

(No Model.)

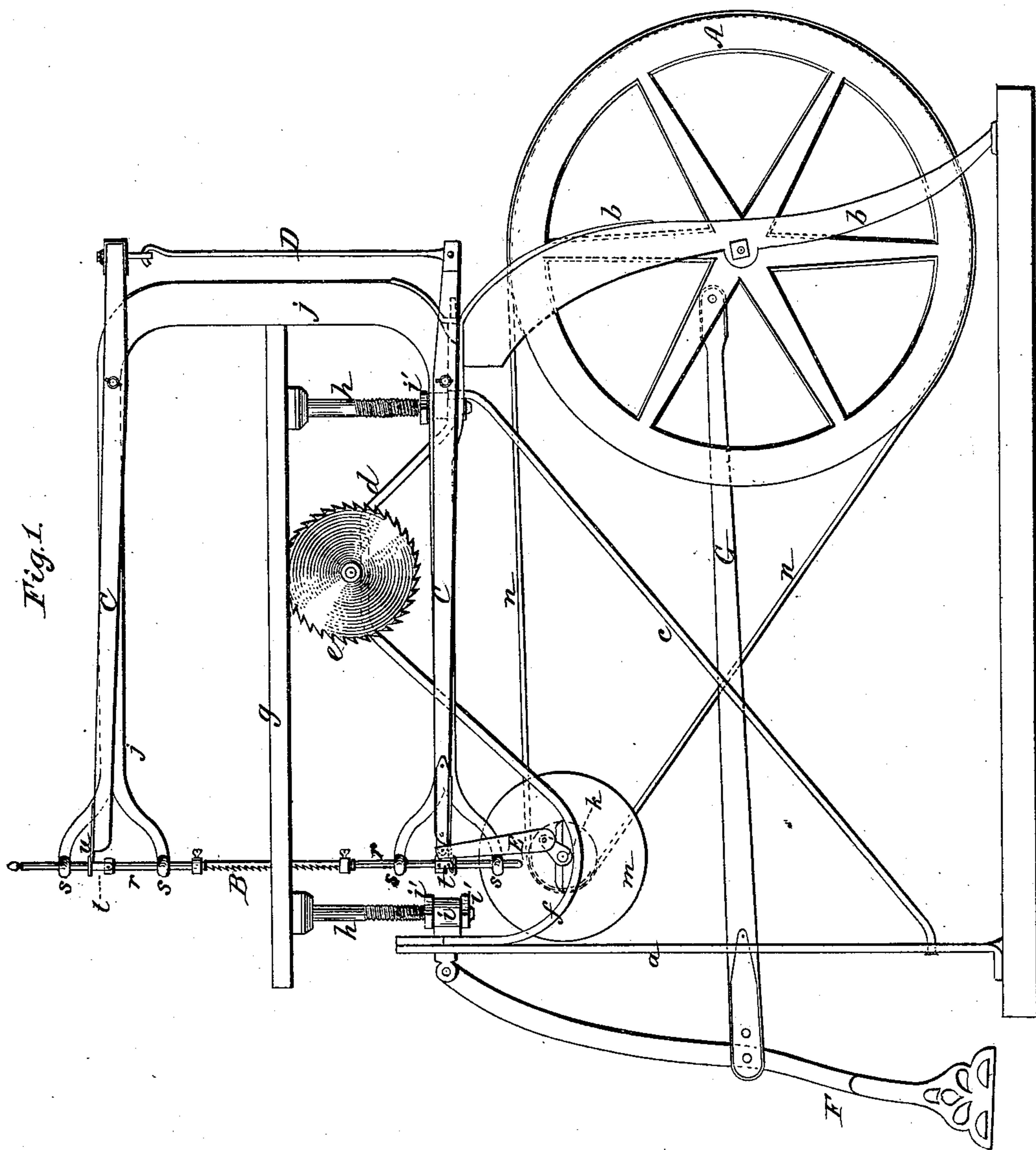
3 Sheets—Sheet 1.

A. SHOWALTER.

SCROLL AND CIRCULAR SAWING MACHINE.

No. 253,777.

Patented Feb. 14, 1882.



