

968,881.

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COAL-MINING APPARATUS.  
APPLICATION FILED FEB. 11, 1909

Patented Aug. 30, 1910.

2 SHEETS—SHEET 1.

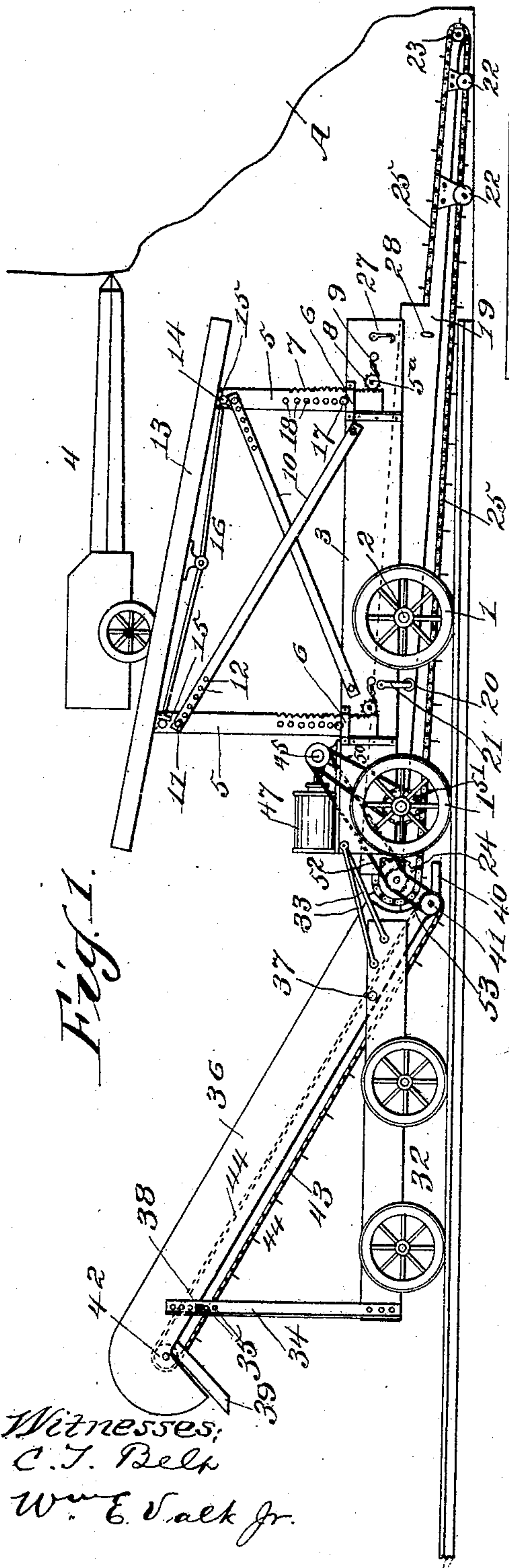


Fig. 1.

