

(No Model.)

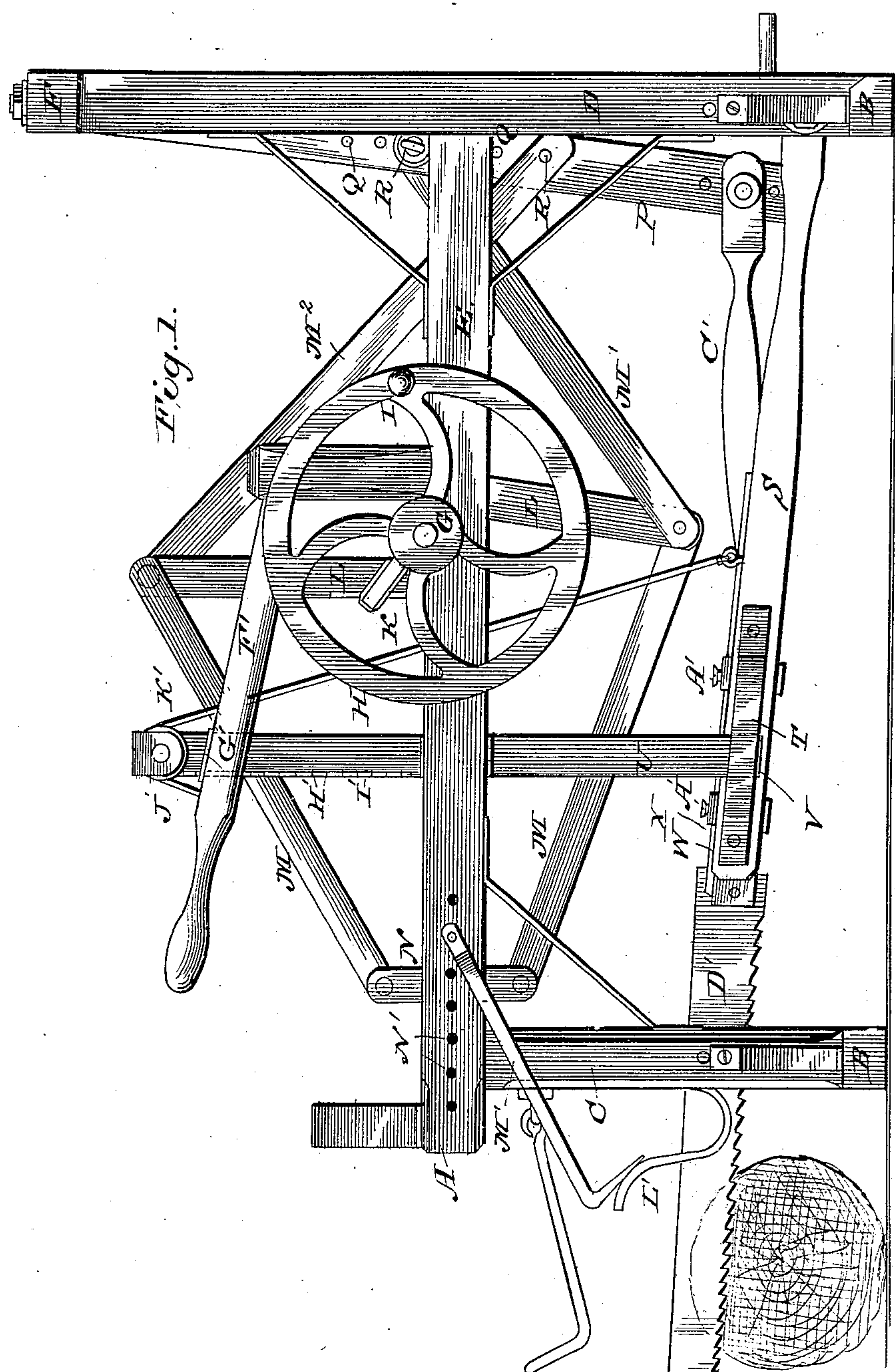
3 Sheets—Sheet 1.

J. H. HULBURT.

DRAG SAW.

No. 312,205.

Patented Feb. 10, 1885.



WITNESSES:

*Fred. L. Dieterich*  
*Geo. E. Frech*

INVENTOR

*James H. Hulburt*  
*Louis Bagger*  
ATTORNEYS.

