(No Model.)

2 Sheets—Sheet 1.

S. R. SMITH & E. MYERS.

CIRCULAR SAW MILL.

No. 262,844. Patented Aug. 15, 1882.

Fig. 1.

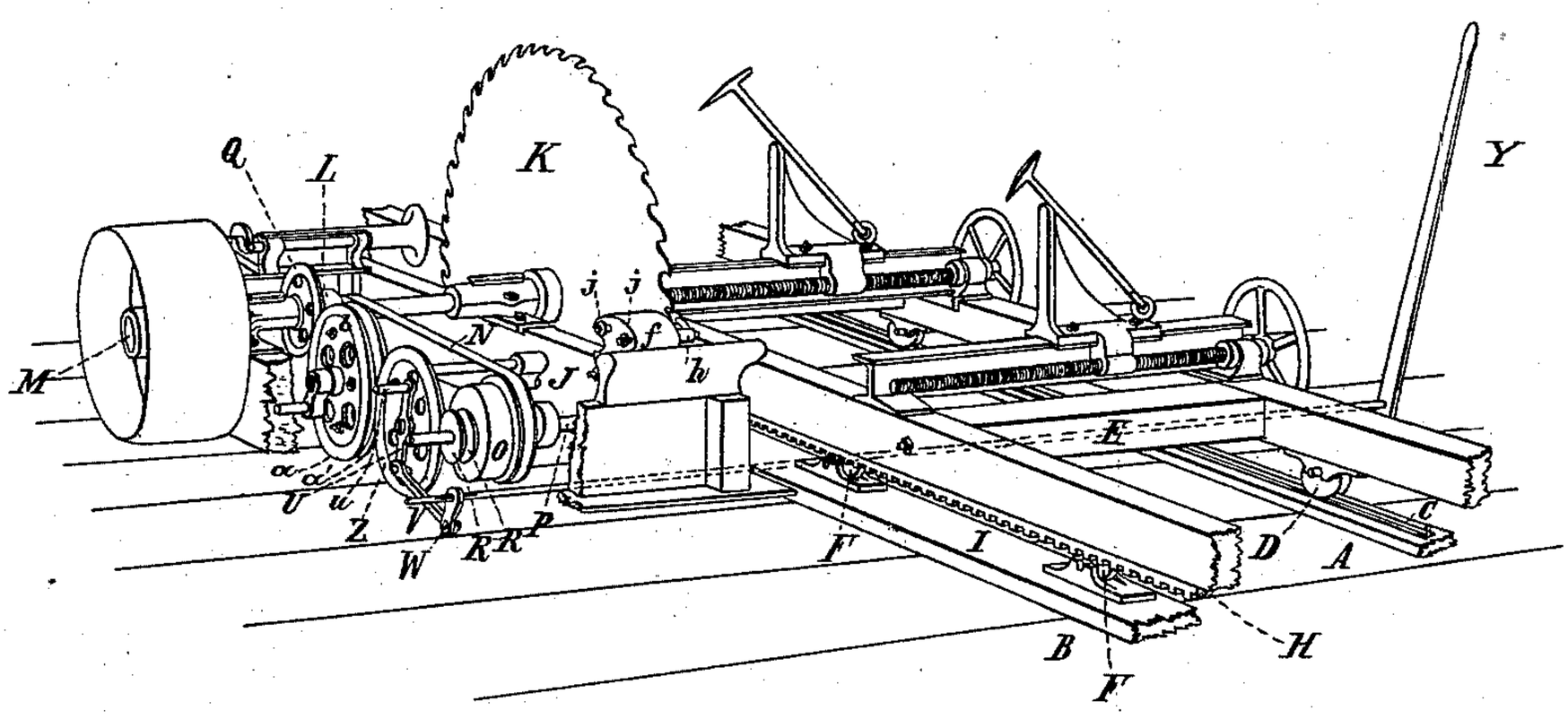
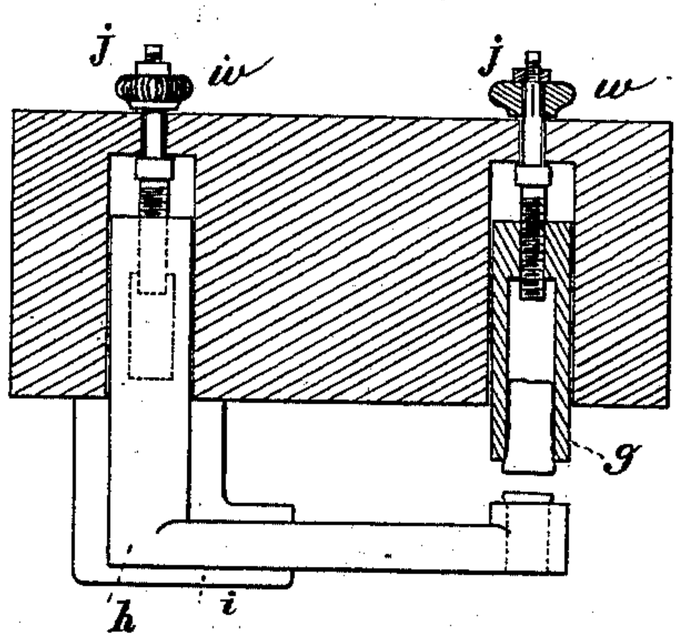


