

(No Model.)

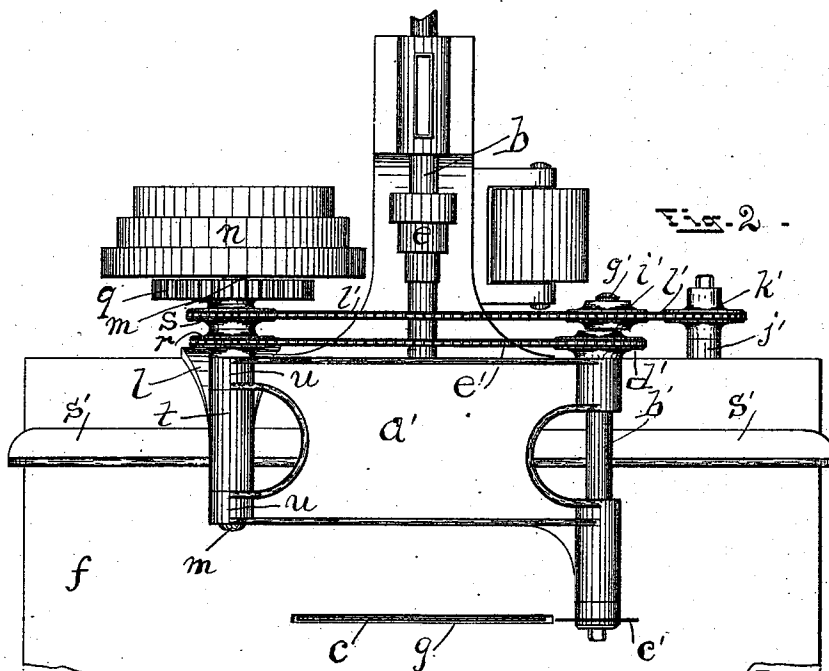
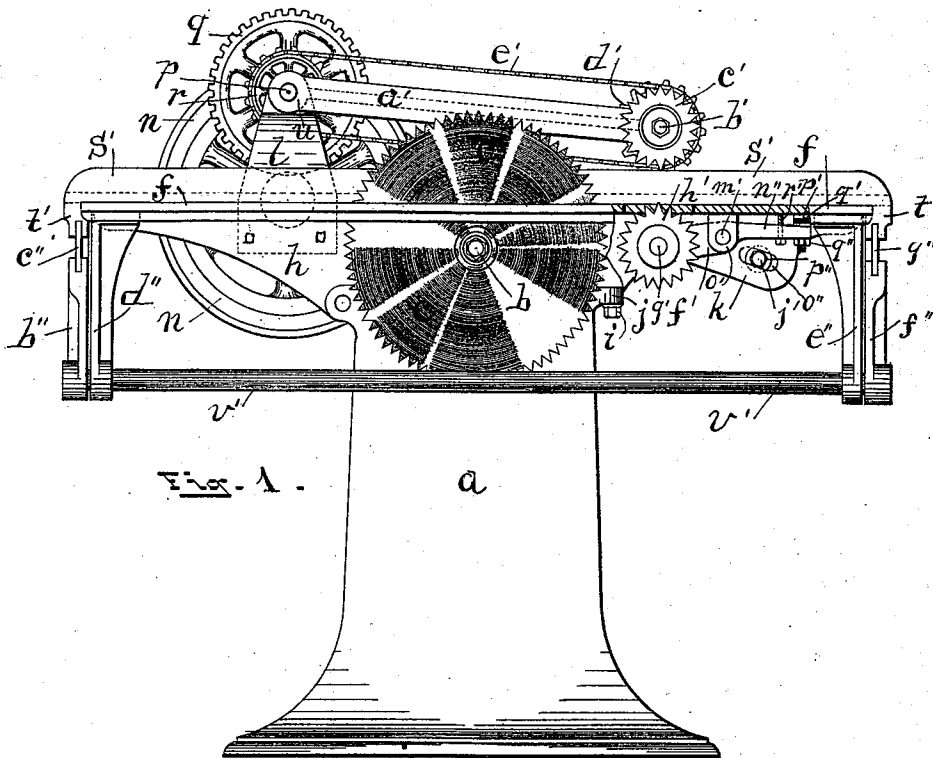
2 Sheets—Sheet 1.

