

No. 676,812.

E. F. BEUGLER.

Patented June 18, 1901.

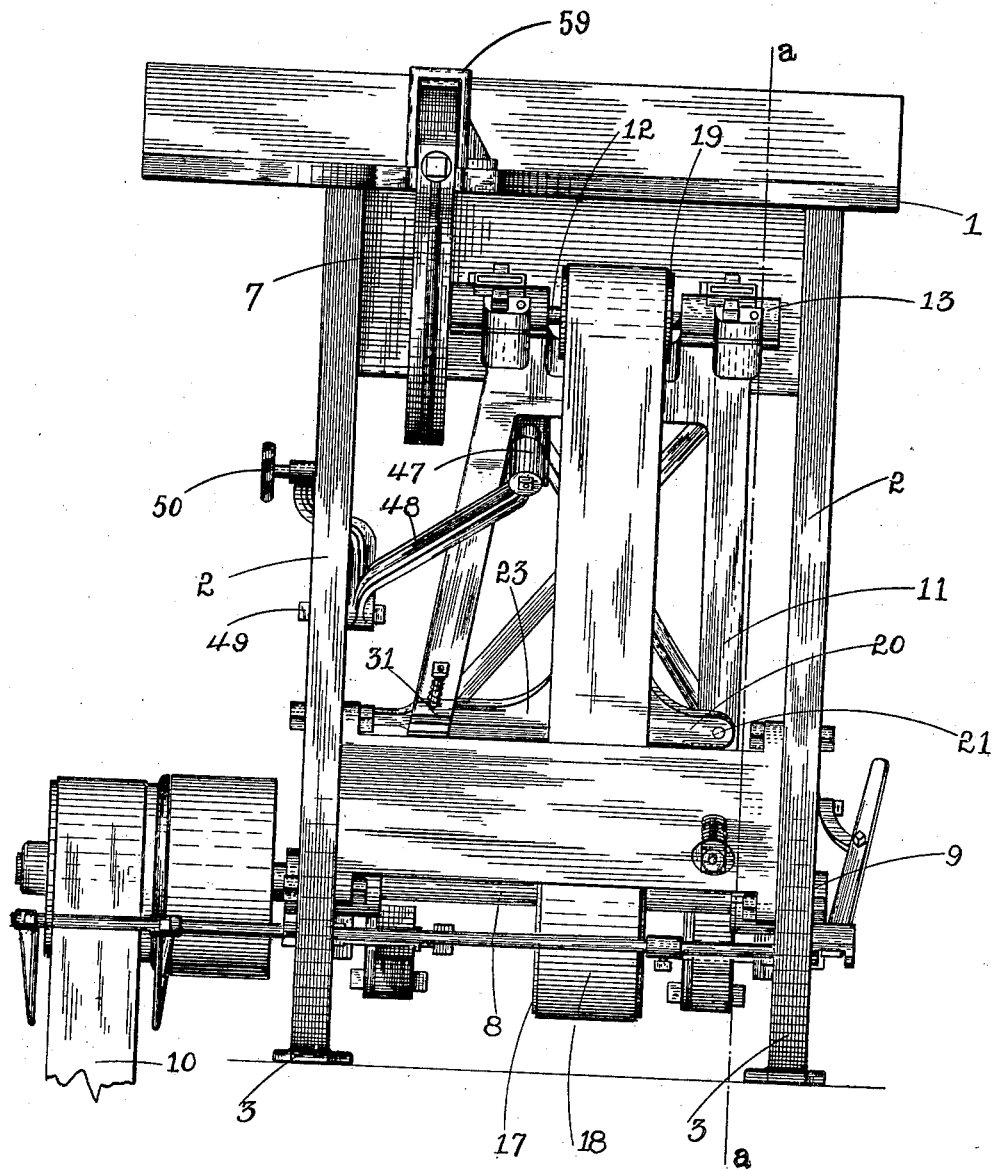
SAWING MACHINE.

(Application filed Dec. 17, 1900.)

(No Model.)

5 Sheets—Sheet 1.

Fig. 1.



Witnesses.

