

**No. 646,662.**

**Patented Apr. 3, 1900.**

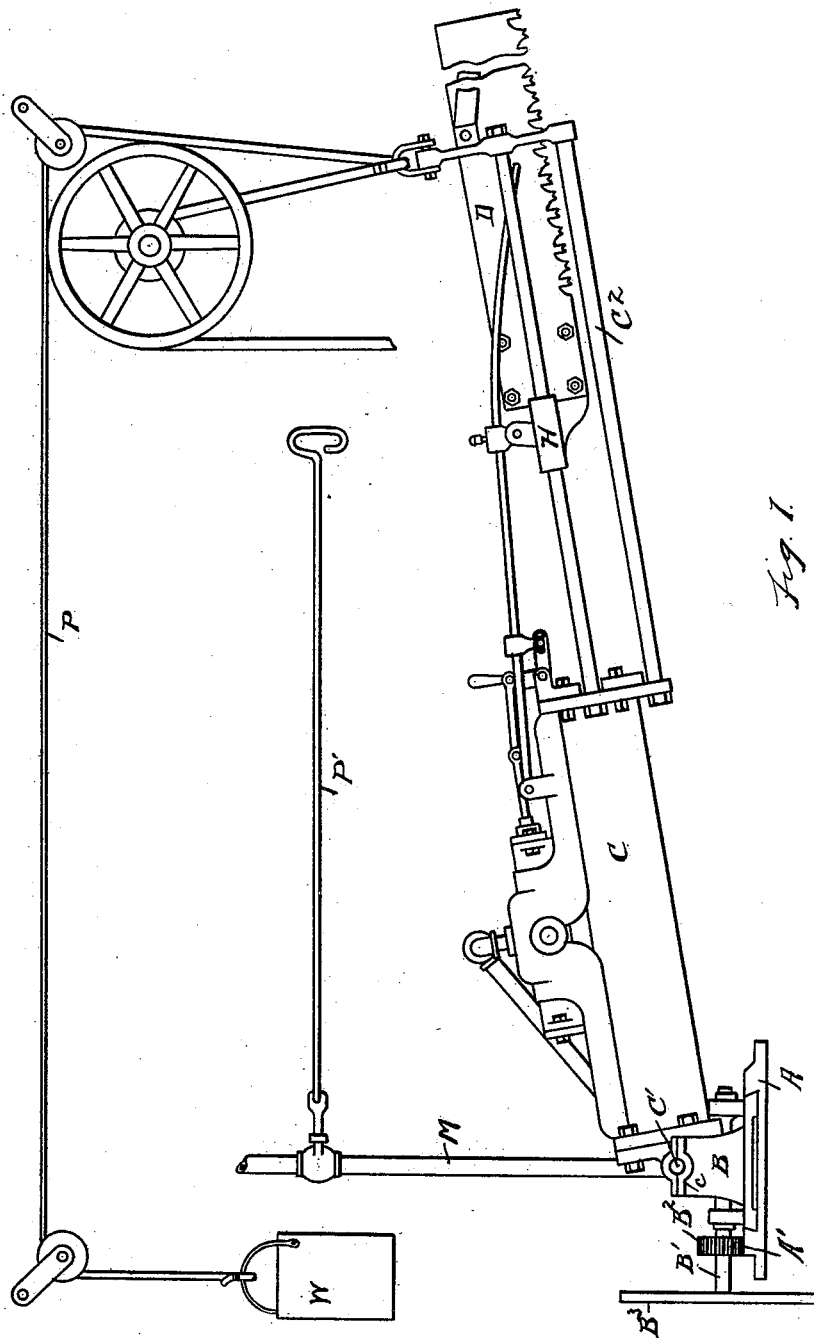
**A. S. HILL.**

**DRAG SAW AND ENGINE THEREFOR.**

(Application filed Apr. 4, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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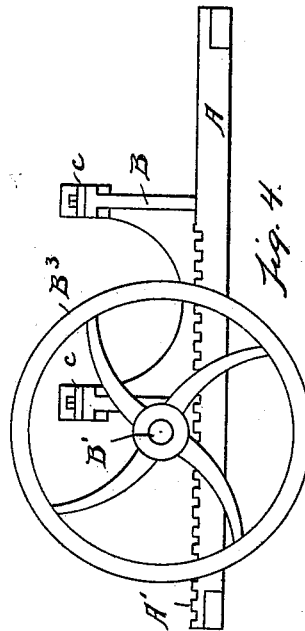
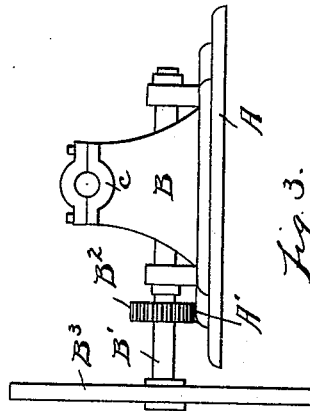
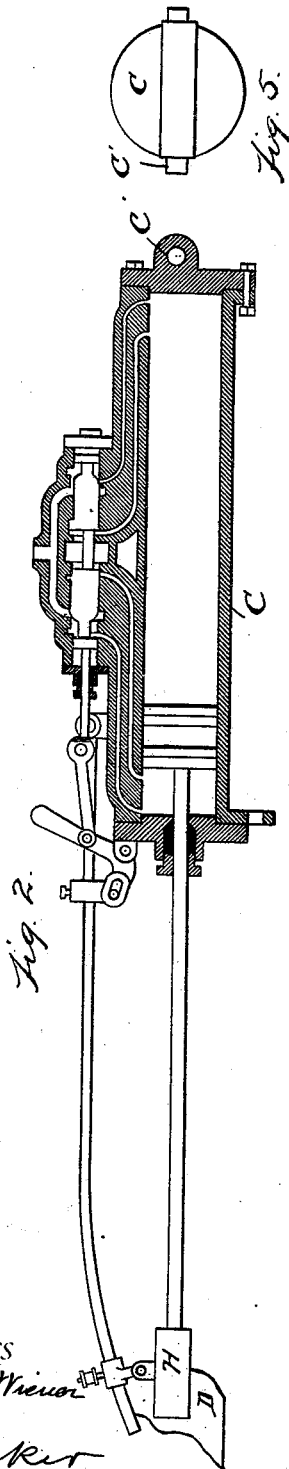
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WITNESSES  
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# UNITED STATES PATENT OFFICE.