A. D. CATLIN.

CIRCULAR SAWING MACHINE.

No. 377,708.

Patented Feb. 7, 1888.



ATTEST.  
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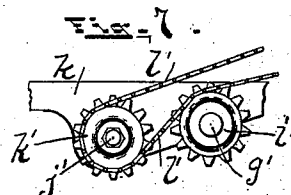
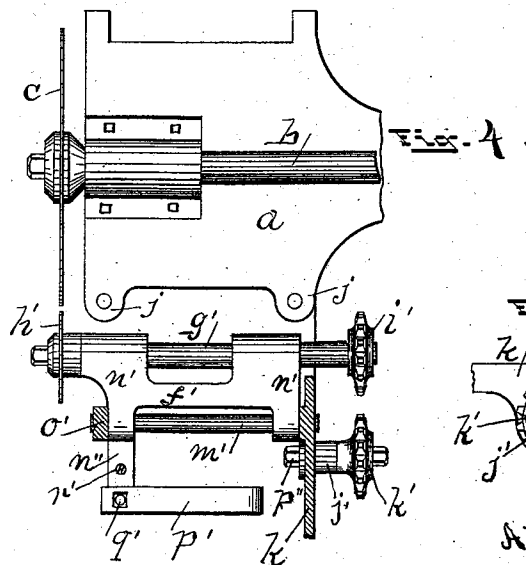
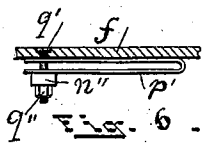
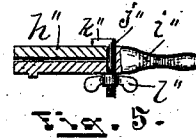
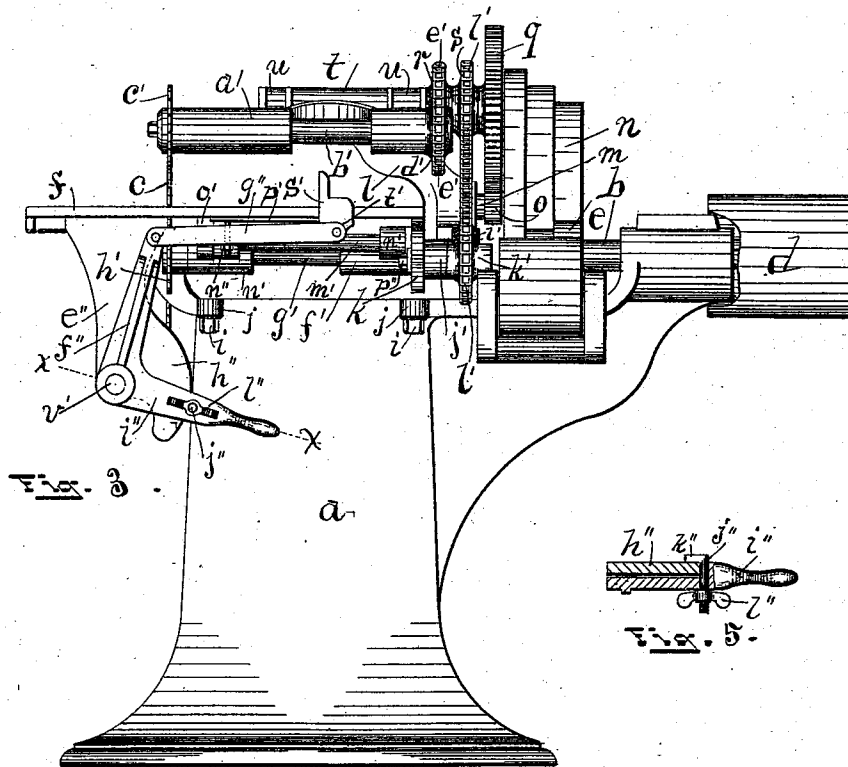
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WITNESSES:  
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# UNITED STATES PATENT OFFICE.

