture 31 in the upper end thereof. Extending through this aperture and adjustable therein by means of the teeth 32 is a rod 33 having a handle 34 on one end and a head 35 on the opposite end. This head 35 operates in a cylinder 36, which cylinder has a pair of outwardly extending arms 37 secured to the bowed frame of the saw 28 by pivots 38. Springs 39 and 40 press on both sides of the head 35 and maintain the same in resilient connection with the arm 33.

Secured to the upper portion of the frame 28 and in spaced relation are brackets 41 in which are rotatably mounted pulleys. The lower end of the frame 26 is bifurcated, as at 43, and extending outwardly therefrom are fork-shaped bearing members 44. An axle 45 extends between these bearing members 44 and is adjustable therein by means of screws 46 which extend through threaded apertures 47 in the members 44. Rotatably mounted on this axle 45 is a pulley 48.

Between the legs of the bifurcated end 27 of the frame 26 is fixedly mounted on the axle 25 a gear wheel 49 and a drive pulley 50.

Rotatable over the pulleys 42, 48 and the sprocket 49 is an endless saw 51. This saw comprises a series of teeth 52 having depressions 53 in their upper edges so that the said teeth depressions will engage in the teeth of the sprocket wheel 49.

In order that the saw may be driven, I have provided the following mechanism: Fixedly mounted on the rod 19′ is a motor bed 54 which is secured to the cross arm by means of a screw 55 passing through a collar 56 on the said bed. A motor 57 is secured to this bed and has the usual drive wheel 58 thereon. A driving belt 59 passes over this wheel 58 and over the pulley 50 on the shaft 25. Thus it may be seen that the rotation of the wheel 58 of the motor 57 will cause the belt 59 to rotate the pulley 50 and with it the gear 49 to cause the saw to pass about the pulleys 42 and 48.

Secured to the end of the arm 29 of the member 18 is a segmental rack 61 which cooperates with the spring pressed pawl 61′ mounted on a downwardly extending arm 62 on the motor bed 54. By means of this rack and pawl the saw frame 28 may be adjusted in any position with relation to the vertical and held in its adjusted position.

In order that the plate 15 may be held positively in its adjusted position after the motor has been adjusted on its pivot 16, I have provided a boss 62′ in which is adjustably mounted a binding rod 63 on the end of which is an operating handle 64.

The operation of the device is as follows: The device is pushed to a point adjacent to a tree to be felled. The lever 8 is then operated to allow the truck to rest upon the ground. The downwardly extending arm 62 is then gripped together with the operating handle of the pawl 61 and the motor bed 54 together with the saw frame 28 is turned at an angle. This angle is with relation to the vertical and may be varied to accommodate the particular tree. The member 63 may then be loosened so as to release the plate 15 and the saw frame 28 together with the motor is then swung about a pivot which is constituted by the post 16 until the saw teeth come in contact with the trunk of the tree. The motor is then started and the saw teeth cut the tree at an angle so that the same will be effectively sawed. When it is desired to cut the trunk of the tree or to transport the device to another place it is only necessary to reverse the operation and then grasp the handle 34 and draw upon the rod 33 which swings the frame 28 about a pivot and lift the saw teeth from their location in proximity to the ground. The device may then be wheeled at will to a different location and is ready for operation after having been adjusted.

From the foregoing description it may be seen that I have provided a saw mounted upon a carriage in such a way that the same may be transported from one place to another, and I have so mounted the saw carrying means that the said saw may be swung at any one of a number of angles with relation to the vertical and held in its adjusted position. I have still further provided means for mounting the saw carriage in such way that the said saw may be swung about a vertical pivot.

While I have described a particular embodiment of my invention, I wish it to be understood that I do not wish to be limited to that particular embodiment for it is obvious that numerous changes may be made within the scope of the invention as defined by the claim.

What is claimed is:—

A sawing machine comprising a rotatably mounted vertically extending post, a pair of downwardly diverging arms connected to the upper ends of said posts and being operable therewith on a horizontal axis, a saw frame pivotally connected to the

lower end of one of said arms and arranged to have movement in a vertical plane, a member secured to the other of said arms for adjusting the saw frame in its vertical plane and independent means for adjusting the frame on its horizontal pivot.

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

ARTHUR L. EDWARDS.

Witnesses:

CHAS. J. MARSHALL,

STUART MCLACKIE.