(No Model.)

2 Sheets—Sheet 1.

S. R. SMITH & E. MYERS.

SAW MILL FEED MECHANISM.

No. 270,140. Patented Jan. 2, 1883.

Fig. 1.

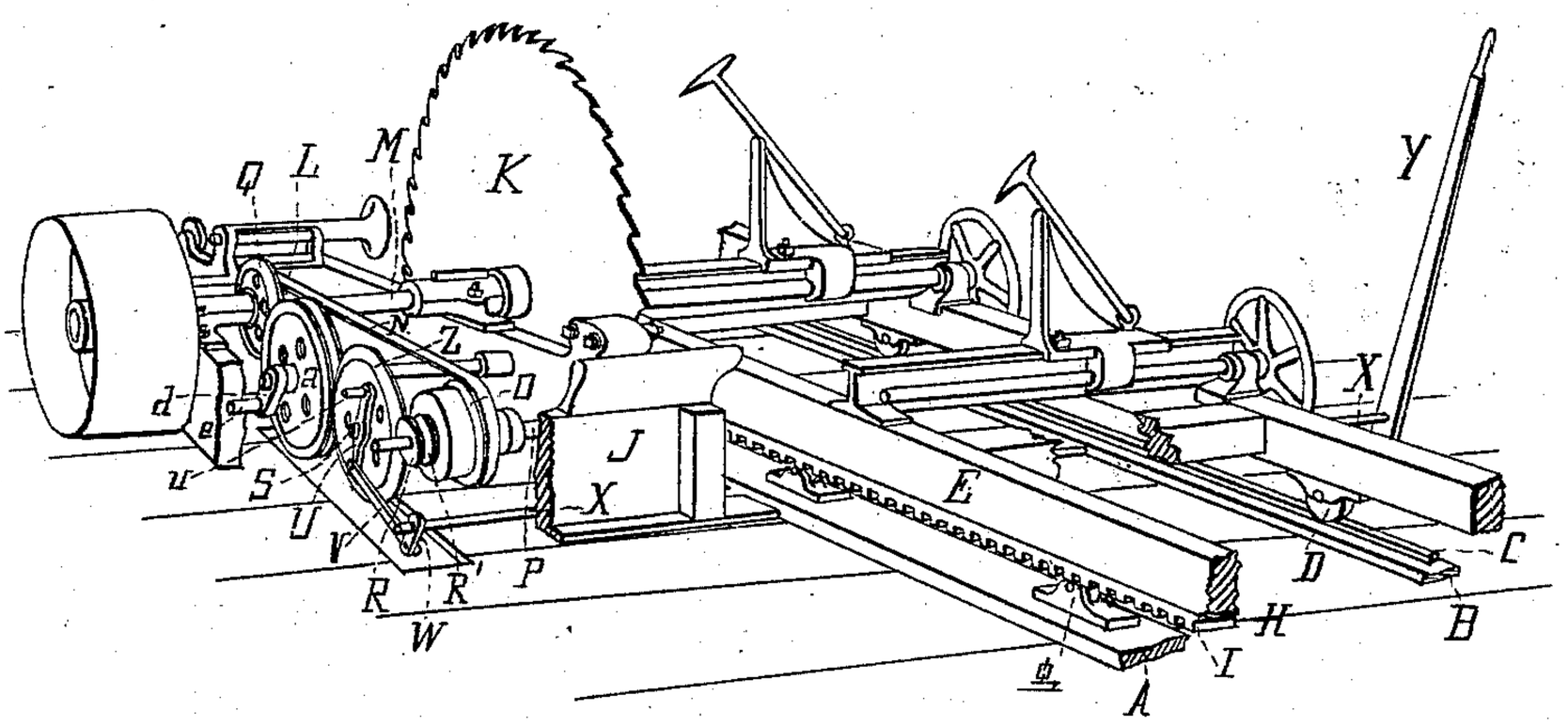
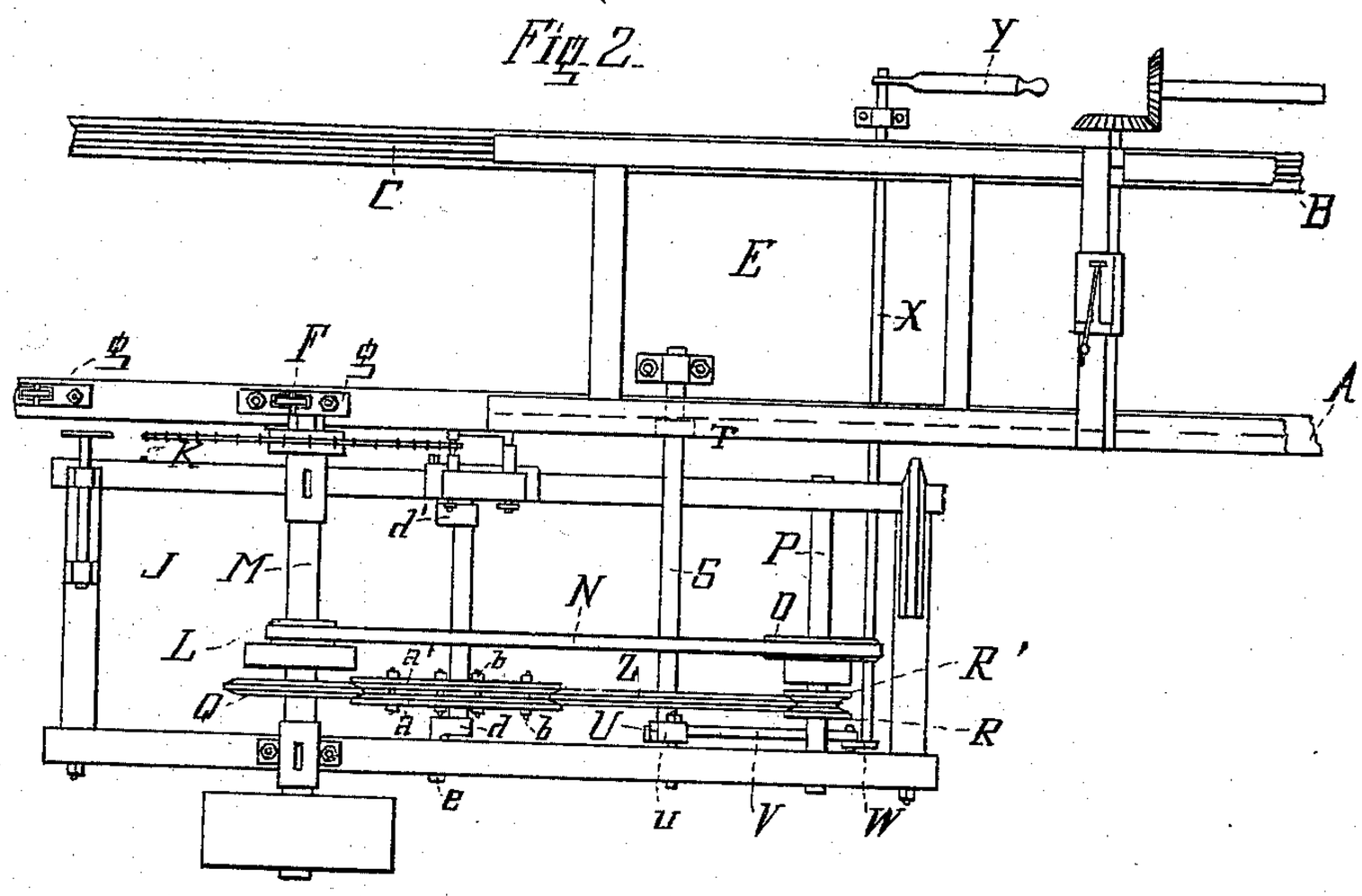


