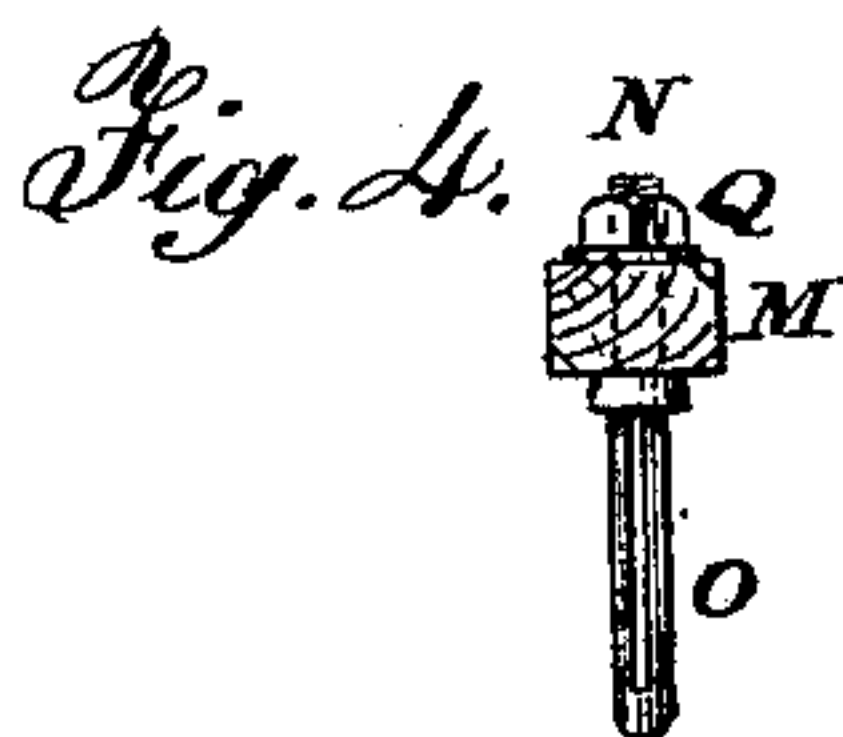
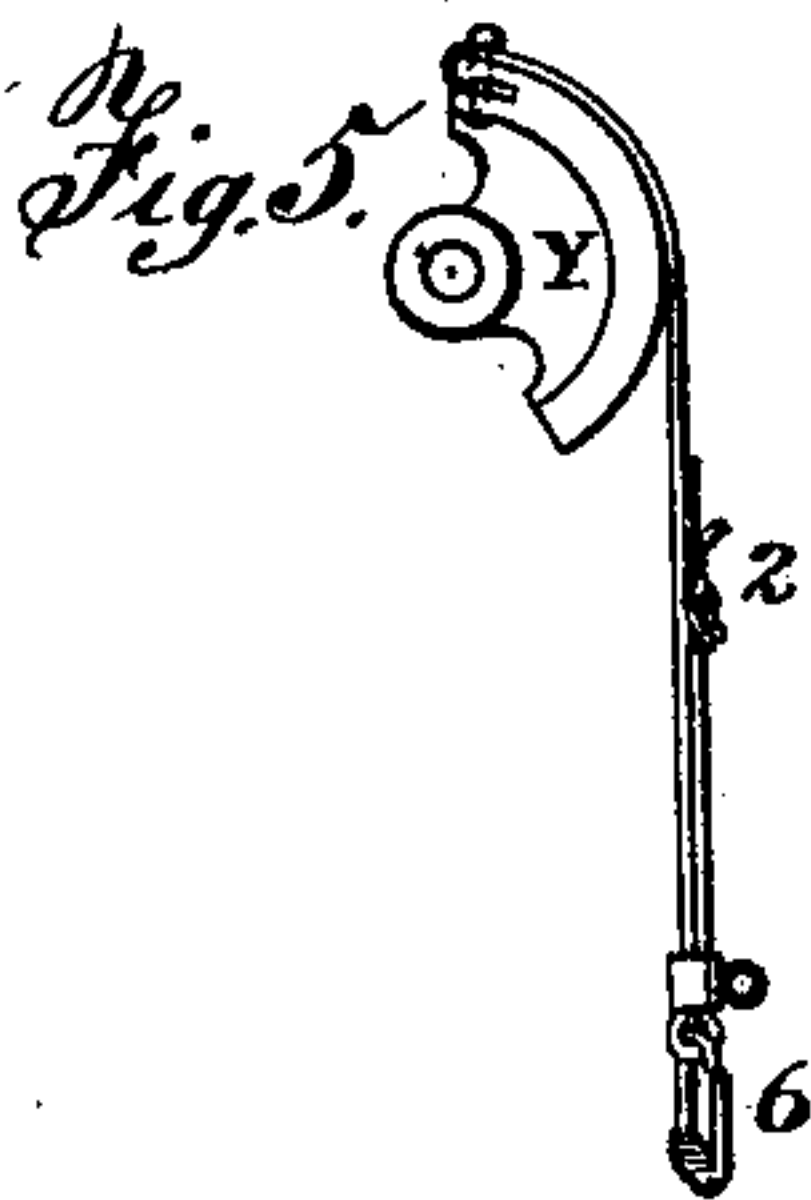
