(No Model.)

J. CONNELL & V. DENGLER.

SWING SAW.

No. 253,513. Patented Feb. 14, 1882.

Fig. 1

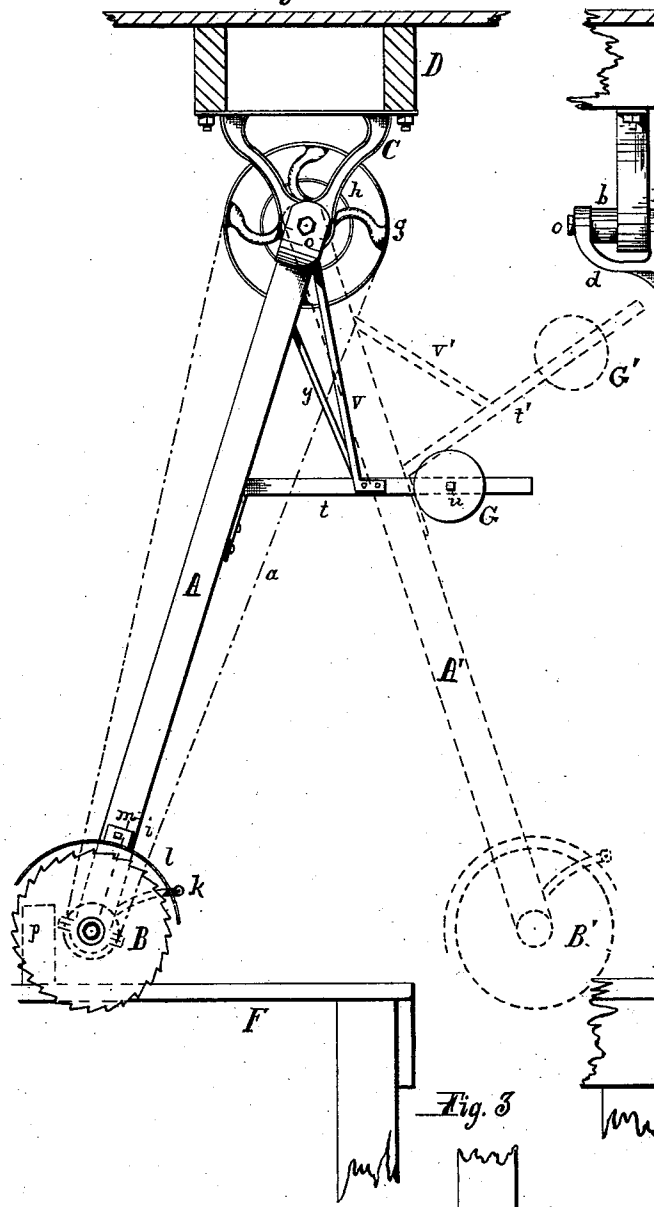


Fig. 2

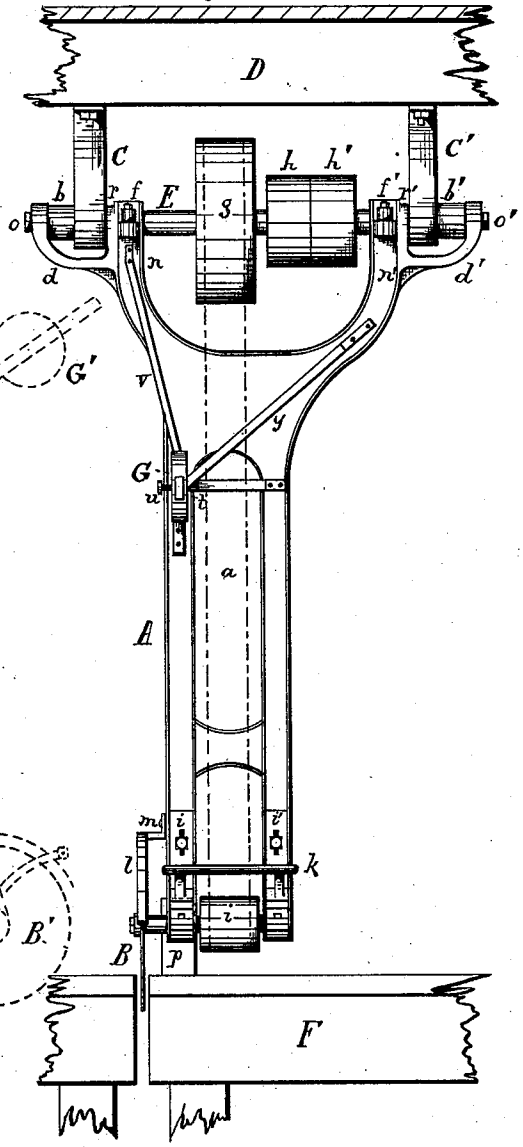
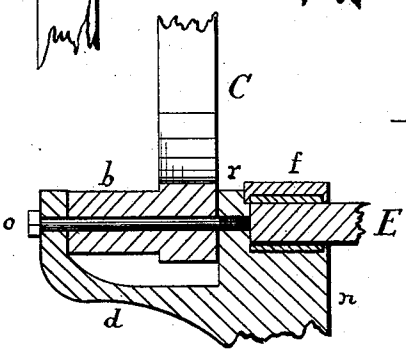


Fig. 3



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UNITED STATES PATENT OFFICE.

