

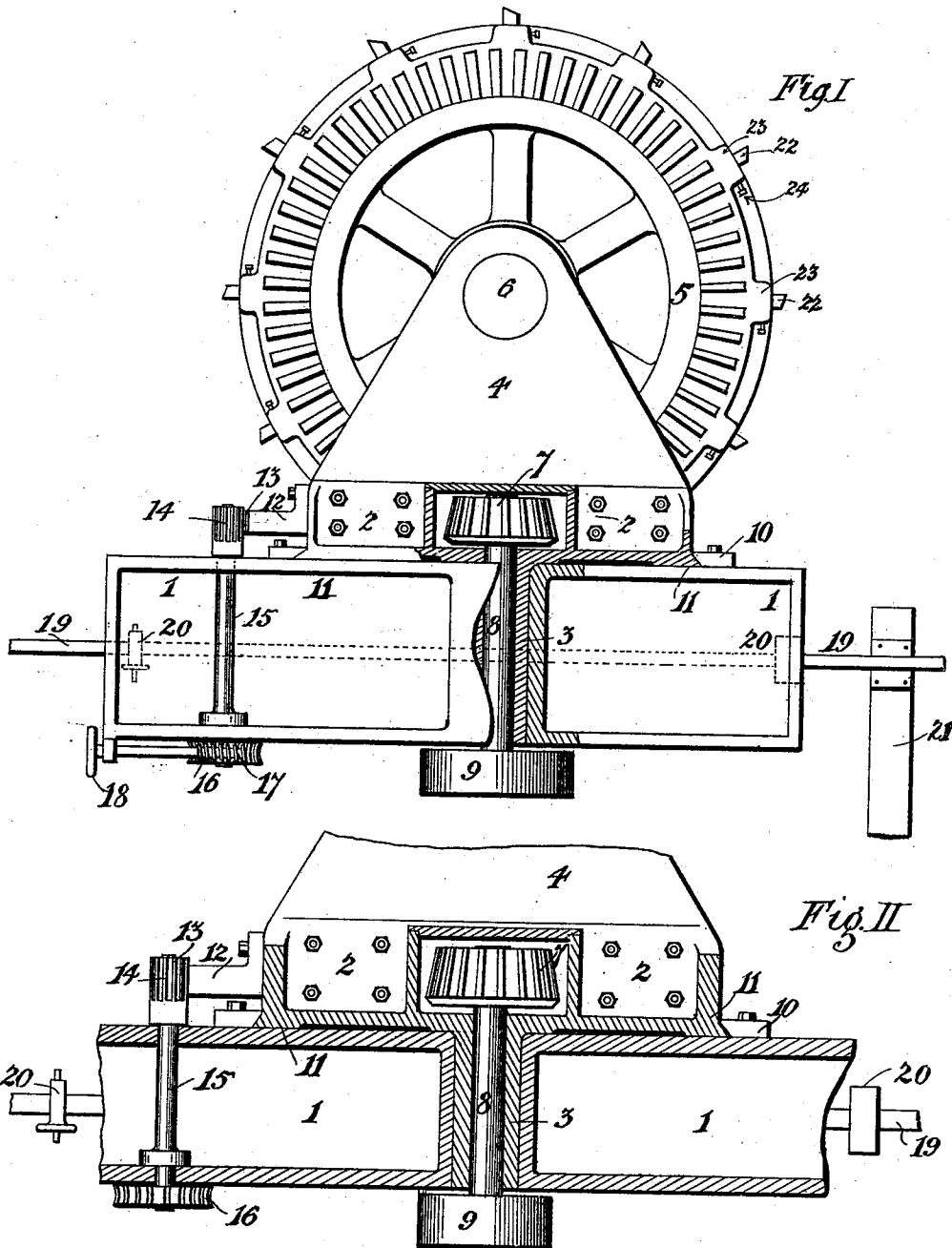
(No Model.)

2 Sheets—Sheet 1.

W. J. E. CARR.
COAL MINING CUTTER WHEEL.

No. 550,944.

Patented Dec. 10, 1895.



Witnesses:

F. G. Fischer
J. D. Lacey

Inventor:

