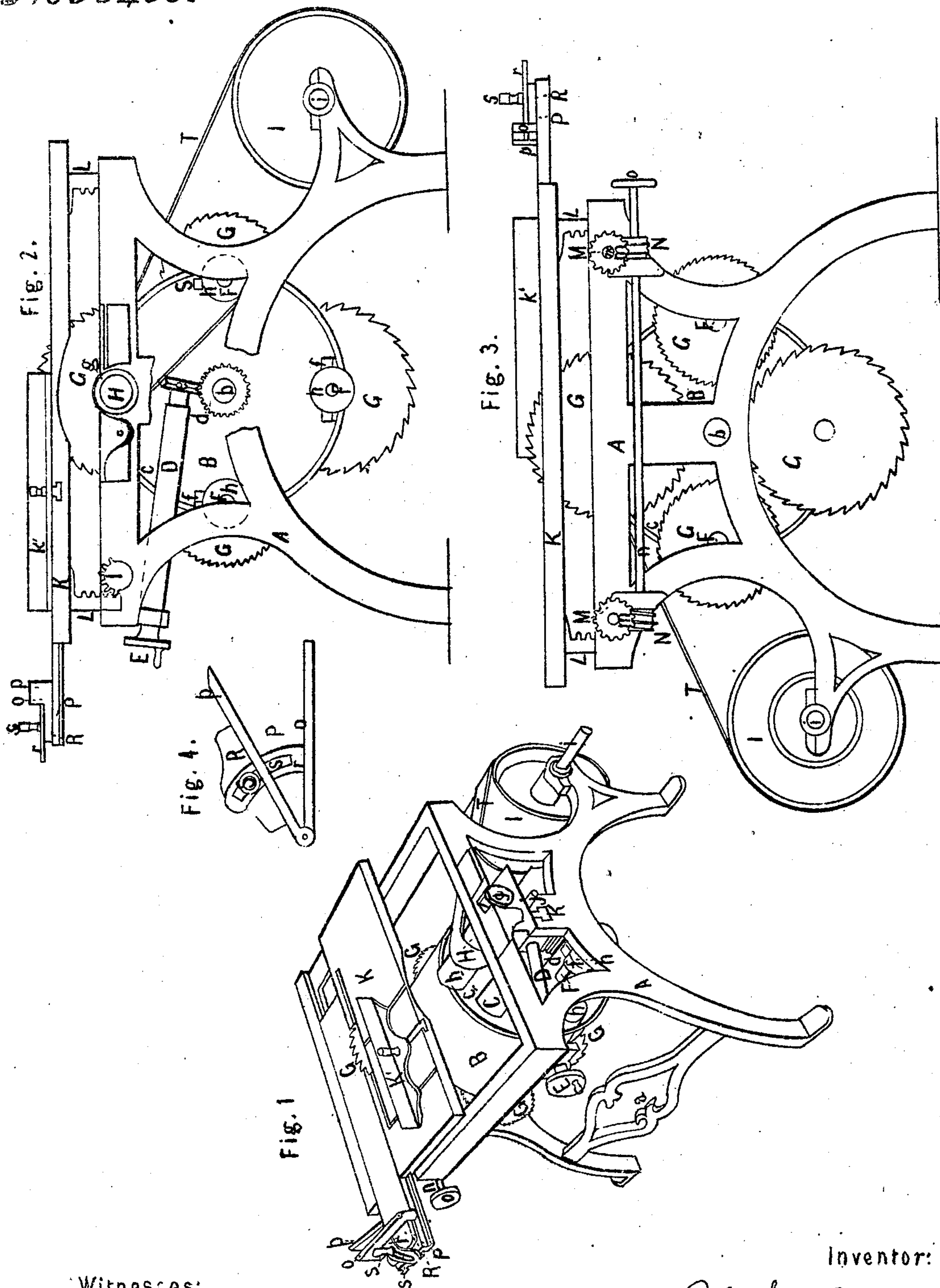


R. M. Lafferty, Sawing Machine.

No 95490.

Patented Oct 5. 1869.



Witnesses:

Jas. J. Day
H. F. Ebbels.

Inventor:

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Per Attorney
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United States Patent Office.

ROBERT M. LAFFERTY, OF THREE RIVERS, MICHIGAN, ASSIGNOR TO HIMSELF AND J. E. & J. P. PRUTZMAN, OF SAME PLACE.

Letters Patent No. 95,490, dated October 5, 1869.

IMPROVEMENT IN SAWING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, ROBERT M. LAFFERTY, of Three Rivers, in the county of St. Joseph, and State of Michigan, have invented a new and useful Improvement in Sawing-Machines; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification.

Figure 1 is a perspective view of my invention from the rear.

Figure 2 is a rear elevation, with the frame broken off.

Figure 3 is a side elevation, showing the position of the saws, and method of raising and lowering the saw-table.

Figure 4 is a plan view of the adjustable guide-block.

Like letters indicate like parts in each figure.

The nature of this invention relates to the construction of a sawing-machine, by means of which several saws may be operated in the same saw-table, being actuated by the same belt, thereby avoiding the necessity of changing saws upon an arbor whenever a different saw is required, the whole so arranged that all the saws are ready for use when desired, and when one is in use the others are stationary, and out of the way under the saw-table.