(No Model.)

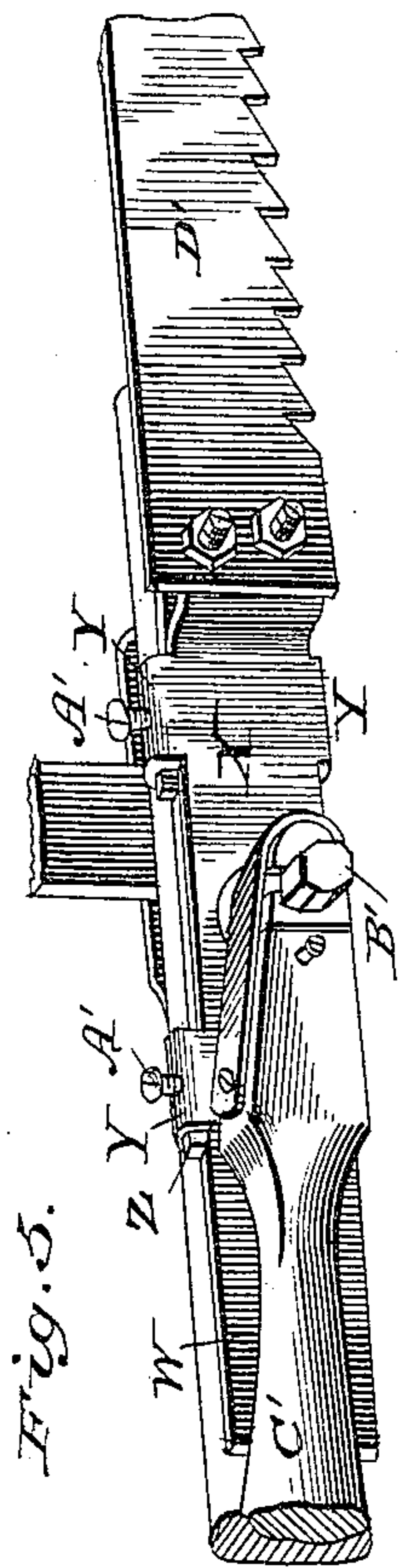
J. H. HULBURT.

3 Sheets—Sheet 2.

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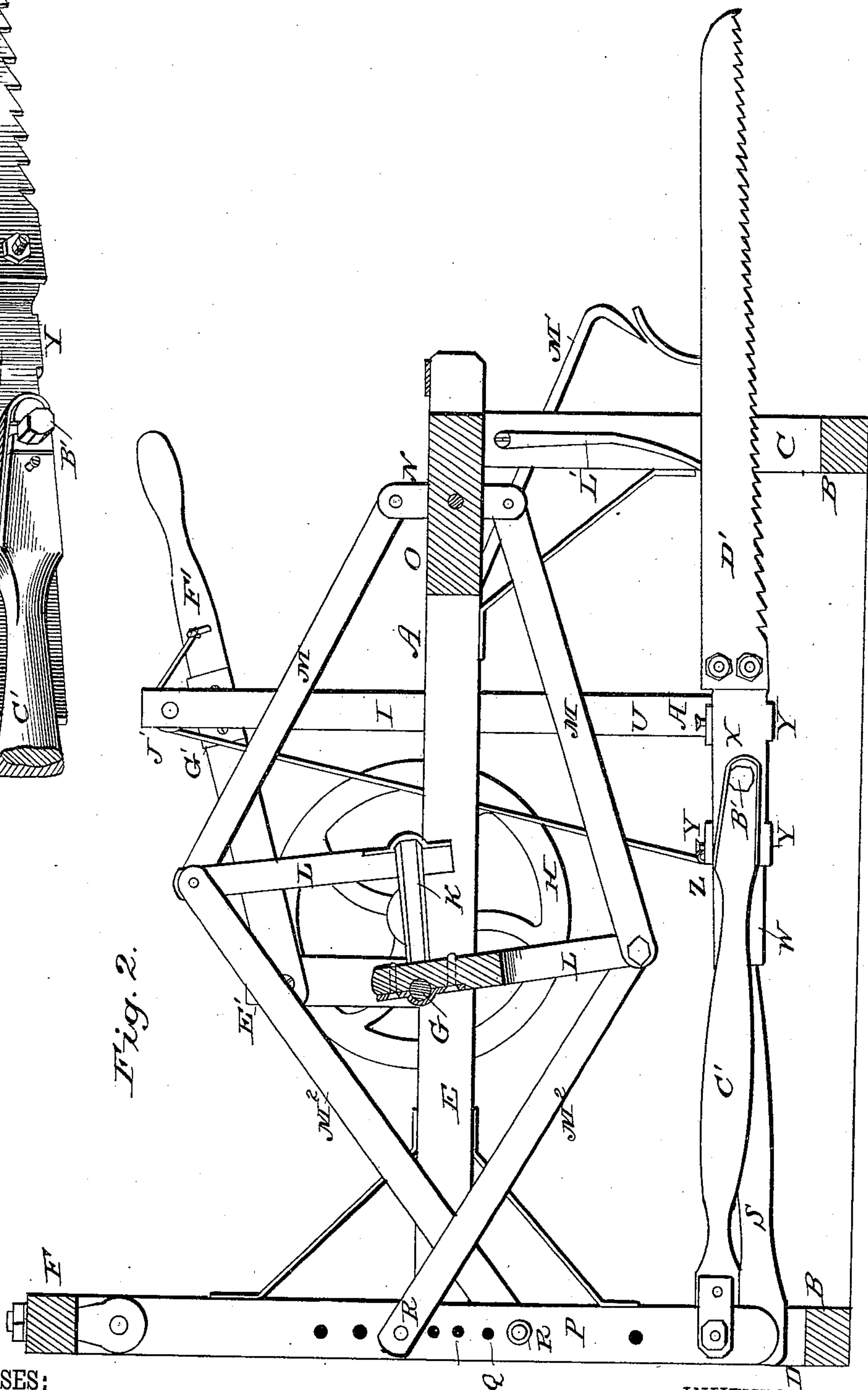


