(No Model.)

J. CONNELL.

CIRCULAR SAWING MACHINE.

No. 321,192. Patented June 30, 1885.

Fig 1

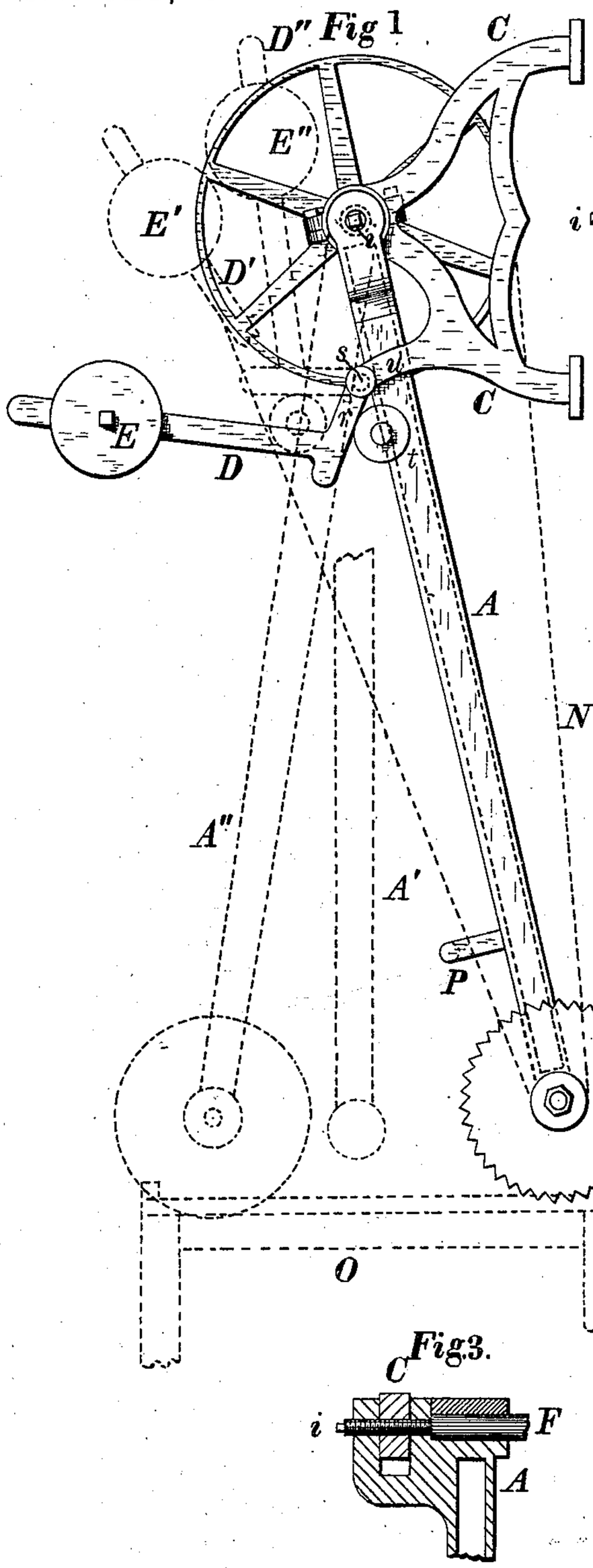

Fig. 2.

