

F. J. SIEVERT.
SCROLL SAW.
APPLICATION FILED JAN. 19, 1909.

984,398.

Patented Feb. 14, 1911.

2 SHEETS—SHEET 1.

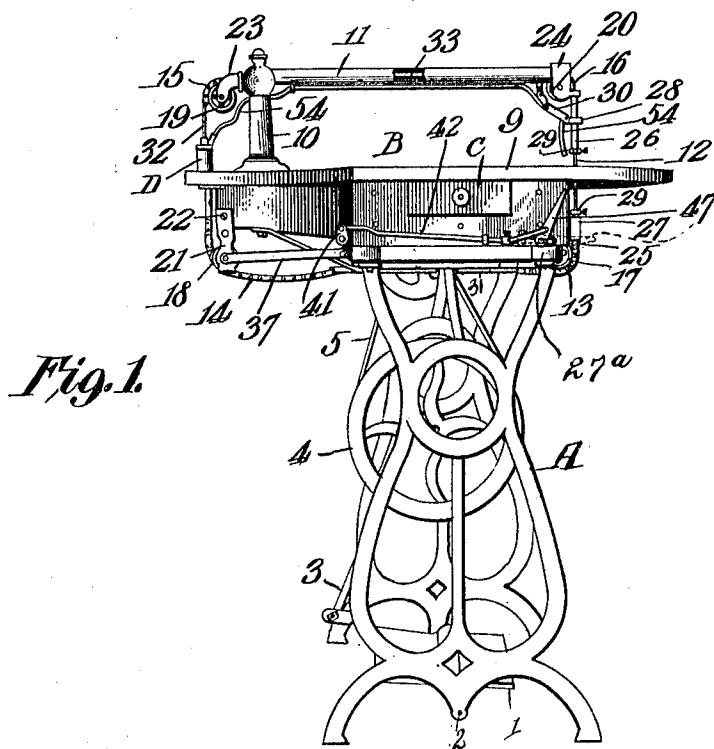


Fig. 1.

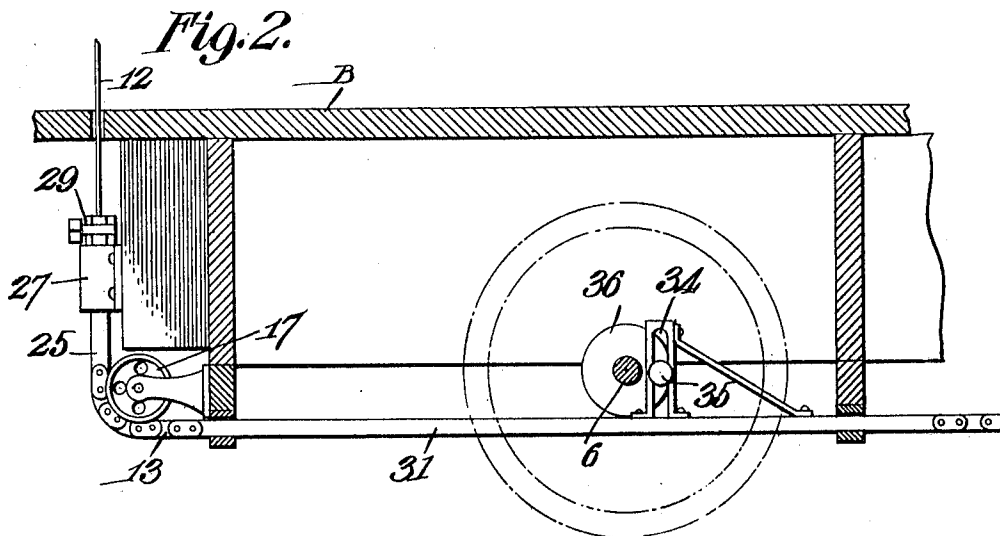


Fig. 2.

