F. L. HARTENSTEIN & SAMUEL HYMAN.

Improvement in Wood-Sawing Machines.

No. 126,808. Patented May 14, 1872.

FIG. 3.

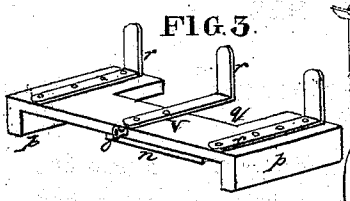


FIG. 4.

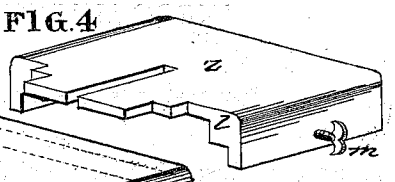
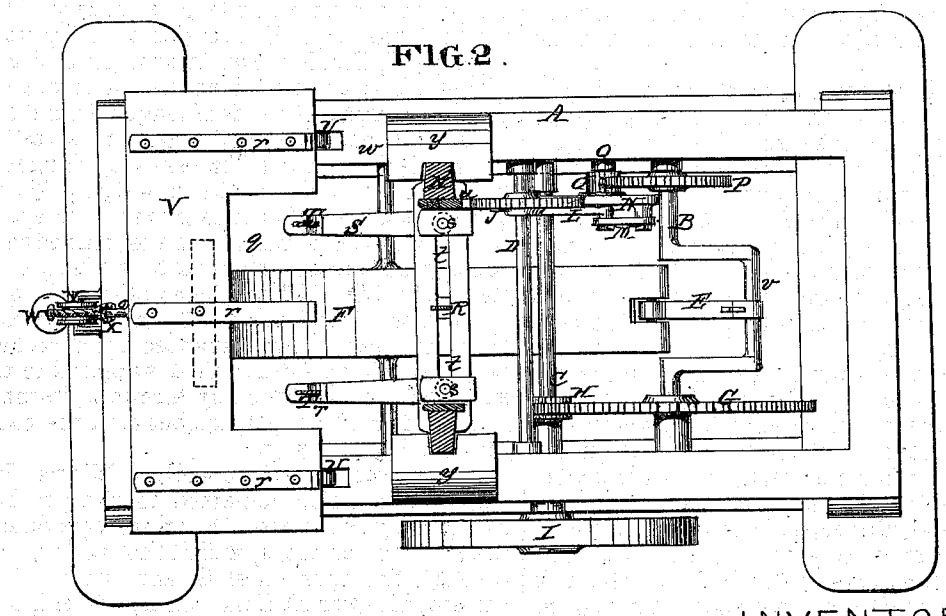


FIG. 1.

FIG. 2.



ATTEST

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FRANZ L. HARTENSTEIN AND SAMUEL HYMAN, OF NASHVILLE, TENNESSEE.

IMPROVEMENT IN WOOD-SAWING MACHINES.

Specification forming part of Letters Patent No. 126,808, dated May 14, 1872.

Specification describing certain Improvements in Sawing-Machines, invented by FRANZ LUDWIG HARTENSTEIN and SAMUEL HYMAN, both of Nashville, in the county of Davidson, Tennessee.

This is a convertible machine for sawing scrolls or cutting fire-wood. It may be driven by foot, hand, or other power. The first part of the invention relates to the operating mechanism; and consists in a combination of gear-wheels, shafts, crank-disks or cranks, a connecting-rod, and fly-wheel for operating the reciprocating frame or sash through the medium of spur-wheel and rack. The invention further consists, secondly, in saws adjustable as to distance apart, and further adapted, by spring-supporting arms for cutting fire-wood, the same projecting in front of the sash as required, being adapted to be applied and used without detaching the scroll-saw, and to be readily detached as required when the latter is to be used. Thirdly, in a supplemental table attached by screws, for use in place of the fire-wood carriage, in connection with the scroll-saw.