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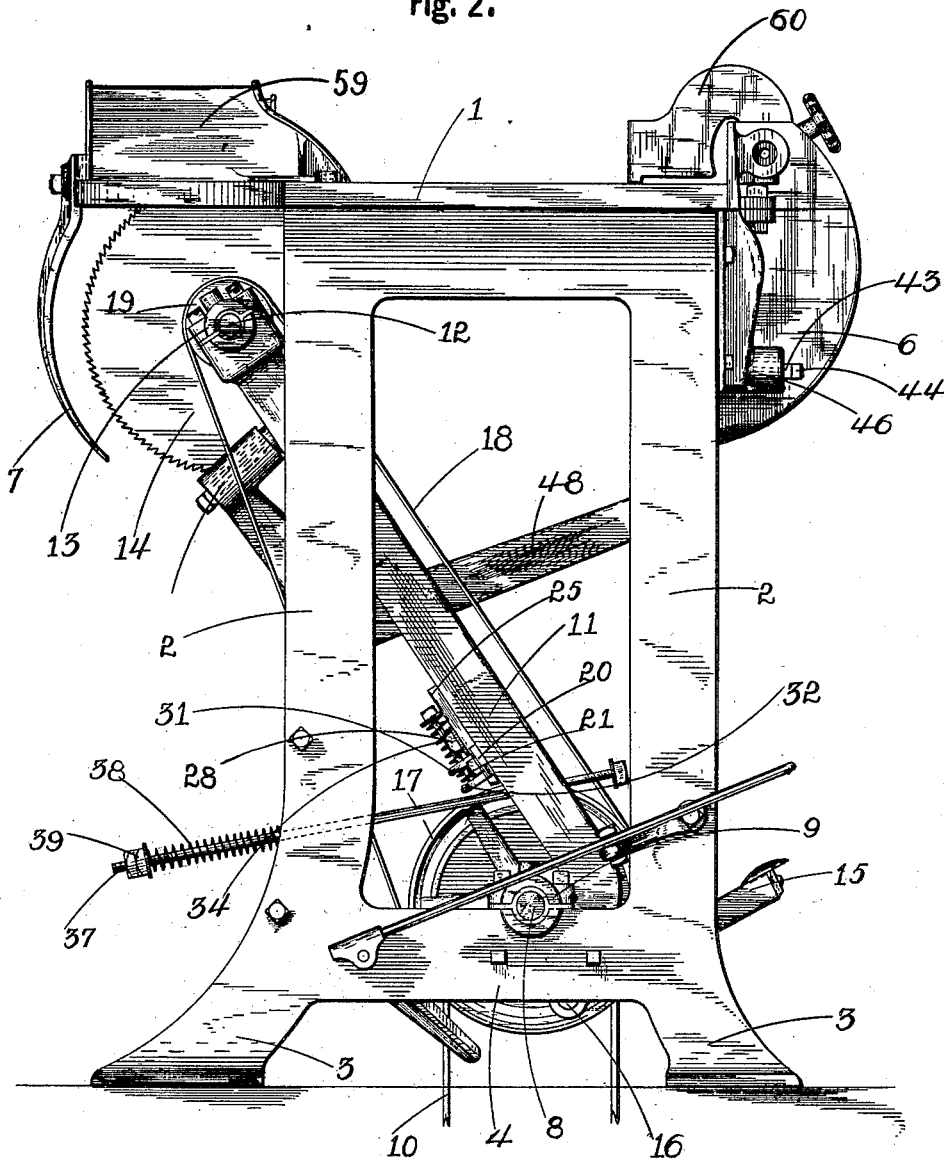
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Fig. 2.



Witnesses.