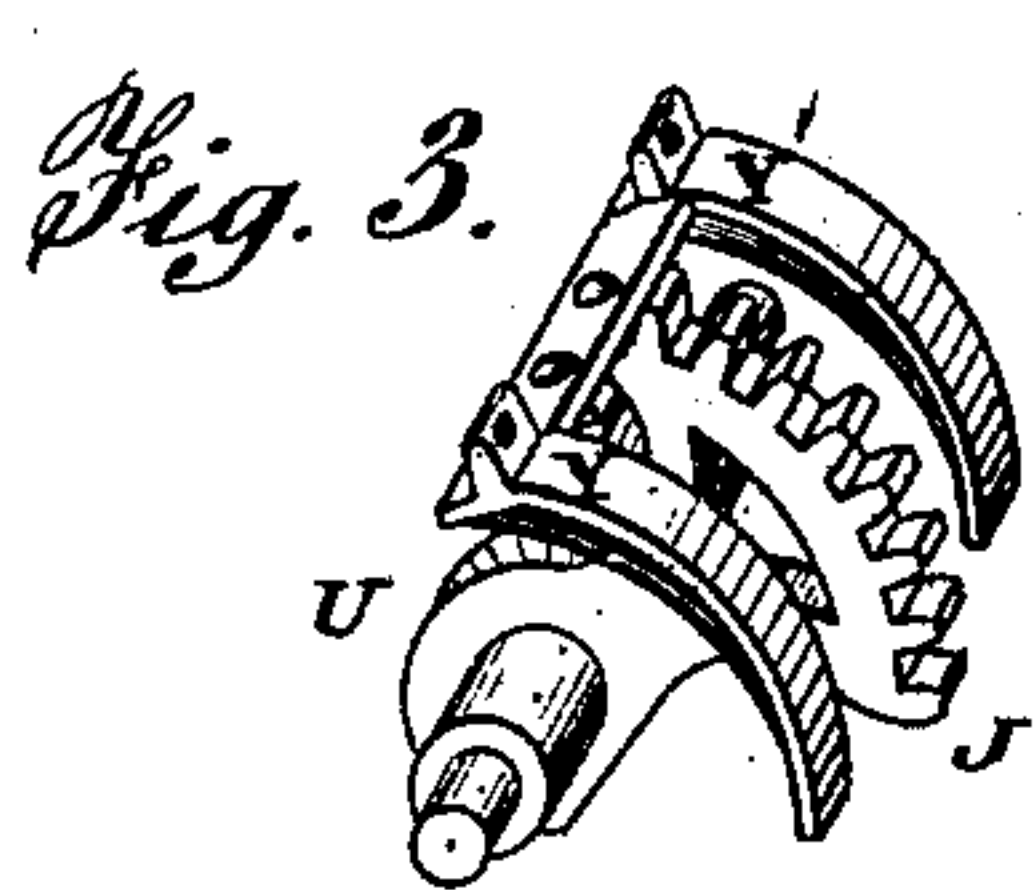
