

No. 817,948.

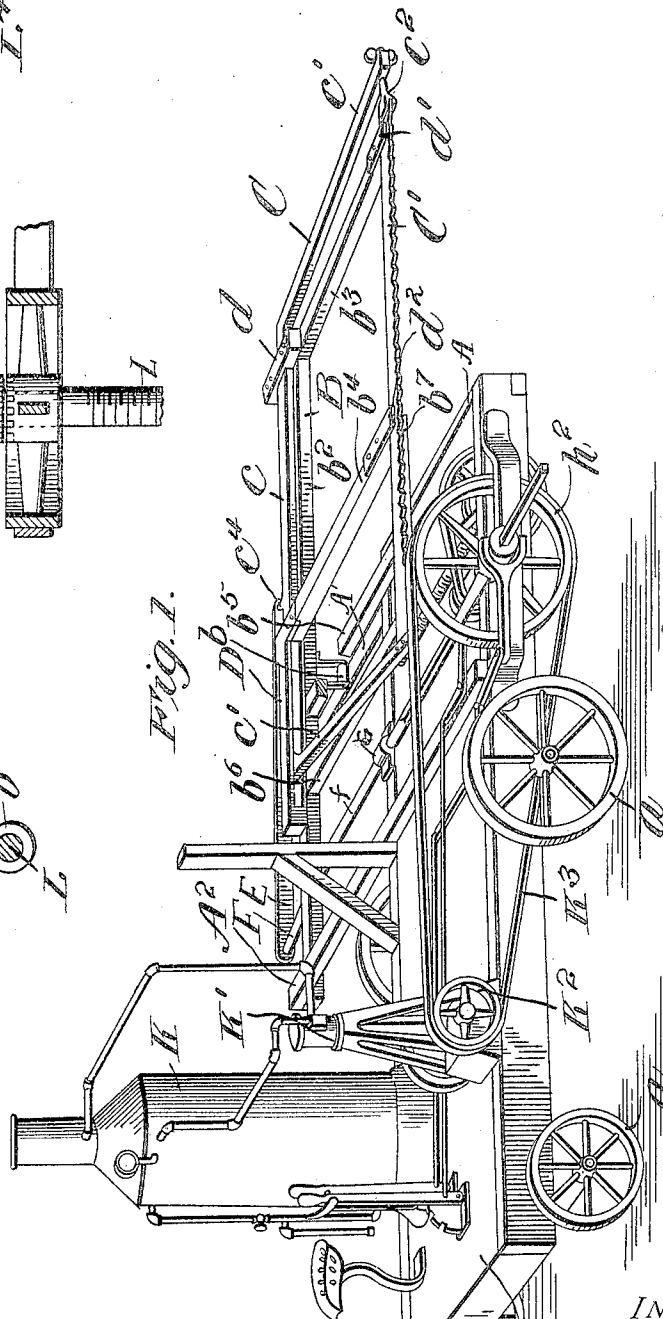
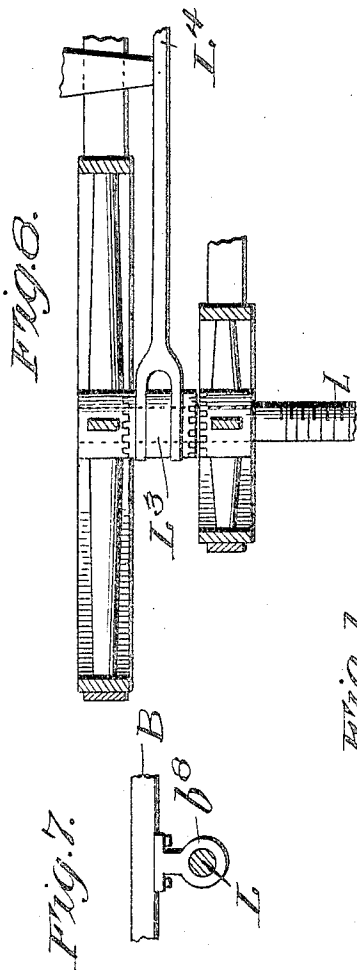
PATENTED APR. 17, 1906.

