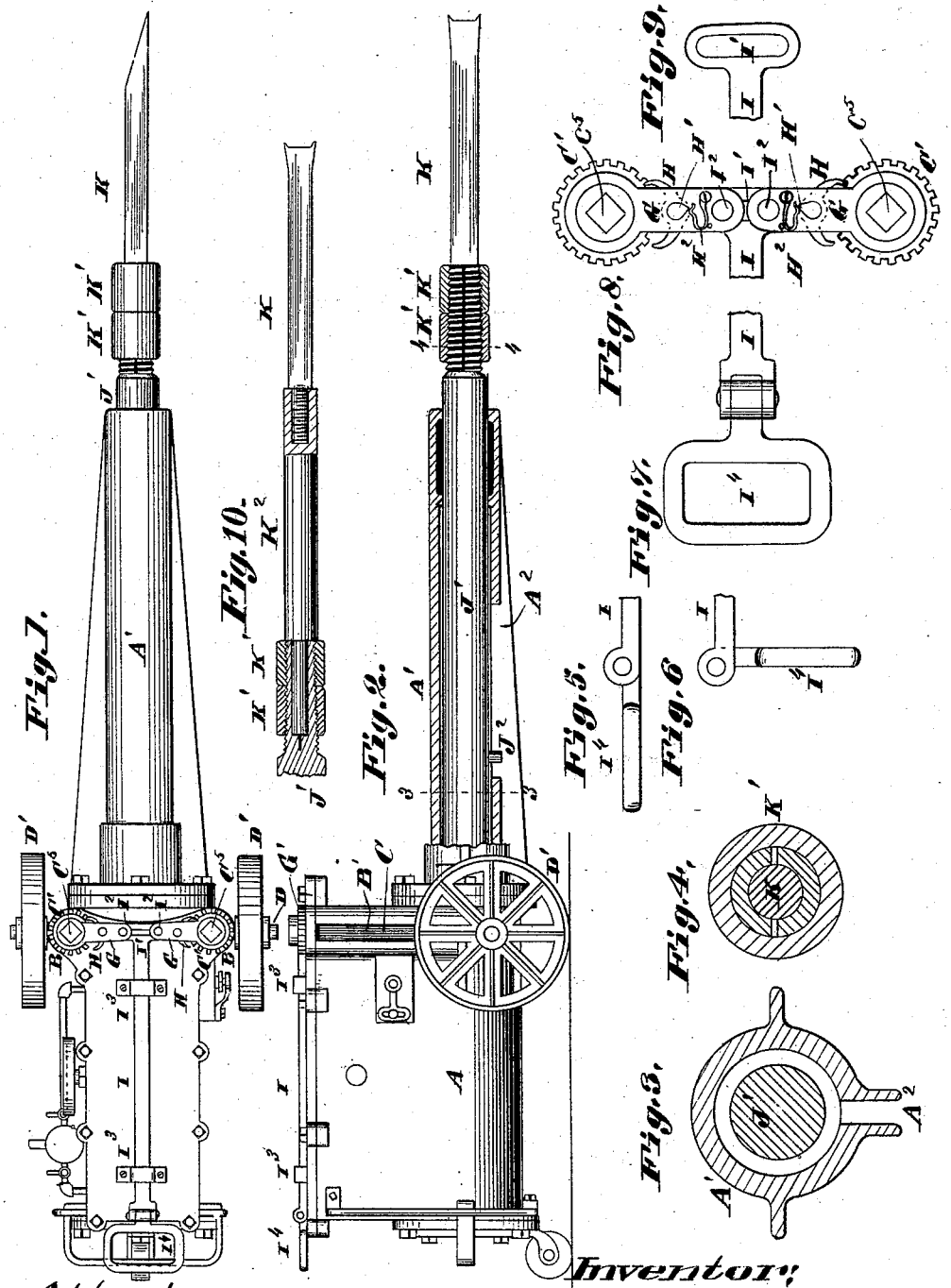
(No Model.) 2 Sheets—Sheet 1.

F. T. CHEW.

MINING MACHINE.

No. 301,960. Patented July 15, 1884.



Attest:
Charles Pickles
Geo. L. Wheelock

Inventor:
Francis T. Chew
By Knight Bros
attys

(No Model.)

2 Sheets—Sheet 2.

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Fig. 11.

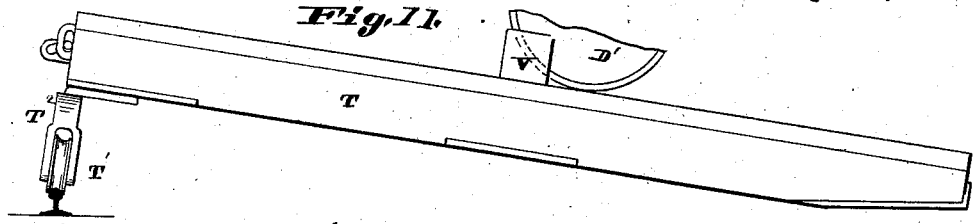

Fig. 12.

