No. 831,715. PATENTED SEPT. 25, 1906.

D. E. FRANKS.

WOOD SAWING MACHINE.

APPLICATION FILED MAR. 10, 1906.

2 SHEETS—SHEET 1.

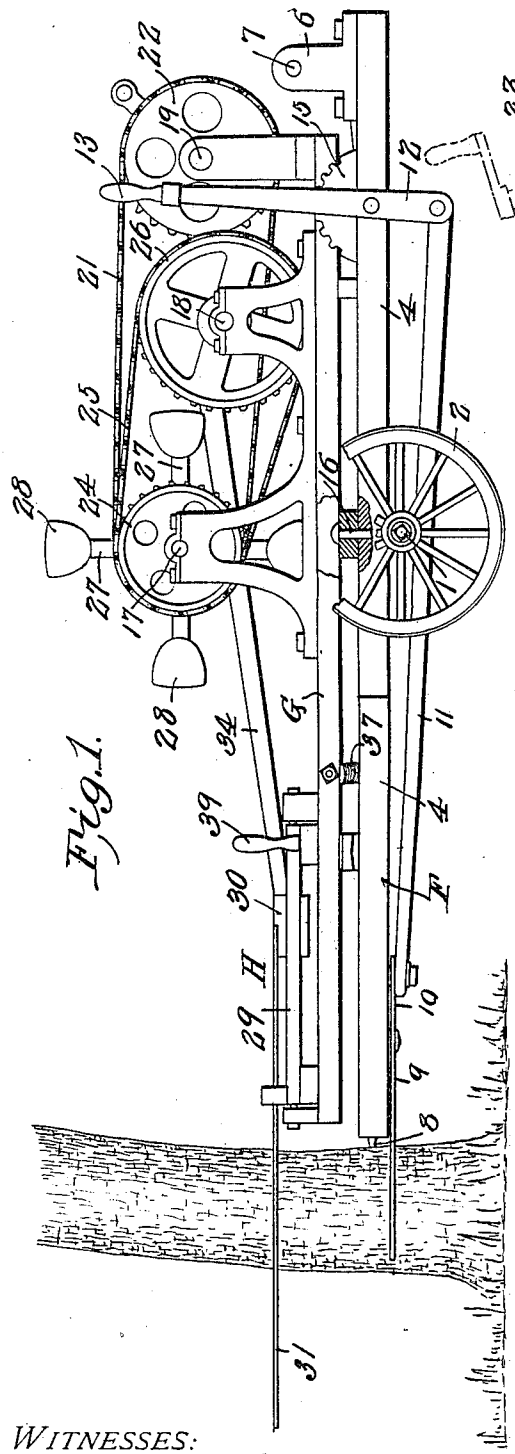

Fig. 1.

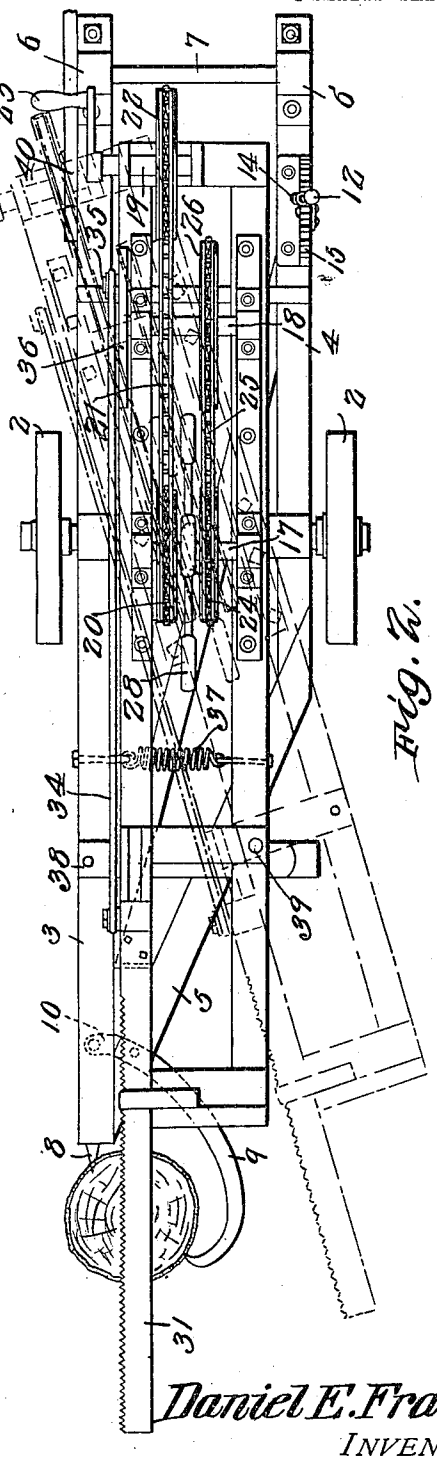

Fig. 2.