Witnesses:
Edward Broahag
Wm. H. Brereton

Inventor:
pro Abraham Showalter,
Johnson & Johnson
Attys

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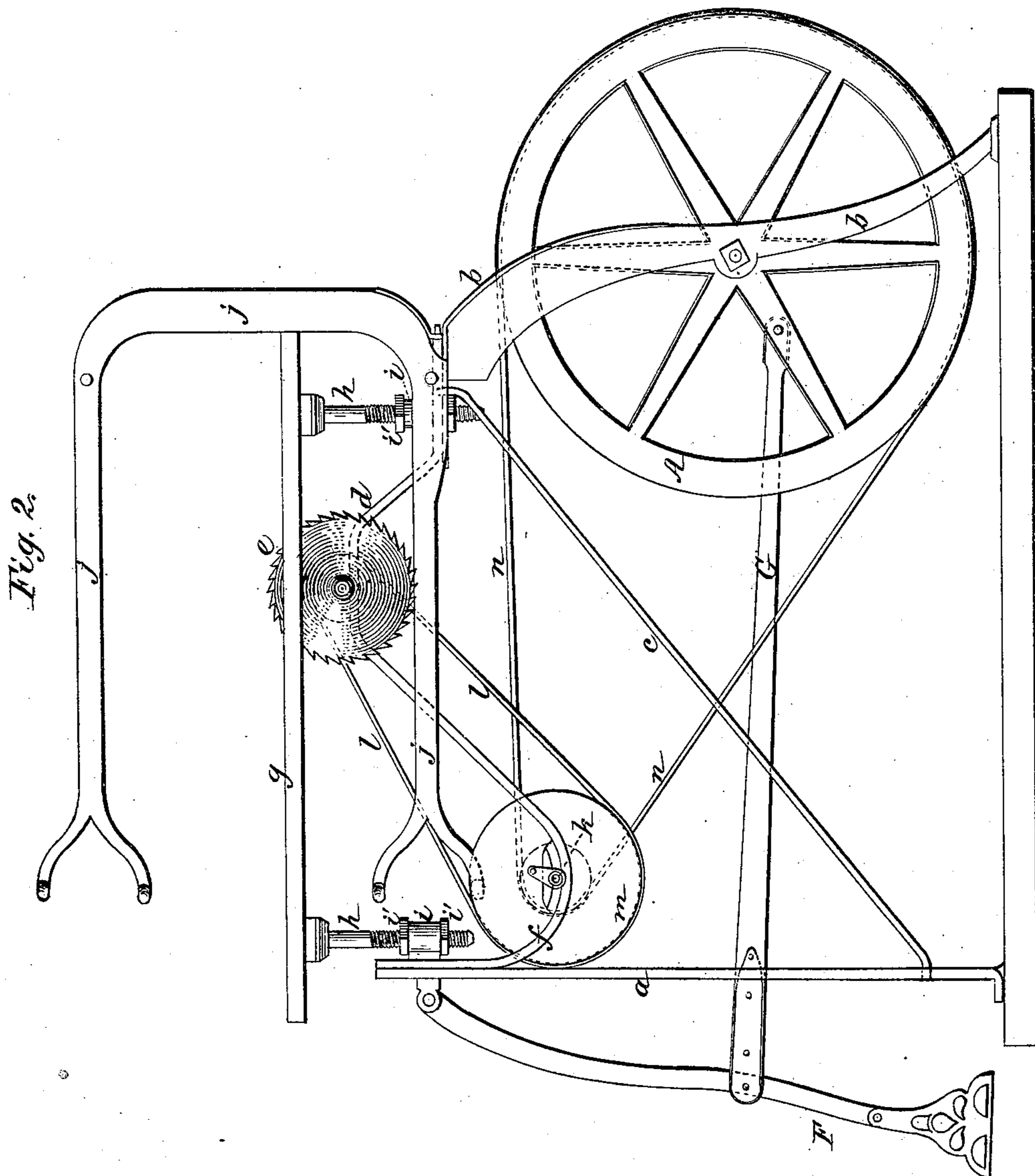
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Witnesses:
Amos Brodhead
Wm. H. Breckin

