No. 701,979. Patented June 10, 1902.

C. WISSEMANN.

MACHINE FOR EXTRACTING COAL IN PIECES FROM MINES.

(Application filed Apr. 9, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

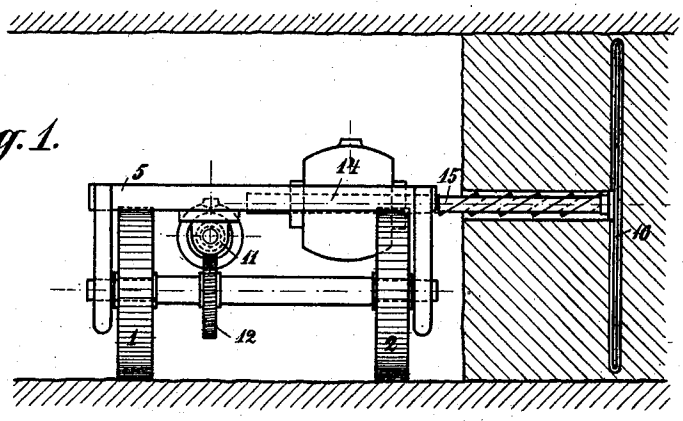
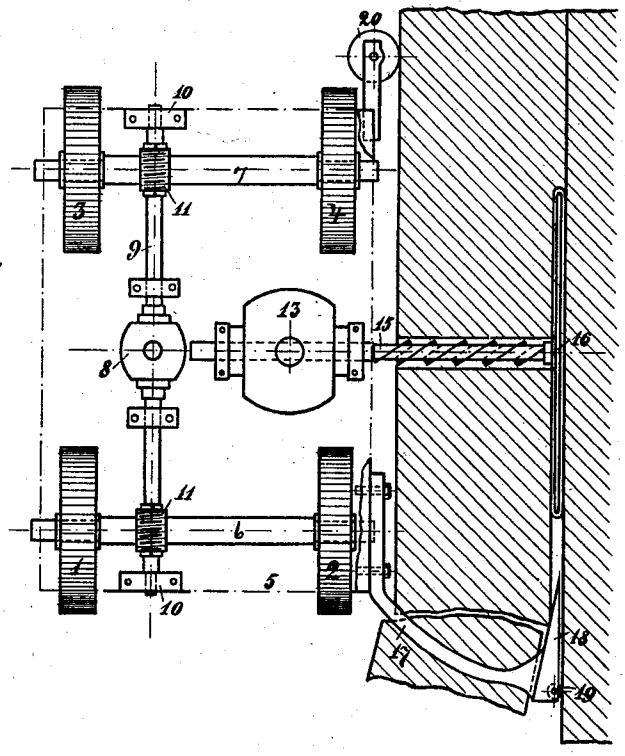


Fig. 2.



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Fig. 3.

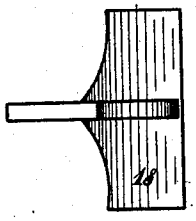


Fig. 4.

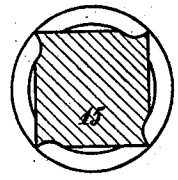
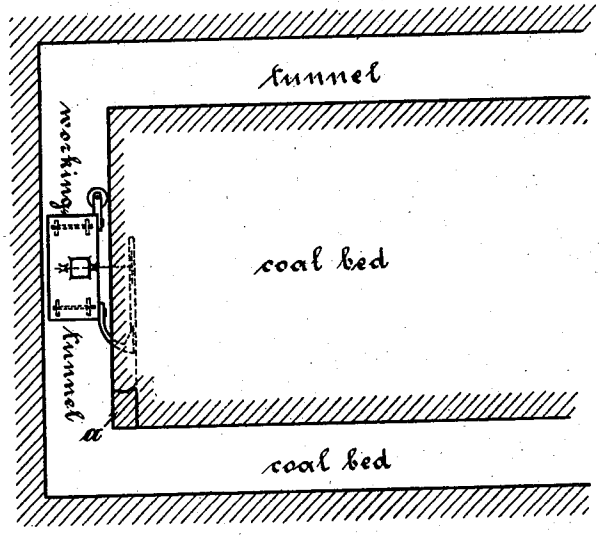


Fig. 5.



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UNITED STATES PATENT OFFICE.

CONRAD WISSEMANN, OF GELSENKIRCHEN, GERMANY.

MACHINE FOR EXTRACTING COAL IN PIECES FROM MINES.

SPECIFICATION forming part of Letters Patent No. 701,979, dated June 10, 1902.

Application filed April 9, 1901. Serial No. 54,993. (No model.)