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

S. R. SMITH & E. MYERS.

SAW MILL FEED MECHANISM.

No. 270,140. Patented Jan. 2, 1883.

Fig. 3.

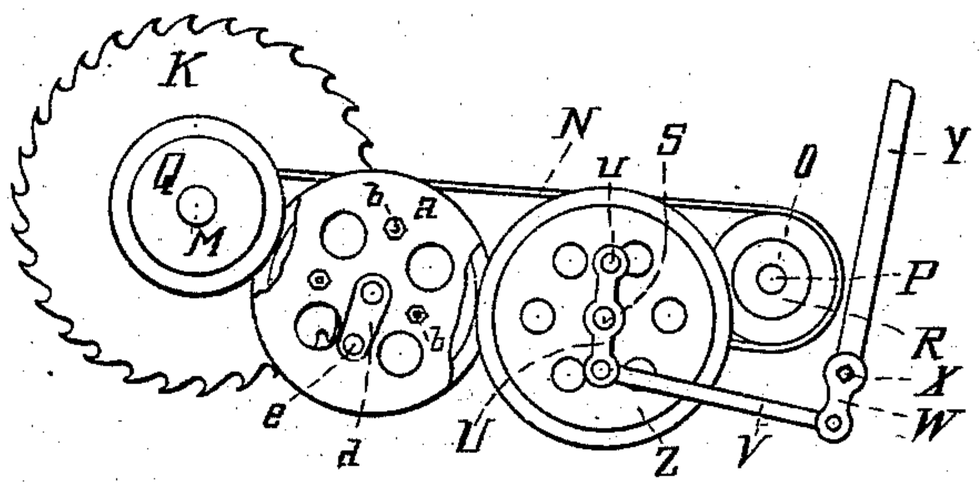


Fig. 4.

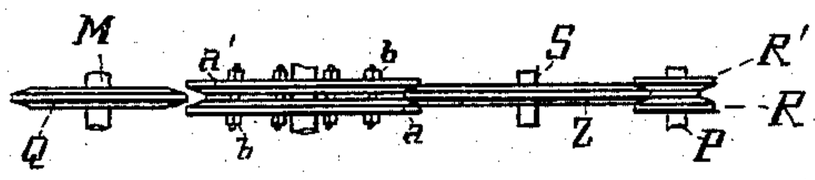


Fig. 5.

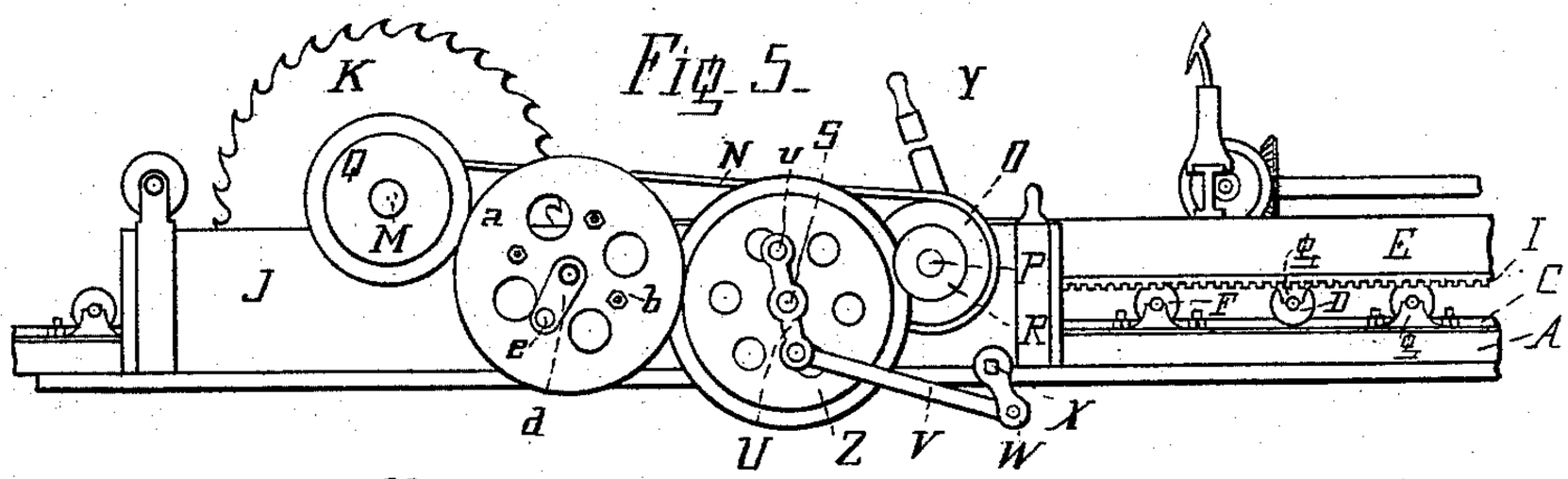


Fig. 6.