O. H. WITCHER & A. L. HARVEY.

SAWING MACHINE.

APPLICATION FILED JULY 6, 1905.

2 SHEETS—SHEET 1.



No. 817,948.

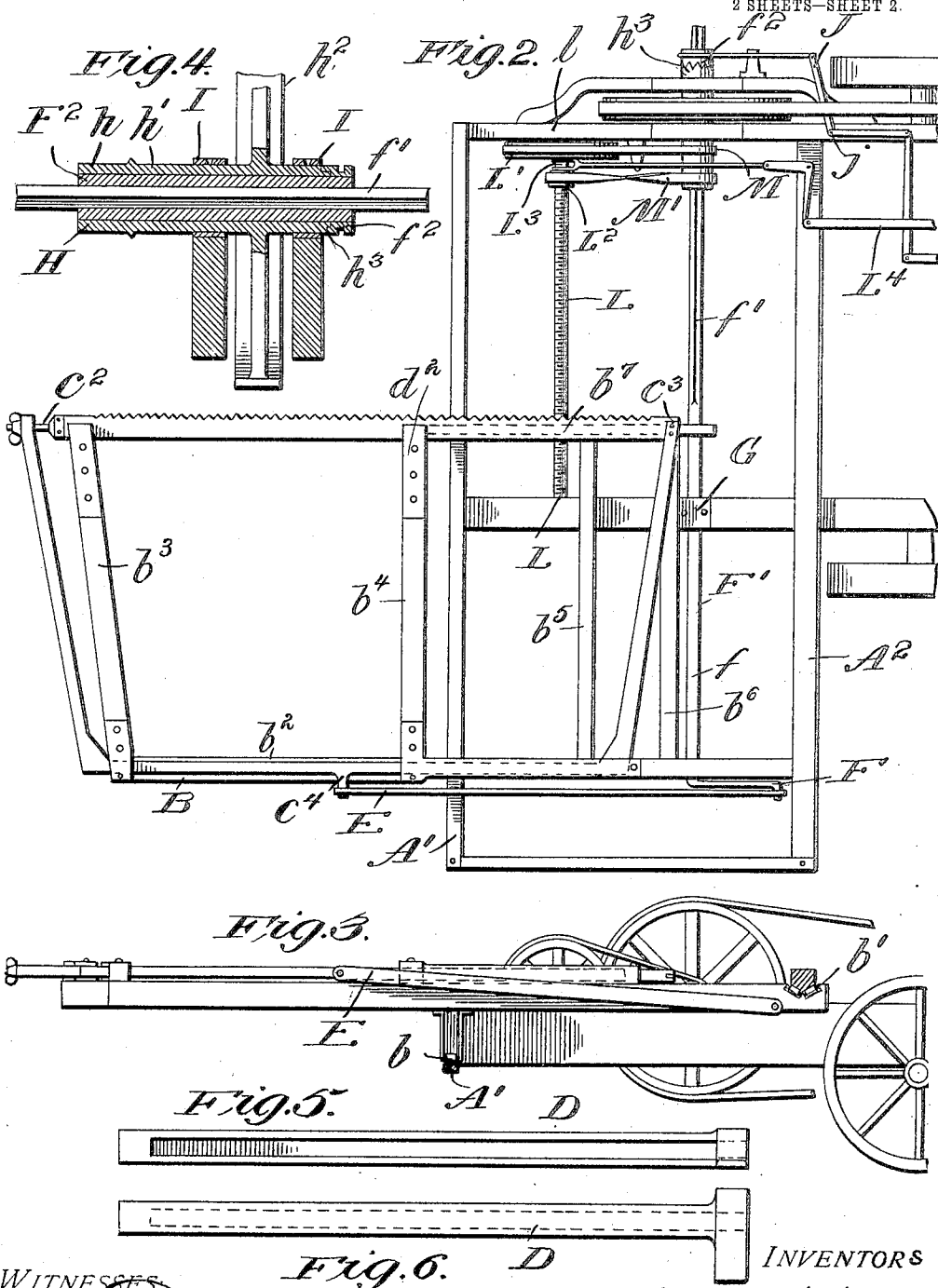
PATENTED APR. 17, 1906.