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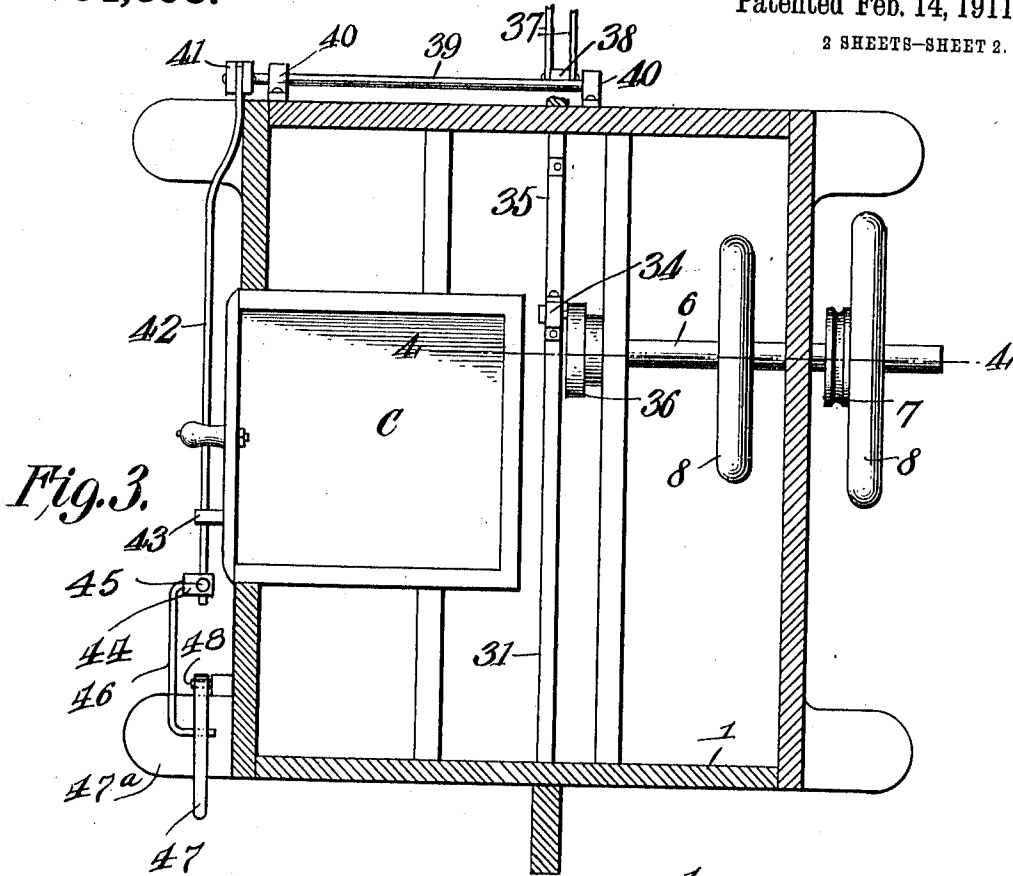


Fig. 3.

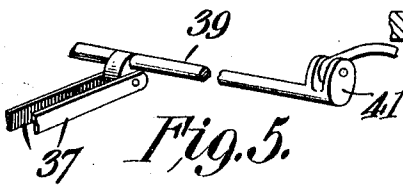


Fig. 5.

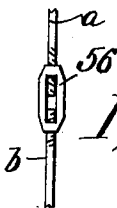


Fig. 6.

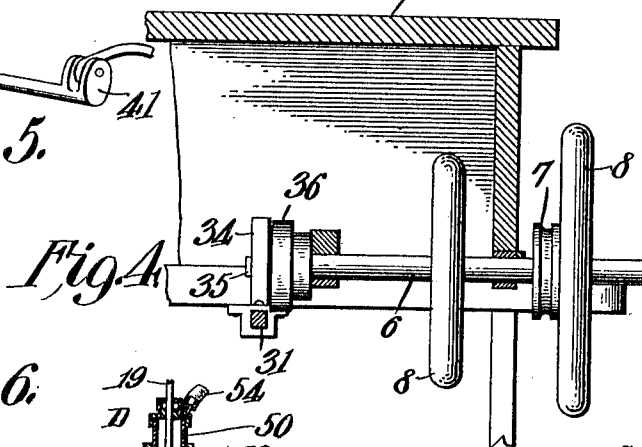


Fig. 4.

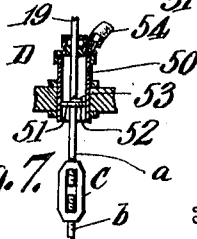


Fig. 7.

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UNITED STATES PATENT OFFICE.

FREDRICK J. SIEVERT, OF SOMERS, MONTANA.

SCROLL-SAW.

984,398.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed January 19, 1909. Serial No. 473,107.

To all whom it may concern:

Be it known that I, FREDRICK J. SIEVERT, a citizen of the United States, residing at Somers, in the county of Flathead and State of Montana, have invented new and useful Improvements in Scroll-Saws, of which the following is a specification.

This invention relates to a sawing machine for scroll work and the like.

The invention has for one of its objects to improve and simplify the construction and operation of devices of this character so as to be comparatively simple and inexpensive to manufacture, reliable and efficient in use, and readily manipulated.

Another object of the invention is the provision of an improved operating mechanism for the saw whereby the latter will operate with practically no vibration and whereby the saw is positively driven.

A further object is the provision of an improved tensioning device whereby the driving element for the saw can be loosened for applying or removing the saw, there being provision for regulating the tension to any required extent.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention, Figure 1 is a perspective view of the sawing machine, the supporting frame and treadle mechanism being shown in dotted lines. Fig. 2 is a detail sectional view of a portion of the operating means for the saw-blade. Fig. 3 is a horizontal section taken through the table of the machine. Fig. 4 is a sectional view on line 4—4, Fig. 3. Fig. 5 is a fragmentary perspective view of a portion of the saw-tightening or tensioning device. Fig. 6 is a detail view of a modified form of tension adjuster. Fig. 7 is a detail sectional view of the air pump of the device for cleaning the sawdust from the pattern or work.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawing, A designates a frame of any approved construction which is provided with a table top B which may be of the stationary or tiltable type, as desired,

