

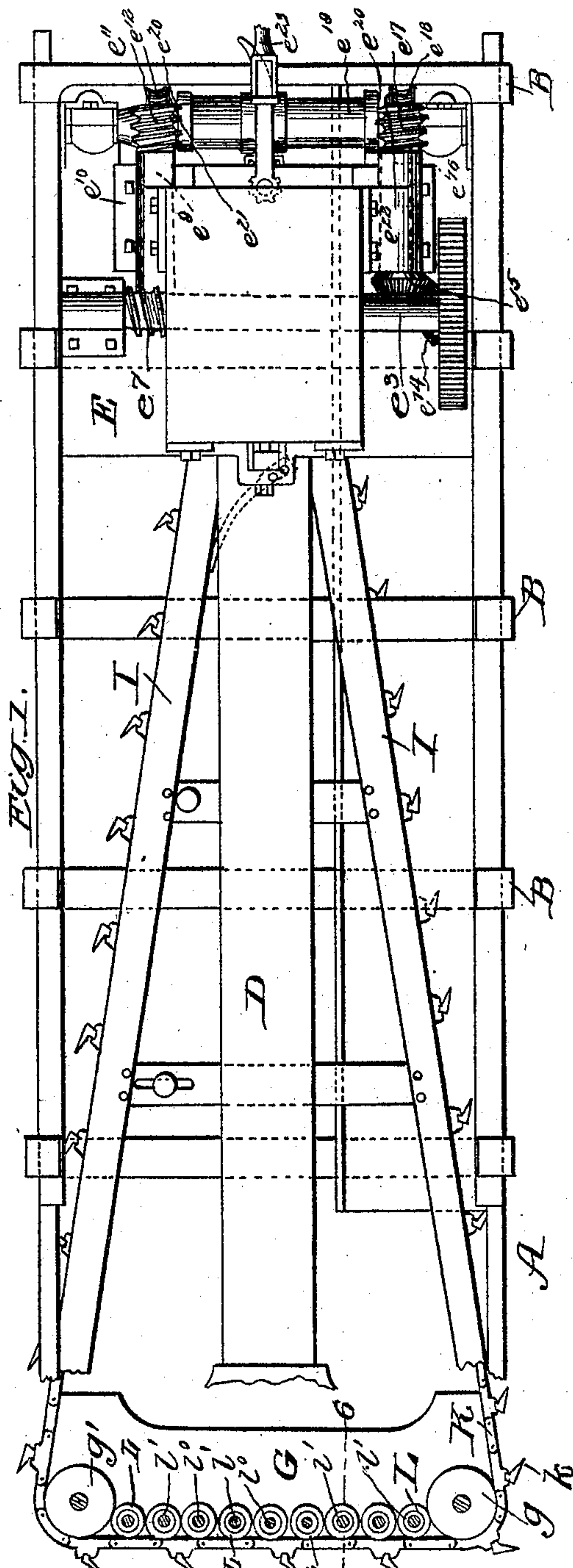
No. 805,885.

PATENTED NOV. 28, 1905.