ABEL D. CATLIN, OF BAY CITY, MICHIGAN, ASSIGNOR TO THE CHATTANOOGA  
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## CIRCULAR SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 377,708, dated February 7, 1888.

Application filed September 27, 1887. Serial No. 250,810. (No model.)

*To all whom it may concern:*

Be it known that I, ABEL D. CATLIN, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Circular Sawing Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to that class of circular sawing machines which are used for ripping or slitting lumber to various widths and dimensions; and the improvement and invention consist, chiefly, in the improved means of operating the gage or guide piece which regulates the width of the piece ripped or cut off, in the new and improved means of feeding the lumber to the saw, and in the construction and combination of the several parts of the machine, which I hereinafter more fully describe and claim.

The objects of the invention are, first, to obtain a machine for sawing or ripping lumber that is provided with a feeding device which will move the lumber to the saw in a sure and positive manner and which entirely relieves the operator from the labor of pushing the lumber toward the saw; and, second, to provide a gage or guide for regulating the width of the piece to be cut which may be more easily and quickly changed and adjusted for pieces of different widths than those in common use and that may be firmly held in any desired position by the adjusting devices. I attain these objects by the devices illustrated in the accompanying drawings, in which—

Figure 1 is a side view in elevation of a sawing-machine embodying my invention. Fig. 2 is a top or plan view of the same. Fig. 3 is a view of the front end of Fig. 1. Fig. 4 shows a top view of the supporting-column and of the frame supporting the lower feeding-disk, the saw-table being removed. Fig. 5 is a section at *xx* of the adjusting-lever in Fig. 3. Fig. 6 is a front view of frame for lower feeding-disk, with section of saw-table.

Fig. 7 is a view of the mechanism actuating the lower feeding-disk, detached.

*a* represents a base or column support, and *b* is a saw-arbor journaled in suitable boxes upon the upper portion of the column *a*, and is provided upon one end with a saw, *c*, and upon its opposite end with a driving-pulley, *d*, and also carries a cone-pulley, *e*, upon its central portion.

*f* is a saw-table, provided with a slit, *g*, through which passes the saw, the table being above the arbor, and is hinged to the rear side of the column *a* by the downwardly-extending flange-pieces *h*, which are pivoted to the column, and the table is held securely in a horizontal position by the screws *i*, passed through the lugs *j*, which project from the column and into the downwardly-extending flange-pieces *h*. This mode of securing the table to the column allows the table and all of the parts connected therewith to be tilted back and freed from the saw, and this allows the saw to be removed from the arbor or gives free and clear access to the saw for filing or setting, &c.

Firmly secured to one side of the table *f*, in rear of the saw-arbor, is an upwardly-extending bracket or arm, *l*, and upon the lower portion of this arm is journaled the shaft *m*, carrying the cone-pulleys *n*, and also the pinion *o*, and in the box *t* upon the upper portion of the arm *l* is journaled the shaft *p*, upon which is secured the gear-wheel *q*, which intermeshes with the pinion *o*. The chain-sprockets *r* and *s* are also placed upon the shaft *p*, which is also passed through the rearward-extending lugs *u* of the frame *a'*. The forward end of the frame *a'* reaches in front of the saw and is provided with a shaft, *b'*, journaled in a suitable manner to the front end of the frame, and, extending beyond the frame, is provided directly in front of and in alignment with the saw with a feeding-disk, *c'*. This disk *c'* is provided on its periphery with projecting teeth, and upon the opposite end of the shaft *b'* is placed and secured a chain-sprocket, *d'*, and a chain, *e'*, is passed over this sprocket, and also over the sprocket *r*, and thereby a proper rotary motion is imparted to the feeding-disk *c'*.

By hanging the rear end of the frame *a'* to the shaft *p* the front end of the frame is al-

lowed to move upward to any desired position, and the movement of the driving-chain which imparts the rotary movement to the feeding-disk *c'* will not be affected thereby.