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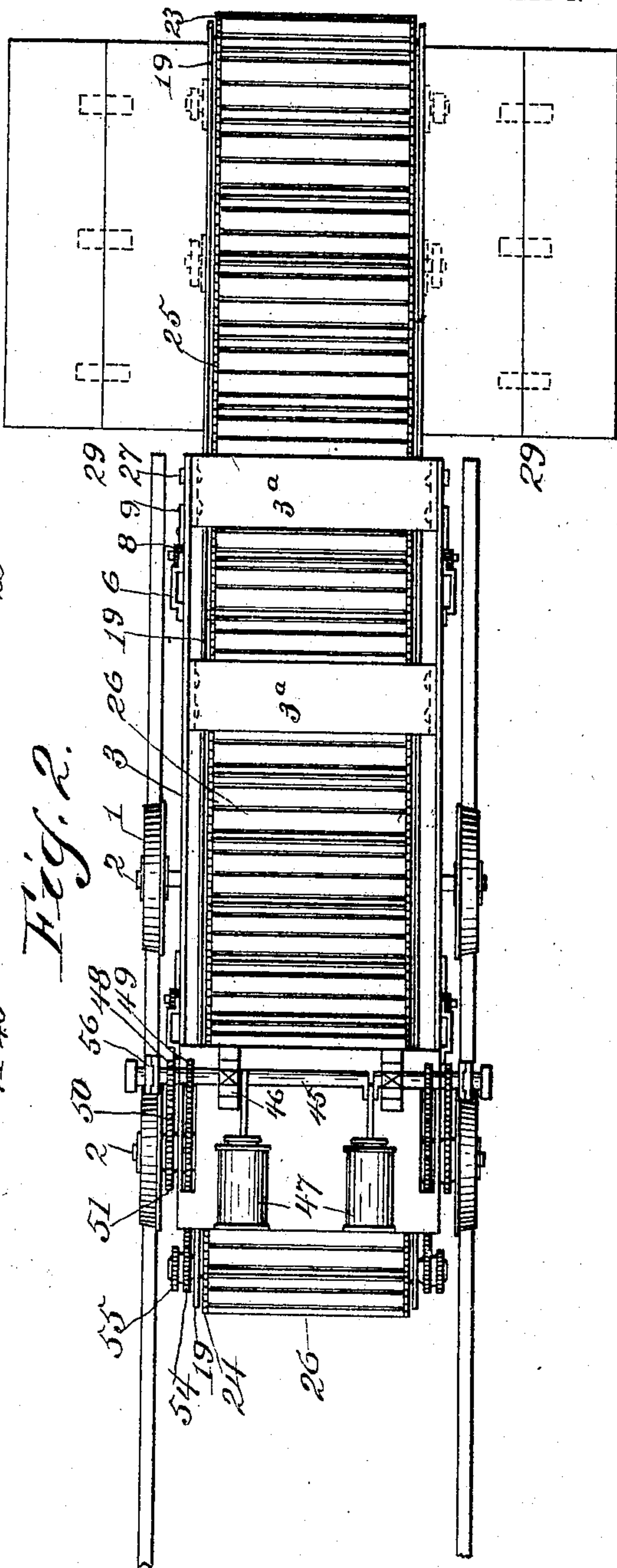
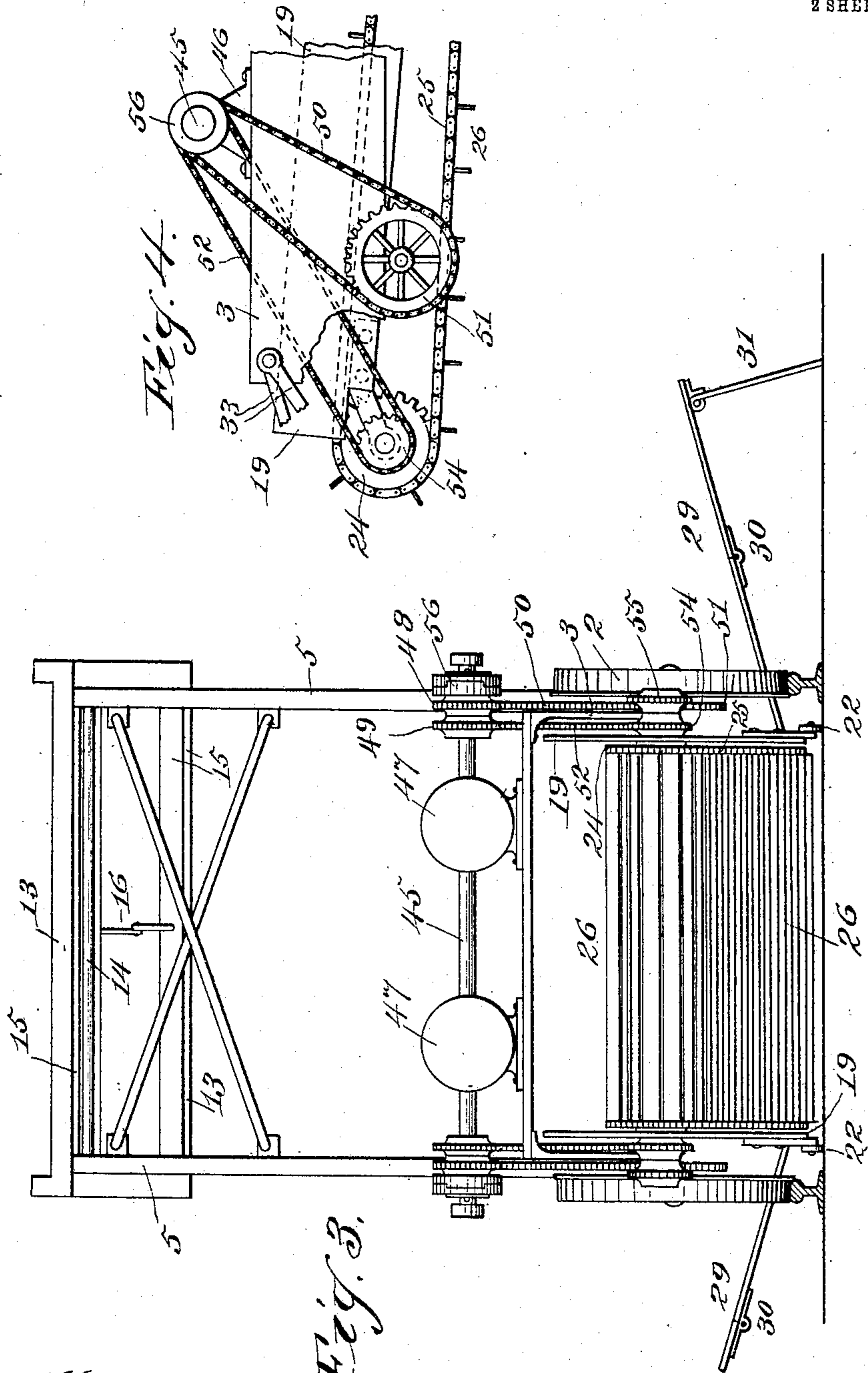


