

No. 860,207.

PATENTED JULY 16, 1907.

A. H. GIBSON.
COAL MINING MACHINERY.
APPLICATION FILED DEC. 27, 1906.

2 SHEETS—SHEET 1.

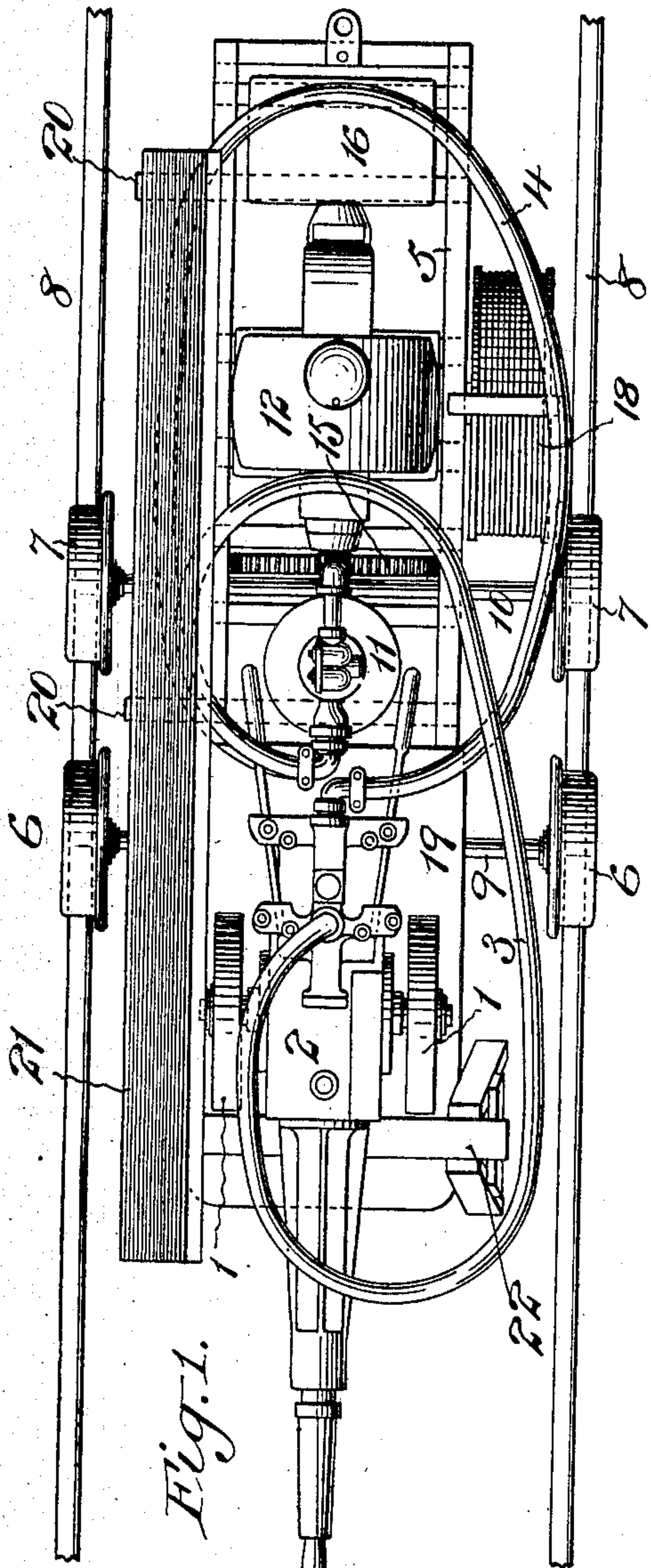


Fig. 1.

Witnesses
J. George Barry
Henry Skene.

