F. Willcox,

Scroll Sawing Machine.

No. 35,725. Patented June 24, 1862.

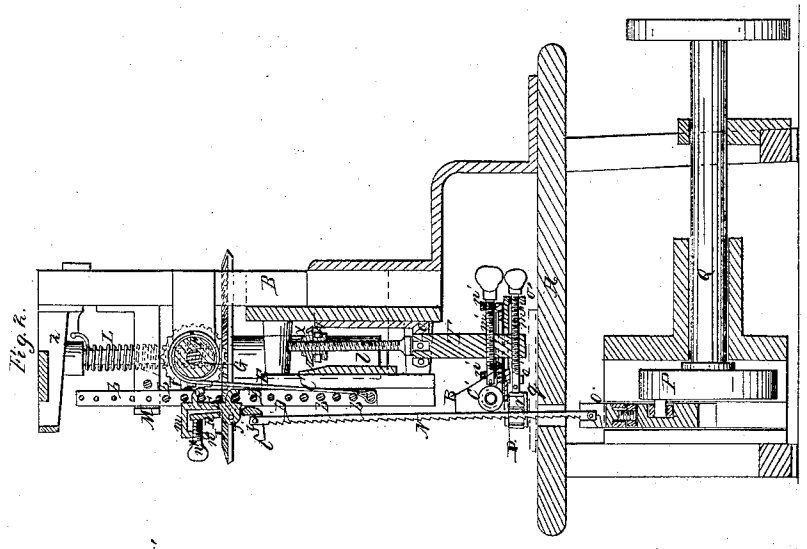

Fig. 2.

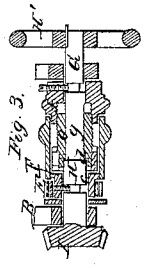

Fig. 3.

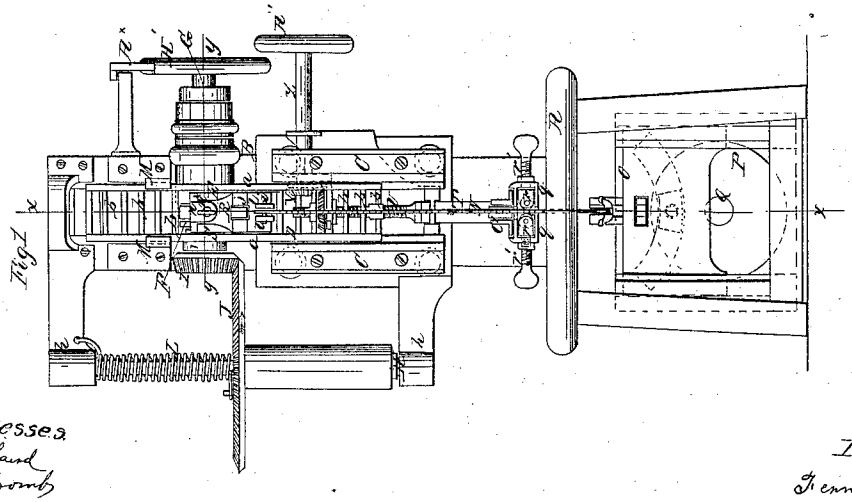

Fig. 1.

Witnesses.
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FENN WILLCOX, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN GIG SAWING MACHINES.

Specification forming part of Letters Patent No. **35,725**, dated June 24, 1862.

To all whom it may concern:

Be it known that I, FENN WILLCOX, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Muley or Gig Sawing Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a front view of my invention. Fig. 2 is a side sectional view of the same, taken in the line *x x*, Fig. 1; Fig. 3, a horizontal section of a portion of the same, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a muley or gig sawing machine which will admit of saws of different lengths being secured in it with facility, and also admit of more or less rake being given the saw, as circumstances may require, and the tension of the saw-spring regulated as desired, whereby the machine may be adapted for sawing stuff of various thicknesses and rendered capable of a more general application than those hitherto devised.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a horizontal bed, which is supported at a proper height by any suitable framing, and B is an upright framing which is over the bed A, and has two vertical parallel guides, C C, connected to it, between which a reciprocating frame, D, is fitted and allowed to work freely up and down. This frame D is composed of two bars, *a a*, connected by parallel rods *b*, placed at an equal distance apart, as shown clearly in Fig. 1.

To the lower end of the frame D a strap, E, is attached, which extends upward at the back of the frame D and is connected to a pulley, F, placed loosely on a shaft, G, the bearings of which are in the framing B. The pulley F is connected to the shaft G by means of a clutch, H, one part, *c*, of which is attached to pulley F and the other part, *d*, attached to a collar or sleeve, *e*, which has a screw-thread cut on its external surface, on which a nut, *f*, is fitted. (See Fig. 3.) By turning the nut *f* the sleeve *e* will be moved and the part *d* of the clutch thrown in or out of gear with the part *c*, as may be desired. The sleeve *e* is fitted on a square portion, *g*, of shaft G, and consequently turns with the latter, and when the pulley F is connected to sleeve *e* the former of course will be connected to shaft G.