Fig. 11.



Witnesses:
Carl Spengel

Inventor's
Samuel R. Smith
Edward Myers
by Knight Bros.
Atty's

(No Model.) 2 Sheets—Sheet 2.

S. R. SMITH & E. MYERS.

CIRCULAR SAW MILL.

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Fig. 7.

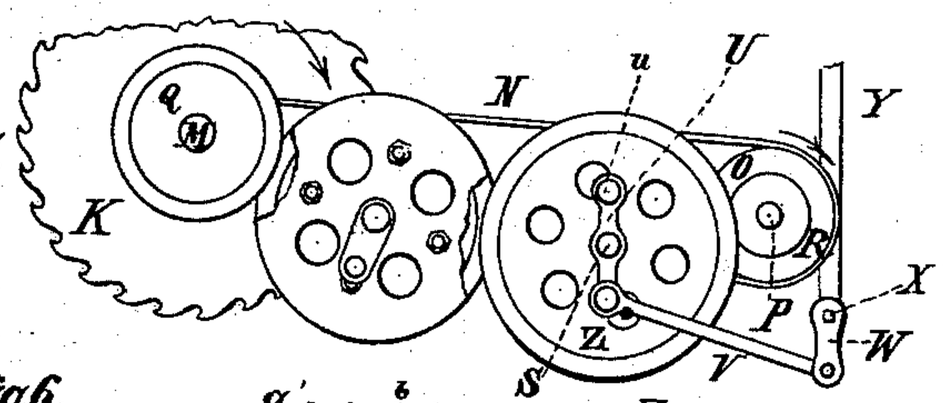


Fig. 6.

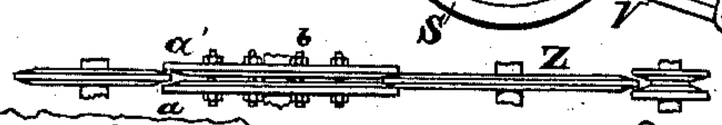


Fig. 5.

Fig. 4.

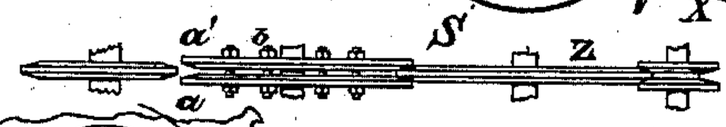


Fig. 3.