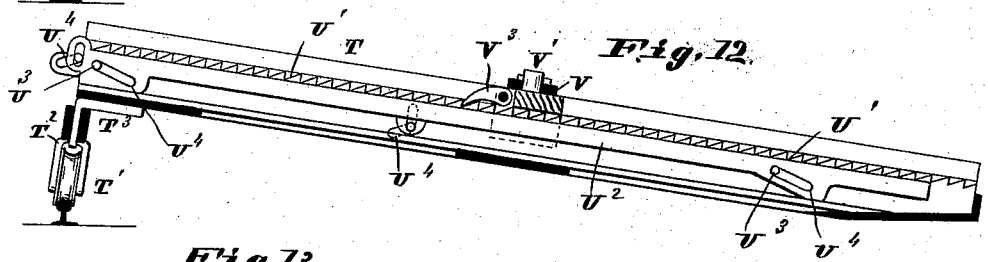

Fig. 13.

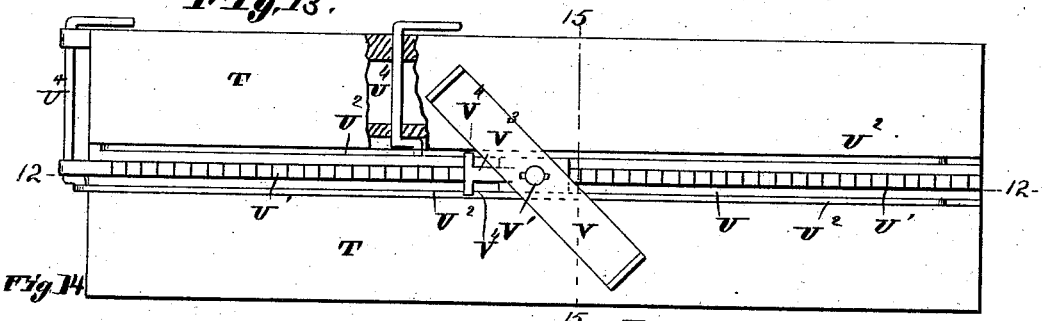

Fig. 14

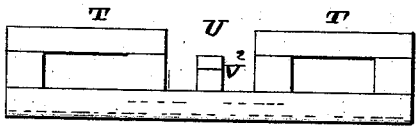

Fig. 16

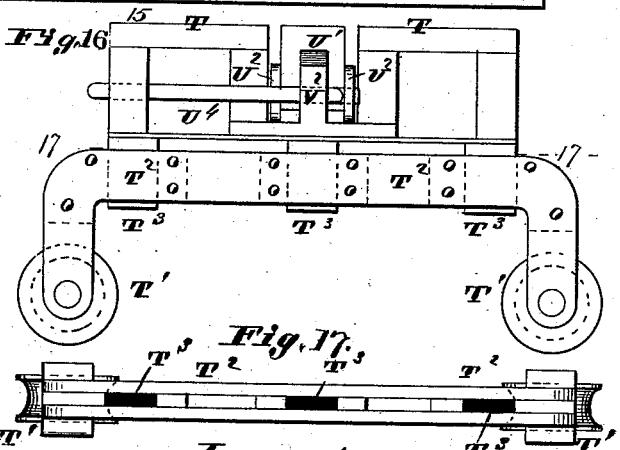

Fig. 15.

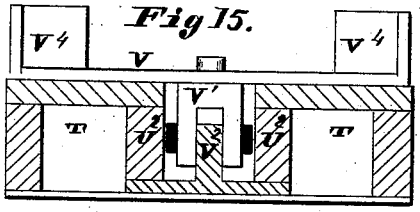

Fig. 17.

Attest;

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By Knight Bros

attys

UNITED STATES PATENT OFFICE.

FRANCIS T. CHEW, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO THE ELLSWORTH COAL COMPANY, OF DANVILLE, ILLINOIS.

MINING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 301,960, dated July 15, 1884.

Application filed November 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS T. CHEW, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Mining-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a top view. Fig. 2 is a side elevation, part in section. Fig. 3 is a transverse section taken on line 3 3, Fig. 2. Fig. 4 is a similar view taken on line 4 4, Fig. 2. Figs. 5, 6, and 7 are different views of the handle for operating the hoisting-screws of the cylinder. Fig. 8 is an enlarged top view of the screws and operating levers and ratchets. Fig. 9 is an enlarged view of the end of the operating bar or rod. Fig. 10 shows a modified form of securing the pick to the piston wherein a lengthening-piece is employed. Fig. 11 is a side view of my improved platform. Fig. 12 is a longitudinal section of the same, taken on the line 12 12, Fig. 13. Fig. 13 is a top view of the same, part broken away. Fig. 14 is an end view of the same. Fig. 15 is a transverse section taken on the line 15 15, Fig. 13. Fig. 16 is a rear end view of the same. Fig. 17 is a section taken on the line 17 17, Fig. 16.