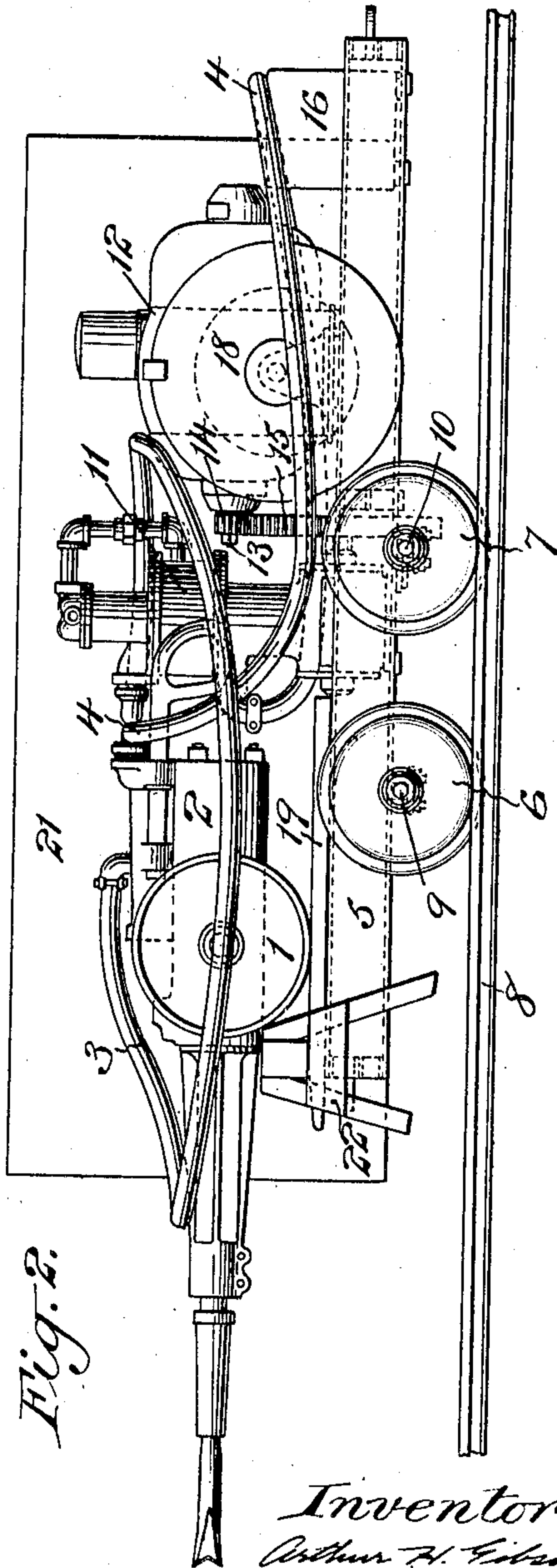


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 4.