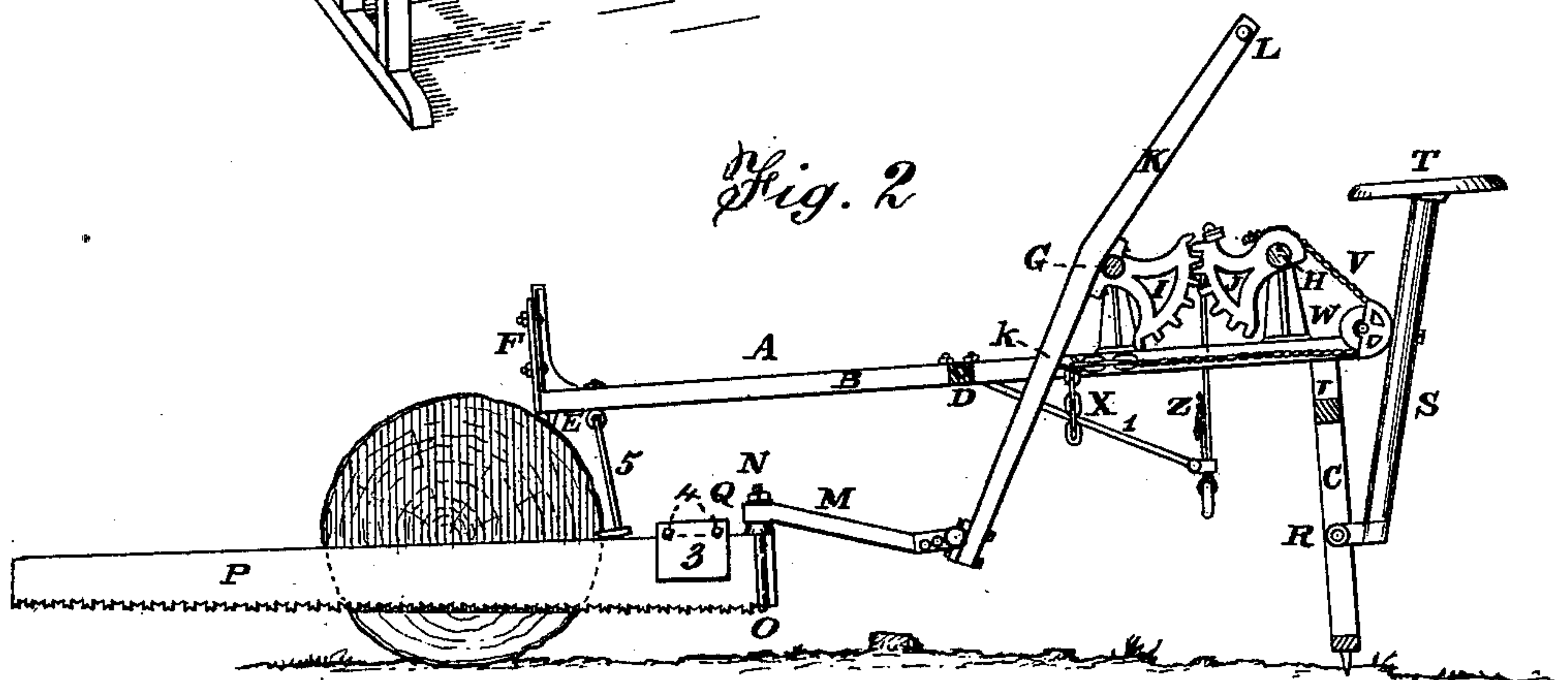
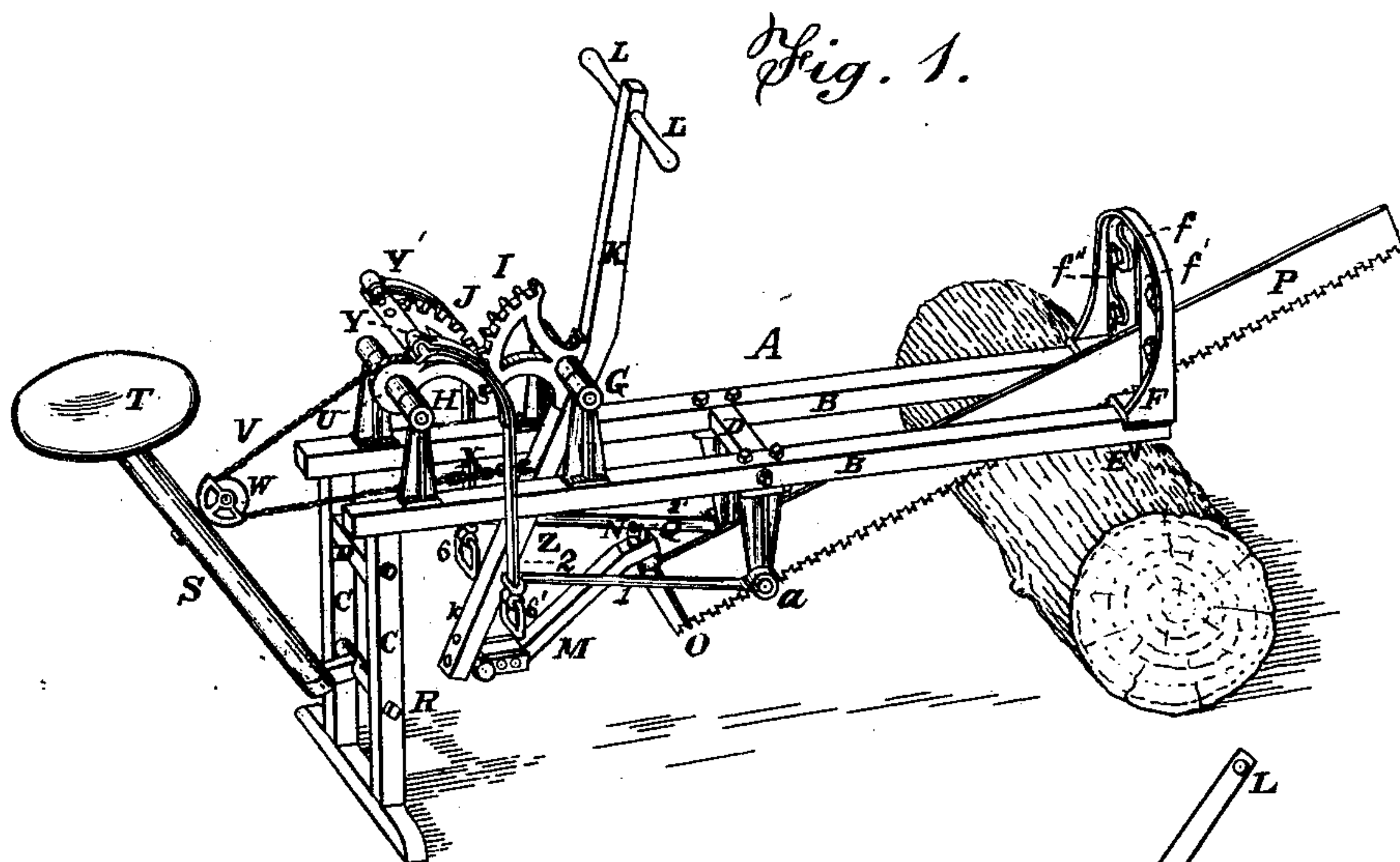