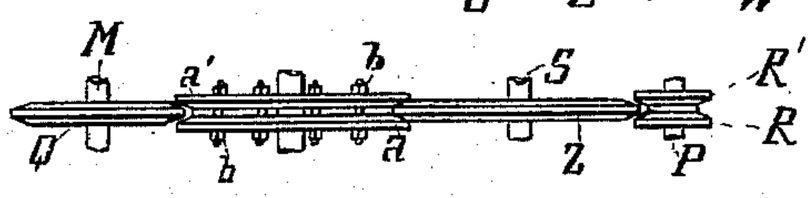
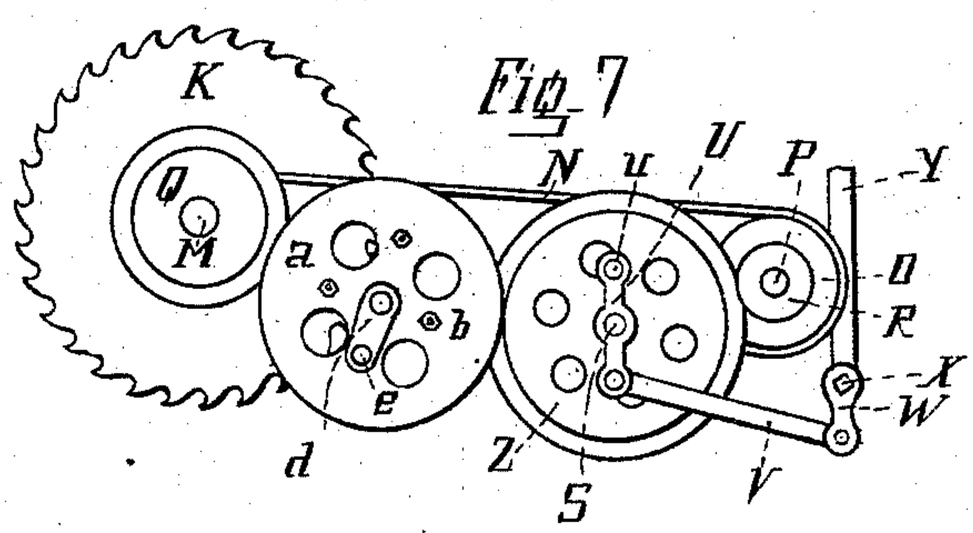


Fig. 7.



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UNITED STATES PATENT OFFICE.

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

SAW-MILL FEED MECHANISM.

SPECIFICATION forming part of Letters Patent No. 270,140, dated January 2, 1883.

Application filed August 11, 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-Mill Feed Mechanism, of which the following is a specification.

Our invention relates to an improved feed and gig movement for circular-saw-mill feed mechanism of exceptional efficiency, compactness, and durability.

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.

The following parts may be of the represented or of any suitable or customary form, to wit: bed-sills A B, track C, carriage E, wheels D F, steps G on inverted track H, and inverted rack I.

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 is for the most part composed of V friction-gearing, and 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 than said wheel Q. A shaft, S, armed at its front end with pinion T, which meshes in the rack I, is journaled 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, which passes through or under the bed-sills, and is provided at its front end with a handle, Y. The shaft S has 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 latter case being driven by the wheel Q at the rapid rate suitable for gigging back, and in the former case being driven in the opposite direction by the much more slowly moving wheel R R′ for feeding the carriage to the saw-action. 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′* are at rest and no motion of the carriage takes 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 the single disk-wheels Z and Q, when brought in contact with them, with very little exertion on the part of the sawyer.

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. Over friction-feed that depends wholly on cylindrical pulleys our above-described arrangement of alternate single V and groove pulleys has a number of decided advantages. For example, the entire suit of friction-wheels may be made wholly of iron or other hard metal which is practically indestructible, so that for communicating the exceedingly-rapid gigging or retrograde movement of the carriage the transmitting-surfaces are wholly metallic. There is a great saving, both in cost of manufacture and in room taken up, compared to the cylindrical or so-called "flat" friction-feed. The slippage is less, and, much less lateral pressure being

required, there is less liability to heat up and less consumption of power. The sawyer is relieved of much of the severe labor required to hold the flat feed in efficient contact, especially in rapid work.

We claim as new and of our invention—

The feed and gig movement for circular-saw mills, consisting of pulley L upon the saw-arbor, having belt-connection N with a larger pulley, O, upon shaft P, the chamfered wheel Q on said arbor, the chamfered disks R R′ on said shaft P, the chamfered disks *a a′* on gravitating shaft *p*, and the chamfered wheel Z on the carriage-driving pinion-shaft, whose free extremity is journaled in hanger U, connected by rod V, arm W, and shaft X with lever or handle Y, substantially as set forth.

In testimony of which invention we hereunto set our hands.

SAML. R. SMITH.
EDWARD MYERS.

Attest:
SAML. S. CARPENTER,
GEO. H. KNIGHT.