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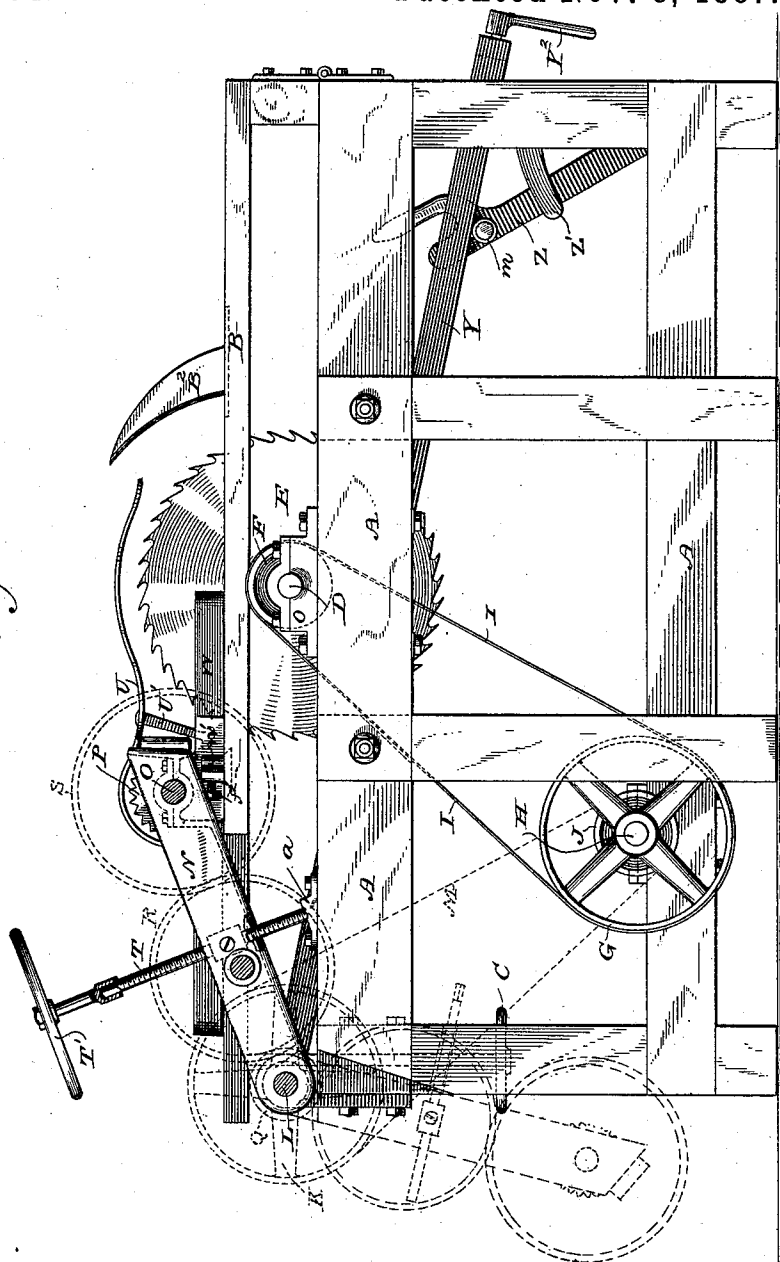
3 Sheets—Sheet 1.

C. F. GERLACH.
CIRCULAR SAWING MACHINE.

No. 372,904.

Patented Nov. 8, 1887.

Fig. 1.



Witnesses

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Maurice F. Frear.