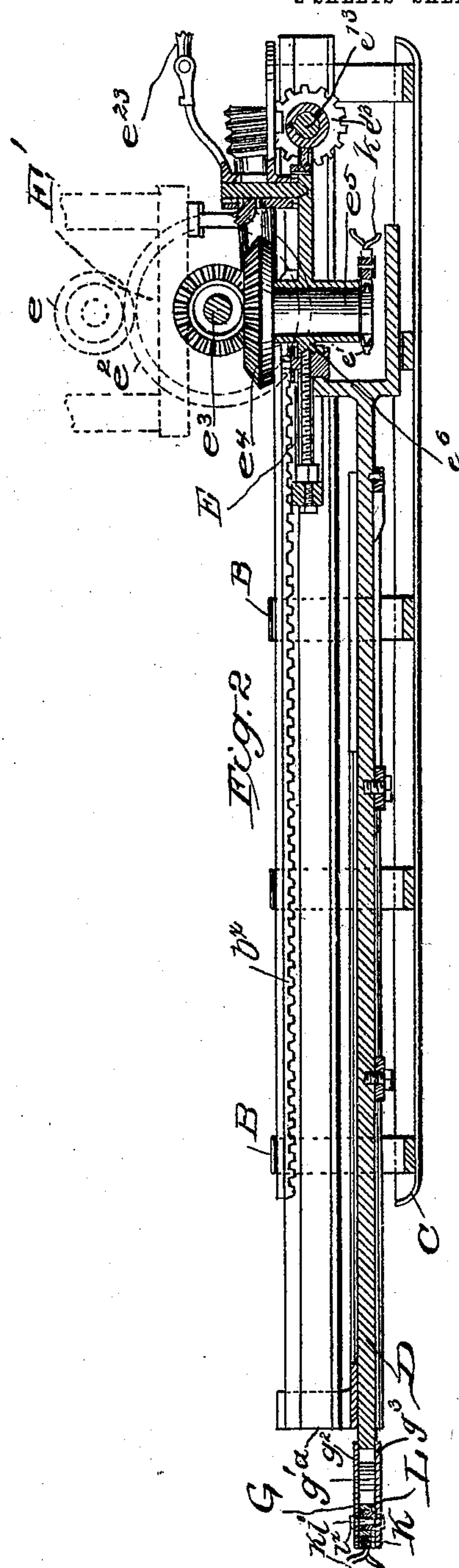
W. H. SEXTON.
MINING MACHINE.

APPLICATION FILED JULY 6, 1905.

2 SHEETS—SHEET 1.



WITNESSES:
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2 SHEETS—SHEET 2.

Fig. 3.