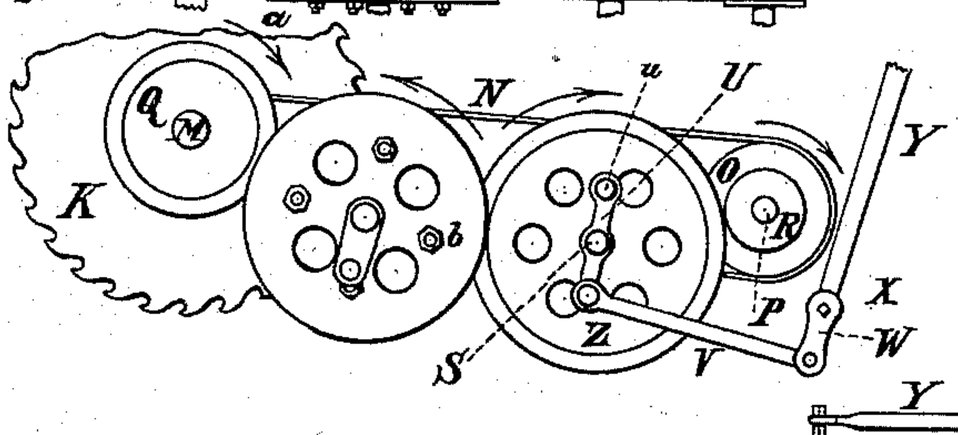


Fig. 2.