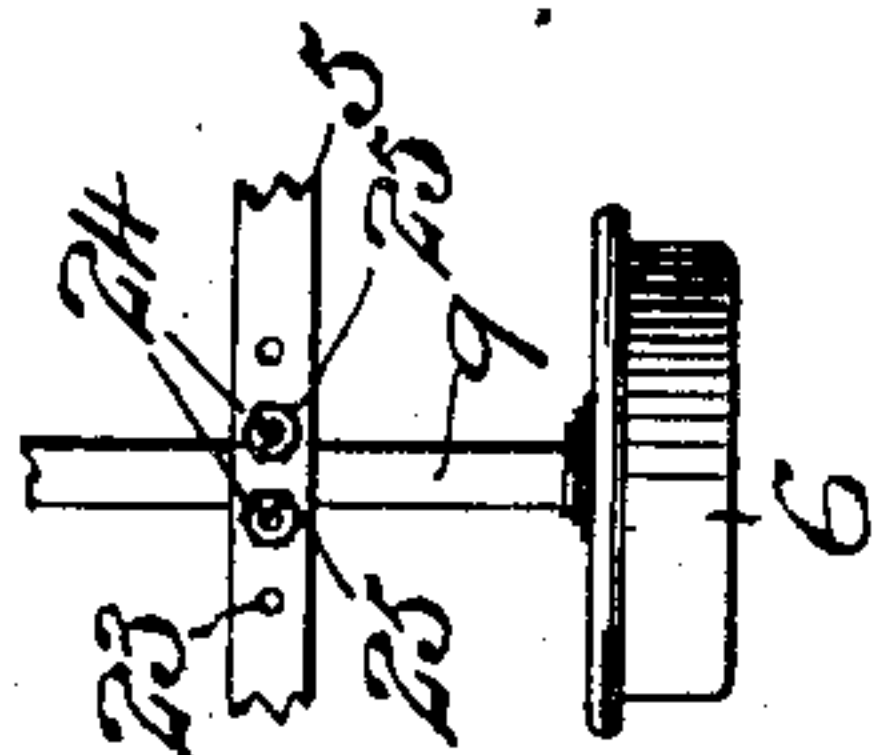
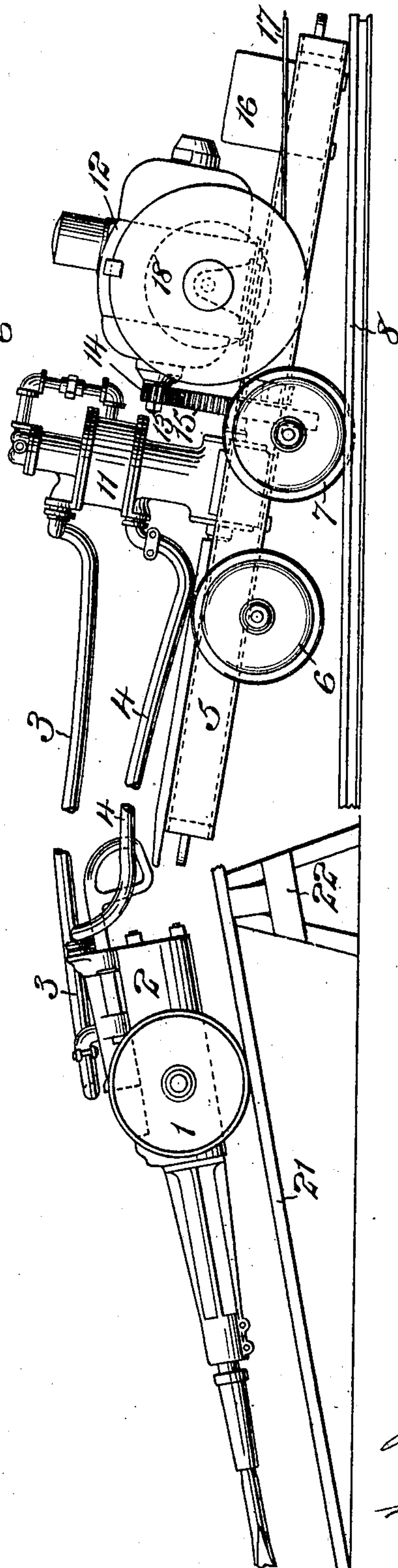


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

ARTHUR H. GIBSON, OF EASTON, PENNSYLVANIA, ASSIGNOR TO INGERSOLL-RAND COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

COAL-MINING MACHINERY.

No. 860,207.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed December 27, 1906. Serial No. 349,620.

To all whom it may concern:

Be it known that I, ARTHUR H. GIBSON, a subject of the King of Great Britain, and a resident of Easton, in the county of Northampton and State of Pennsylvania, have invented a new and useful Improvement in Coal-Mining Machinery, of which the following is a specification.

This invention relates to coal mining machinery and consists broadly in a portable coal cutter, a motor driven pressor at all times operatively connected with the coal cutter for operating the same by reciprocating columns of air, and a wheeled truck which forms a permanent support for the motor driven pressor and a temporary support for the coal cutter so that the coal cutter may be transported from place to place and put into operation without disconnecting the coal cutter pressor.

This invention more particularly consists in certain novel features of construction and arrangement of the several parts whereby the truck is counterbalanced on its traction wheels by the coal cutter in position thereon and the pressor, and is overbalanced at one end by the pressor when the coal cutter is removed from the truck for operation.