Inventor:
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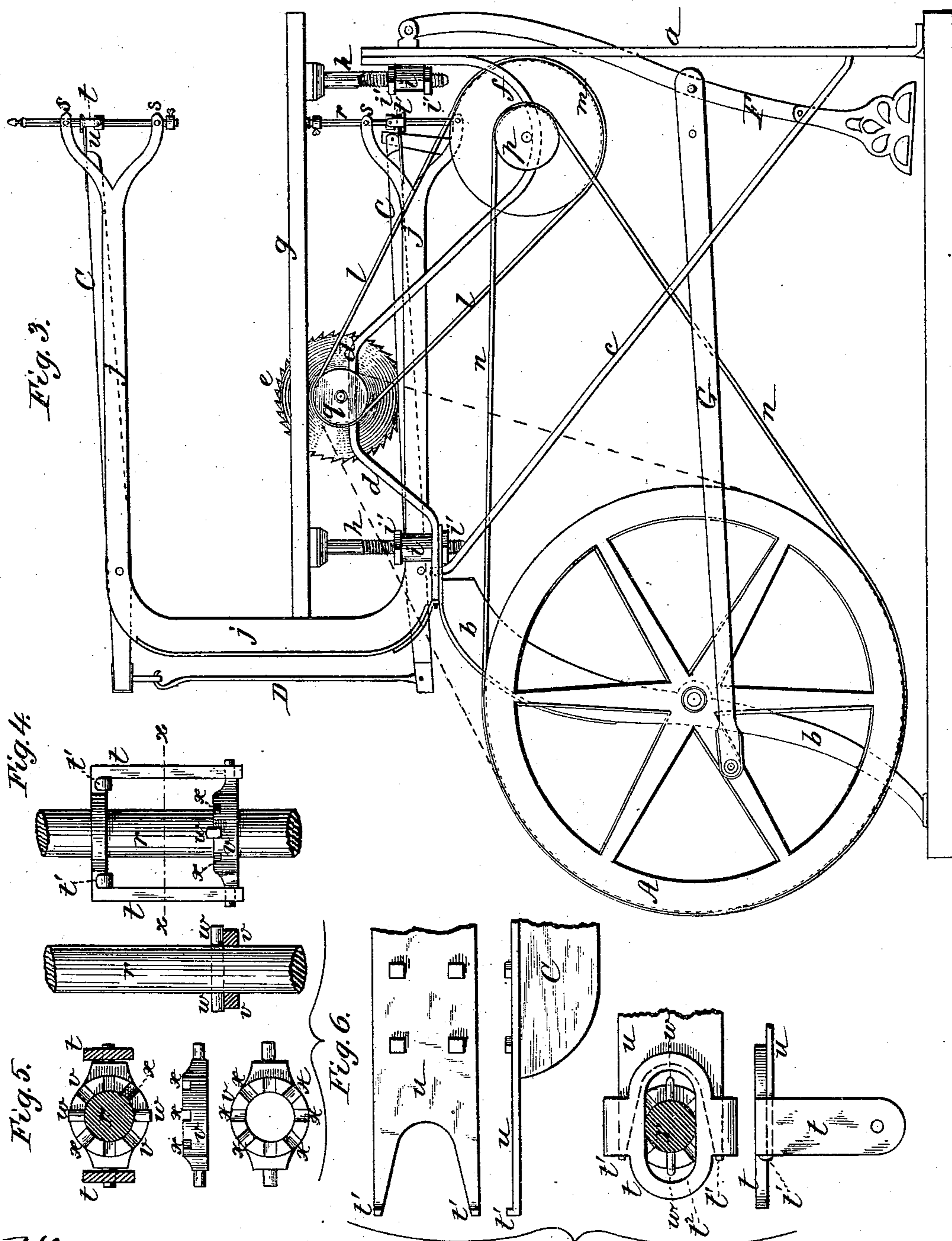
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SCROLL AND CIRCULAR SAWING MACHINE.

No. 253,777.

Patented Feb. 14, 1882.



Witnesses:
Quinn Broahag
 Thos. H. Breerton

Inventor:
for Abraham Snowwater,
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UNITED STATES PATENT OFFICE.

ABRAHAM SHOWALTER, OF PATASKALA, OHIO, ASSIGNOR OF ONE-THIRD
TO WILLIAM D. ARNOLD, OF SAME PLACE.

SCROLL AND CIRCULAR SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 253,777, dated February 14, 1882.

Application filed October 11, 1881. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM SHOWALTER, a citizen of the United States, residing at Pataskala, county of Licking, and State of Ohio, have invented new and useful Improvements in Combined Scroll and Circular Sawing Machines, of which the following is a specification.