Fig. 2.

WITNESSES:

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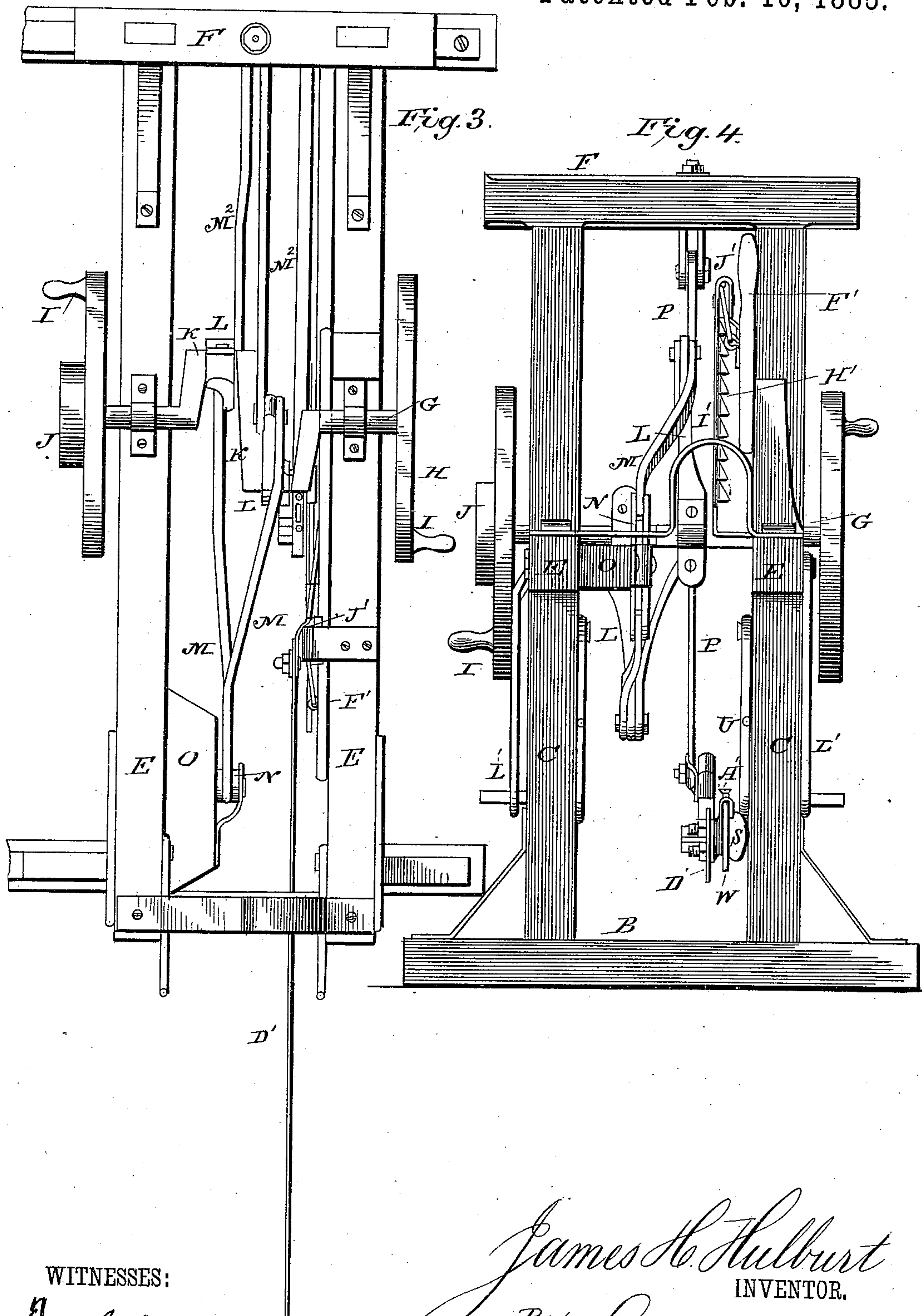
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WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES H. HULBURT, OF BLANCHARD, MICHIGAN, ASSIGNOR OF ONE-HALF TO BYRON WINTERS, OF SAME PLACE.