Inventor

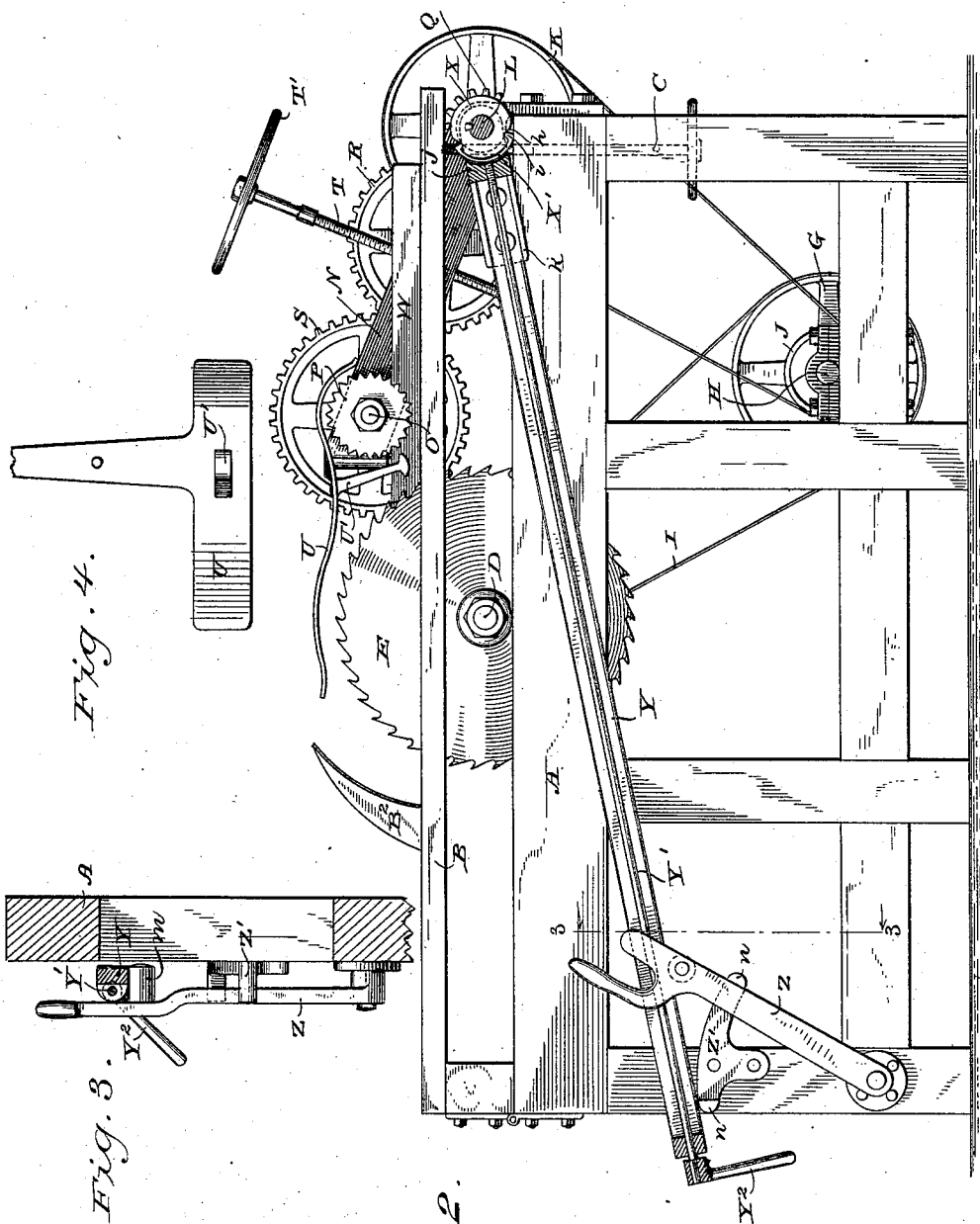
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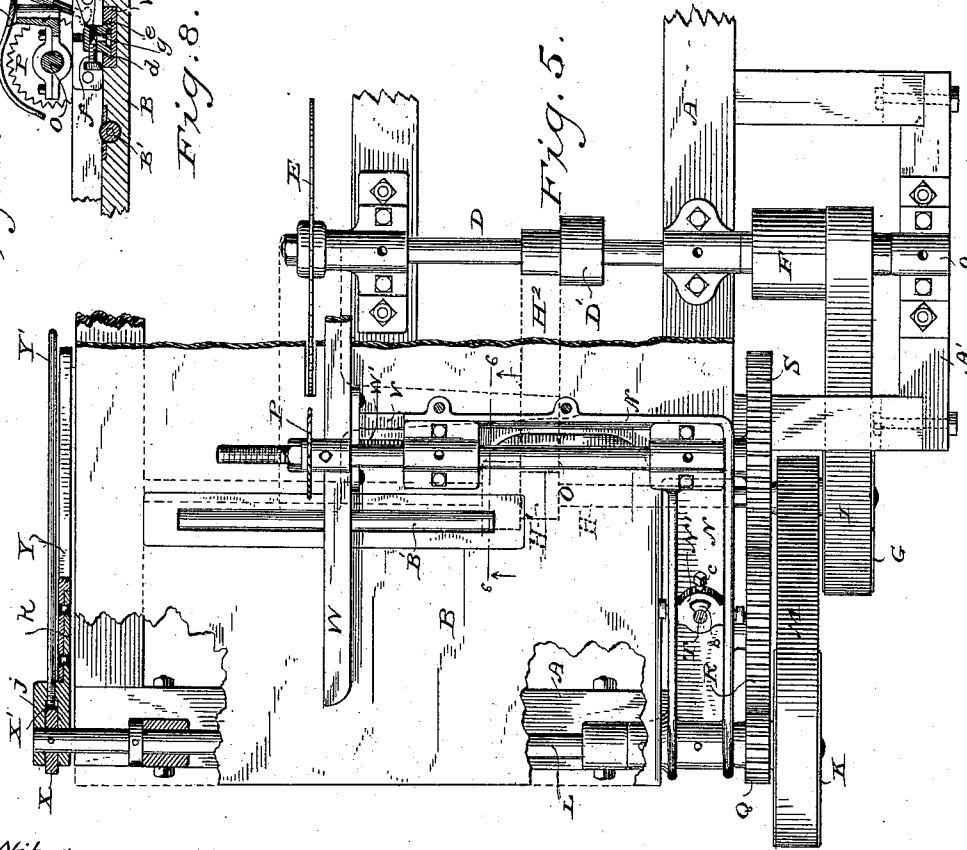
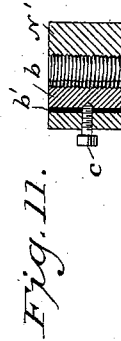
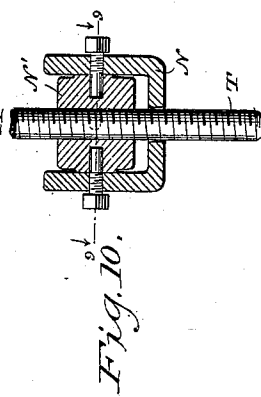