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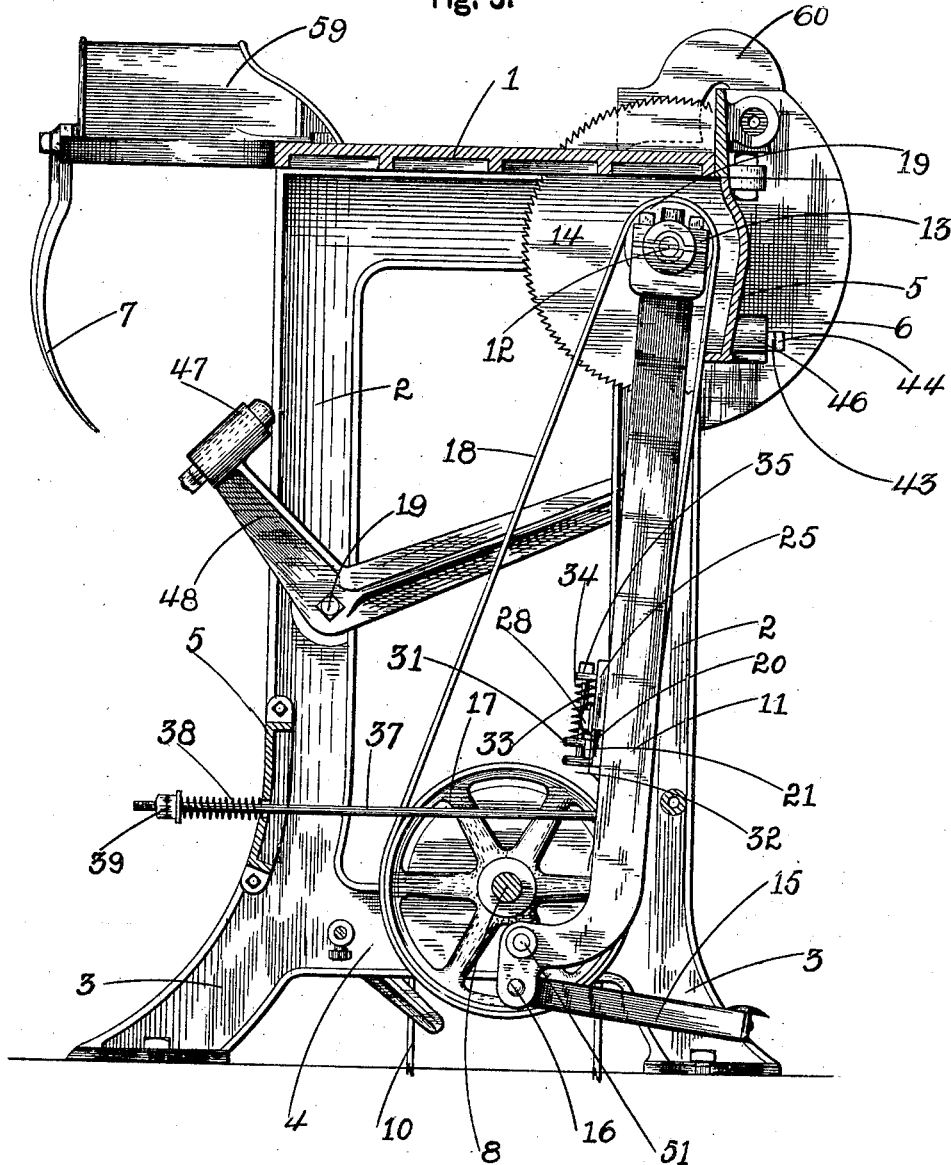
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Fig. 3.