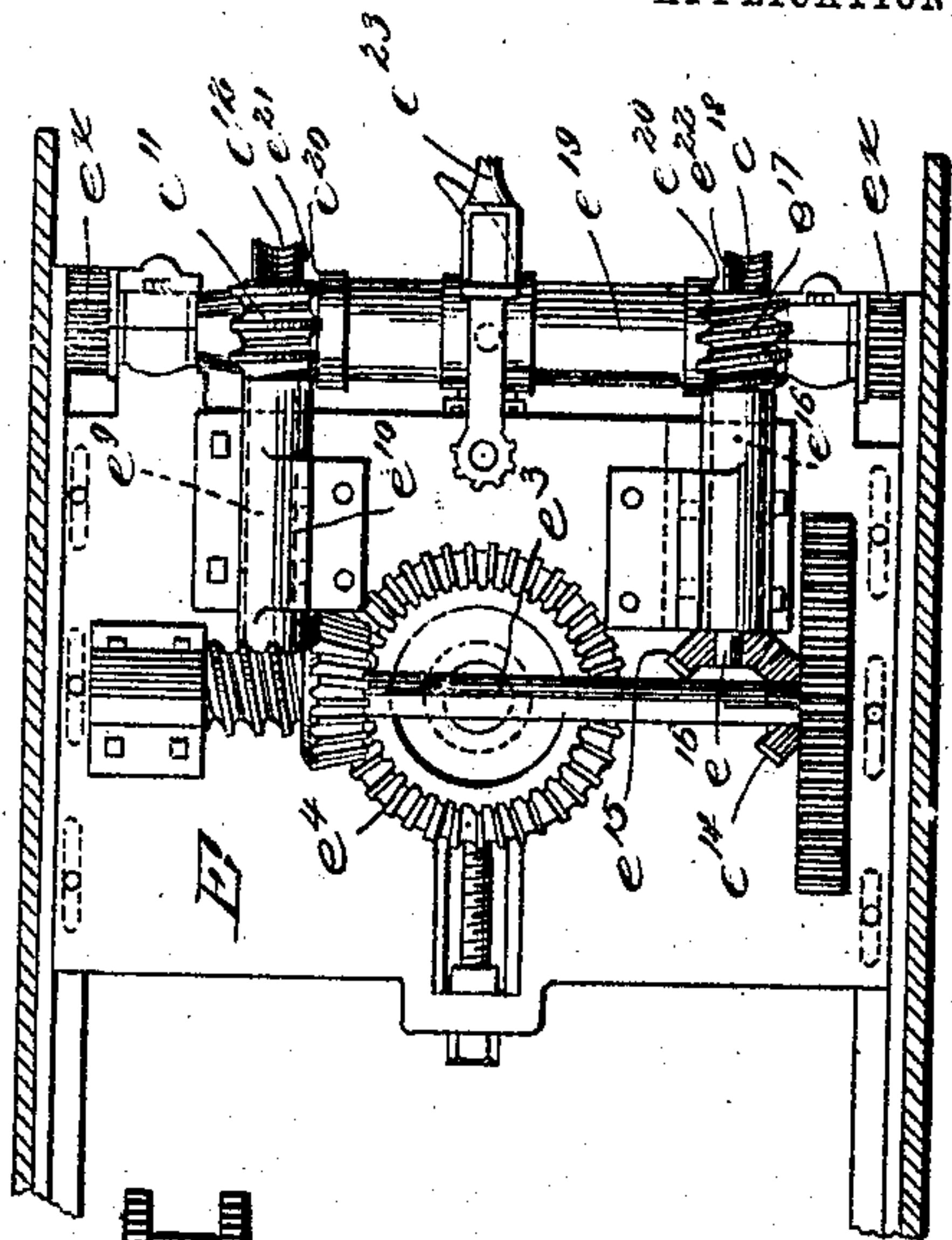


Fig. 4.