## DRAG-SAW.

SPECIFICATION forming part of Letters Patent No. 312,205, dated February 10, 1885.

Application filed September 29, 1874. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. HULBURT, of Blanchard, in the county of Isabella and State of Michigan, have invented certain new and useful Improvements in Drag-Saws; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of my improved drag-saw complete and ready for operation. Fig. 2 is a longitudinal vertical sectional view of the same. Fig. 3 is a top view. Fig. 4 is a front view, and Fig. 5 is a perspective detail view of a portion of the machine.

The same letters refer to the same parts in all the figures.

This invention relates to that class of wood-sawing machines which are known as "drag-saws;" and it has for its object to provide a device of this class which shall possess superior advantages in point of simplicity, durability, power, ease of manipulation, and general efficiency.

With these ends in view the invention consists in the improved construction and arrangement of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, A designates the frame of my improved sawing-machine, which consists, essentially, of the sills B B, having uprights C C and D D, respectively, at the front and rear ends, and a pair of parallel longitudinal beams, E E, connecting the uprights C C and D D. The latter are also provided with a transverse cap-piece, F, at their upper ends.

The beams E E are provided with suitable boxes or bearings for a transverse shaft, G, the ends of which are provided with heavy wheels H H, having cranks or handles I, by means of which the machine may be operated by hand-power. One end of the said shaft is also provided with a band wheel or pulley, J, to receive a belt or band, whereby the machine may be run by motive power of any suitable kind—for instance, by horse-power.

The shaft G is formed or constructed with a pair of cranks, K K, extending in diametrically-opposite directions, and provided with pitmen L L, to the upper end of each of which a pair of toggle-levers, M M<sup>2</sup>, are pivoted. Two of these, connected, respectively; to the upper and lower pitman, and designated by letter M, extend in a forward direction, and are pivotally connected with the upper and lower ends of a lever, N, which is fulcrumed to a bracket, O, extending inwardly from one of the side beams, E, of the machine. The toggle-levers M<sup>2</sup> extend rearwardly and are pivotally connected with an arm or bar, P, hinged or pivoted to the under side of the cap-piece F of the machine. Said bar is provided with a series of holes, Q Q, in which the connecting-bolts R R are adjustable, for the purpose of regulating the distance of the pivoting-points of the toggle-bars M<sup>2</sup> from the fulcrum of the swing-bar P.