Figure 1 is a perspective of the machine in normal condition, with the fire-wood, saws, and carriage, and the supplemental table, all detached, the position of the former being indicated by dotted lines, and fragments of the frame and sash omitted to expose parts behind. Fig. 2 is a plan, partly in section, representing the machine as arranged for sawing fire-wood. Fig. 3 is a perspective of the fire-wood carriage; Fig. 4, a like view of the supplemental table.

In carrying out our invention we employ a frame, A, which may be of wood or metal, being so constructed as to furnish suitable bearings, *z*, for the several shafts, vertical guides *y*, for the saw-frame or sash, and a horizontal table, *x*, behind the latter, and a corresponding horizontal surface, *w*, in front of the same. Mounted transversely of this frame, in the bearings *z*, are three shafts, B C D. The first of these shafts, B, is the driver, and may be connected by crank *v* and pitman E to a treadle, F, or adapted by crank or pulley to be driven by hand or by a steam-engine, or other motor. This shaft carries a spur-wheel, G, meshing with a pinion, H, on the second shaft C, which rotates with multiplied speed and carries the fly-wheel I. The third shaft, D, carries one or more spur-wheels, J, meshing with a rack or racks, *u*, on the upright bars of the saw-frame or sash K, and is oscillated to reciprocate said sash by connection, through a long crank-arm, or its equivalent, L, connecting-rod M, crank-disk or crank N, pinion O, and spur-wheel P, to the driving-shaft B, the said crank-disk N and pinion O being mounted on a stud-shaft, Q, or its equivalent. The horizontal bars of the sash K are adapted for the attachment, centrally, of the upright scroll-saw R. On each side of this there are vertical slots *t*, to receive bolts *s* which pass through and secure the spring-arms S, by which the fire-wood saws T are attached; the said arms being so bent as to embrace three sides of the bars of the frame, as shown in Fig. 2, to secure the requisite support. The slots *t* permit the adjustment of the saws T to any desired distance apart within the width of the sash, to provide for cutting wood in different lengths. Arranged in the front horizontal surface *w* of the frame A are rollers U, to support the fire-wood carriage V, Fig. 3, shown in position in Fig. 2. The wood is supported at the front edge of this by the upturned ends of longitudinal metal bars *r*. A recess, *q*, in the same receives the saws. It is supported laterally by flanges *p*, is drawn back in use by a weight, W, attached to a cord, X, running over a pulley, Y, and secured in a ring, *o*, at the rear edge of the carriage, and is stopped by a cleat, *n*, on its under side. When the scroll-saw R is to be used the fire-wood saws T, carriage V, and their removable appurtenances are detached, and the supplemental table Z is applied to the surface *w*, and attached by screws *m*, its inner end *l* fitting into the space between the sash, sash-guides, and saw.

The operating devices work as follows: Rotary motion being imparted to the driving-shaft B by the treadle F or its equivalent, the same is imparted, multiplied as to speed through the spur-wheel G and pinion H, to the secondary shaft C and the fly-wheel I, and multiplied as to power through the spur-wheel P, pinion O, crank-disk N, connecting-rod M, crank-arm L, shaft D, spur-wheel or wheels J, and rack or racks *u* to the saw-frame or sash. The mode of driving the saw secures a steady, powerful movement, the speed of which may

be regulated as desired. The fly-wheel, as arranged, even at very slow speed, carries the cranks past their centers infallibly, and insures regular movement.

We claim as new herein and of our invention—

1. The combination of the rotary driving-shaft B, spur-wheel P, pinion O, crank-disk N, connecting-rod M, crank-arm L, shaft D, spur-wheel or wheels J, and rack or racks *u*, arranged and operating substantially as described, for reciprocating the saw-frame or sash K.

2. The combination, with said mechanism, B P O N M L D J *u*, of the spur-wheel G, pinion H, secondary shaft C, and fly-wheel I, for the purposes specified.

3. The detachable fire-wood saws T T, arranged in the described relation to the permanent scroll-saw R, and supported by the spring-arms S, and adjustable as to distance apart, all as shown and specified, for the purpose set forth.

4. The supplemental table Z, furnished with the screws *m*, and constructed and employed substantially as represented and described, for the purpose set forth.

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Witnesses:
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