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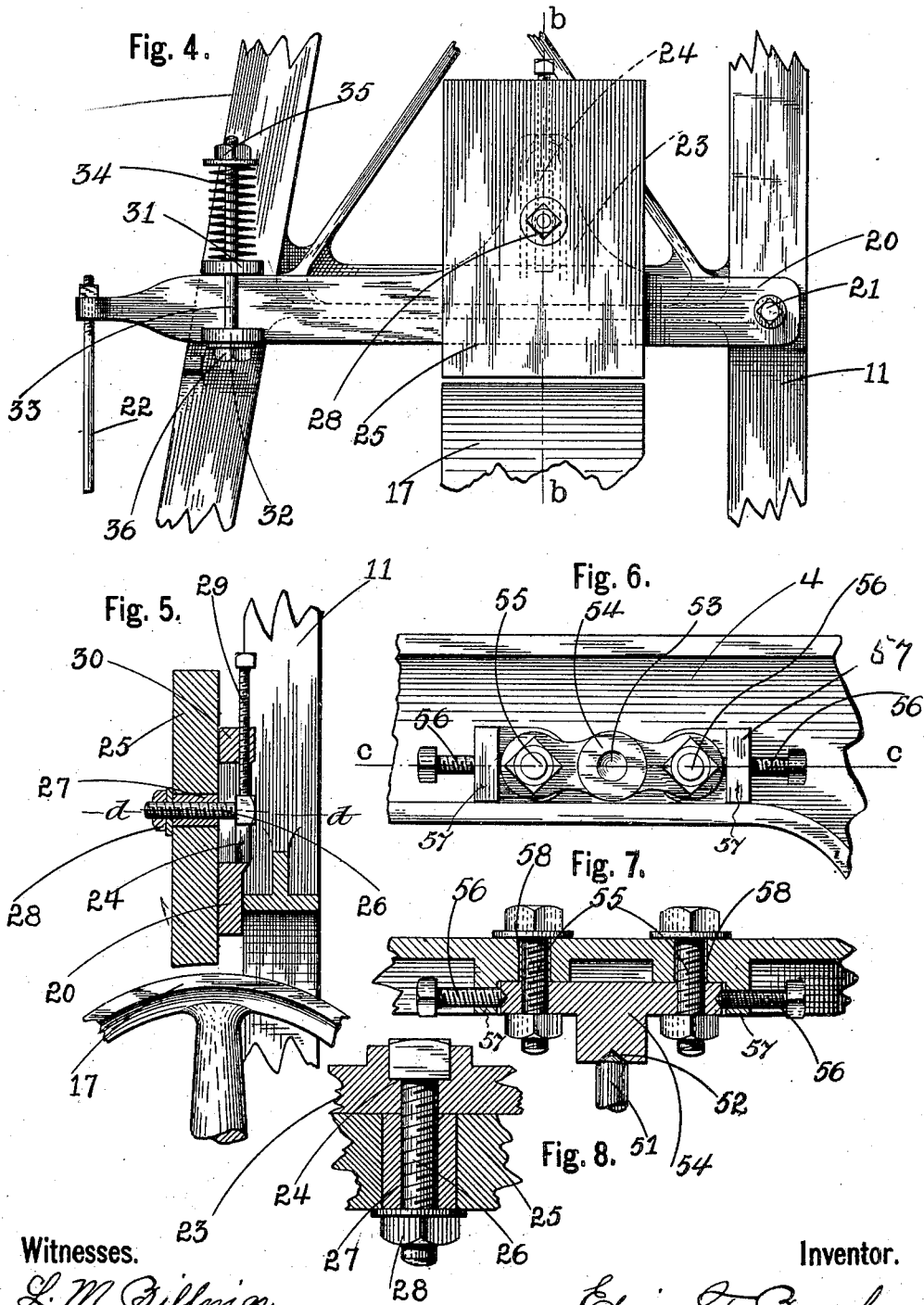
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(Application filed Dec. 17, 1900.)

(No Model.)