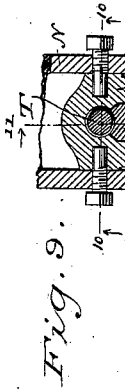
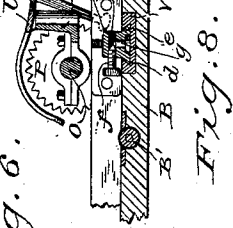
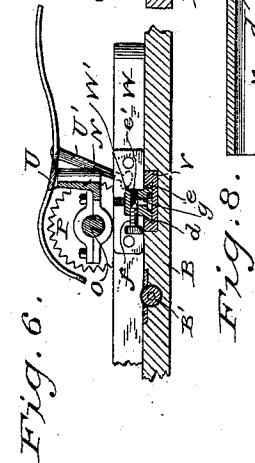
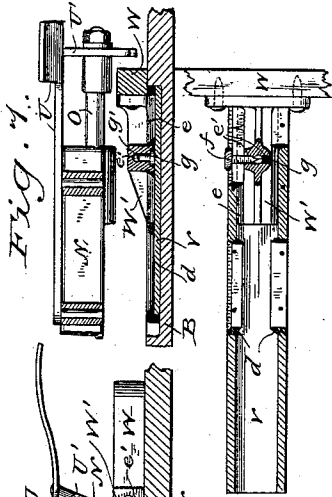
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UNITED STATES PATENT OFFICE.