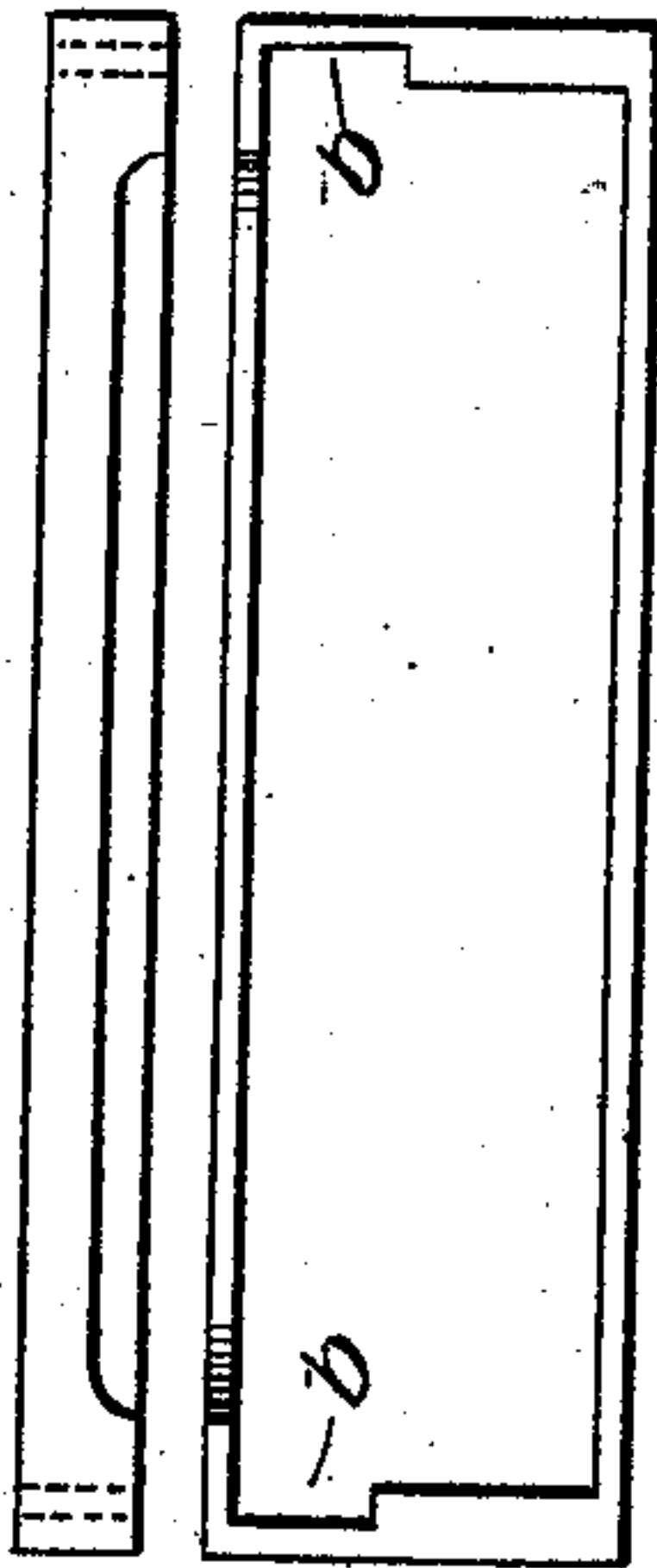


Fig. 5.

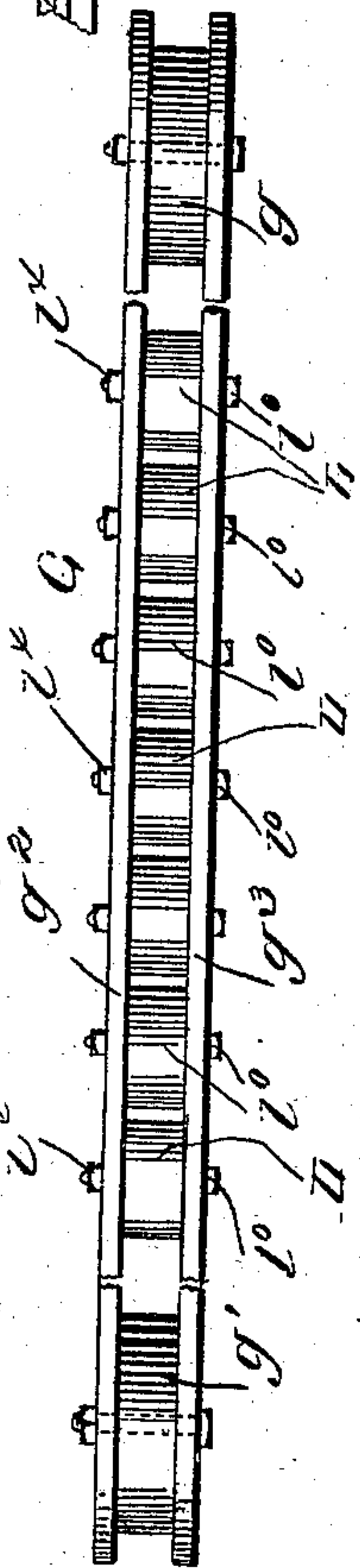
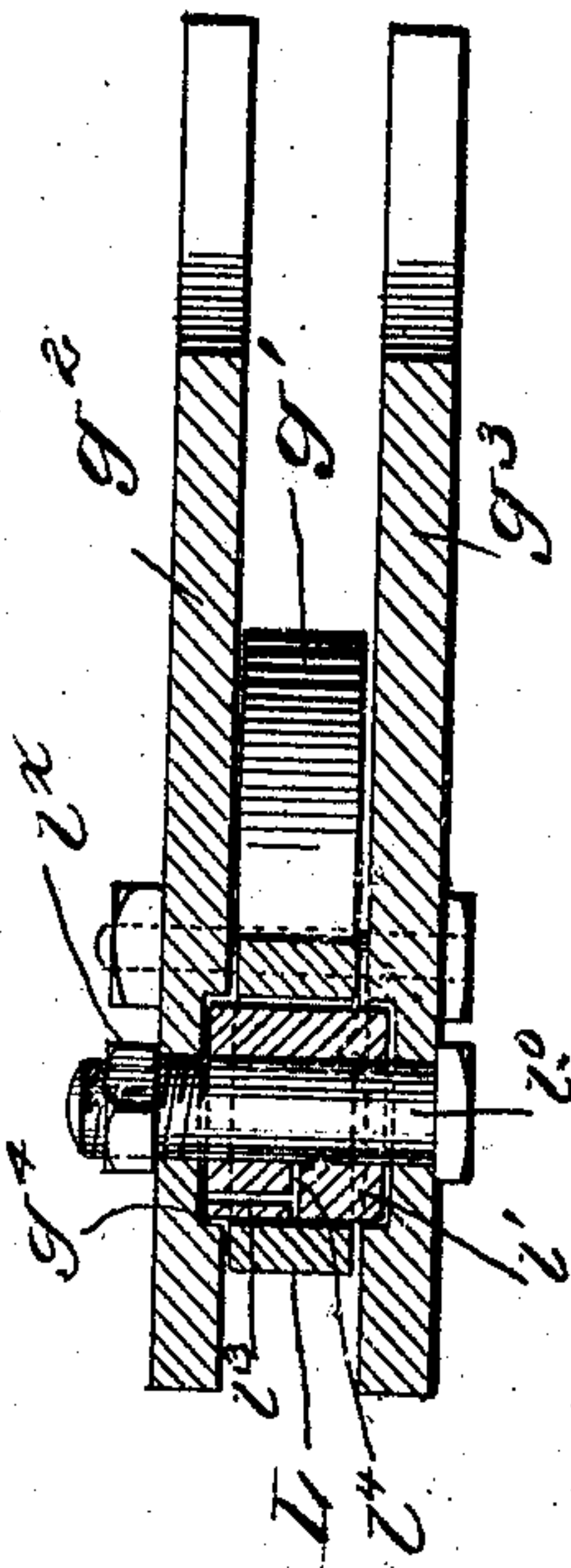


