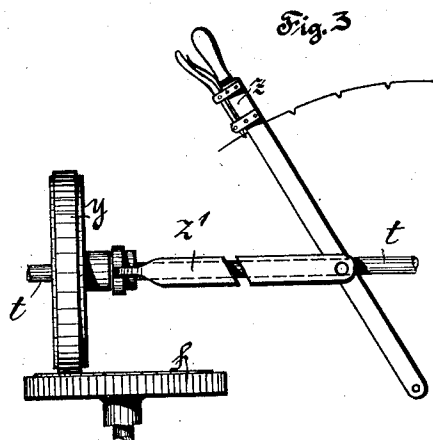
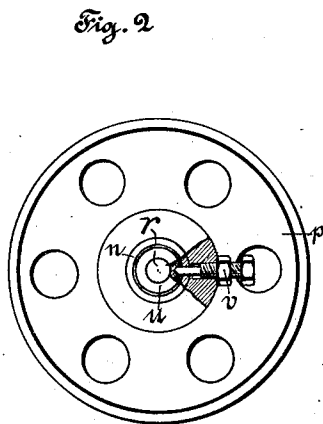
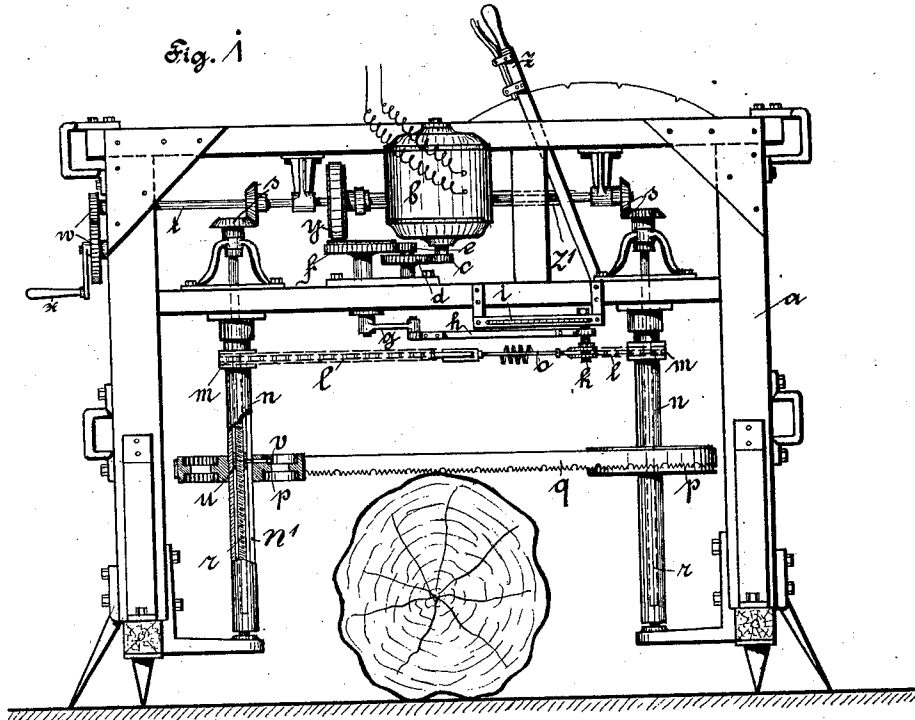


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PORTABLE MACHINE SAW.  
APPLICATION FILED DEC. 30, 1912.

1,088,092.

Patented Feb. 24, 1914.



Witnesses:

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# UNITED STATES PATENT OFFICE.

MATHIAS REICHLINGER, OF ORSCHOLZ, GERMANY.

PORTABLE MACHINE-SAW.

1,088,092.

Specification of Letters Patent.

Patented Feb. 24, 1914.

Application filed December 30, 1912. Serial No. 739,307.

*To all whom it may concern:*

Be it known that I, MATHIAS REICHLINGER, a subject of the Emperor of Germany, residing at Orscholz, district of Saarburg, Trier, Germany, have invented certain Improvements in Portable Machine-Saws, of which the following is a specification.

The present invention relates to a portable machine saw such as employed for felling and trimming trees and the like, and consists in the various details of construction and combination of parts as hereinafter set forth and claimed.

In the accompanying drawings the invention is illustrated by way of example, Figure 1 representing a view of the machine partly in section, Fig. 2, a plan, partly in section, of one of the saw carriers, and Fig. 3, a view on an enlarged scale of the saw-feeding device.

The machine is composed of a frame *a* which is adapted to be supported either in an upright position as shown in Fig. 1, for cutting and trimming logs, or placed horizontally on the ground for felling trees.