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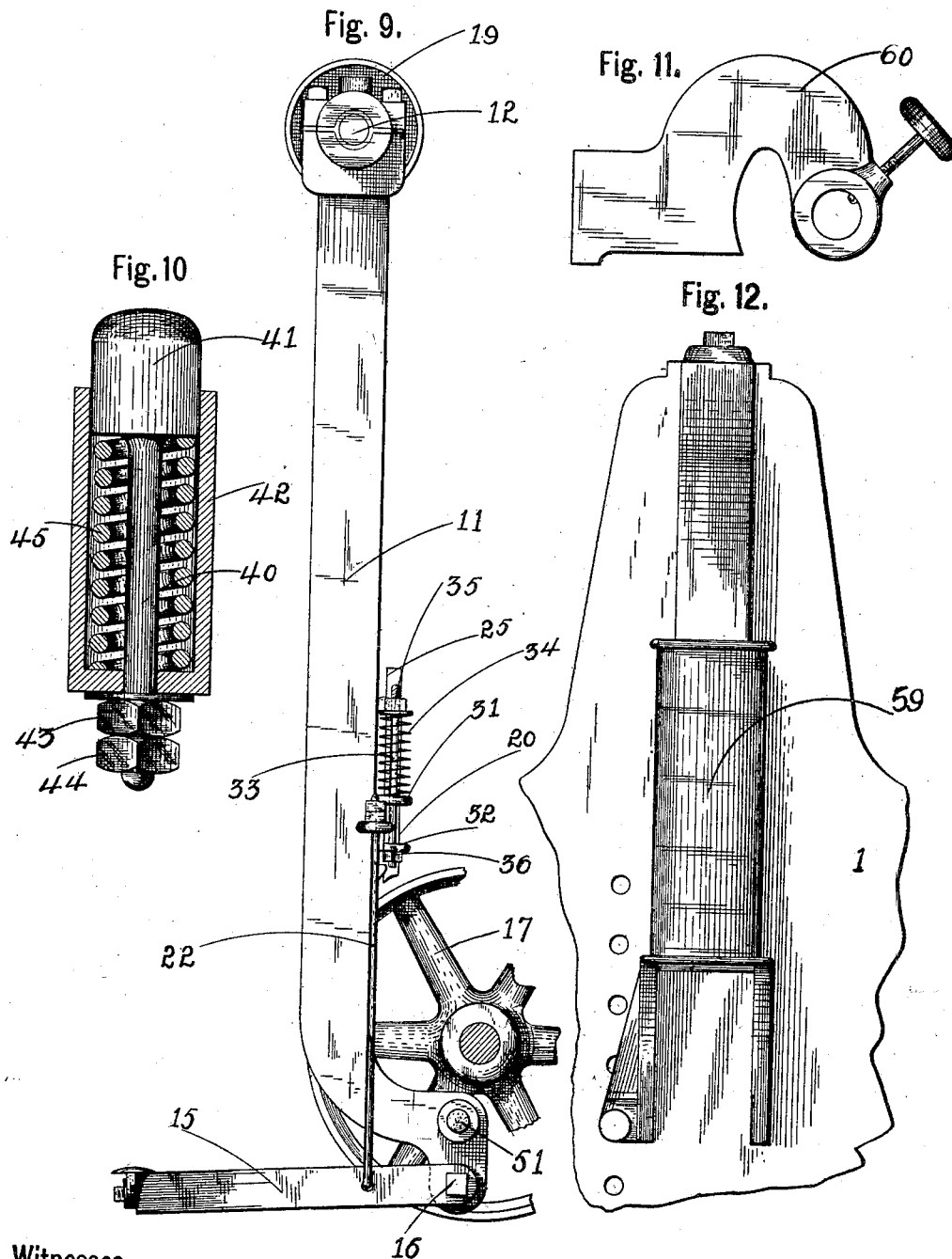
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5 Sheets—Sheet 5.



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UNITED STATES PATENT OFFICE.

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SAWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 676,812, dated June 18, 1901.

Application filed December 17, 1900. Serial No. 40,106. (No model.)

To all whom it may concern:

Be it known that I, EDWIN F. BEUGLER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Sawing-Machines, of which the following is a specification.

This invention relates to an improved sawing-machine; and the main object of the invention is to arrange the saw so as to secure increased belt tension as the saw comes in cutting position, and thus prevent slipping.

It also relates to certain details of construction, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of the improved sawing-machine. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section on line *a a*, Fig. 1, the swinging frame being shown at the limit of its forward range of movement. Fig. 4 is an enlarged fragment to illustrate the brake device. Fig. 5 is a section on line *b b*, Fig. 4. Fig. 6 is an enlarged fragment to illustrate the adjustable cone-bearings. Fig. 7 is a section on line *c c*, Fig. 6. Fig. 8 is an enlarged fragmentary section on line *d d*, Fig. 5. Fig. 9 is an enlarged detached view of the swinging frame and the foot-lever, also showing a fragment of the pulley, the friction device, and the connection between the friction device and foot-lever. Fig. 10 is an enlarged section through one of the spring-cushions. Fig. 11 is an enlarged detached view of the adjustable stop. Fig. 12 is an enlarged top view of a fragment of the table and the adjustable guard thereon.