In the accompanying drawings, Figure 1 represents the coal mining machine in top plan with the parts assembled on the truck, Fig. 2 is a side view of the same, Fig. 3 is a side view showing the position which the parts assume when the coal cutter is removed from the truck and ready for operation, and Fig. 4 is a detail view showing the manner of adjusting the axle of one of the pairs of truck wheels to obtain the proper balance when the parts are in position on the truck.

The portable coal cutter is herein shown of the puncher type and it is provided with the usual traction wheels 1. The cylinder of the coal cutter is denoted by 2, which cylinder is connected to the motor driven pressor, to be hereinafter described, by flexible tubes 3 and 4 by means of which the puncher tool is operated by reciprocating columns of air from the said pressor. These flexible tubes are of sufficient length to permit the pressor to be at all times operatively connected with the coal cutter thus permitting the coal cutter to be removed from the truck into position to perform its work without disconnecting the said tubes.

The truck frame is denoted by 5. The truck is provided with two pairs of traction wheels 6 and 7 fitted to travel along the rails 8 of a track. The axles 9 and 10 of these front and rear pairs of wheels form supports for the truck frame 5. These front and rear pairs of wheels are located close together near the middle of the truck frame so as to permit the truck to travel around

the short turns of the track. The motor driven pressor is permanently mounted on the truck.

The cylinder of the pressor is denoted by 11 and it is connected to the cylinder 2 of the coal cutter through the flexible tubes 3 and 4 above referred to.

The motor for driving the pressor is herein shown as an electric motor 12, the shaft 13 of which is provided with a pinion 14 which meshes with a gear 15 fixed to the crank shaft of the pressor. This motor is permanently mounted in the truck frame 5 in its proper position with respect to the pressor. The resistance box of the motor is denoted by 16 and it is supported at the rear end of the truck frame 5.

The electric cable 17 leads to a suitable source of power and it is wound upon the cable drum 18 mounted on the truck frame 5 thus permitting a considerable range of action for the mining machine.

The loading board is denoted by 19 and it is located on the front portion of the truck frame and forms the temporary support for the coal cutter when the coal cutter is being transported from place to place.

Brackets 20 project laterally from the truck frame 5 forming supports for the cutting board 21 when the machine is being moved from place to place. The trestle 22 for supporting the cutting board in its inclined position when in use, is carried at any convenient point on the truck frame when not in use.

The portable coal cutter and motor driven pressor are so located when the coal cutter is being transported from place to place that the truck is counterbalanced thus permitting it to travel on its front and rear pairs of traction wheels.

When the coal cutter is removed from the truck, the truck is overbalanced at one end by the parts permanently mounted thereon thus bringing the rear end of the truck frame into engagement with the ground and lifting the front pair of wheels 6 off the track. This overbalancing of the truck will prevent the same from moving when the coal cutter is in use thus forming a stationary support for the motor driven pressor.

One of the axles of the truck, in the present instance the front axle 9, may be adjusted toward and away from the rear axle to obtain the proper balance of the truck when the parts are in position thereon. The means which I have shown for obtaining this adjustment consists in providing the truck frame with a series of holes 23 through certain of which the bolts 24 which lock the axle to the frame may be passed, said bolts being secured in position by their nuts 25.

In operation, the truck with the parts supported thereby is moved along the track by any suitable means to the place where the coal cutter is to be used. The cutting board and trestle are then placed in the re-

quired position with respect to the work to be done and the coal cutter is wheeled out onto the cutting board. As the coal cutter is removed from the forward end of the truck, the rear end of the truck will drop
 5 down into engagement with the ground where it may be backed up by any suitable means, such, for instance, as a lump of coal or wood. The motor is then started thus driving the pressor and causing it to operate the coal cutter tool by reciprocating columns of air.
 10 As soon as the work has been completed by the coal cutter it is wheeled back onto the truck and the cutting board and trestle are also replaced on the truck. The weight of the coal cutter will lift the rear end of the truck off the ground and bring the forward pair of
 15 truck wheels into engagement with the track. The truck may then be moved to the next place where the coal cutter is to be used.