S is a beam or bar, pivoted to the inner side of one of the uprights D, and provided at its front end, on its outer side, with a plate or staple, T, fitting and sliding over a vertical arm or guide, U, secured to the under side of one of the beams E, and having at its lower end a stop, V, serving to limit the downward movement of the said bar S. The latter is provided on its inner side with a plate, W, the upper and lower edges of which form bearings for a slide, X, provided with flanges Y, that catch over the said edges, as shown.

To compensate for wear, plates Z are inserted under the upper flanges, Y, which latter are provided with set-screws A', by means of which the said wear-plates may be tightened against the upper edge of the plate W.

The inner side of the slide X is provided with a pin or stud, B', forming a bearing for the front end of a connecting-rod, C', the rear end of which is pivoted adjustably to the lower end of the swing-bar P.

To the front end of slide X the saw D' is secured by bolts and nuts or in any other suitable manner.

One of the frame-beams E is provided with an upright, E', to which is pivoted a lever, F', having a tooth or catch, G', adapted to engage any one of a series of ratchets, H', upon an upright, I', mounted upon the beam E in front



of the upright E'. The said upright I' is provided at its upper end with a pulley, J', over which passes a rope or chain, K', one end of which is attached to the lever F' near the front end of handle of the latter, and the other end of which, after passing over the pulley J', is attached to the pivoted beam or bar S, the front end of which has the reciprocating slide or bearing for the saw. It will be seen that by this mechanism the front end of the pivoted bar S, with the saw, may be raised to and retained at any desired elevation without regard to whether the saw at the time is in motion or not, thus enabling the material which is to be sawed to be placed in position.

To the inner sides of the uprights CC, at the front end of the frame, are pivoted a pair of hook-shaped supports, L' L', in which cord-wood and the like may be placed while being sawed. When logs or heavy timber are to be operated upon, these supporting-hooks are to be simply swung back out of the way.

M' M' are dogs pivoted to the outer sides of the frame-beams EE for the purpose of holding the wood securely while being sawed. When logs are to be operated upon, these dogs are to be moved forward, according to the size of the log, and additional bolt-holes, N', are provided for this purpose.

The frame of the machine is to be provided with suitable braces wherever needed, and the several parts are to be securely bolted together.

The operation of this invention will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. By operating the crank-shaft, a reciprocating motion is, through the toggle-bars and the swing-bar P, imparted to the saw, the length of stroke, and consequently the power, being regulated by properly adjusting the toggle-bars M<sup>2</sup> and the connecting-rod C' with relation to the fulcrum of the swing-bar P. The saw may be easily raised while in motion for the purpose of adjusting material to be sawed, and a guide of proper construction is provided for the purpose of entering it accurately in the wood without deflection to either side.

The general construction of the machine is simple and inexpensive, and it is easily manipulated and operated.

I would have it understood that with regard to the construction of the details of this device I do not wish to limit myself to the precise construction herein shown and described, but reserve to myself the right to all such modifications as may be resorted to without departing from the spirit of my invention.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a wood-sawing machine, the combination, with a suitable frame, of a double-crank shaft, a pivoted arm having a reciprocating slide, a pivoted rod connecting the said slide with the lower end of a swinging arm, toggle-bars connecting the said swinging arm with pitmen mounted upon the crank-shaft, and a saw secured to the reciprocating slide, substantially as and for the purpose set forth.

2. In a wood-sawing machine, the combination of a pivoted arm having a reciprocating slide carrying the saw, operating mechanism for the said slide, an upright having a series of ratchets, a lever having a tooth engaging the same, and a rope or chain passing over a pulley at the upper end of the said upright, and connecting the said lever with the pivoted saw-carrying arm, which may thereby be raised to and retained at any desired elevation, substantially as and for the purpose set forth.

3. In a wood-sawing machine, the combination of a pivoted arm having a reciprocating saw-carrying slide, mechanism for raising and retaining the said arm, a pivoted rod connecting the slide adjustably with the lower end of a swinging arm or bar, adjustable toggle-bars connecting the said swinging bar with the ends of pitmen mounted upon a double-crank shaft, toggle-bars connecting the said pitmen with the ends of a lever pivoted at the front end of the frame of the machine, and hand-wheels or other mechanism for driving the said shaft, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JAMES H. HULBURT.

Witnesses:

H. V. DARLING,

BERT. STINCHCOMBE.