In referring to the drawings in detail like numerals designate like parts.

The frame of the machine is preferably composed of the top 1, the side frame-pieces 2, having legs 3 at their lower ends, the side cross-pieces 4, and the end cross-pieces 5.

The top 1 serves as the sawing-table and has the usual slit in which the saw travels. Front and rear guards 6 and 7 for the saw are mounted on the top. A counter-shaft 8 is journaled in boxes 9 in the side cross-pieces 4 and is belted to a source of power by the belt 10.

A swinging frame 11, which is preferably angular in form, is pivoted in the side cross-pieces 4, beneath and slightly to one side of the counter-shaft, and a shaft 12 is journaled in boxes 13 in the upper portion of the frame, upon which is mounted a saw 14. A foot-treadle 15 extends from and is pivoted to the lower end of the swinging frame by pintles 16 at a point substantially vertically beneath the pivoting-point of the swinging frame to the frame of the machine and serves to move the swinging frame and saw when sawing. A pulley 17 is mounted on the counter-shaft 8 and is connected by a belt 18 to a pulley 19, mounted on the saw-shaft 12. The pivoting-point of the swinging frame is so arranged relatively to the counter-shaft that the distance between the pulley 17 on the counter-shaft 8 and the pulley 19 on the saw-shaft 12 gradually increases as the frame swings forward and gradually tightens the belt 18 around said pulleys, thereby securing increased belt tension to prevent slipping as the saw comes into cutting position.

To assist the operator in moving the swinging frame forward, a friction device is arranged on the swinging frame, which is brought in contact with the periphery of the pulley 17 by the downward movement of the pivoted foot-treadle 15. By this means the rotation of the counter-shaft swings the swinging frame forward, and thereby moves the saw through the slit in the top 1 and cuts the board or other material on said top.

The preferred construction of the friction device is shown in Figs. 4, 5, 8, and 9, in which a lever 20 is pivoted at one end to the swinging frame by the pin or bolt 21 and connected at the opposite end to the foot-treadle by a connecting-rod 22. The lever is provided with an enlargement 23, having a slot 24, and a friction-block 25, of wood or other suitable material, arranged over the periphery of the pulley 17, is adjustably secured to the lever by a screw-bolt 26, passed through the slot 24 and an opening through the block. A sleeve 27 is mounted on the screw-bolt 26 and loosely fitted in the opening in the block (see Figs. 5 and 8) and serves to permit a slight revolving movement to the block 25, and thus allow said block to adjust itself automatically so that its lower edge will come

in contact at all points with the periphery of the pulley 17. The screw-bolt is locked in position by the nut 28, and the block is fastened against upward movement by a locking-screw 29, which passes through a lug 30 and contacts with the head of the screw-bolt 26. (See Fig. 5.) The friction device is normally held from contact with the pulley 17 by spring means. An apertured lug 31 extends 10 from the swinging frame, and an apertured lug 32 from the lever 20, and a rod 33 passes through the apertures in said lugs and projects above said lugs. A coil-spring 34 is mounted upon the upper portion of the rod 15 above the lugs and tends to lift the lever upward with a spring tension. (See Fig. 4.) Nuts 35 and 36 are secured upon the upper and lower ends of the rod.

The swinging frame is normally in its rear 20 position, substantially as shown in Fig. 2, and is swung forward by the downward movement of the treadle under pressure of the operator's foot, assisted by the rotation of the counter-shaft through the friction device, as heretofore described. The depressing of the 25 foot-treadle as it is connected to the swinging frame at a point below its main pivoting-point acts to start the swinging frame on its swinging sawing movement and also to draw the 30 friction device into contact with the pulley on the counter-shaft. (See Fig. 9.) As the counter-shaft rotates in the direction of the sawing movement of the swinging frame it swings the frame in its sawing movement 35 when the friction device is in contact with the pulley. To automatically return the swinging frame to its rear position upon the release of the treadle, a rod 37 is connected at one end to the swinging frame and its opposite 40 end is passed loosely through an opening in the machine-frame. A spiral spring 38 is mounted upon the projecting portion of the end of the rod passed through the machine-frame and is held in place between the 45 machine-frame side and a nut 39 on the end of the rod. By this means the swinging frame is automatically returned to its rear position by a spring device upon the removal of the operator's foot from the treadle or the release of pressure thereon. 50