I have adapted for separate use in a combined machine the scroll and the circular saw for ripping and for scroll-work, thus saving the expense of separate and distinct machines for such work. A top bracket of the table-frame supports and carries the circular saw, the U-frame of the scroll-saw, means for operating both saws, and guide-rests for screws, by which to support and to adjust the table relatively with the circular saw to put it into and out of use. Means are provided by which the scroll-saw is adapted to be turned upon its guide-rods to saw in any direction to suit the work. The special points of improvement as to these matters will be specifically pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a side elevation of the sawing-machine as adapted for scroll-work; Fig. 2, a side elevation of the sawing-machine as adapted for operation with the circular saw; Fig. 3, the opposite side of the same; Fig. 4, an enlarged detail front view of the saw-guide-rod connections; Fig. 5, a horizontal section of the same on the line *xx*, and details thereof; Fig. 6, detail views of one of the pivoted arms and its saw-guide-rod connections, these several detail views being enlarged.

The frame is of iron, preferably of arched front legs, *a a*, and a rear standard, *b*, connected by diagonal braces *c*, extending from the front legs to the top of the rear standard, and a top bracket approximating in form to a cyma-reversa or ogee, the front end of which is bolted to and depends from the top of the front legs, and the rear end terminates in a horizontal part bolted to and upon the rear standard. An elevated middle part, *d*, of this bracket supports the shaft of the circular saw *e*, while a depressed front part, *f*, supports the crank-shaft for operating the scroll-saw, such

elevated and depressed parts having relation to the table for the proper operation of the saws.

The table *g* is supported by screw-studs *h h*, passing through tubular guide-rests *i i* at the front and rear ends of the top bracket and secured by lock-nuts *i' i'*, the guide-rests serving to brace and firmly support the screw-studs and allow of their adjustment to raise the table above the circular saw when the latter is put out of use and to lower the table to bring the circular saw above it for use, such adjustment of the table being in a horizontal plane.

The guide-rods for the scroll-saw are carried by U-frame *j*, the lower arm of which is firmly secured to the top bracket below its elevated middle part and above its depressed front part. It will therefore be seen that the top bracket practically forms a support for the table, the circular saw, the guide-frame for the scroll-saw, the means for operating the saws, and the means for adjusting the table in relation to the circular saw; and this construction is important in a machine adapted for the separate use of a circular and a scroll saw by reason of giving compactness and economy of construction, with adaptation for operating both saws from the same crank-shaft.

The circular-saw shaft is mounted in boxes in the elevated part of the top bracket, and the crank-shaft *k* of the scroll-saw is mounted in boxes in the front depressed part of said bracket, and these two saw-operating shafts are connected by a band, *l*, passing around pulleys of unequal diameters, the pulley *m* being upon the crank-shaft and having a diameter about twice that of the pulley on the circular-saw shaft.

The crank-shaft is driven by a band, *n*, lead from a large treadle connecting-wheel, *A*, on the rear standard to a small pulley, *p*, on the crank-shaft. By this arrangement of the driving-belts the circular saw is driven with a high speed for light work; but for ripping stuff two or three inches thick the driving-belt may lead from the treadle connecting-wheel to a small pulley, *q*, on the circular-saw shaft, as shown by dotted lines in Fig. 3.

The scroll-saw *B* is secured to rods *r*, fitted to move vertically in guide *s* at the ends of the

U-frame, the arms of which are above and below the table and support the saw near the front end thereof. The saw is secured in slits in the ends of the guide-rods by collars and clamp-screws, as shown, or otherwise, and it is operated by the bars **C C**, pivoted to the arms of the **U**-frame, and connected by the stretcher-rod **D** in the usual manner.

The connection of each of the pivoted bars with the saw-guide rods is made by yokes t , placed upon said rods, and connected with said pivoted bars by plates u , forked so as to enter the yoke between it and the guide-rod, and thus form a free connection with said yoke. Each yoke has also a free connection with its guide-rod by means of an eyed cross-bar, v , pivoted to the open ends of the yoke, and a pin, w , fixed in the guide-rod, so as to rest upon the eyed hub of the cross-bar. It is against these pins w that the stretching action of the pivoted arms is exerted through the yokes upon the guide-rods to keep the saw properly stretched. In this stretching action the pivoted arms pull upon the yokes t by the connections of the forked plates u , which allow of a convenient means for connecting and disconnecting the saw-guide rods with the operating-arms, the forked plates of which are preferably bent to form lip-hooks t' , which lap over and form holds with the yoke-heads. By this connection the saw-operating arms **C** are free to be moved toward each other upon their guide-rod connections t , and thus relieve all cramping action upon the saw **B**, and cause the pivoted arms to act only with a pulling force.