Fig. 2.

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# UNITED STATES PATENT OFFICE

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## COAL-MINING APPARATUS.

968,881.

Specification of Letters Patent.

Patented Aug. 30, 1910.

Application filed February 11, 1909. Serial No. 477,447.

*To all whom it may concern:*

Be it known that I, ANDREW POWELL, a citizen of the United States, residing at Uniontown, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Coal-Mining Apparatus, of which the following is a specification.

This invention relates to the class of mining machines, and pertains especially to a coal mining apparatus.

The object of the invention is to provide novel and peculiar construction and arrangement of parts in a coal mining apparatus, as will be hereinafter fully described and pointed out in the claim.

In the accompanying drawings forming part of this application: Figure 1 is a side elevation of the apparatus in position for operation. Fig. 2 is a top view of the carriage with the punch support removed. Fig. 3 is an end view of the carriage with the rear truck removed. Fig. 4 is a detail side elevation of the rear portion of the carriage.

The same reference numerals denote the same parts throughout the several views of the drawings.

The carriage comprises suitable wheels 1, axles 2, and sides 3 having braces 3<sup>a</sup>. The support for a punch 4, consists of four up-rights 5, working in brackets 6 secured to the sides 3, and having a rack 7, engaged by a pinion 8, having a pawl 9, for sliding the up-rights 5 when a suitable crank-handle is applied to the stem 5<sup>a</sup>; the up-rights are braced by bars 10, having one end pivoted to the sides 3, and the other end is adjustably secured to the up-rights 5 by bolts 11 and apertures 12; a bed 13, upon which the punch is operated, is carried by rods 14 at the top of the up-rights, and such bed has angle-irons 15 resting on the rods 14 and connected by tie rods 16. One pair of the up-rights is shorter than the other or rear pair, for the purpose of inclining the punch-bed relatively to a body of coal A. The up-rights are held in adjusted position by stop-pins 17 engaging holes 18 and the top edge of the sides 3.