W. J. E. Carr

by *Knight Bros*

Attys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. III

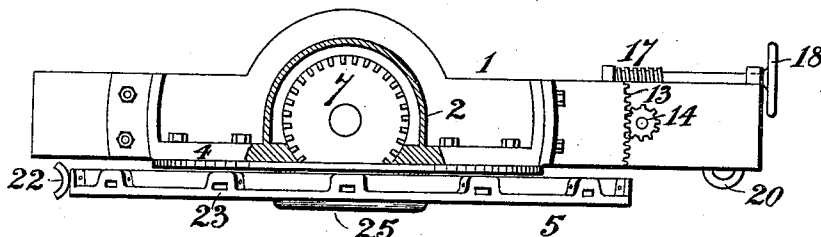


Fig. V

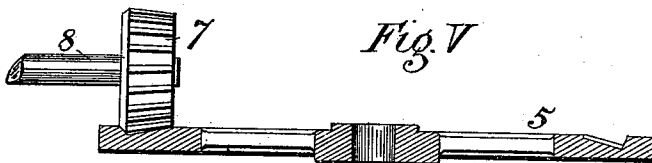


Fig. VI

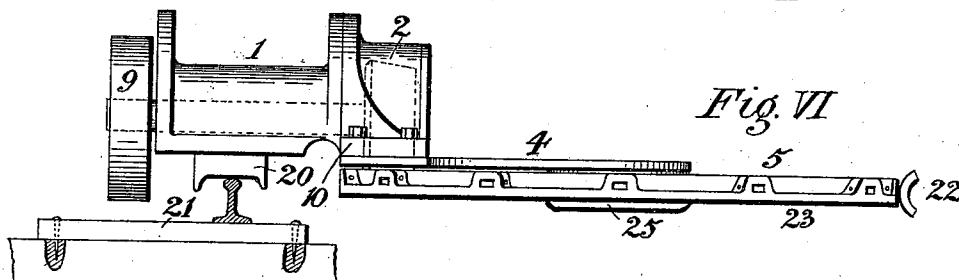
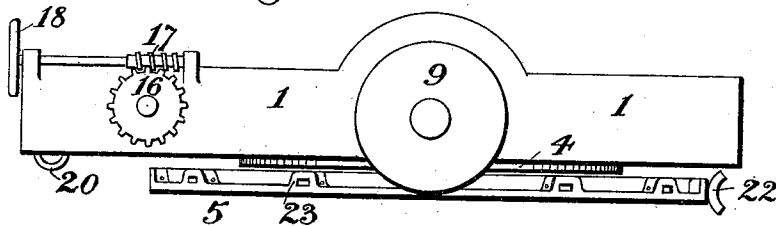


Fig. IV



Witnesses:
F. G. Fischer
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Inventor:
W. J. E. Carr
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UNITED STATES PATENT OFFICE.

WILLIAM J. E. CARR, OF LEAVENWORTH, KANSAS.

COAL-MINING CUTTER-WHEEL.

SPECIFICATION forming part of Letters Patent No. 550,944, dated December 10, 1895.

Application filed December 31, 1894. Serial No. 533,470. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. E. CARR, of Leavenworth, in the county of Leavenworth, in the State of Kansas, have invented certain new and useful Improvements in Coal-Mining Cutter-Wheels, of which the the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in coal-mining cutter-wheels; and my improvement consists in certain features of novelty hereinafter described, and pointed out in the claims.

Figure I represents a plan view of a coal-mining cutter-wheel embodying my improvements. Fig. II represents the same in cross-section with the cutting-wheel removed. Fig. III represents a rear end view of the same. Fig. IV represents a front end view of the same. Fig. V represents a detail view of the cutting-wheel and pinion operating the same. Fig. VI represents a side elevation of the same.

Similar numerals refer to similar parts throughout the several views.

1 represents the main frame.

2 represents an arm formed with the sleeve 3, having its bearing in the main frame.

4 represents the frame supporting the cutting-wheel carried on the arm 2.

5 represents the cutting-wheel journaled in its supporting-frame at 6.

7 represents the pinion by which the cutting-wheel is actuated. 8 represents a driving-shaft of said pinion, having its bearing in the sleeve 3 of the arm. 9 represents the drive-wheel on said shaft.

10 represents guide-shoes by which the arm is guided and retained in its position on the main frame.

11 represents flanges on the arm engaging the guide-shoes.

12 represents a bracket on the arm provided with the rack 13.

14 represents a rack-pinion meshing with the rack.

15 represents the shaft of the rack-pinion.

16 represents a worm-wheel carried on the rack-pinion shaft.

17 represents the worm of the worm-wheel.

18 represents a hand-wheel by which the worm is operated.

19 represents the rail on which the machine is carried.

20 represents guides under the machine, by which the same is retained in position on the rail.

21 represents the anchor-plate for the rail.

22 represents the picks set in the bosses in the periphery of the cutter-wheel and retained therein by the set-screws 24.

25 represents the under plate of the journal-bearing of the cutter-wheel.

The object of my invention is to provide means for oscillating the cutter-wheel in vertical planes while it is operating in its channel under the bed of coal to control and guide its operation when carried out of its proper plane of action by rock or other protuberance in the line of its cut and restore it to such plane when the protuberance is passed and also enable it to follow the undulations of the underlying strata. This is done in the following manner: The cutter-wheel is journaled in the frame 4, carried on the arm 2, said arm being provided with the sleeve 3, having a bearing in the main frame, and being guided and retained in position by the flanges 11, engaging the guide-shoes 10. The arm is oscillated by means of the rack 13, connected therewith, and rack-pinion 14, actuated by the hand-wheel 18 through the worm and worm-wheel 17 and 16. The shaft of the pinion driving the cutter-wheel is journaled in the sleeve of the arm, so that the oscillation of the arm will not interfere with the meshing of said pinion with the gear of the cutter-wheel. A further object of my improvements is to carry the machine with the wheel and frame balanced on a single rail, thus producing less friction and making the wheel more easily manageable.

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

1. In a coal mining cutter wheel the combination with the main frame, of a sleeve having a bearing in the main frame, an arm integrally connected with said sleeve, flanges on said arm, guide shoes secured to the main frame and engaging said flanges, a cutter

wheel mounted on said arm, a drive wheel for operating said cutter wheel having its shaft journaled in said sleeve, and means for oscillating said arm and cutter wheel in vertical planes substantially as set forth.

5 2. In a coal mining cutter wheel the combination with the main frame, of the sleeve 3 having a bearing in the main frame, an arm 2 integrally connected with said sleeve, 10 flanges 11 on said arm, guide shoes 10 secured to said main frame and engaging said flanges,

a frame 4 carried on said arm, a cutter wheel mounted in said frame 4, a rack 12 on said arm a rack pinion engaging said rack, means for operating said rack pinion and means for 15 operating said cutter wheel, substantially as set forth.

WILLIAM J. E. CARR.

Witnesses:

J. B. HAMNER,
W. EUGENE PARKER.