JOHN CONNELL AND VALENTINE DENGLER, OF ROCHESTER, NEW YORK.

SWING-SAW.

SPECIFICATION forming part of Letters Patent No. 253,513, dated February 14, 1882.

Application filed May 31, 1880. (No model.)

To all whom it may concern:

Be it known that we, JOHN CONNELL and VALENTINE DENGLER, residents of the city of Rochester, in the State of New York, have jointly invented certain Improvements in Swing-Saws, of which the following is a specification, reference being had to the annexed drawings, in which—

Figure 1 is an end view of our improved swing-saw in position for use. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section through the joint by which the vibrating frame is attached to the hangers.

Our invention relates to an improvement in swing-saws of the class which are supported by a hanging frame freely pivoted at its upper end; and it consists in applying a counterbalance to the forward side of the saw-frame, so that the frame, when allowed to hang in its natural position, inclines backward from the work-bench and the operator.

Our improved swing-saw is represented in the accompanying drawings, in which A is the vibrating frame, B the saw, and C C′ the hangers by which the vibrating frame is supported from the platform or flooring D. F is a bench on which the work is supported. G is the balance-weight, attached to the vibrating frame by an arm, *t*. The hangers C C′ are provided at their lower ends with boxes or journals *b b′*, through which the pins *o o′*, which sustain the weight of the swinging frame, pass. The upper part of the frame A is divided to afford space for the pulleys *g h h′*, and the arms *n n′* carry the journal-boxes *f f′*, in which the shaft E revolves. The bosses *r r′* on the arms *n n′* abut against the inner faces of the boxes on the hangers. From the outside of the arms *n n′* the brackets *d d′* project laterally, and turning upward fit against the outer ends of the boxes *b b′*. The pins *o o′* pass through the extremities of the brackets, through the boxes *b b′*, and screw into the bosses *r r′*. The pins are fitted into the boxes *b b′*, so that they revolve freely therein and permit the vibrating motion of the swinging frame necessary to bring the saw to its work.

Power is transmitted to the shaft E by means of a belt running over the tight and loose pulleys *h h′*. The saw is driven from the pulley *g* by the belt *a*, running over the pulley *i* on the saw-arbor, which revolves in suitable boxes on the lower end of the vibrating frame. A curved guard, *l*, attached to the frame A by bent arm *m*, may be placed over the saw. The lower part of the frame A is provided with a handle, *k*, by which the saw is drawn forward into contact with the material to be sawed. An arm, *t*, projects outward from the frame in a direction at right angles with the shaft E on the side of the frame nearest the operator. On this arm is placed an adjustable weight, G, which causes the vibrating frame A to incline backward from the vertical, as represented in full lines in the end view, Fig. 1. The swinging frame takes this position automatically whenever, after being drawn forward for the purpose of acting on the material to be sawed, it is released and permitted to vibrate freely. The arm *t* may be provided with braces *v y*, connected to the frame A, for the purpose of giving it increased rigidity.

The position of the frame and saw when fully drawn forward is shown by dotted lines at A′ B′ G′ *t′*, Fig. 1. A stop, *p*, is arranged to limit the backward movement of the saw. It may be attached to the bench F, or to any other convenient support.

We are aware that swing-saws have been heretofore used which were drawn backward by a weight attached to a rope running over a corner-pulley and connected to the lower part of the frame, and such arrangement we do not claim. Many serious accidents have occurred from the breaking of the rope in this construction of swing-saws—a contingency which is entirely avoided by our improvement.

The inclination of the saw-frame when at rest is determined by the position of the weight on the arm *t*, the inclination being greater when the weight is placed farther from the frame.

The boxes which carry the saw-arbor may be attached to the lower end of the swinging frame by means of bolts and slots *i i′*, so that they can be adjusted vertically for the purpose of varying the length of the frame, the position of the saw, or to insure the parallelism of the shafts.

We are aware that counter-weights have been heretofore applied to swinging saws in various different manners, as shown, for in-

stance, in the patents of Field, No. 13,351, July 31, 1855, Berger, No. 184,692, November 28, 1876, and Ward, No. 223,968, January 27, 1880, and such arrangements we hereby disclaim.

We claim—

The combination and arrangement, with the swing-saw frame A, pivoted vertically over the work-supporting table F on the line of the driving-shaft E, and provided with saw B and belt *a*, of the arm *t*, projecting laterally from the frame and carrying the weight G, operating substantially as and for the purposes set forth.

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Witnesses:
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