CHARLES F. GERLACH, OF MILWAUKEE, WISCONSIN.

CIRCULAR SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 372,904, dated November 8, 1887.

Application filed May 31, 1887. Serial No. 239,779. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. GERLACH, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Circular Sawing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to circular sawing machines; and it consists in certain peculiarities of construction and combination of parts, to be hereinafter described with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 represents an elevation of the drive side of a circular sawing machine constructed according to my invention, the driving-gear for the feeder being illustrated in dotted lines; Fig. 2, a similar view of the opposite side of the machine; Fig. 3, a detail view illustrating the adjusting-lever; Fig. 4, an under side plan view of a portion of the guard; Fig. 5, a plan view of the machine partly broken away; Figs. 6 and 7, detail sectional views of the guard and guide; Fig. 8, a plan view of the guide, partly in section; Figs. 9, 10, and 11, detail sectional views of the nut that engages the adjusting-screw for the feed-arm of the machine.

Referring by letter to the drawings, A represents a frame, to which is hinged the forward end of a table, B, the rear end of the latter being supported on an adjusting-screw, C, operative in a transverse timber of said frame.

Journaled in suitable bearings on the frame A is the arbor D of a circular saw, E, said arbor carrying a pulley, F, over which and a pulley, G, on a drive-shaft, H, is passed a belt, I. The drive-shaft H carries another pulley, J, over which and a pulley, K, on a shaft, L, journaled in suitable bearings at the rear end of the frame and beneath the table, is passed a belt, M. Fast on the saw-arbor D is the usual cone-pulley, D', over which and a similar pulley, H', on the drive-shaft H (shown in dotted lines, Fig. 5) is passed a belt, H², this construction serving to regulate the speed of the saw. Rigidly connected to the shaft L is the longitudinal portion of an angle-arm, N, and journaled in the transverse portion of this arm is the arbor O of a feeder, P, the latter being

adjustable on said arbor. Fast on the hub of the pulley K is a pinion, Q, that meshes with a gear-wheel, R, journaled to the longitudinal portion of the angle-arm N, said gear-wheel also meshing with a similar wheel, S, on the arbor of the feeder P.

Swiveled in the longitudinal portion of the arm N is a nut, N', for an adjusting-screw, T, that bears against an inclined block, a, on the frame A, and is preferably provided with a removable hand-wheel, T'. The nut N' is preferably provided with a removable section, b, that is held in position against the screw T by means of a set-screw, c. The removable section b and the recess b' in the main portion of the nut N', that receives said section, have their sides correspondingly beveled on lines struck from the center of the bore for the adjusting-screw T. When the adjusting-screw T and bore of the nut N' have become worn by frictional contact, I remove the section b of said nut, and by filing or grinding reduce the beveled sides thereof, so that this section may be adjusted in the recessed main portion of said nut to come snug against said adjusting-screw. In other words, I am enabled by the above-described construction and operation to reduce the bore of the nut N' so that it will at all times exactly correspond to the diameter of the adjusting-screw T.

Detachably connected to the transverse portion of the angle-arm N is a guard, U, for the saw E and feeder P, and this guard is provided with a depending pressure-foot, U', that comes between said saw and feeder to hold the material down against the table.

Mortised in the table B is a transverse plate, V, having a dovetailed slot, d, that receives the dovetailed portion e of an arm, W', belonging to the guide W, said arm being preferably arranged in front of the anti-friction roll B', that is journaled in the machine-table B, said table being also provided with a spreader, B². The arm W' of the guide W is provided with a screw-threaded aperture, e', for a conical-pointed set-screw, f, that comes against the conical point of a pin, g, the latter being arranged in the dovetailed portion of said arm at right angles to the set-screw, so that its head g' will bear upon the bottom of said dovetailed groove.

When the guide is adjusted to the desired position, the set-screw *f* is tightened, and by its travel against the pin *g* causes the guide-arm *W'* to rise up and bind in the grooved plate *V*, whereby said guide is securely retained in its adjusted position.