My invention relates to machines for mining purposes; and it consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, A represents the main cylinder, provided on each side with a vertical hollow projection, B, adapted to receive a hollow internally-screw-threaded leg, C, to which is secured an arbor, D, projecting outward, and forming journal-bearings for the supporting-wheels. (See Figs. 1 and 2.) Within the hollow legs are hoisting and lowering screws C^5, connected to the cylinder at their upper ends in such a manner that they can be turned. The projections B are provided with slots B′, (see figure,) for the passage of the arbors D, as the cylinder is raised and lowered by turning the screws C^5. As a means for turning the screws, I have shown levers or arms G, secured to their upper ends, (see Figs. 1 and 8,) which are provided with double ratchets or pawls H, engaging with ratchet-wheels C′, secured to the screws. The ratchets or pawls have stems by which they are pivoted to the levers, and on these stems (see Fig. 8) are V-shaped cams H′, against which bear springs H^2, secured to the levers, to hold the ratchets in contact with the wheels. By reversing the pawls or ratchets the screws may be turned in opposite directions, so as to either raise or lower the cylinder, as may be desired. The levers are operated to turn the screws by means of a bar or rod, I, having a slotted head, I′, (see Figs. 8 and 9,) to which the adjacent ends of the levers are connected by pins or rivets I^2. The bar is supported in brackets I^3, (see Figs. 1 and 2,) and its free end is provided with a pivoted handle, I^4, (see Figs. 1, 2, 5, 6, and 7,) by which it is pulled and pushed to operate the levers. The handle, being at the rear end of the machine, is within easy reach of the operator.

To the front head of the cylinder A is secured a nose, A′, through which the rod J′ of the piston J works and is supported. J^2 represents a pin secured to the piston-rod, (see Fig. 2,) which works in a slot, A^2, in the nose A′, for the purpose of keeping the rod from turning. The end of the piston-rod is provided with a socket to receive the end of a pick, K, and it is slotted and screw-threaded, as shown in Figs. 2 and 4, and is provided with collars K′, for tightening it upon the pick.

In Fig. 10 I have shown a lengthening-piece, K^2, interposed between the piston-rod and pick for use when desired.

T represents a platform upon which the machine is supported when in use. This platform may be inclined, or it may be level, and accordingly one or both ends would be supported on rollers T′, journaled in a U-shaped frame, T^2, and resting upon one of the rails of the track of the mine. The main frame or platform can be separated from the frame T^2 by simply lifting it up, as they are only connected by projections T^3 on the platform entering sockets in the frame. (See Figs. 16 and 17.) There is a longitudinal opening, U, in the center of the platform, and beneath this opening is a ratchet-bar, U′, and two plain bars or strips, U^2, supported by pins U^3, fitting in inclined slots U^4 in the plates.

V represents a block or bar, pivoted at its

center to a post, V′, secured to the platform. The function of this block is to chuck the wheels of the machine, and for this purpose may be turned at any angle to the platform, as shown in Fig. 13. The post V′ is not rigidly secured to the platform, but simply straddles a rib, V^2, (see Fig. 15,) so that it can be moved back and forth to change the position of the chuck-block; and it is held at any desired point by a pawl, V^3, pivoted thereto, and adapted to engage the ratchet-bar U′. When it is desired to move the chuck-block back, the free end of the pawl is raised to disengage it from the ratchet-bar by means of the bars or strips U^2, which it overlaps by means of projections V^1, one or the other of which, as is most convenient, is pulled back and raised by cranks U^4, secured to the platform. One of the cranks, as shown in Fig. 13, is at the end and the other near the center of the platform, so one will always be within reach.

I claim as my invention—

1. In a mining-machine, the combination of a frame, hollow vertical projections on the sides of the frame, having vertical openings, hollow internally-screw-threaded legs within said projections, having journals extending through said openings to receive the wheels, hoisting-screws to work within, to adjust the legs, levers connected to the ends of the screws, and an operating-bar connecting the contiguous ends of the levers, as set forth.

2. In a mining-machine, the combination of a frame, hollow projections on the frame, hollow internally-screw-threaded legs within the projections to receive the supporting-wheels, hoisting-screws within the legs, ratchet-wheels secured to the screws, levers having ratchets or pawls to engage the ratchet-wheels, and a bar connected to the inner ends of the levers, as set forth.

3. In combination with a mining-machine, a platform provided with a pivoted longitudinally-movable chuck-block, and suitable mechanical means for holding the block to any adjustment, substantially as and for the purpose set forth.

4. In combination with a mining-machine, a platform provided with an opening in its center, a ratchet and two plain bars beneath the center, cranks for raising the plain bars, a pivoted chuck-block secured to a sliding post, and a pawl pivoted to the post, so as to engage the ratchet-bar, and having projections overlapping the plain bars, all substantially as shown and described, for the purpose set forth.

FRANCIS T. CHEW.

In presence of—
GEO. H. KNIGHT,
BENJ. A. KNIGHT.