WITNESSES:

E. F. Stewart

Wm. Bagger

Daniel E. Franks

INVENTOR.

By Church & Co

ATTORNEYS

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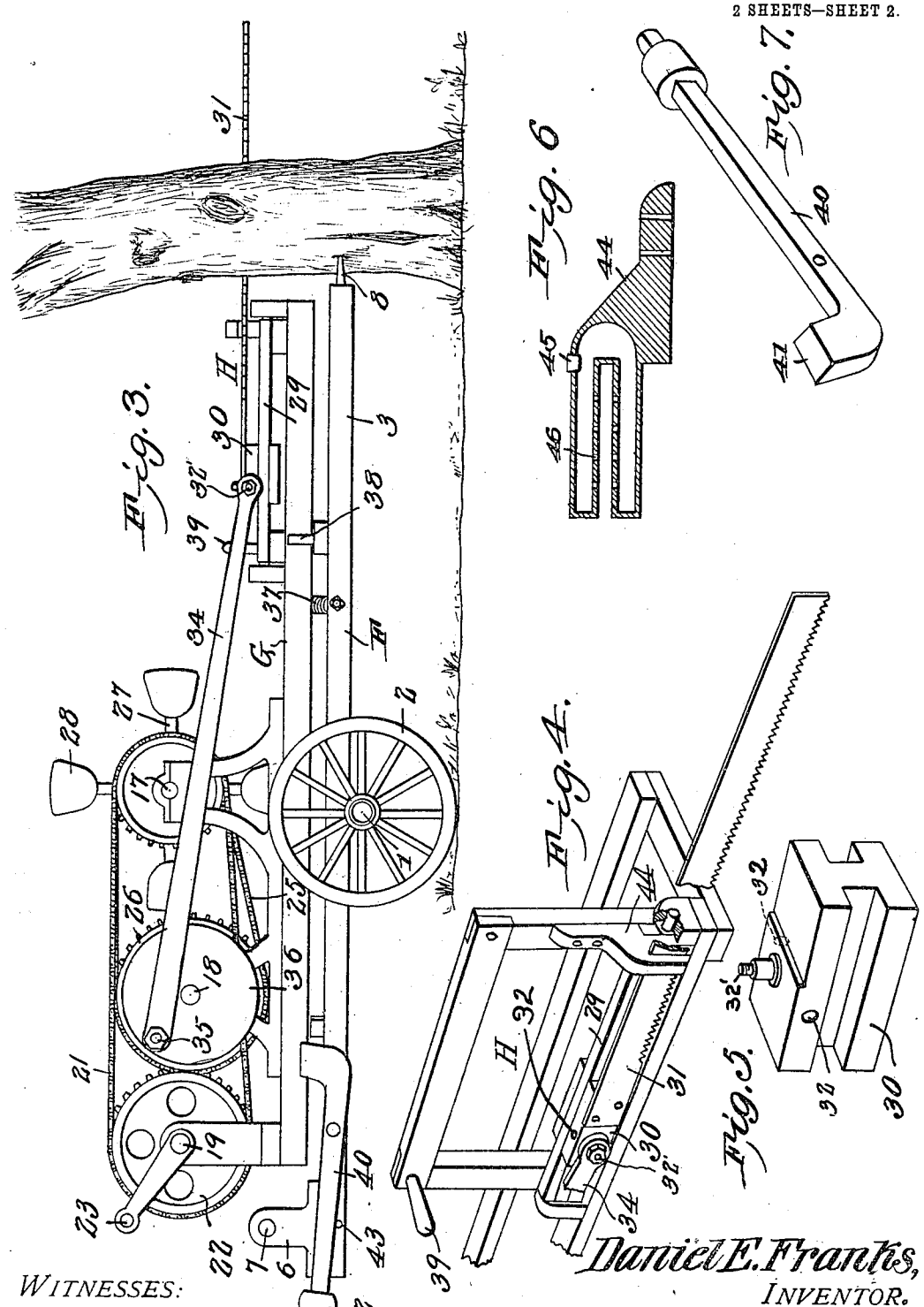

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ATTORNEYS

UNITED STATES PATENT OFFICE.