Spring-cushions are arranged to receive the swinging frame as it swings forward and back. These cushions are preferably formed substantially as shown in Fig. 10, in which 55 a rod 40, having an enlarged head 41, is passed through a casing 42 and held in place at its lower end with lock-nuts 43 and 44. A spiral spring 45 is supported within the casing and bears against the head 41 of the rod 40. One of these spring-cushions, which I will designate by the numeral 46 in Figs. 2 and 3, is mounted at the rear of the machine, and another (designated by the numeral 47 in Figs. 1, 2, and 3) is mounted at one end of 60 an angle-lever 48. This lever is pivoted to the main frame of the machine at an intermediate point by a pivot pin or bolt 49 and

can be moved to change the position of the cushion 47 to regulate the length of movement of the swinging frame in accordance with the 70 width of lumber to be sawed. The lever is locked in its position by a hand-screw 50.

The swinging frame is preferably journaled on adjustable bearings, substantially as shown in Figs. 6 and 7, having opposed pins 75 51, provided with cone ends 52, which seat in the cone depressions 53 in bearing-pieces 54. These bearing-pieces are screwed to the sides of the frame by bolts 55 and are adjusted horizontally and locked in their adjusted position by the screw-nuts 56, which pass 80 through lugs 57, projecting from the frame. The openings 58 in the bearing-pieces 54, through which the bolts 55 pass, are larger than said bolts to allow sufficient horizontal 85 movement to adjust the frame and aline the saw.

An adjustable guard 59 is placed at the front of the machine, and a stop 60 for aligning the lumber with the saw is arranged at 90 the rear. (See Figs. 2 and 3.)

I claim as my invention—

1. In a sawing-machine, the combination of a machine-frame, a swinging saw-carrying frame, a shaft journaled in the frame and rotating in the direction of the sawing movement of the swinging frame, and means for starting the swinging movement of the frame and also bringing the swinging frame under operative control of the shaft. 100

2. In a sawing-machine, the combination of a machine-frame, a swinging saw-carrying frame pivoted to said machine-frame, a counter-shaft having a pulley, a friction device on the swinging frame operatively arranged 105 with respect to the pulley on the counter-shaft, a foot-treadle connected to said swinging frame, and an operating connection between the foot-treadle and the friction device, whereby the friction device is brought 110 into contact with the pulley when the treadle is depressed.

3. In a sawing-machine, a main frame, a shaft journaled in said frame, a swinging frame carrying saw mechanism, a foot-treadle 115 supported from the swinging frame, and a device carried by the swinging frame operatively connected to the foot-treadle and adapted to be brought into engagement with the shaft when the foot-treadle is depressed, 120 whereby the rotation of the shaft swings the frame in sawing movement when the foot-treadle is depressed.

4. In a sawing-machine, a main frame, a counter-shaft journaled in said frame, a 125 swinging frame carrying saw mechanism, a foot-treadle attached to the swinging frame, a friction device in the swinging frame, and a connection between the foot-treadle and the friction device whereby the depressing 130 of the foot-treadle moves the swinging frame and also brings the friction device into contact with the counter-shaft.

5. In a sawing-machine, a main frame, a

shaft journaled in said frame and having a pulley, a swinging saw-carrying frame, a friction device on said swinging frame adapted to frictionally engage with the surface of the pulley, and a foot-treadle pivoted to the swinging frame and operatively connected to said friction device.

6. In a sawing-machine, a main frame, a shaft journaled in said frame, and having a pulley, a swinging frame, a foot-treadle pivoted to the swinging frame, and a lever pivoted to the swinging frame and operated by the foot-treadle and having a block adapted to frictionally engage with the pulley.

7. In a sawing-machine, a main frame, a shaft journaled in said frame and having a pulley, a swinging frame, a foot-treadle pivoted to the swinging frame, and a lever pivoted to the swinging frame and operated by the foot-treadle and having a friction-block adapted to frictionally engage with the pulley.