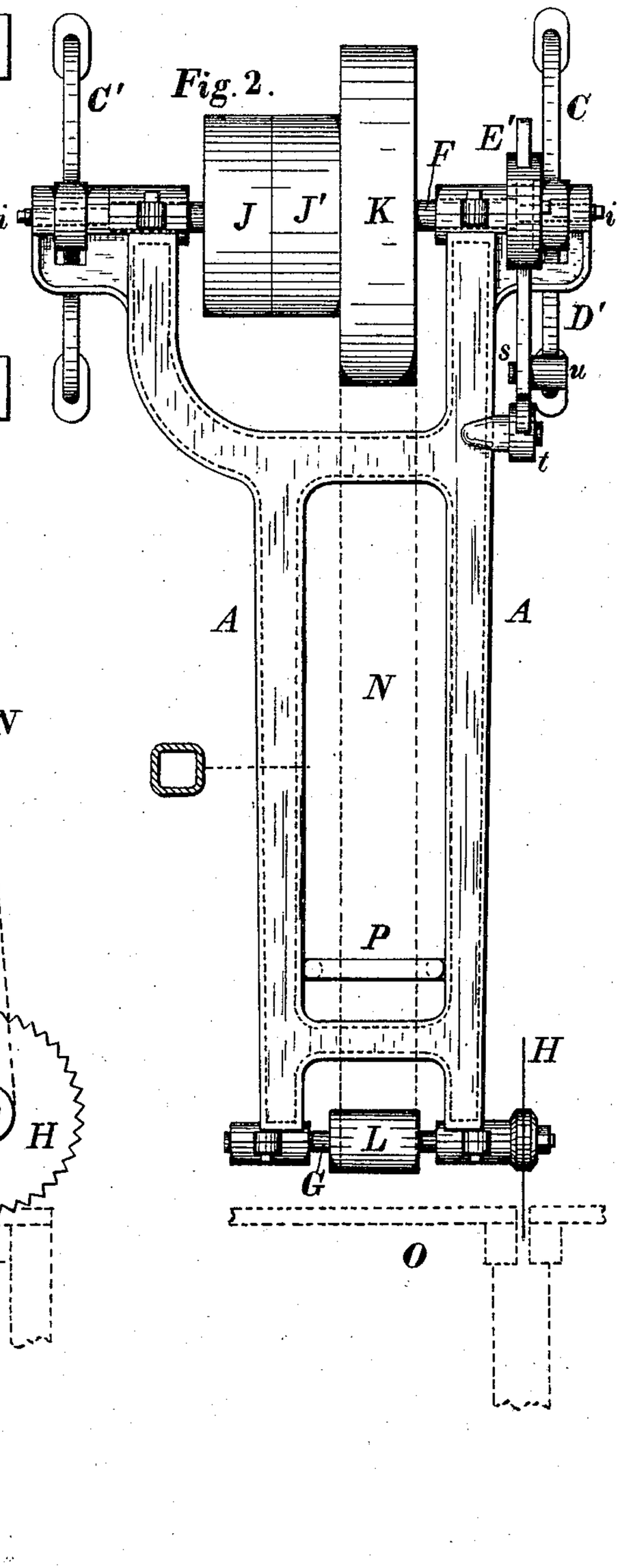

Fig 3.

WITNESSES

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JOHN CONNELL, OF ROCHESTER, NEW YORK.

CIRCULAR SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 321,192, dated June 30, 1885.

Application filed November 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN CONNELL, of the city of Rochester, in the county of Monroe and State of New York, have invented certain Improvements in Swing-Saws, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to certain improvements in swing-saws, which improvements are fully described in the following specification, and the novel features specified in the annexed claims.

In the accompanying drawings, representing my improvements in swing-saws, Figure 1 is a side elevation. Fig. 2 is a front elevation. Fig. 3 is a sectional view showing the mode of suspending the frame of my improved swing-saw.

The object of my invention is to produce a swing-saw which shall require as nearly as possible a uniform amount of force to cause it to move through the requisite path in doing the work, but have a constant tendency to swing backward away from the saw table or bench when released by the attendant; and to this end it consists in the peculiar combination and arrangement with the swinging frame of the saw of a pivoted angular lever provided with a weight which acts with decreasing force as the saw advances toward the operator from the vertical line.

Swing-saws have been heretofore combined with weighted chains, levers, and other devices variously constructed and arranged, but objectionable on account of their expense, complexity, and liability to release the saw in the event of breakage, &c. I have overcome these objections, and constructed an exceedingly cheap, durable, and safe swing-saw, which I have shown by trial to be entirely reliable in practical use, by combining with the swinging frame an angular lever carrying a weight, the resistance of which decreases as that of the frame increases, so that the force required to move the saw is practically uniform throughout its entire movement.

My improved swing-saw consists, essentially, of the vibrating frame A, hangers C C', angular lever D, weight E, driving-shaft F, provided with suitable pulleys, and saw-mandrel G, supporting saw H. The hangers are of any ordinary construction, the swinging frame A being supported thereon by the studs *i i*, the longitudinal axis of which corresponds with that of the driving-shaft F. The shaft F is supported in suitable journal-boxes in the frame, and is provided with the tight and loose pulleys J J' and larger pulley K, from which motion is transmitted to the pulley L on the saw-mandrel by the belt N. A suitable table, over which the saw swings, is indicated by the dotted lines O. A handle, P, may be attached to the frame for convenience in operating the machine.

The bent arm *r* of the lever D is pivoted on a stud, *s*, to an arm, *u*, of the hanger C, or other suitable support, the pivotal point being located at some distance below the axis on which the frame swings, and preferably in the same vertical plane. A stud or roller, *t*, attached to the frame bears against the side of the bent part *r* of the lever. As the frame swings forward toward the left hand in Fig. 1 the roller *t* causes the lever carrying the weight E to swing upward, as indicated by the dotted lines. When the frame hangs vertically at A', the lever and weight will occupy the positions indicated by the dotted lines D' E', and at the extreme limit of the forward movement of the frame the lever and weight will be thrown upward to D'' E''. The higher the lever swings the greater the proportion of the weight thrown on the stud *s*, so that the resistance of the weight to the movement of the frame decreases as the frame is moved forward.

It is obvious that the swinging frame may be supported in various different manners without departing from the principle of my invention.

As represented in the drawings, the frame A is cast hollow, in one piece, in order to secure strength combined with lightness.

I prefer to use a roller at *t*, to reduce the friction.

I claim—

1. The combination of the fixed brackets or hangers C, the pendulous saw-frame suspended therefrom, and the weighted lever pivoted to the bracket and acting directly on the frame to urge the same backward, as described.

2. The pendulous saw- [illegible] roller or projection thereon and the angular weighted lever mounted on a fixed axis above the roller and acting on the latter, as described.

JOHN CONNELL.

Witnesses:
H. G. PHILLIPS,
J. F. GORDON.