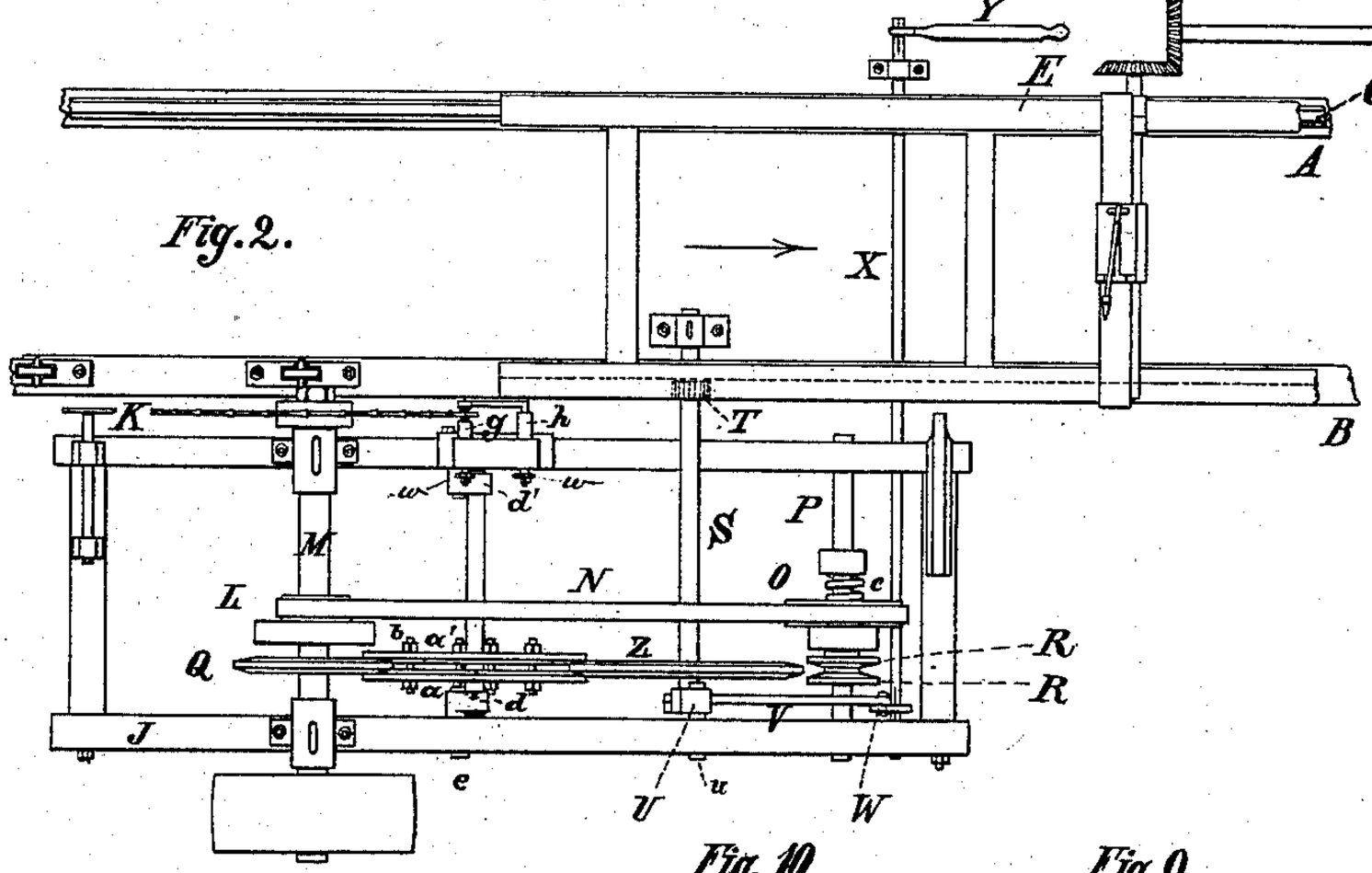


Fig. 8.

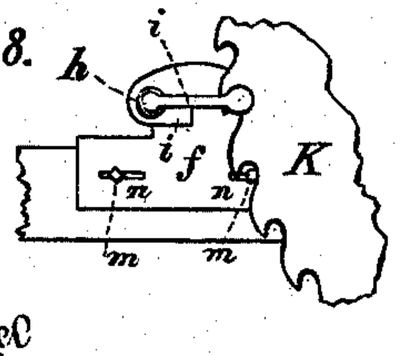


Fig. 10.

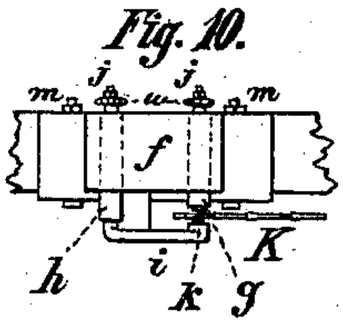
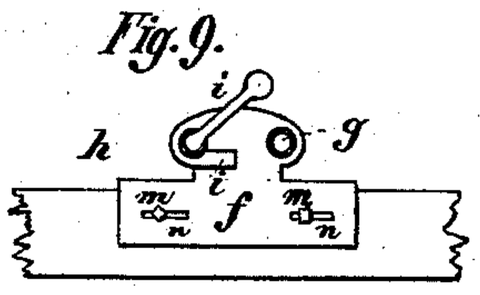


Fig. 9.



Attest:
Carl Spengel

Inventor's
Samuel R. Smith and Edward Myers
by Knight Bros Atty's.

UNITED STATES PATENT OFFICE.

SAMUEL R. SMITH AND EDWARD MYERS, OF CINCINNATI, OHIO, ASSIGNORS TO SMITH, MYERS & SCHNIER.

CIRCULAR-SAW MILL.

SPECIFICATION forming part of Letters Patent No. 262,844, dated August 15, 1882.

Application filed May 3, 1882. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL R. SMITH and EDWARD MYERS, both of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Saw-Mills, of which the following is a specification.

Our invention relates to an improved mode of supporting and guiding the carriage of circular-saw mills.

In the accompanying drawings, Figure 1 is a perspective view, and Fig. 2 is a top view, of portions of a circular-saw mill in which our movement is represented in condition for "gigging back." Fig. 3 is a rear elevation of the movement in the same condition. Figs. 4 and 5 are respectively a top view and a rear elevation of the movement in condition for "feeding." Figs. 6 and 7 are respectively a top view and a rear elevation of the movement in its intermediate or inactive condition. Figs. 8 and 9 are front elevations of our saw-guide or steady-pin mechanism in its effective and its released conditions, respectively. Fig. 10 is a top view of the same in its effective condition. Fig. 11 is a horizontal section through the saw-guide.

A and B may represent respectively the front and the rear bed-sills. The sill A has an iron track, C, for the flanged "live-wheels" D, journaled to the under side of the carriage E. Wheels F, journaled in steps G on sill B, give support to an inverted track, H, which, being one component part or projection of the inverted rack I, is with it bolted fast to the under side of the carriage-frame.