The invention consists in a novel method of transferring motion from one part of the machine to another part of the same machine by the use of a loose pulley upon an independent shaft; also, in the arrangement of various devices connected with a drum provided with a series of said shafts, for the purpose of using various sorts of saws, and of bringing them into use at will; and also, for making the driving-belt, rotating said saws, more or less tight, as desired; also, in the arrangement of an independent pulley provided with boring or cutting-apparatus, in connection with the driving-gear; also, in the general novel arrangement of its several parts.

A, in the drawings, represents a suitable frame, the two sides of which are secured by ordinary cross-bars, *a*, and the central rigid shaft *b*, upon which the drum B is sleeved and rotates.

This drum is constructed with a recess, *c*, at each end, and with a prolonged central thimble, C, through which the rigid shaft *b* passes.

Upon the end of this thimble is secured a cog-wheel, *d*, which is actuated by the worm-screw *e* upon the end of the shaft D, which is properly journalled to the frame, and provided with a crank, E.

F is a series of saw-shafts, securely journalled in proper bearings, *f*, bolted to the inside of the rim of the drum, each saw-shaft or arbor being provided with a pulley, *h*, all of the pulleys being of the same size.

The opposite ends of these shafts F are similarly journalled at the opposite end of the drum, and to them are secured the circular saws G.

H is a pulley, being of the same size of the pulley *h*, and is rigidly secured to a short independent shaft properly journalled to the frame, as shown. The outer end of this independent shaft may be provided with any revolving cutter-head, *g*, or with any apparatus for boring or drilling.

I is a wide pulley, rigidly secured to the counter-shaft *i*, from which the belt T communicates motion to the pulley H, or either of the pulleys *h*, as may be required.

The saws G may be of various sizes, coarse or fine, and rip or crosscut, and each may be brought into use as desired. By turning the crank E, the drum is rotated until the pulley *h*, which drives the saw desired, is brought directly opposite the pulley H, and upon which the belt may run at all times when not required to drive the saws, when said belt may, by any proper device, be thrown from said pulley on to the saw-shaft pulley, when a rapid motion will be given to the saw.

While driving the saw, as just described, should the belt be found to be too loose, it may be instantly tightened by a turn of the crank E, thereby rotating the drum, and carrying the pulley *h* a little further from the driving-pulley.

J is an adjustable table, by means of the set-screw *j* and slot *k*, upon which the timber may rest while being operated upon by the cutters in the head *g*.

I do not wish to be understood as confining myself to making the pulleys *h* all of uniform size, as I may wish to vary the sizes of them in the same machine, to regulate the speed according to the size of the saw, and other circumstances.

K is a saw-table, provided with the usual adjustable guide *k*, and resting upon two standards, L, one at each end of the frame, and which operate vertically between proper vertical guides.

The inner sides or faces of these standards are toothed, and engage with segmental pinions, *l*, rigidly attached to the small shafts *m*, which are properly journalled through the frame.

The outer ends of these shafts are provided with pinions, M, which are also rigidly secured to said shafts, and these pinions engage with the worm-screws N, upon the shaft *n*, which is conveniently journalled to the outside of the frame, and provided with a crank or hand-wheel, O, by the rotation of which, and the last-described pinions, shafts, and toothed standards, the saw-table is elevated or lowered at pleasure.

P is a guide, constructed of two pieces, *o* and *p*, hinged together as shown, the piece *o* being secured to the top of the slide R, in the saw-table.

To the piece *p* is secured the quadrant *r*, which

passes through a convenient slot in the piece *o*, and is secured in place by the set-screw *S*, which passes through the slot *s* in the quadrant, into the table. The top of the slide or table may be laid off into inches, and fractions thereof, so that by the use of this adjustable guide, and said scale, any desired angle can readily and instantly be obtained.

The operation of the various parts of this machine having been so fully described in the foregoing specification, a further description thereof is deemed unnecessary.

I am aware that there are machines in which more than one saw are operated. These, or any parts thereof, I do not claim; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The method herein described of transferring motion from one part of a machine to another part of the same machine, by the use of a loose pulley upon an independent shaft.

2. The arrangement of the saws *G*, and their arbors *F*, upon the drum *B*, rotating upon fixed shaft *b*,

in connection with pulley *H* upon an independent shaft, when constructed and operating as and for the purposes above set forth.

3. The arrangement of the pulley *H* upon the independent shaft, provided with cutter-head *g*, the pulley *I*, and the belt *T*, in connection with the saw-shafts *F*, when constructed and operating as and for the purposes above set forth.

4. The arrangement of the thimble *C*, the cog-wheel *L*, the worm-screw *e*, the shaft *D*, and the crank *E*, in connection with the belt *T*, when constructed as described, and operating to tighten said belt *T*, as above set forth.

5. The combination and arrangement of the parts *A, a, B, b, C, c, D, d, E, e, F, f, G, g, H, h, I, i, J, j, K, k, L, l, M, m, N, n, O, o, P, p, R, r, S, s, and T*, as and for the purposes herein set forth, shown, and described.

ROBERT M. LAFFERTY.

Witnesses:

JAS. I. DAY,
H. F. EBERTS.