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM HOWARD SEXTON, OF SULLIVAN, INDIANA.

MINING-MACHINE.

No. 805,885.

Specification of Letters Patent.

Patented Nov. 28, 1905.

Application filed July 6, 1905. Serial No. 268,362.

To all whom it may concern:

Be it known that I, WILLIAM HOWARD SEXTON, a citizen of the United States, and a resident of Sullivan, in the county of Sullivan and State of Indiana, have made certain new and useful Improvements in Mining - Machines, of which the following is a specification.

My invention is an improvement in mining-machines; and it consists in certain novel constructions and combinations of parts hereinafter described and claimed.

Referring to the drawings forming a part hereof, Figure 1 is a plan view of my improved machine. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a plan view of the motor end of the machine with the motor and platform removed. Fig. 4 is a top plan and front view, respectively, of the cross-bar. Fig. 5 is an end view of the cutting-chain-carrying frame with the cutter-chain removed, and Fig. 6 is a section on the line 6 6 of Fig. 1.

In the practical application of my invention I provide a bed-frame composed of flat side bars A, arranged with their widest dimensions in a vertical plane and provided with channels *a* in their inner faces. Suitable cross-bars B, having recesses *b* for receiving the side bars, are provided for securing the side bars together, and upon the lower faces of the cross-pieces are arranged shoes C for convenience in sliding the frame over the ground. A carriage D is arranged to slide upon the bed-frame and comprises in the present instance a cross-plate or platform E, sliding in the channels A, a longitudinal bar, and a front cross-bar G. The platform E supports the motor E' and the wheel *e'* for driving the cutter-chain K. Channel-bars I extend from the platform to the outer ends of the bar G and form therewith a substantially triangular frame, having journaled within the outer corners thereof the guide-wheels *g g'*. A cutter-chain K, supported on the driving-wheel *e'* and the guide-wheels *g g'*, is provided with cutters *k*, secured to the links thereof, and is supported between the guide-wheels *g g'* by means of a series of rollers L, journaled in the cross-bar G. The cross-bar G is composed of the upper and lower plates *g² g³*, provided with a series of corresponding recesses *g⁴* for the reception of shafts *l'*, approximately two inches in diameter, the recesses being counterbored for the reception of the ends of the shaft. Bolts *l⁰* traverse the plates and the shaft, and nuts *l^x* engage the ends of the bolts,