DANIEL E. FRANKS, OF CRYSTAL RIVER, FLORIDA, ASSIGNOR OF ONE-HALF TO GEORGE W. CROSBY, OF CRYSTAL RIVER, FLORIDA.

WOOD-SAWING MACHINE.

No. 831,715. Specification of Letters Patent. Patented Sept. 25, 1906.

Application filed March 10, 1906. Serial No. 305,356.

To all whom it may concern:

Be it known that I, DANIEL E. FRANKS, a citizen of the United States, residing at Crystal River, in the county of Citrus and State of Florida, have invented a new and useful Wood-Sawing Machine, of which the following is a specification.

This invention relates to an improved wood-sawing machine which may be usefully employed for felling trees, sawing logs or cord-wood, and for other purposes to which a wood-sawing machine may be employed, the objects of the invention being to simplify and improve the construction and operation of this class of machines.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations, and modifications within the scope of the invention may be resorted to when desired.

In the drawings, Figure 1 is a side elevation showing the improved machine in position for felling a tree. Fig. 2 is a top plan view. Fig. 3 is a side elevation showing the machine from the opposite side to that shown in Fig. 1. Fig. 4 is a perspective detail view of the saw head and guide, showing the same tilted to a position at right angles to the position shown in Figs. 1, 2, and 3. Fig. 5 is a perspective detail view of the saw-head. Fig. 6 is a sectional detail view of the lubricator, which also constitutes a saw-guide. Fig. 7 is a perspective detail view of the latch-lever for the pivoted or swinging saw-carrying frame.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

The main frame F of the improved machine is mounted for transportation upon an axle 1, having carrying-wheels 2 2. Said frame includes side members 3 and 4, the former of which is extended forwardly of the latter, with which it is connected by an obliquely-disposed front piece 5. The side members 3 4 are provided near their rear ends with brackets 6, connected by a cross-bar or handle 7, whereby the machine may be manipulated when it is to be transported from place to place. The forward end of the side member 3 of the frame is provided with a sharp-pointed spike or barb 8.

Upon the under side of the frame there is pivoted a grab-hook 9, having an arm 10, which is connected by means of a link-bar 11 with a lever 12, which is pivoted upon one side of the frame near the rear end of the latter. Said lever is extended upwardly to form a handle 13, and it is provided with a suitable spring-actuated or stop member 14, which by engaging a segment-rack 15 serves to secure the lever and the parts operated thereby at various adjustments.

Pivotally supported upon the main frame F, as by means of a king-bolt 16, is a swinging frame G, upon which are mounted brackets constituting bearings for shafts 17, 18, and 19. The shaft 17 carries a sprocket-wheel 20, which is connected by a link belt 21 with a sprocket-wheel 22 upon the shaft 19. The latter, which is supported near the rear end of the frame, is provided with a crank 23, capable of being operated by hand. The shaft 17 also carries a sprocket-wheel 24, which is connected by a link belt 25 with a sprocket-wheel 26 upon the shaft 18, which latter is thereby driven. The shaft 17 finally carries a balance wheel or member consisting of a plurality of arms or spokes 27, extending radially from the shaft and carrying at their outer ends weights 28, whereby regularity of movement will be conserved.

At the forward end of the frame G is hingedly supported a guide-frame H, having guides 29 for a cross-head 30, with which a saw-blade 31 is suitably connected. The saw-head or cross-head 30 is provided with two sockets 32 for the reception of a wrist-pin, as 32′, said sockets being at right angles to each other, the wrist-pin 32′ in Figs. 4 and 5 being located in one of the sockets 32 and the other socket 32 being clearly shown, and

said wrist-pin being adapted for connection with a pitman 34, the opposite end of which is connected with a wrist-pin 35 upon a disk 36, carried by the shaft 18, from which latter reciprocatory motion will thus be transmitted to the saw.