O. H. WITCHER & A. L. HARVEY.

SAWING MACHINE.

APPLICATION FILED JULY 6, 1905.

2 SHEETS—SHEET 2.



~~WITNESSES~~

W. F. K. C.
J. K. Moore

INVENTORS

BY *Otho H. Witches.*
Albert L. Harvey.
Whitaker & Davis Attorneys

UNITED STATES PATENT OFFICE.

OTHO H. WITCHER AND ALBERT L. HARVEY, OF SWEET SPRINGS,
MISSOURI.

SAWING-MACHINE.

No. 817,948.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed July 6, 1905. Serial No. 268,319.

To all whom it may concern:

Be it known that we, OTHO H. WITCHER and ALBERT L. HARVEY, citizens of the United States, residing at Sweet Springs, in the county of Saline and State of Missouri, have invented certain new and useful Improvements in Sawing-Machines; and we 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.

Our invention relates to new and useful improvements in the class of sawing-machines, and particularly to that type which is employed for felling trees, &c.

In order that our invention may be thoroughly understood, we have illustrated the same in the accompanying drawings, of which a full and exact description is contained in the annexed specification.

In the accompanying drawings, Figure 1 is a perspective view of our improved device. Fig. 2 is a top plan view of a portion thereof. Fig. 3 is a rear elevation of a portion thereof. Fig. 4 is an enlarged sectional view of the clutch construction. Figs. 5 and 6 are enlarged detail views of the saw-guiding frame. Figs. 7 and 8 are enlarged detail views of parts of our device.

In the several views like letters of reference designate similar parts of our improved device.

A in the drawings designates the truck or platform, mounted on suitable wheels *aa* to enable the same to be drawn from place to place by horse or other suitable power.

A' A² are parallel bars secured to the platform A and extending at right angles thereto, the former being secured beneath and the latter above said platform.

B designates the saw-carrying frame, constructed to travel upon the parallel bars A' A², said frame being provided with rollers *b* *b'*, constructed to bear upon the bars A' A², respectively, to permit a free traveling movement of said frame, as shown in Fig. 3. Said saw-carrying frame B comprises the bar *b*², to which are secured the arms *b*³ *b*⁴ *b*⁵ *b*⁶, the three latter being connected at their free ends by the bar *b*⁷. (Shown in dotted lines, Fig. 2.)

C is the saw-frame of ordinary construction, comprising the back *c* and arms *c'* *c'*, to the free ends of which the saw C' is attached by any suitable means, as *c*² *c*³. Part *c* of

said frame is constructed to rest and slide upon bar *b*² of the saw-carrying frame B, the same being retained in position thereon by the casing D, which is secured to the bar *b*². As illustrated in Fig. 5, this casing D is so constructed as to permit the free movement of the saw-frame and at the same time guides the same during its movement. To further insure the proper movement of the saw, we provide the additional guides *d*, *d'*, and *d*², the two latter bearing upon the saw C'.

*c*⁴ is a projection on the saw-frame C, to which is pivoted a link E, which is pivoted at its other end to the crank F of crank-shaft F', which when rotated will turn said crank, thus imparting a reciprocating movement to said saw. The shaft F' comprises a cylindrical portion *f*, which is journaled in the bearing G on the platform A, and a rectangular portion *f'*, upon which is mounted a cylindrical sleeve F², provided with a rectangular opening of suitable size to permit said sleeve to slide longitudinally thereon. (See Fig. 4.)

H is a cylindrical sleeve loosely mounted upon the sleeve F² and is journaled in the bearings I I on the platform A. Said sleeve H is provided with the belt-engaging portions *h* and *h'* and pulley *h*², the latter being preferably of considerably larger diameter than said sleeve and is provided at its end with a suitable clutch portion *h*³, adapted to be engaged by a corresponding clutch portion *f*² on the sleeve F², whereby said sleeves H and F² may be locked together or unlocked by shifting said sleeve F² upon shaft F' through the medium of the bell-crank lever J, mounted upon the platform A at *j*.