- 5 Beneath the table *f*, and in front of the saw, is placed a frame, *f'*, and to the rear end of the frame is journaled a shaft or arbor, *g'*, upon one end of which is placed a feeding-disk, *h'*, provided on its periphery with teeth  
10 which reach upward and through the table *f*, a slot being provided through the table for that purpose in alignment with the saw, and upon the opposite end of the shaft, which reaches beyond the outside of the table, is mounted a  
15 sprocket-wheel, *i'*. In front of this sprocket-wheel *i'*, and secured adjustably by a slot, *o''*, and nut *p''* to the downwardly-projecting flange-piece *l*, is a stud, *j'*, upon which, and in alignment with the sprocket *i'*, is journaled  
20 the sprocket *k'*. A driving-chain, *l'*, is passed around the sprocket *s* and the sprocket *k'*, bringing the lower portion of the chain to pass over and engage with the sprocket *i'*, which imparts a rotary movement to the shaft  
25 *g'* in the opposite direction to the motion of the shaft *b'*.

The frame *f'* is pivotally secured to the under side of the table by a bolt, *m'*, passing through the central portions of the side pieces, *n'*, and through lugs *o'*, extending downward from the table.

- One of the side pieces, *n'*, of the frame extends forward toward the front edge of the table, forming a lever, *n''*, and a spring, *p'*, is placed between the lever and the table, which  
35 operates to bear downward upon the lever *n''*, and this raises the pieces *n'* and shaft *g* and feeding-disk *h'*.

- q'* is a gage screw or stud passing through the free end of the lever *n''*, and with its upper end secured to the under side of the table *f*, and with its lower end reaching below the lever *n''*, and provided with a nut, *q''*, which, being turned on the stud, raises the lever *n''*  
40 and lowers the disk *h'*, and by this means the feeding-disk can be regulated to reach through the table to any required distance, or can be withdrawn entirely and held from engagement with the piece to be sawed, if desired.

- 50 *r'* is a set-screw passed through a threaded opening in the lever *n''*, and with its upper end resting against the under side of the table *f*, which, operating in conjunction with the gage-screw *q'*, retains the disk *h'* in any desired position firmly and rigidly, if necessary.

- The operation of the device is as follows: Proper rotary motion being imparted to the saw in the usual manner, the cone-pulley *e* upon the saw-arbor imparts the necessary rotary  
60 motion, through the cone-pulleys *n*, the gear-wheels *q* and *o*, and the chains *c'* and *l'*, to the arbors *g'* and *b'* and the feeding-disks *h'* and *c'*. The piece to be sawed is then passed between the disks *h'* and *c'*, and the frame *f'*, which carries the disk *h'*, being rendered adjustable by the spring *p'*, allows the piece to be sawed to lie firmly and evenly upon the table, while the

teeth of the disk catch into the under side of the piece and propel the same toward the saw. The upper frame, *a'*, being hung at its rear end  
70 allows the front end, which carries the disk *c'*, to rise without other manipulation than presenting the piece to be sawed between the disks, when, as the teeth of the disk *c'* catch upon the piece, the frame is raised until the  
75 teeth of the disk engage with the top of the piece, and the disk *c'* then co-operates with the disk *h'* to propel the piece toward the saw. By this arrangement of the disks and their actuating mechanism a piece of any thickness  
80 may be passed between the disks without delay or adjustment, and the disks being in alignment with the saw the impression of the teeth of the disks upon the piece to be sawed is cut out or removed by the saw as the piece is cut.  
85 Upon the surface of and lengthwise of the table is placed a gage-piece, *s'*, the ends of the piece reaching somewhat beyond the front and rear edges of the table, and are provided with downwardly-projecting lugs *t'*, which also  
90 reach under and catch beneath the edges of the table. Projecting downward from the under side of the table are the front and rear supporting-brackets, *d''* and *e''*, and through the lower ends of these brackets is passed the shaft  
95 *v'*. To the rear end of the shaft *v'* is secured an arm, *b''*, the outer or free end of the arm being pivoted to one end of the connecting-piece *c''*, and the opposite end of the piece *c''* is pivoted to the rear lug *t'* of the guide-piece. 100