When the material to be sawed varies but slightly in thickness, I adjust the feeder-arm *N* to the requisite elevation by means of the screw *T*; but in case the material is crooked or more than ordinarily thick, and it is therefore desirable to raise said arm to its greatest elevation in less time than can be done by said screw, I employ the following construction: Keyed to that end of the shaft *L* farthest from the pulley *K* is a disk, *X*, provided with notches *h*, to receive the turned in ends *i* of a spring-segment, *X'*. The disk *X* is arranged on the shaft *L* between the bifurcated end *j* of a plate, *k*, bolted to the adjacent end of an arm, *Y*, said plate being loosely fitted to said shaft. The plate *k* has a bearing for the screw-threaded end of a rod, *Y'*, and another bearing is provided for said rod in the front end of the arm *Y*. The screw-threaded end of the rod impinges against the spring-segment *X'*, and said rod is turned by means of a crank or wrench, *Y''*. The rear end of the arm *Y* rests on a lug, *m*, projecting inward from a hand-lever, *Z*, fulcrumed to the frame *A* and limited in its movement by stops *n*, extended outward from a segment-plate, *Z'*, rigidly connected to said frame.

When it is desired to elevate the feeder-arm by the means just described, I tighten the rod *Y'* to force the spring segment *X'* tight against the periphery of the notched disk *X* and pull the lever *Z* rearward, this operation causing the shaft *L* to turn backward in its bearings and raise said arm.

When it is not desirable to employ the feeder, the guard *U* is detached from the arm *N*, and the latter, with the parts carried thereby, is swung over and down against the rear end of the frame, as shown by dotted lines, Fig. 1, thus leaving a clear table.

The outer bearing, *o*, for the saw-arbor is on a removable section, *A'*, of the frame *A*, and by this construction I am enabled to readily change the pulley *F* on said arbor.

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

1. In a circular sawing machine, the combination of a frame, table, and saw with a shaft having its bearings on said frame beneath the table, an angle-arm arranged on the shaft, a feeder having its arbor journaled in the angle-arm, and suitable mechanism for driving said saw and feeder, as set forth.

2. In a circular sawing machine, the combination of a frame, table, and saw with a shaft having its bearings on said frame beneath the

table, an angle-arm arranged on the shaft, a feeder having its arbor journaled in the angle-arm, an adjusting-screw operative in said arm, and suitable mechanism for driving said saw and feeder, as set forth.

3. In a circular sawing machine, the combination of a frame, table, and saw with a shaft having its bearings on said frame, an angle-arm arranged on the shaft, a feeder having its arbor journaled in the angle-arm, a disk keyed on said shaft, a spring-segment arranged adjacent to the periphery of the disk, an arm carrying a set-rod for impingement against the spring-segment, a lever for adjusting the rod-arm, and suitable mechanism for driving the saw and feeder, as set forth.

4. In a circular sawing machine, the combination of a frame, table, and saw with a shaft having its bearings on said frame beneath the table, an angle-arm arranged on the shaft, a feeder having its arbor journaled in the angle-arm, a guard connected to said arm and having a depending pressure-foot, and suitable mechanism for driving said saw and feeder, as set forth.

5. In a circular sawing machine, the combination of a frame, table, and saw with a shaft having its bearings on the frame beneath the table, an angle-arm arranged on the shaft, a feeder having its arbor journaled in the angle-arm, a nut swiveled in said arm, an adjusting-screw operative in said nut, and suitable mechanism for driving said saw and feeder, as set forth.

6. In a circular sawing machine, the combination of a frame, table, and saw with a shaft having its bearings on the frame, an angle-arm arranged on the shaft, a feeder having its arbor journaled in the angle-arm, a nut swiveled in said arm and provided with a detachable section, a set-screw for holding said section in place, an adjusting-screw operative in the nut, and suitable mechanism for driving said saw and feeder, as set forth.

7. In a circular sawing machine, the combination of a table and saw with a plate connected to the table and provided with a dovetailed slot, a guide having an arm adjustably fitted in said slot, a conical-pointed pin arranged in the guide-arm to have its head impinge against the bottom of said slot, a set-screw also provided with a conical point and arranged in said arm to impinge against the pin-point, and suitable mechanism for driving the saw, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

CHARLES F. GERLACH.

Witnesses:

DAVID BIRCH,
N. E. OLIPHANT.