On one end of the shaft G there is placed a hand-wheel, H′, and on the opposite end a bevel-pinion, I, which gears into a horizontal wheel, J, on a vertical shaft, K, the bearings of which are in arms *h h*, attached to the framing *b*. On the shaft K, above the wheel J, there is placed a spiral spring, L, the lower end of which is connected with the wheel J and the upper end with the upper arm *h* of the framing B.

M M are two supplemental guides for the frame D, and which are attached to the framing B.

N represents the saw, the lower end of which is attached to a slide, O, actuated by a crank-pulley, P, on the driving-shaft Q, as shown in Fig. 2. The upper end of the saw is connected by a pin, *i*, with the lower end of a plate, R, which is attached by a hinge or joint, *j*, with a plate, S, which has hooks *k* projecting from its back side to catch over the rods *b* of the frame D and secure S to D, as shown clearly in Fig. 2. The pin *i* of the saw N is fitted in a groove in the upper surface of lips *l* at the lower end of the plate R, also shown clearly in Fig. 2. The upper end of the plate S is provided with a horizontal projection, *m*, having a pendent lip, *n*, at its end, through which a set-screw, $n^{\times}$, passes and bears against the upper end of the plate R. By adjusting this set-screw it will be seen that more or less rake may be given the saw, as may be desired—that is to say, the upper end of the saw may be thrown farther in or out from the frame D on a vertical line. This will be fully understood by referring to Fig. 2.

T represents a vertical bar, which is fitted in guides *o o*, attached to the framing B, and has a vertical screw, U, secured to its upper end. On this screw U there is fitted a nut, W, which is connected with a bevel-wheel, X, into which a similar wheel, Y, on a horizontal shaft, Z, gears. The shaft Z has its bearings in the framing B, and is provided at its outer end with a hand-wheel, A′.

Through the lower part of the bar T two

screws, m' m', pass horizontally. The upper screw m' also passes through vertical projection n' n' on a sliding plate, B', in the front end of which a roller, C', is placed, and which, by turning the screw m', is made to bear against the back edge of the saw N. The sliding plate B' is fitted between guides on a plate, D', which is provided with pendent lugs or ears o' o', through which the screw m'' passes. The vertical bar T passes through oblong slots p' in the plates B' D', and to the front end of the plate D', at its under side, there are pendants q, in which slides r are placed, containing friction-rollers s s, the slides r being adjusted by screws r'. The saw N works between these friction-rollers, and the lower surfaces of the pendants q, serve as bearings or guides for the work or stuff to be sawed, preventing its upward movement under the upward movement of the saw.

By adjusting the plate S higher or lower on the frame D, saws of different lengths may be used, and by disconnecting the pulley F from the shaft G the frame D may be more or less elevated, so that its lower end cannot come in contact with the plate D'—a contingency which might otherwise occur when thick stuff is sawed. This adjustment of the frame D, therefore, is an important feature of the invention, as it admits of very short as well as quite long saws being used—a result which cannot be attained by the adjustment of the plate S alone. The spring L keeps the saw N strained in proper position through the medium of the gearing I J, pulley F, and strap E, and in order to adjust the frame D higher or lower the pulley F is disconnected from the shaft G by turning the nut f so as to disconnect the part d of the clutch H from the part e, and then raising or lowering the frame D to the desired point. In order to prevent the relaxing of the spring L during this adjustment of frame D, the wheel H' has a pawl, A, fitted in a notch in its periphery, as shown in Fig. 1. The pendent bearings q q are adjusted higher or lower, to suit the thickness of the stuff to be sawed, by turning the nut W and wheel X through the medium of the wheel Y on shaft Z. The rollers s s may be adjusted farther forward or backward by turning the screw m''.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The frame D, constructed as shown, in connection with the plate S, attached to said frame D by hooks k, as and for the purpose set forth.

2. The adjustable plate R, connected by a hinge or joint, j, to the plate S and operated by a set-screw, $n^{\times}$, for the purpose of regulating the rake of the saw, as set forth.

3. Connecting the frame D to the shaft G by means of the strap E and pulley F, the latter being connected to its shaft G by the clutch H, to admit of the adjustment of frame D, as described.

4. The combination and arrangement of the gearing I J and spring L, for the purpose of straining the saw N, as herein set forth.

5. The roller C', when placed in the adjustable plate B' and attached to the vertically-adjustable plate D', as and for the purpose set forth.

FENN WILLCOX.

Witnesses:

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