J may represent any suitable frame for support and attachment of the various operative parts of the saw K and of the feed and gig movement, which latter consists of the following parts: A pulley, L, upon the saw-arbor M communicates by belt N with a larger pulley, O, upon a shaft, P. The arbor M has a chamfered wheel, Q, and the shaft P a pair of interiorly-chamfered disks, R R′, of smaller diameter then said wheel Q. A shaft, S, armed at its front end with pinion T, which meshes in the rack I, journals at its rear extremity in a hanger, U, which is pivoted at *u* to the frame, and at its free extremity to a rod, V, which connects it with an arm, W, on the rear end of a shaft, X, provided at its front end with a handle, Y. The shaft S has a chamfered wheel, Z, which, when the parts are placed in the condition shown in Figs. 4 and 5, impinges by its chamfered surfaces on the corresponding surfaces of the wheel R R′. Constantly impinging against wheel Z is an interiorly-chamfered wheel formed by two disks, *a a′*, united by nutted bolts *b*. The said wheels Z and *a a′* operate alternately as drivers, one of the other, according to whether they are thrown into position Figs. 4 and 5, or position Figs. 2 and 3, in the former case being driven by the wheel Q at the rapid rate suitable for gigging back, and in the latter case being driven in the opposite direction by the much more slowly moving wheel R R′ for feeding the carriage to the saw action, or when in the intermediate position shown in Figs. 6 and 7, in which neither wheel Q nor wheel R R′ is impinged upon, both wheels Z and *a a′* being at rest and no motion of the carriage taking place. The lateral resilience of the disks which respectively compose the internally-chamfered wheels R R′ and *a a′* enables them to grasp with sufficient traction to communicate motion to the single disk-wheels Z and Q when brought in contact with them. This traction may, as shown in the case of wheel R R′, be enhanced by a powerful helical spring, *c*, the disk R in that case being shiftable upon shaft P.

In order that the wheel *a a′* shall constantly bear against the wheel Z, the former has its shaft P journaled in arms *d d′*, which are pivoted to the frame at *e e*, and which, by extending obliquely upward in the manner shown, enable the gravity of the wheel *a a′* to keep it in contact with the wheel Z.

As the chamfered surfaces wear they may have their traction restored by tightening the bolts *b*.

The pulleys L and O may be of the stepped form, as represented, so as to enable the sawyer to change at discretion the relative speeds of the feeding and gigging movements.

Our saw-blade-steadying device may consist of a bracket, *f*, which contains adjustable sleeves *g h*, of which one contains a vibratable

arm, *i*. Both sleeves are capable of longitudinal adjustment by means of screws *j*, having hand-wheels *w*. Sleeve *g* and arm *i* are socketed to receive wooden pins or plugs *k*. A lug, *l*, that projects from the vertical surface of the bracket prevents the arm *i* dropping below the horizontal or working position shown in Fig. 8, and the capacity of the arm for being turned upward permits the detachment of the saw-blade when desired. The bracket *f*, being attached to the frame by bolts *m*, occupying slots *n* in the bracket, enables the steadying device to be secured at the desired distance from the saw center. The advantages of having the guide trucks or wheels D on the rear side, and attached to the carriage, while the bearing or carrying wheels F are in fixed bearings on the front side, are of great practical importance. Among these advantages are, the guide-wheels D, being located on the rear side, away from the weight of the log and from the sawdust, have their proper functions less interfered with, while the bearing-wheels F, being on the saw side, where the dust falls, and the track on this side being inverted and always protecting the wheels which are opposite the saw, the dust does not interfere with the running of the machine.

A signal and important advantage accrues from the arrangement of adjusting devices for the saw-steadying mechanism, which can be manipulated by the sawyer at any moment, without personal risk, while the mill is running.

We claim as new and of our invention—

The saw-mill carriage J, resting at its front side upon track C on bed-sill A by wheels D, journaled to its under side, and at its rear side by inverted track H upon wheels F, journaled in steps G on the bed-sill B, substantially as set forth.

In testimony of which invention we hereunto set our hands.

SAML. R. SMITH.
EDWARD MYERS.

Attest:
GEO. H. KNIGHT,
RANKIN D. JONES.