A conveyer-frame 19 having sides working between the sides of the carriage is suspended from the carriage sides 3, between the wheels 1, by means of a shaft 20, and

links 21, and the front end of said frame is provided with wheels 22, the front pair thereof being hung closer to the said frame than the other pair, to provide for the inclined position of the frame. The front edge of the frame 19 is provided with sprocket wheels 23, and the rear end thereof has sprocket wheels 24. These wheels operate endless sprocket chains 25 which carry the conveyer 26. The front end of the conveyer frame 19 may be raised or swung on the shaft 20, and held in such position by means of hooks 27 depending on the carriage sides 3 and engaging eyes 28 on the frame 19. This is desirable especially in moving the apparatus from one position to another on a track B.

Each side of the front end of the frame 19 is provided with wings 29, hinged at 30, and supported in raised position by legs 31. These wings form a platform for the coal as it falls from the coal body A. When the wings are in horizontal position for the first dropping of coal thereon, the coal is shoveled or pushed from the platform onto the conveyer, but after sufficient coal has been removed from said body, the wings may be unfolded at their hinges and supported at an angle to the frame 19 by their legs 31.

A truck 32 is connected to the rear end of the carriage by means of a pair of bars 33 on each side, and this truck is provided with standards 34 having apertures 35. An elevating conveyer frame 36 is pivotally hung at 37 to the truck 32, and may be adjusted to vary its incline by bolts, rods or pins extending through the apertures 35 to hold the frame in adjusted position.

The frame 36 is provided at its upper end with a discharge chute 39 and the bottom end of this frame has a projecting leaf adapted to extend under the rear end of the conveyer 26.

The ends of the frame 36 are provided with sprocket wheels 41 and 42 respectively for endless chains 43 of the elevating conveyer 44.

A double crank shaft 45 is journaled in bearings 46 upon the rear end of the carriage, and may be operated by any suitable motive power, but for the purpose of illustration, the shaft is shown operated by two compressed air engine cylinders 47. Each end of this shaft is provided with two sprocket



wheels 48 and 49 respectively. The wheels 48 impart motion to the carriage through a sprocket chain 50, and sprocket wheels 51 on the rear wheel axle 2, and the wheels 49 impart motion to the conveyers through sprocket chains 52 and 53 and sprocket wheels 54 and 55. Clutches 56 are operated to couple and uncouple the shaft 45 and the axle 2.

10 It is obvious that sufficient coal must be removed from under a body of coal to permit the front end of the conveyer 26 to be run under such body; that the punch may be operated from such point of coal removal  
15 upward for an unusual distance as afforded by the adjustable punch support; that the conveyer 44 carries coal direct from the conveyer 26 to the chute 39; and that the chute end of the conveyer 44 may be adjusted as  
20 desired, especially to suit pit cars of various heights, by simply swinging the conveyer 44 on its pivot 37.

Having thus described my invention what

I claim as new and desire to secure by Letters Patent is:

25 In a coal mining machine, the combination of a carriage having open ends and closed sides, a shaft crosswise under the carriage, a conveyer frame pivotally mounted on the shaft so as to be free to swing in  
30 respect thereto, links pivoted to the sides of the carriage and connecting the ends of the shaft therewith so that the shaft may have swinging movement, and sides secured to and projecting upwardly from the said  
35 frame between the carriage sides for closing the space between the carriage sides and the said frame when the latter is swung below the carriage.

In testimony whereof I affix my signature 40 in presence of two witnesses.

ANDREW POWELL.

Witnesses:

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