To all whom it may concern:

Be it known that I, CONRAD WISSEMANN, a subject of the King of Prussia, Emperor of Germany, residing at Gelsenkirchen, in the Kingdom of Prussia, German Empire, have invented a certain new and Improved Machine for Extracting Coal in Pieces from Mines, of which the following is a specification.

This invention has reference to an electrically-driven movable machine for breaking the coal, especially from layers of but limited extent. The value of the coal broken in pieces from such coal beds or layers of but limited extent by the use of the machine is greatly increased thereby, aside from the great economy realized from the work of the machine as compared with the methods of extracting the coal in use before my invention.

In the accompanying drawings, forming part of this specification, I have shown the machine by way of example.

Figure 1 is an elevation, and Fig. 2 a plan view. Fig. 3 is a detail view of the plowshare-like appliance used in connection with my invention. Fig. 4 is a cross-section through the shaft of the circular saw which rotates within the coal-bed. Fig. 5 is a diagram which illustrates the machine at work.

The operation of the machine is such that a vertically-placed electrically-driven circular saw of a diameter approximately corresponding to the breadth of the coal-bed is employed to sever plates or slabs of about twelve to sixteen inches thickness from the coal, which are then broken to pieces by a plowshare or a similar contrivance arranged immediately behind the said saw, which is mounted upon a movable truck or car, and the driving-shaft of which is so arranged and constructed that it will be forced automatically through the coal-bed, the machine beginning to work from the front end of the coal-bed. The machine yields coal broken to pieces, which may be shipped directly, an advantage which it was not possible to obtain before my invention.

Referring to the drawings, 1 2 3 4 are wheels supporting the frame 5 of the car or truck and being provided with broad and suitably-grooved tires. 8 is a motor-engine of any suitable type and construction mounted upon the said frame and causing the rotation of one or both axles 6 7 of the truck or car. In the preferred construction shown in the drawings, I make use of a worm-gear, while the driving-shaft 9 of the motor-engine is extended on both sides beyond the axles of the car. 10 represents journals for the said driving-shaft, which is provided with the worms 11, acting upon the worm-wheels 12 upon the axles of the car, preferably placed above the said shaft.

Upon the car-frame I mount a strong fast-moving motor-engine 13, which may be raised or lowered, according to the thickness of the coal-bed. Upon the shaft 14 of the motor, at its extremity opposite the front end of the coal-bed, I mount a circular saw 16 of a diameter corresponding to the thickness of the coal-bed, altogether about two to four feet. The piece 15, which forms an extension to the shaft 14 and penetrates through the coal-bed, is of triangular or square cross-section. The edges of the shaft are hardened and sharpened and spirally wound and studded with sharp pins. Thereby the rotation of the shaft will enable it to penetrate into the horizontal coal-bed. To the rear end of the truck or car a strong arm 17 is attached, which moves along the horizontal slot produced by the operation of the shaft 15 during the movement of the car. To the arm 17 is fastened a vertical plate or blade 18 of wedge-shaped cross-section, the sharp front edge of which moves along the vertical slot produced by the circular saw 16 and causes the coal to be broken into pieces during the forward movement of the machine. Small rollers 19 are provided at the rear end of the plate 18, on both sides of the same, which serve to diminish friction.

Inasmuch as the plowshare-like appliance 18 has to meet the resistance of the coal it is desired to remove, and inasmuch as the propelling force is working at the wheels of the truck—that is to say, at the front end and laterally with relation to the plowshare—the front end of the car or truck opposite the coal would be deflected from its course. In order to obviate this inconvenience, and in order to move the car by means of the motor-engine 8 in a direction parallel to the wall of the coal-bed, a roller 20 is fastened to the front end of the car or truck, which counter-

acts the drifting of the car toward the wall of the coal-bed, thus securing the propelling of the car in a direction parallel to the wall.

Fig. 5 illustrates the manner of adjusting the machine so as to bring it in position for operation, as shown in Fig. 1. The adjustment is effected by placing the machine across the tunnel which lines the bed it is desired to work. The machine is then pushed into the latter. In case the tunnel is not broad enough a piece large enough to allow the commencement of work is broken off from the corner or wall.

What I claim, and desire to secure by Letters Patent of the United States, is—

A coal-mining machine composed of a truck, a shaft of angular cross-section projecting laterally therefrom and adapted to cut its way through the coal-bed, a circular saw mounted upon the end of said shaft, a transverse arm in horizontal alinement with the shaft, and a wedge mounted upon said arm back of the saw, substantially as specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CONRAD WISSEMANN.

Witnesses:
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