and on the frame A is a treadle 1 journaled at 2 and provided with a pitman 3 that rotates a wheel 4 that drives, through a belt 5, a horizontal shaft 6 arranged under the table B, there being a pulley 7 on the shaft 6, as shown in Fig. 3, around which the belt 5 runs. On the shaft 6 are one or more balance wheels 8 of which one is located outside the table A so as to be conveniently reached by the operator to start the treadle mechanism in case the same should be on a dead center. The table B is provided with a flat top 9 of suitable size and rising from this top at the rear end thereof is a post or standard 10 that carries a hollow horizontal arm 11 that projects forwardly from the post. The arm 11 constitutes a support for the saw-operating element which, together with the saw 12, constitutes an endless band. This saw-operating element consists of four pieces of chain 13, 14, 15 and 16, which pass over rollers 17, 18, 19 and 20, respectively. The roller 17 is arranged under the table B at the front thereof while the roller 18 is mounted in a hanger 21 that is pivoted at 22 to the rear end of the table at a point below the top 9 thereof. The roller 19 is arranged in a bracket 23 at the upper end of the post 10 and the roller 20 is mounted in a bracket 24 on the forward end of the arm 11. The pieces of chain or flexible members 13 and 16 are provided, respectively, with short rods 25 and 26, respectively, that move in guides 27 and 28, and on these rods are gripping devices 29 for receiving the ends of the saw 19. The guide 27 is arranged on the front of the body of the table B, while the guide 28 is carried by a brace 30 secured to the front end of the arm 11. Between the chains 13 and 14 is a horizontally-disposed connecting rod or bar 31 and between the chains 14 and 15 is a vertical rod 32 and between the chains 15 and 16 is a horizontal rod 33 that works in the hollow arm 11. As shown in Fig. 2, the rod 31 is provided with a yoke 34 in which works a crank pin 35 arranged on a crank disk 36 that is secured to the inner end of the shaft 6 so that as the shaft rotates, the rod 31 will reciprocate so as to thereby impart an up and down movement to the saw blade 12.

The endless saw-operating element is provided with a tensioning device which, when released, will provide sufficient slackness to permit the saw-blade to be readily removed or applied. This tensioning de-

vice is used in connection with the pivoted hanger 21 for the roller 18 so that by moving the position of the hanger, the saw-operating element can be loosened or tightened. The hanger 21 is connected with the rear end of the parallel links 37 that are connected at their rear end with a crank arm 38 with a horizontal rock shaft 39 journaled in bearings 40 on the rear of the table body, as shown in Fig. 3. On one end of the shaft 39 is a crank arm 41 to which is connected a rod 42 disposed at one side of the table top at a point below the drawer C. The rod is slidably mounted in a guide 43 and on the rod is a block 44 that can be adjusted back or forth thereon and is held in place by a set screw 45, and attached to this block is a link 46 which is connected with an operating lever 47 fulcrumed at 48 on the table. When the lever is in the position shown by full lines in Fig. 1, the saw-operating element is slack, as shown, but when the lever is pulled forwardly and downwardly until it strikes the projection portion 47^a of the frame and assumes the dotted line position, the saw-operating element is held under tension. By sliding the block 44 backwardly or forwardly on the rod 42, the tension device can be set to exert any desired tension.

A blast device is employed for removing the saw-dust from the pattern or work at a point adjacent to the saw and in the present instance, this device comprises a pump D arranged at the rear of the table top behind the post 10. This pump, as shown in Fig. 7, consists of a cylinder 50 suitably secured to the table top and through which cylinder passes the rod 19 that constitutes a piston rod to which is secured the piston 51 of the pump. The piston has a port 52 closed by a flap valve 53 so that as the piston descends, air will be admitted to the space above the piston, and this air will be discharged through a pipe 54 connected with the upper end of the cylinder. The pipe 54 extends along and is supported by the arm 11 and has its front end arranged just behind the saw-blade to direct a blast of air against the work or pattern. As the saw-operating element moves back and forth, the pump piston will be simul-

taneously actuated so as to deliver a blast of air. The portion of the rod 19 below the piston 51 is composed of two sections *a* and *b* connected by a sleeve *c* whereby the endless saw-operating element can be made longer or shorter, as required. Instead of the sleeve, a turn buckle 56, as shown in Fig. 6, may be employed.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what I claim is:—

1. A scroll saw machine comprising a supporting structure, a work table, actuating means for reciprocating a saw blade, said means including a longitudinally-movable rod through which power is transmitted to the saw, a cylinder through which the rod extends and one end of the cylinder being provided with a head through which the rod reciprocates, a piston on the rod, and a conduit connected with the said head and leading to the saw for removing the sawdust from the work.

2. A scroll saw machine comprising a supporting structure, a work table, an endless element including a saw blade and also including a piston rod, a cylinder through which the said rod passes, a piston on the rod, means for discharging air from the cylinder to the saw for removing sawdust from the work, and means for actuating the element back and forth to reciprocate the saw.

In testimony whereof I affix my signature in presence of two witnesses.

FREDRICK J. SIEVERT.

Witnesses:

C. M. O'NEILL,
Jno. F. DUFFY.