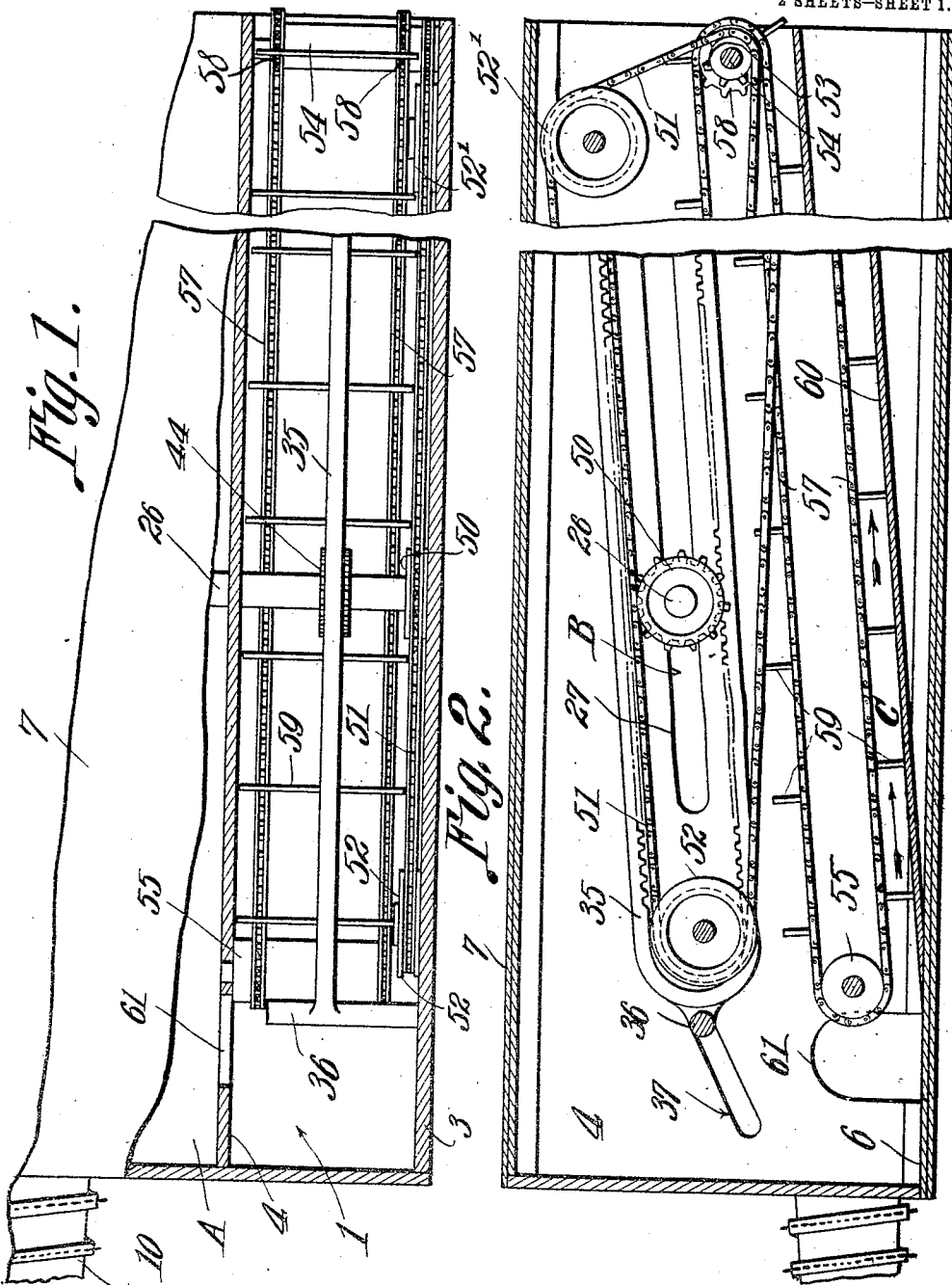


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 ATTACHMENT FOR MINING MACHINES.  
 APPLICATION FILED JUNE 2, 1910.

999,996.

Patented Aug. 8, 1911.