What I claim is:—

- 20 1. A portable coal cutter, a pressor at all times operatively connected with the coal cutter, a motor for driving the pressor and a wheeled truck forming a support for the coal cutter, pressor and the motor.
- 25 2. A portable coal cutter, a pressor at all times operatively connected with the coal cutter, a motor for driving the pressor and a wheeled truck forming a temporary support for the coal cutter and a permanent support for the pressor and motor.
- 30 3. A portable coal cutter having traction wheels, a pressor at all times operatively connected with the coal cutter, a motor for driving the pressor and a wheeled truck forming a support for the coal cutter, the pressor and the motor.
- 35 4. A portable coal cutter having traction wheels, a pressor at all times operatively connected with the coal cutter, a motor for driving the pressor and a wheeled truck forming a temporary support for the coal cutter and a permanent support for the pressor and motor.
- 40 5. A portable coal cutter, a pressor, a motor for driving the pressor, flexible tubes connecting the pressor and cutter and a wheeled truck forming a support for the coal cutter, the pressor and motor.
- 45 6. A portable coal cutter having traction wheels, a pressor, a motor for driving the pressor, flexible tubes connecting the pressor and cutter and a wheeled truck forming a temporary support for the coal cutter and a permanent support for the pressor and motor.
- 50 7. A wheeled truck, a portable coal cutter, a pressor at all times operatively connected with the coal cutter and a motor for driving the pressor, the said truck being counterbalanced when the coal cutter is carried by the truck and overbalanced when the coal cutter is removed.
8. A wheeled truck, a portable coal cutter having traction wheels, a pressor at all times operatively connected

with the coal cutter and a motor for driving the pressor, the said truck being counterbalanced when the coal cutter
 55 is carried by the truck and overbalanced when the coal cutter is removed.

9. A wheeled truck, a portable coal cutter temporarily supported thereon, a pressor at all times operatively connected with the coal cutter, a motor for driving the
 60 pressor, the said pressor and motor being permanently carried by the truck, the said truck being counterbalanced when the coal cutter is carried by the truck and overbalanced when the coal cutter is removed.

10. A wheeled truck, a portable coal cutter having traction wheels, said coal cutter being temporarily supported
 65 on the truck, a pressor at all times operatively connected with the coal cutter, a motor for driving the pressor, the said pressor and motor being permanently carried by the truck, the said truck being counterbalanced when the coal
 70 cutter is carried by the truck and overbalanced when the coal cutter is removed.

11. A portable coal cutter, a pressor at all times operatively connected with the coal cutter, an electric motor for driving the pressor, a cable for supplying current to the
 75 motor, a cable drum and a wheeled truck forming a temporary support for the coal cutter and a permanent support for the pressor, the motor and the cable drum.

12. A portable coal cutter, having traction wheels, a pressor at all times operatively connected with the coal
 80 cutter, an electric motor for driving the pressor, a cable for supplying current to the motor, a cable drum and a wheeled truck forming a temporary support for the coal cutter and a permanent support for the pressor, the motor
 85 and the cable drum.

13. A truck having two pairs of wheels, a portable coal cutter temporarily supported on the truck, a pressor at all times operatively connected with the coal cutter, a motor for driving the pressor, the said pressor and motor
 90 being permanently supported on the truck and means for adjusting the position of one pair of truck wheels relatively to the other pair of truck wheels to properly balance the weight of the parts on the truck when the coal
 95 cutter is carried thereby.

14. A truck having two pairs of wheels, a portable coal
 95 cutter having traction wheels, said coal cutter being temporarily supported on the truck, a pressor at all times operatively connected with the coal cutter, a motor for driving the pressor, the said pressor and motor being
 100 permanently supported on the truck and means for adjusting the position of one pair of truck wheels relatively to the other pair of truck wheels to properly balance the weight of the parts on the truck when the coal cutter is
 105 carried thereby.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses,
 this 24th day of December 1906.

ARTHUR H. GIBSON.

Witnesses:

H. D. MAXWELL,
 C. D. PATTERSON.