The main frame F is connected with the pivoted frame G by means of a spring 37, which serves to advance or to feed the saw, a stop member, as 38, being provided to limit the movement of the frame G. A suitably-disposed handle 39 is provided, whereby the pivoted frame may be manipulated, said handle being shown as connected with the hinged frame H, so that the latter may likewise be manipulated by said handle.

Pivotally connected with one side of the main frame F is a latch-lever 40, having a beveled or inclined face 41, which is disposed in the path of the pivoted frame G. The opposite end of the lever 40 carries a weight 42, serving to hold the lever normally in operative engagement with a stop member 43. When the pivoted frame G is retracted against the tension of the spring 37 to the position indicated in dotted lines in Fig. 2 of the drawings for the purpose of placing the saw in position to begin operations, one of the side members of said frame G will slide over the inclined or beveled face of the latch-lever, which latter as soon as the beveled face thereof is released from engagement with the frame G is restored by the weight 42 to its normal position, thus retaining the frame G in retracted position while the machine is being placed in position for operation.

Suitably supported upon the frame H is a hollow bifurcated member 44, constituting a lubricant-reservoir, the same being provided with a filling-plug 45. The inner sides or faces of the limbs of the bifurcated member 44 are provided with apertures 46, through which the lubricant may escape for the purpose of lubricating the saw-blade, which is guided between said members.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood by those skilled in the art to which it appertains. By manipulating the main or carrying frame by means of the handle 7 the machine may be readily transported to the place where it is to be used—for instance, for the purpose of felling a tree. The machine may be conveniently steered so as to drive the spike or barb 8 through the bark of a tree, the pivoted frame G being meanwhile held by the latch-lever 40 in the retracted position. (Shown in dotted lines in Fig. 2 of the drawings.) By manipulating the lever 12 the grab-hook 9 is then operated to force the point or prong of said hook through the bark of the tree, thereby securing the machine in operative position, the lever 12, controlling the grab-hook, being secured by the stop member 14 engaging the segment-rack 15. By releasing the frame G from the latch-lever 40 the spring 37 will be free to exercise its tension upon said frame, which will thus swing around until the saw engages the tree, when by manipulating the handle 23 a reciprocatory movement will be imparted to the saw, whereby the tree will be speedily cut through. When it is desired to utilize the machine for cutting prostrate logs, for sawing cord-wood, or the like, the pitman 34 is disconnected from the wrist-pin 32′ of the cross-head 30, and the frame H is then tilted to the position shown in Fig. 4 of the drawings, after which the pitman 34 is connected with the wrist-pin 33 of the cross-head, thus disposing the saw to operate in an approximately vertical plane. When the machine is utilized in this manner, the feed motion of the saw is obtained by gradually tilting the frame F upon its supporting-axle.

Having thus described the invention, what is claimed is—

1. A wood-sawing machine comprising a wheeled main frame, a swinging frame pivotally mounted upon said main frame, a guide-frame pivotally mounted upon said swinging frame, a saw carried by said guide-frame, and means for operating said saw.

2. A wood-sawing machine comprising a main frame having a pair of wheels upon which said main frame is movable pivotally in a vertical direction, a swinging frame pivotally mounted upon said main frame for movement in a horizontal direction, a movable saw, and a guide-frame pivotally mounted upon said swinging frame and adapted to move the saw from horizontal to vertical position and vice versa.

3. A wood-sawing machine comprising a pair of carrying-wheels, a main frame pivotally mounted upon said carrying-wheels for movement in a vertical direction, a swinging frame pivotally mounted upon said main frame for movement in a horizontal direction, means for moving said swinging frame relatively to said main frame, a guide-frame pivotally mounted upon said swinging frame, a reciprocatory saw carried by said guide-frame and adapted to be moved thereby from vertical to horizontal position, and means for reciprocating said saw when in either vertical or horizontal position.

4. In a wood-sawing machine, a supporting-frame mounted tiltingly upon an axle, carrying-wheels for said axle, a frame mounted pivotally upon the supporting-frame, a guide-frame hingedly connected with the pivoted frame, a saw-carrying cross-head mounted for reciprocation in the guide-

frame and having wrist-pin-receiving sockets at right angles to each other, operating mechanism supported upon the pivoted frame said operating mechanism including a driven shaft having a disk, and a pitman connecting said disk with a wrist-pin upon the cross-head.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DANIEL E. FRANKS.

Witnesses:
R. J. KNIGHT,
N. BARCO.