2 SHEETS—SHEET 1.



Witnesses  
*J. P. ...*  
*Mason B. Lawton*

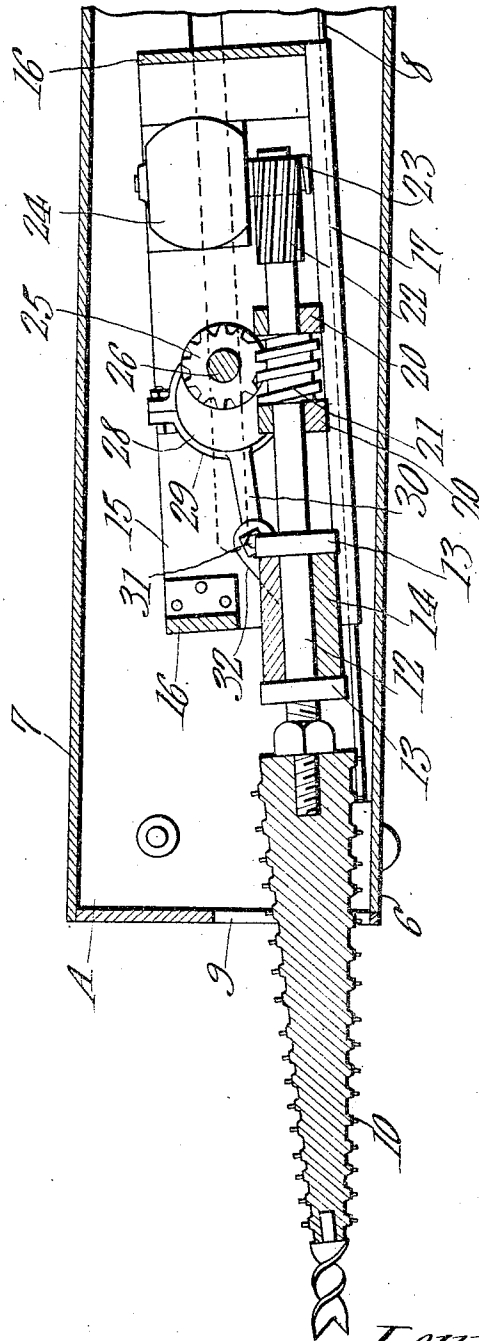
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*Fig. 3.*



Witnesses

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# UNITED STATES PATENT OFFICE.

LOUIS F. HESS, OF HAWKS NEST, WEST VIRGINIA, ASSIGNOR OF ONE-HALF TO DANIEL BOONE, OF HAWKS NEST, WEST VIRGINIA.

ATTACHMENT FOR MINING-MACHINES.

999,996.

Specification of Letters Patent.

Patented Aug. 8, 1911.

Application filed June 2, 1910. Serial No. 564,621.

*To all wh<sup>o</sup> it may concern:*

Be it known that I, LOUIS F. HESS, a citizen of the United States, residing at Hawks Nest, in the county of Fayette and State of West Virginia, have invented a new and useful Attachment for Mining-Machines, of which the following is a specification.

The device forming the subject matter of this application is a mechanism for operating a conveyer, adapted to be employed upon mining machines, of the type shown and described in my co-pending application, Serial No. 554,781.

It is the object of this invention to provide mechanism for actuating a conveyer, adapted to constitute a part of a machine of the sort above mentioned, the conveyer operating to remove the dust and detritus accumulating at the front of the machine, and to deposit the same to the rear thereof.

Another object of the invention is to provide conveyer actuating means which may be readily applied to mining machines of that type in which a carriage, carrying the cutting element, reciprocates at an angle to the horizontal, between the front and rear of the machine.

The drawings show typical embodiments merely, and it is to be understood that changes, properly falling within the scope of what is claimed, may be made without departing from the spirit of the invention.

In the drawings, Figure 1 is a top plan of a portion of a mining machine equipped with the conveyer of my invention, parts being broken away and sectioned; Fig. 2 is a vertical longitudinal section, parts being broken away, the cutting plane being passed through the compartment in which the conveyer is mounted; and, Fig. 3 is a vertical longitudinal section, the cutting plane being passed through the compartment in which the mining mechanism proper is mounted; parts being broken away.

Referring to the drawings, there is shown a main framework, or casing, comprising a hollow side member 1, and a compartment A. This casing is made up of an outside plate 3, constituting the outer wall of the casing, and an inside plate 4, constituting the inner wall of the casing, the plates 3 and 4 being united by a bottom plate 6 and a top plate 7. The end of the casing is provided with an opening 9 for a cutter head 10,

carried by a shaft 12. The shaft 12 carries spaced collars 13 engaging opposite ends of a bearing 14 mounted on a carriage made up of side members 15 and cross members 16, the side members being provided at their lower edges, with grooved foot members 17, adapted to engage inclined tracks 8, so that the carriage may slide along the tracks.

Mounted between bearing blocks 20 on the carriage 15—16 is a worm 21 carried by the shaft 12, but secured to said shaft for rotation only, the shaft 12 being slidable through the worm 21, the latter being held against sliding movement by the blocks 20 which also form bearings for the shaft 12. Beyond this worm 21, the shaft 12 carries a pinion 22, engaged by a worm 23 on the armature shaft of an electric motor 24, the pinion 22 being elongated, so that the shaft 12 may have longitudinal movement, while the motor 24 is imparting rotary movement to the shaft 12. The worm 21 engages a pinion 25 on a shaft 26 supported for rotation in the side members 16 of the carriage, the shaft 26 being extended into the hollow side member 1 as shown in Fig. 1. In the inside plate 4, there is a slot 27 in which the shaft 12 moves, this slot 27 being parallel to the track 8. The slot 27 permits the carriage to be advanced and retracted in the compartment A. The shaft 26 carries an eccentric 28 to which is applied an eccentric strap 29 having an arm 30 the free end of which is pivoted to a pin 31 carried by a member 32 secured to the bearing 14. Thus, as the shaft 26 is rotated, the bearing 14, and consequently the shaft 12 and the cutter 10 will be reciprocated, at the same time that the cutter 10 is rotated by the motor 24.