securing the plates and the shafts rigidly together. The rollers L are journaled on the shafts and are approximately one inch in thickness, and the back of the cutter-chain rests upon the rollers, thus being supported firmly in contact with the face of the coal. For convenience in oiling the rollers an opening *l³* is provided longitudinally of the shaft *l'*, and radial openings *l⁴* lead from the longitudinal opening to the outer face of the shaft.

The shaft of the motor E' is provided with a pinion *e*, meshing with the pinion *e²* on the counter-shaft *e³*, and a bevel-gear secured to the outer end of the said shaft meshes with the bevel-gear *e⁴* on a vertical stud-shaft *e⁵*, journaled in a bearing *e⁶* in the platform E, and on the lower end of the stud-shaft is journaled the driving-wheel *e'* of the cutter-chain. A worm *e⁷* on the counter-shaft *e³* operates a worm-wheel on a short horizontal shaft *e⁹*, journaled in bearings *e¹⁰* on a platform E, the rear end of the shaft being provided with a worm *e¹¹*, meshing with the worm-wheel *e¹²*, loosely mounted on a transverse shaft *e¹³* on the rear of the platform E. A bevel-gear *e¹⁴* is secured to the inner face of the pinion *e²* on the counter-shaft *e³* and meshes with the bevel-gear *e¹⁵* on a second horizontal shaft *e¹⁶*, parallel to the shaft *e⁹* and provided with a worm *e¹⁷*, meshing with a second worm-wheel *e¹⁸*, loosely mounted on the transverse shaft *e¹³*. A sleeve *e¹⁹*, provided with oppositely-disposed clutching-faces *e²⁰* for coacting with clutching-faces *e²¹ e²²* on the worm-wheels *e¹² e¹⁸*, is splined to the shaft *e¹³*, and a lever *e²³* is provided for manipulating the sleeve. The ends of the shaft *e¹³* are provided with pinions *e^x*, engaging the rack-bars *b^x*, secured to the cross-bar B and supported above the carriage. It will be evident that when the shaft *e¹³* is rotated the engagement of the pinions *e^x* with the racks *b^x* will drive the carriage forward or backward in accordance with the direction of rotation of the shaft.

In operation, the machine being placed in proper position with respect to the face of the coal, the motor is started, the clutches being in proper position to drive the carriage forward by means of the engagement of the gears and pinions. When the cut has been made to a sufficient depth, the machine is reversed by means of the clutches and the sliding frame is withdrawn and the machine is moved far enough to the side so that it will be in position for a second cutting.

By providing the active portion of the chain-

cutter with the roller-support friction is reduced to a considerable extent, while at the same time the rollers afford a firm support for the back of the cutter.

5 It will be evident from the description that the provision of the shafts of large diameter engaging the counterbored openings in the plates provide an efficient means for securing the plates in spaced relation with respect
10 to the rollers, thus reducing the friction between the ends of the rollers and the plates to a minimum.

Having thus described my invention, what I claim as new, and desire to secure by Letters
15 Patent, is—

In a mining-machine the combination of the bed-frame, a carriage slidably mounted in the frame and comprising side bars connected at

the front by a cross-bar comprising upper and lower plates, guide-wheels journaled between
20 the ends of the plates, a drive-wheel journaled at the rear of the carriage, a cutter-chain supported on the drive-wheel, and the guide-wheels, and means for supporting the cutter-chain between the guide-wheels comprising
25 shafts of relatively large diameter engaging counterbored openings in the plates and provided with a longitudinal opening and with radial openings communicating therewith, bolts traversing the shafts and the plates, nuts
30 engaging the bolts for securing the shafts and plates together and rollers on the shafts.

WILLIAM HOWARD SEXTON.

Witnesses:

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