8. In a sawing-machine, a main frame, a shaft journaled in said frame and having a pulley, a swinging saw-carrying frame, a foot-treadle pivoted to the swinging frame, a lever pivoted to the swinging frame and carrying a block adapted to contact with the pulley and a connection between the treadle and lever.

9. In a sawing-machine, a main frame, a shaft journaled in said frame and having a pulley, a swinging saw-carrying frame, a foot-treadle, a lever pivoted to the swinging frame and having a slot, a friction-block arranged relatively to the pulley and having an opening, a sleeve loose in the opening, a bolt passing through the sleeve and slot, and a connection between the treadle and lever.

10. In a sawing-machine, a main frame, a shaft journaled in said frame and having a pulley, a swinging saw-carrying frame, a foot-treadle pivoted to the swinging frame, a lever pivoted to the swinging frame, and having a slot, a friction-block, a bolt passing through the friction-block and slot, and a connection between the treadle and lever.

11. In a sawing-machine, a main frame, a counter-shaft journaled in said frame, an angular swinging frame pivoted to said main frame beneath and slightly to one side of the counter-shaft, a saw-carrying shaft journaled in said swinging frame, a belt connecting the saw-carrying shaft to the counter-shaft, a foot-treadle pivoted to the swinging frame at a point vertically beneath the pivoting-point of the swinging frame to the main frame and a connection between the swinging frame and the foot-treadle.

12. In a sawing-machine, a main frame, a counter-shaft journaled in said frame, a swinging frame pivoted to said main frame, a friction-lever pivoted to the swinging frame and normally in an inoperative position, and a foot-treadle connected to the swinging frame and the friction-lever and adapted to start the swinging frame and move the friction-lever into contact with the counter-shaft.

13. In a sawing-machine, a main frame, a shaft journaled in said frame and having a pulley, a swinging frame, a foot-treadle pivoted to the swinging frame, a lever pivoted to the swinging frame and operated by the foot-treadle and having an adjustable block adapted to frictionally engage with the pulley and means for adjusting said block.

14. In a sawing-machine, a main frame, a shaft journaled in said frame and having a pulley, a swinging frame, a foot-treadle connected to the swinging frame, a lever pivoted to the swinging frame and operated by the foot-treadle and having a block adapted to frictionally engage with the pulley, means for adjusting said block and means whereby the block automatically aligns its contacting edge to the pulley-surface.

15. In a sawing-machine, a main frame, a counter-shaft journaled in said frame, an angular saw-carrying swinging frame pivoted to said main frame beneath and slightly to one side of the counter-shaft, a saw-carrying shaft journaled in said swinging frame, a belt connecting the saw-carrying shaft to the counter-shaft, a foot-treadle pivoted to the swinging frame at a point vertically beneath the pivoting-point of the swinging frame to the main frame and a connection between the swinging frame and the foot-treadle.

16. In a sawing-machine, a main frame, a counter-shaft journaled in said frame, a swinging frame pivoted to said main frame, a lever pivoted to the swinging frame, a friction-block on said lever, a spring for normally maintaining said lever in an inoperative position and a foot-treadle pivoted to the swinging frame and means for moving the lever to bring the block into contact with the counter-shaft.

17. In a sawing-machine, a main frame, a counter-shaft journaled in said frame, a swinging frame pivoted to said main frame, a lever pivoted to the swinging frame, a friction-block on said lever, a spring for normally maintaining said lever in an inoperative position, a foot-treadle pivoted to the swinging frame and a connection between the foot-treadle and lever for moving the lever to bring the block in contact with the counter-shaft upon the depression of the foot-treadle.

18. In a sawing-machine, a main frame, a counter-shaft journaled in said frame, a swinging frame pivoted to said main frame, a lever pivoted at one end to the swinging frame, a friction-block on said lever, a spring for normally maintaining said lever in an inoperative position, a foot-treadle pivoted at one end to the swinging frame and a connection between the opposite end of the lever and an intermediate point of the foot-treadle.

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Witnesses:

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