Disposed in the side member 1, is a rack frame 35, having studs 36 at its ends, adapted to register in inclined slots 37 in the plates 3 and 4. Mounted upon the shaft 26 is a pinion 44, located within the rack frame 35. The rack frame 35 may be slid longitudinally by any desired means. When the rack frame is thus slid in one direction, the studs 36 will traverse the slots 37, elevating the rack frame 35, and causing the pinion 44 to mesh with the teeth in the lower part of the rack frame. When the rack frame 35 is slid in an opposite direction, the rack frame will be depressed, causing the pinion 44 to mesh in the teeth in the upper part of the rack frame 35. By thus manipulating

the rack frame 35, the sliding movement of the carriage may be reversed, and when the pinion 44 is in mesh with neither the upper nor the lower portions of the rack frame, the carriage will not be actuated.

The foregoing and preliminary explanation will serve to point out to those skilled in the art, the type of machine upon which the conveyer operating means herein disclosed, is adapted peculiarly to be mounted.

Passing now to a detail description of the conveyer operating means it will be seen that that end of the shaft 26 which is located adjacent the outside plate 3, carries a sprocket wheel 50. This sprocket wheel 50 is located within the contour of a sprocket chain 51, constituting a driving belt for operating certain mechanisms which will be described hereinafter. The uppermost portion of the periphery of the sprocket wheel 50 is adapted to engage the upper portion of the sprocket chain 51, the sprocket chain 51 being carried about a smooth pulley 52, journaled for rotation upon the outside plate 3, adjacent the front of the machine. Another smooth pulley 52' is mounted upon the outside plate 3, adjacent the rear of the machine, and about this pulley 52', the sprocket chain 51 is likewise passed.

Journalled for rotation in the plates 3 and 4, adjacent the front of the machine is a roller 55, a roller 54 being journaled for rotation, in a similar manner, adjacent the rear of the machine. Upon the roller 54 is a sprocket wheel 53, and this sprocket wheel 53 is adapted to receive the sprocket chain 51. Sprocket chains 57 are passed about the rollers 54 and 55, there being sprocket wheels 58 upon the roller 54, adapted to engage the said sprocket chains. These chains are connected by blades 59, to form a belt conveyer. Disposed within the compartment 1, and below the belt conveyer, is an inclined platform 60, sloping downwardly, from the rear of the machine toward the front thereof, the rear end of the platform being located below the pulley 52' and the roller 54, while the front end of the platform is located below the pulley 52 and the roller 55. The blades 59 of the belt conveyer are adapted to sweep along the platform 60 from the front end toward the rear thereof. There is an opening 61 in the inside plate 4, located adjacent to the depressed end of the platform 60, and serving as a communication between the compartments A and 1.

In practical operation, the dust and other incidental products produced by the cutter head 10 will be received in the compartment 1 through the opening 61. When the shaft

26 is rotated in the direction of the arrow B the sprocket wheel 50 engaging the sprocket chain 51, will actuate the rear roller 54, causing the blades 59 of the belt conveyer to sweep along the platform 60, in the direction indicated by the arrows C in Fig. 2, the products produced by the cutter 10 being received by the blades 59 and carried upwardly along the platform 60, to be deposited at the rear of the machine.

It may be noted that the shaft 26 is adapted to move transversely from one end of the slot 27 to the other, without impairing the operative connection between the sprocket wheel 50 and the sprocket chain 51; the transverse reciprocation of the shaft 26 being carried on freely without stopping the conveyer. The anti-friction member 52' serves to maintain the sprocket chain 51, in its upper portion, in parallelism with the slot 27, so that the sprocket chain may at all times be properly engaged by the sprocket wheel 51.

From the foregoing it will be seen that the shaft 26 may have the necessary movement in the inclined slot 27, without in any way impairing the efficiency of the shaft as a means for operating the conveyer herein described.

Having thus described the invention, what is claimed is:—

1. In a device of the class described, a casing; pulleys supported for rotation upon the casing; a driving belt passed about the pulleys; a conveyer operating roller disposed below the pulleys and about which the belt is passed; and a shaft mounted for rotation and for transverse sliding movement parallel to that portion of the belt which is disposed between the pulleys, the shaft being operatively connected with the belt to drive the same upon rotation of the shaft.

2. In a device of the class described, a shaft mounted for rotation, and for transverse sliding movement at an angle to the horizontal; a wheel upon the shaft; a driving belt operable by the wheel and within the contour of which belt the wheel is located; pulleys supporting the wheel engaging portion of the belt parallel to the plane of sliding movement of the shaft; and a conveyer operating roller about which the belt passes.

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

LOUIS F. HESS.

Witnesses:  
Wm. F. Wood,  
H. N. Hess.