S. R. SMITH & A. C. FRENCH.
 Drag Sawing Machine.

No. 229,767.

Patented July 6, 1880.



Attest

Walter Knight

W. Tyson Jenkins

Inventors.

Samuel R. Smith

Alonzo L. French

By Knight Bros., Attys.

UNITED STATES PATENT OFFICE.

SAMUEL R. SMITH AND ALONZO C. FRENCH, OF CINCINNATI, OHIO.

DRAG-SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 229,767, dated July 6, 1880.

Application filed October 14, 1879.

To all whom it may concern:

Be it known that we, SAMUEL R. SMITH and ALONZO C. FRENCH, both of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Drag-Sawing Machines, of which the following is a specification.

Our invention relates to improvements in those portable drag-sawing machines in which the operator's hands, acting on a suitable lever, are aided, by the action of his feet and by the weight of his body alternately, in producing the successive forward and backward strokes of the saw.

Our improvements include a peculiar arrangement of hand-lever, intermeshing segment-racks, a gravitating saddle having a sheave that occupies the bight of a cord attached to said lever and to one of the segment-racks, and stirrups connected by straps to arcs upon said segment-rack for the feet of the operator.

In the accompanying drawings, Figure 1 is a perspective view of a drag-sawing machine embodying our invention, the saw being shown in its most retracted position. Fig. 2 is a longitudinal section, showing the saw in its most protracted position. Fig. 3 is a perspective view of one of the segment-racks. Fig. 4 is an end elevation of our saw-coupling strap. Fig. 5 is a detail view of a stirrup and arc.

A is an L-shaped frame, consisting of beams B, furnished at one end with legs C, and connected by cross-pieces D.

The beams B are, on their under sides remote from the legs C, armed with spurs E, whose office, when the machine is in use, is to rest upon and penetrate the log.

Attached to and extending upward from the same end of the frame is a brace, F, having a slot, *f*, to permit the play of the saw and to guide the same into its proper path at the commencement of its work in the log.