ANTHONY S. HILL, OF KALAMAZOO, MICHIGAN.

## DRAG-SAW AND ENGINE THEREFOR.

SPECIFICATION forming part of Letters Patent No. 646,662, dated April 3, 1900.

Application filed April 4, 1898. Serial No. 876,485. (No model.)

*To all whom it may concern:*

Be it known that I, ANTHONY S. HILL, a citizen of the United States, residing at the city of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a certain new and useful Improvement in Drag-Saws and Engines Therefor, of which the following is a specification.

My invention relates to improvements in steam drag-saws; and its objects are to provide a direct-acting steam drag-saw capable of running at high speed, to provide improved means for regulating the feed of the drag-saw, and to provide improved means for laterally adjusting the engine and drag-saw.

Further objects will definitely appear in the specification.

Figure 1 is a side elevation of a complete drag-saw made in accordance with my invention. Fig. 2 is a longitudinal vertical detail sectional elevation through the engine portion of the same. Fig. 3 is an end elevation of the cylinder, showing its trunnions. Fig. 4 is a rear end view of the base and adjustable pillow-block for lateral adjustment. Fig. 5 is a side elevation of the detail appearing in Fig. 4.

Certain details of the valve mechanism are not illustrated separately from the engine, for the reason that the same are made the subject-matter of another application, Serial No. 718,488, filed May 27, 1899.

A represents the base, upon which the rear end of the cylinder is supported. B is an adjustable pillow-block adapted to slide in suitable ways upon the base A. On the base A is firmly fixed a stationary rack A'. The pillow-block B carries the shaft B', having a pinion B<sup>2</sup>, which is adapted to engage in the rack A'. A hand-wheel B<sup>3</sup> is provided and attached to the shaft B' for rotating the shaft, and thus compelling a movement of the pillow-block B backward and forward on the base A, thus securing the necessary lateral adjustment for the machine by merely turning the hand-wheel B<sup>3</sup>.

The steam-cylinder C is supported on the pillow-block by means of the bearings c c for the trunnion C'. This permits the forward

end of the cylinder to be raised and lowered by swinging on the trunnions. This vertical adjustment is partially balanced by pulleys attached to a suitable framework, a rope P, attached to the forward end of the guide-frame C, and a counterweight W. It is obvious that this counterweight can be made sufficient to adequately balance or nearly balance the forward end of the cylinder, and thus regulate the force which is brought to bear upon the teeth of the drag-saw D. Appropriate valve mechanism may be used to operate this mechanism, and a proper form thereof is, as already intimated, made the subject-matter of another application, and therefore it is not described herein in detail. A steam connection to the cylinder is through the pipe M, connected by a suitable rotating joint to a steam-pipe in line with the trunnions C'. A handle P is connected to the valve and is in convenient reach of the sawyer. A suitable cross-head H is secured to the piston-rod and is provided with ways secured to the head of the piston. The cross-head is adapted to receive the saw by a rigid attachment and support the same. Any suitable guide may be provided for the saw.

The mode of operation is sufficiently obvious from the description.

What I claim is—

1. The combination of a direct-acting steam drag-saw, a base, a transversely-movable pillow-block resting thereon in suitable ways, and means on said base for adjustably moving the pillow-block for transverse adjustment, substantially as described.

2. In a steam drag-saw, the combination of a suitable base, an adjustable pillow-block thereon, an engine-cylinder having trunnions resting on the pillow-block, suitable guides secured to the opposite end of the engine-cylinder; the engine-cylinder carrying a piston, piston-rod, cross-head, and a saw connected thereto; and an engine-valve for the cylinder, substantially as described.

3. In a steam drag-saw, the combination of a suitable base, an adjustable pillow-block thereon, an engine-cylinder having trunnions resting on the pillow-block, suitable guides

secured to the opposite end of the engine-cylinder; the engine-cylinder carrying a piston, piston-rod, cross-head, and a saw connected thereto; an engine-valve for the cylinder, and means for vertically raising or lowering the front end of the cylinder carrying the saw, substantially as described.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

ANTHONY S. HILL. [L. S.]

Witnesses:

LELA M. BROWN,  
OTIS A. EARL.