K is an upright boiler mounted upon the platform A and is constructed to supply steam to the engine K', which drives the pulley K².

K³ is a belt passing around the pulleys K² and *h*², thus imparting motion to the sleeve H, which in turn may be made to impart motion to shaft F' by locking the sleeves H and F², as above described.

L is a screw-shaft rotatably mounted on the platform A at *l* and passing through a correspondingly-threaded orifice *b*⁸ in the saw-carrying frame B. (See Fig. 7.) L' and L² are pulleys loosely mounted on said screw-shaft L, the former being preferably of larger diameter than the latter to decrease the speed of said shaft.

L³ is a clutch mounted upon the shaft L between the pulleys (see Fig. 8) and constructed to slide longitudinally thereon to be thrown into engagement with either of said pulleys by the bell-crank lever L⁴, mounted on the platform A.

M is a belt passing around the pulleys L' and h', whereby when said clutch L³ is thrown into engagement with said pulley L' motion is transmitted from sleeve H to said shaft, which when thus rotated will draw the saw-carrying frame and saw toward or through the object to be severed.

M' is a belt passing around the pulleys L² and h², the same being crossed between said pulleys, whereby when said clutch L³ is thrown into engagement with said pulley L² motion is imparted to the shaft L in the opposite direction from that imparted by the belt M, with the result that the saw-carrying frame and saw are carried in the opposite direction, or away from the tree or other object.

From the foregoing description it is believed that the operation of our device is perfectly obvious.

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

1. In a sawing-machine, the combination with supporting means, of a saw-carrying frame constructed to slide thereon, a saw slidably mounted in said frame, a shaft revolvably mounted on said supporting means, connections between said shaft and saw whereby said saw may be reciprocated, a sleeve mounted on said shaft and adapted to rotate therewith, said sleeve being constructed to permit said shaft to slide longitudinally therein, a pulley loosely mounted on said sleeve, connections between said pulley and said frame whereby said frame may be moved in either direction and means for locking said pulley to said sleeve, substantially as described.

2. In a sawing-machine, the combination with supporting means, of a saw-carrying frame constructed to slide thereon, a saw slidably mounted in said frame, a screw-shaft revolvably mounted on said supporting means and passing through a correspond-

ingly-threaded orifice in said frame, pulleys loosely mounted on said shaft, means for locking either of said pulleys to said shaft, a crank-shaft revolvably mounted on said supporting means, connections between said shaft and saw for reciprocating said saw, a driving-pulley loosely mounted on said crank-shaft, said pulley being provided with a sleeve, belts connecting said pulleys on said screw-shaft with the sleeve on said driving-pulley, one of said belts being crossed whereby said frame may be moved in either direction, and means for locking said pulley to said crank-shaft whereby the frame and saw may be actuated simultaneously, or said frame may be actuated independently of said saw, substantially as described.

3. In a sawing-machine, the combination with a platform of a saw-carrying frame constructed to slide thereon, a screw-shaft revolvably mounted on said platform and passing through a correspondingly-threaded orifice in said frame, pulleys loosely mounted on said shaft, a clutch on said shaft constructed to slide longitudinally thereon, a lever constructed to throw said clutch into engagement with either of said pulleys, a saw slidably mounted in said saw-carrying frame, a crank-shaft revolvably mounted on said platform, a link connecting said saw with said crank-shaft, said crank-shaft being provided with a rectangular portion constructed to fit into a correspondingly-shaped orifice in a cylindrical sleeve provided at its end with a clutch portion, an outer sleeve loosely mounted on said cylindrical sleeve and being provided with pulleys and at its end with a clutch portion, a lever for throwing said clutches into and out of engagement, means for driving said outer sleeve and belts connecting said pulleys on said screw-shaft with said outer sleeve, one of said belts being crossed, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses.

OTHO H. WITCHER.
ALBERT L. HARVEY.

Witnesses:

LEO BURFEIND,
E. C. POWELL.