For driving the machine, an electro-motor *b* is provided which is connected by means of cables to an electric source. This arrangement has the advantage that the machine can be brought into places which would be inaccessible to the same if connected directly to a power plant. In the present instance the current can be taken either from a distant power station or from a portable power plant arranged in any suitable position near the working place. A train of wheels *c*, *d*, *e*, *f* transmits the motion of the motor shaft to a crank *g* which reciprocates, by means of a connecting rod *h*, a slide *k*. The latter works in a guide-way *i* and is connected, by means of a resilient link *o* of known construction, to a chain *l* the opposite ends of which are secured to wheels *m* mounted on two parallel hollow shafts *n*. Loosely arranged on the shafts *n*, which are rotatably held in the machine frame, are two wheels *p* to which the ends of a saw-band *q*, having teeth for cutting in both directions, are secured in any suitable known manner. Within each shaft *n* a screw-spindle *r* is so arranged as to allow of independent rotation. One spindle is fitted with a right- and the other with left- hand screw-thread and each car-

ries a nut *u* which is coupled by means of a screw *v* to the bushing of the wheel *p*, the shaft *n* being provided with a longitudinal slot *n'* in which the coupling element is guided. From this arrangement it follows that while the wheel *p* is compelled to participate in the rotary movement of the shaft *n*, it can be adjusted longitudinally on the latter by means of the spindle *r*. The saw-band *q* and the chain *l* are arranged at opposite sides of the shafts *n* and they are therefore both tensioned by the link *o* which is capable of adjustment for varying the tension. When the chain is reciprocated by the slide *k*, the movement will be transmitted by the shafts *n* to the saw-band which will also be reciprocated for performing its work.

In order to feed the saw-band automatically along the shafts as the work progresses, the following arrangement is provided: The gear wheel *f* is fitted with a friction surface which contacts with the rim of a friction wheel *y*. The latter is slidably feathered on a shaft *t*, and is connected by a link *z'* to a hand lever *z* so that it can be moved to either side of the center of the wheel *f*, for altering the rotating direction, and set at various distances from said center for varying the speed, this arrangement being known *per se*. On the shaft *t* bevel wheels *s* are mounted which mesh with corresponding wheels mounted on the screw-spindles *r* and which rotate the latter in opposite directions when the wheel *y* is actuated by the wheel *f*. By this arrangement, therefore, the saw-band *q* can be fed automatically at a speed which is variable relative to the reciprocating movement.

When the shafts *n* are rocked for reciprocating the saw-band, the nuts *u* will also be rocked on the spindles *r*. This involves an axial displacement which is counteracted by providing one of the spindles with right- and the other with left- hand screw-thread so that the saw-blade, instead of being moved transversely throughout its length, is simply rocked about the work piece. In order to enable the screw-spindles to be adjusted by hand, when necessary, a gearing *w* is provided which is connected to the shaft *t* and adapted to be operated by means of a crank handle *x*.

The friction elements must be carefully covered up and protected from the weather. It is evident that the friction gear may be substituted by any other suitable change speed gearing.

I claim:—

1. A machine saw of the character described, comprising a frame, two rotatable parallel shafts held in said frame, wheels slidably but not rotatably mounted on said shafts, a saw-band having its ends secured to the rims of said wheels, wheels connected rigidly to said shafts, a chain having its ends secured to the rims of said rigid wheels, a slide holding said chain, a crank-mechanism for actuating the slide so as to rock the shafts by means of the chain and reciprocate the saw-band, a motor for operating the crank, and means for feeding the saw-blade.

2. A machine saw of the character described, comprising a frame, two rotatable parallel shafts held in said frame, wheels slidably but not rotatably mounted on said shafts, a saw-band having its ends secured to the rims of said wheels, wheels connected rigidly to said shafts, a chain having its ends secured to the rims of said rigid wheels and being arranged relative to the saw-band so as to work at opposite sides of the shafts, a resilient adjustable link arranged in said chain for tensioning the saw-blade, a crank mechanism acting on the chain for reciprocating the saw-band, a motor for driving

said crank-mechanism, and means for feeding the saw.

3. A machine saw of the character described, comprising a frame, two parallel hollow shafts rotatably held in said frame, screw-spindles arranged within and projecting through said shafts, a nut arranged on each spindle within the hollow shaft, a wheel loosely arranged on the hollow shaft, a coupling member guided in a longitudinal slot in the hollow shaft and adapted to couple the nut to the wheel and compel both of these elements to follow the rotary movements of the shaft, a saw-band having its end secured to the rims of the two wheels so as to be wound from one onto the other when the shafts are rocked, rigid wheels connected to the shafts, a chain arranged on and secured to the rigid wheels so as to work at opposite sides of the shafts relative to the saw-band, a resilient link in said chain for tensioning the same and the saw-band, a crank-mechanism acting on the chain for reciprocating the same and the saw-band through the medium of the shafts, a variable speed gearing for operating the screw-spindles so as to move the saw-band wheels axially on the hollow shafts, and a motor for driving said gearing and the crank mechanism.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."