Upon the front end of the shaft *v'* is secured an arm, *f''*, to the free end of which is pivoted one end of the connecting-piece *g''*, the opposite end of the piece *g''* being pivoted to the lug *t'* on the front end of the gage-piece *s'*.  
105 The front bracket, *e''*, is provided with a quadrant, *h''*, and the arm *f''* is provided with a handle or lever, *i''*, having a projecting portion which reaches to the rear side of the quadrant, and a bolt, *j''*, is passed through the  
110 lever just outside of the periphery of the quadrant, and provided with a head portion, *k''*, so formed as to reach over the rear side of the quadrant, and a lever-nut, *l''*, is placed upon the front end of the bolt, and this nut, on being  
115 tightened against the arm, draws the head *k''* against the rear side of the quadrant and securely retains the lever in position, which also secures the gage-piece *s'* in position.

The operation of this device is that the nut *l''* is loosened and the shaft *v'* is oscillated, which swings the arms *b''* and *f''*, and these arms, being connected to the gage-piece *s'* by the connecting-straps *c''* and *g''*, operate to draw the gage-piece to the desired position. The nut  
120 *l''* is then tightened, and the gage-piece is held firmly in position until the nut is again loosened. The advantages of this device for adjusting the gage-piece are that the adjusting mechanism is in a position to be easily reached  
125 by the operator, and is quickly and easily operated or changed from one position to another without interfering in any way with the handling or manipulation of the piece to be sawed. 130

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

1. In a sawing-machine, the combination, with a saw-table and a gage-piece, *s'*, upon the surface of the table and provided with lugs *t'*, extending over and reaching beneath the edges of the table, of a shaft, *v'*, journaled in brackets beneath the table and provided with the extended rear arm, *b''*, and the extended front arm, *f''*, the connecting-piece *c''*, pivoted to the arm *b''* and to the rear lug *t'*, and the connecting-piece *g''*, pivoted to the arm *f''* and to the forward lug *t'*, substantially as and for the purpose set forth.

2. In a sawing-machine, the combination, with a saw-table, a gage-piece, *s'*, upon the surface of the table and provided with the lugs *t'*, extending over and beneath the edges of the table, the shaft *v'* beneath the table and provided with the rear arm, *b''*, connected by the piece *c''* to the rear lug *t'*, and with the front arm, *f''*, connected by the piece *g''* to the forward lug *t'*, the bracket *d''*, supporting the rear end of the shaft *v'*, and the bracket *e''*, supporting the front end of the shaft *v'* and provided with the quadrant *h''*, of the lever *i''*, secured to the shaft *v'* and reaching beyond the periphery of the quadrant, and a bolt, *j''*, passed through the lever and provided with a head reaching over the quadrant, and a lever-nut, *l''*, substantially as and for the purpose set forth.

3. In a sawing-machine, the combination, with an oscillating frame pivotally secured beneath the saw-table and supporting on its rear free end a shaft provided with a rotary motion, and carrying a feeding-disk reaching through

the saw-table, and having a forward-extending lever, *n''*, of a spring, *p'*, bearing downward upon the lever *n''*, whereby the feeding-disk is held in engagement with the piece to be sawed, substantially as set forth.

4. In a sawing-machine, the combination, with an oscillating frame pivotally secured beneath the saw-table and supporting upon its rear free end a shaft having a rotary motion, and carrying a feeding-disk reaching through the saw-table, and having a forward-extending lever, *n''*, and a spring bearing downward upon the lever, of an adjusting-bolt, *q'*, passed through the lever *n''*, and with one end rigidly secured above the lever, and provided with a nut, *g''*, on the opposite end and beneath the lever, substantially as and for the purpose set forth.

5. In a sawing-machine, the combination, with a saw and saw-table, and an oscillating frame pivotally secured beneath the table and carrying upon its rear free end a shaft having on one end a feeding-disk and upon its opposite end a chain-sprocket, *i'*, of a stud, *j'*, adjustably secured in the slot *o''*, a sprocket, *k'*, upon the stud, and a chain, *l'*, passed over the driving sprocket *s* and the sprocket *k'*, and with its lower portion engaging with the sprocket *i'*, substantially as and for the purposes set forth.

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

ABEL D. CATLIN.

Witnesses:

JAS. E. THOMAS,  
W. H. POWER.