As a means for adapting the saw **B** to be turned to suit the work, the upper and the lower faces of the eyed cross-bars v , which form the pulling-bearings for the yokes, are provided with notches x , placed in coincident and radial positions, into which the pins w may be adjusted by turning the guide-rods r so as to set the saw in the desired direction to work to advantage, especially in long stuff, which cannot be easily turned, or which will not pass the standard of the **U**-frame. To make this adjustment it is only necessary to depress or pull down the guide-rods r , which relieves the lower pin, w , from the cross-bar v , thus leaving the lower guide-rod free to be turned within the cross-bar and the yoke. Then depressing the end of the upper arm, **C**, allows the upper yoke, t , to fall away from the pin w in the upper guide-rod, r , and thus allow both guide-rods to be turned to bring their pins w into other notches of the cross-bars. The notches x are deep enough to receive and securely hold the pins w , so that the saw, when set, is held from being turned by the pressure of the work.

It will be understood that the upper pivoted arm, **C**, has sufficient spring to allow it to be depressed within and free of the yoke t , and thus in turn allow the yoke to drop down free of the pin w , which locks the yoke with the guide-rod; but this is effected by hand only for

the purpose of turning and adjusting the saw as stated.

The crank is connected with and operates the **U**-frame by the connecting-rod **E**; and the machine is operated by a swinging treadle, **F**, depending from the top of the front legs, and connecting by a rod, **G**, with a crank-pin on the band-wheel **A**.

In using the machine for scroll-work the table is raised above the circular saw and the band l is put out of driving-connection with the crank-shaft pulley m . In using the machine for ripping the table is set down to expose the circular saw above its surface, the scroll-saw and its operating-connections are detached, and the band l put in driving-connection with the crank-shaft pulley m .

The depressed front part of the top bracket forms a hanger and brings the crank-shaft in vertical line with and beneath the lower saw-guide, while the bracket is provided with slots to receive the driving-pulleys of the circular saw, and carrying these pulleys and the crank-shaft by this top bracket preserves the relation of these parts for separately operating the saws.

The yokes t are pivoted to the cross-bars v , and are provided with slots t^2 , through which the guide-rods pass to allow the said yokes to oscillate upon their pivots to conform to arcs described by the pivoted operating-arms **C**, connected with said yokes.

I claim—

1. In a sawing-machine, the combination, with a vertically-adjustable table, g , of a top-frame bracket having an elevated part, d , for carrying and supporting the circular-saw shaft, and a depressed front part, f , for carrying and supporting the crank-shaft k , for operating the scroll-saw, and the pulley m , for operating the circular saw, substantially as described, for the purpose specified.

2. In a combined scroll and circular sawing machine, the top-frame bracket having a front hanger part, f , and an arched part, d , and adapted to support and carry the table, the means by which the table is vertically adjusted, the circular-saw shaft, the **U**-frame for supporting and carrying the scroll-saw, and the means for operating both saws, substantially as described, for the purpose specified.

3. The combination, in a scroll-sawing machine, of the pivoted bars **C**, each having an end forked plate, u , with saw-carrying guide-rods r , each having a cross-pin, w , and the slotted yokes t , having the pivoted notched eyed cross-bars v , substantially as described, for the purpose specified.

4. The combination of the fixed frame j , the pivoted bars **C**, and their connecting stretcher-rod **D** with the saw-carrying guide-rod r , having the cross-pins w , and the slotted yokes t , having the notched eyed cross-bars v , substantially as described, whereby the saw is both stretched and adjusted to operate in any direction.

5. The pivoted arms C, each having a forked end plate, *u*, and their stretcher-rod D, in combination with the saw-carrying guide-rods *r*, each having a cross-pin, *w*, the yokes *t*, each having a closed slotted end, and the notched cross-bars *v*, pivoted in the open ends of said yokes, the said forked plates hooking within the closed ends of the yokes and the said cross-bars held against said pins by said pivoted arms, substantially as described, whereby the said notched cross-bars may be released

from said pins *w* to allow the saw to be set to operate in any direction without disconnecting any of the parts, for the purpose described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ABRAHAM SHOWALTER.

Witnesses:

THOS. S. SENINGTON,
WM. R. RAMEY.