The slotted portion is preferably formed of two cheeks, *f f'*, both capable of being adjusted to afford a slot of the proper width and position for the above-stated purpose.

Journaled at G H in the frame are two intermeshing segment-racks, I J. Attached to the segment-rack I is a lever, K, whose upper extremity is provided with handles L for the operator, and whose lower end is attached, by a suitable hinge, to a pitman, M, through which

passes the bolt N that constitutes the shank of a strap or clip, O, which receives and holds the heel of the saw-blade P. A nut, Q, enables the tightening of the clip or strap O.

Journaled at R in the legs C is the stem S of a seat or saddle, which is occupied by the operator.

The segment-rack J has a scored hub, U, for attachment of a cord, V, which, being rove around a sheave, W, upon the saddle-stem S, terminates in a chain, X, which is engaged by one or other of its links in a hook, *k*, on the lower limb of the lever K.

Attached to the segment-rack J are two arcs, Y Y', from which bands or straps Z extend downward to stirrups 6 6', guided by the rocking arms 1 1', that are pivoted to the frame at *a*. The straps Z are provided with buckles 2, which enable the lengthening or shortening of the straps, so as to adapt the machine to the dimensions of the operator.

The engagement of one or the other of the links X enables the shortening or lengthening of the cord V and the consequent placing of the operator's seat in a more or less elevated position. This feature enables the machine to be quickly adapted to the diameter of log to be operated upon, the cord being shortened for a larger and lengthened for a smaller log.

The peculiar attachment of the saw-blade to its operating-lever by means of a pitman located wholly above the blade enables the blade to be operated with greater advantage, and also to complete its work without contact of either end with the ground.

The mode of attachment by the strap or clip O enables the ready and complete release of the saw-blade for any purpose and its easy replacement.

3 represents a weight capable of being fastened to any desired part of the saw-blade by means of screws 4. The blade affords a ready-made slide for the weight, which may be readily adjusted to any position along the saw-blade, and may be easily removed therefrom whenever it may be deemed necessary or advisable to dispense with its use or remove it for other reasons, as it will be only necessary in such case to loosen the screws 4.

One or more hinged dogs, 5, may be provided for additional security.

Arcs coupled to one another by crossed me-

tallic straps may be employed instead of the gear-racks I J.

The operation of the machine is as follows: The machine being placed with its spurred extremity resting upon the log to be sawed and the blade being in the retracted position, as in Fig. 1, the operator, being seated upon the saddle T and having his feet resting in the stirrups 6 6', grasps the handles L L and draws the same toward him, at the same instant pressing the stirrups downward with his feet, placing most of his weight upon them. These actions operate, through the lever K and pitman M, to thrust the saw forward, and at the same time to elevate the seat to the position shown in Fig. 2, consequent on the connection of the seat with the lever K and segment J by means of the cord V and sheave W. The operator then, transferring his weight from the stirrups to the seat and pushing the handles L away from him, brings the operating members back to the position first mentioned. In this retractile movement the depression of the seat is effected in part by the weight of the operator's person and in part by the backward stress exerted upon it in its capacity of yielding abutment to the thrust upon the handles L.

It will be perceived that the straps Z and stirrups 6 6', at the forward stroke of the saw, and the cord V, sheave W, and seat S T, at the backward stroke, coact with the lever K to operate simultaneously on both segments, thus

equalizing their action, preventing friction and lost motion, and securing an easy balanced movement in both directions of the stroke. 35

It will also be perceived that the seat S T, even in its most elevated position, as seen in Fig. 2, leans somewhat rearward, so as to enable the weight of the operator to become promptly effective to co-operate with the other members in retracting the saw. 40

We do not now lay claim to the novel saddle-formed or inverted-U-shaped gravity attachment 3 above described, as it is intended to make the same the subject of another application for patent, the right to make which is hereby reserved. 45

We claim as new and of our invention—

In combination with the operating-lever K, the intermeshing segments I J, with the arc-projections Y Y' and pendent foot-straps Z, and the hinged saddle S T of a drag-sawing machine, the sheave W upon the saddle-stem S, occupying the bight of a cord, V, which is fastened to the said lever and to one of the segments, in the manner and for the purpose set forth. 50 55

In testimony of which invention we hereunto set our hands.

SAML. R. SMITH.
ALONZO C. FRENCH.

Attest:

GEO. H. KNIGHT,
D. HUMPHREYS.