

Nov. 24, 1925.

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D. B. BRACKETT ET AL

COAL FLOW

Filed March 18, 1925

2 Sheets-Sheet 1

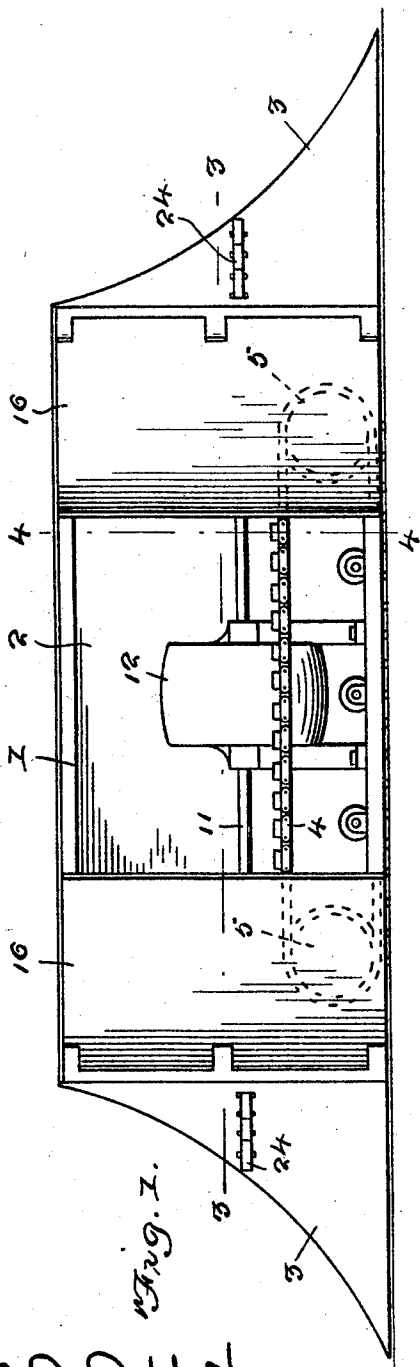


Fig. 1.

E. Q. Ruppert.

WITNESS:

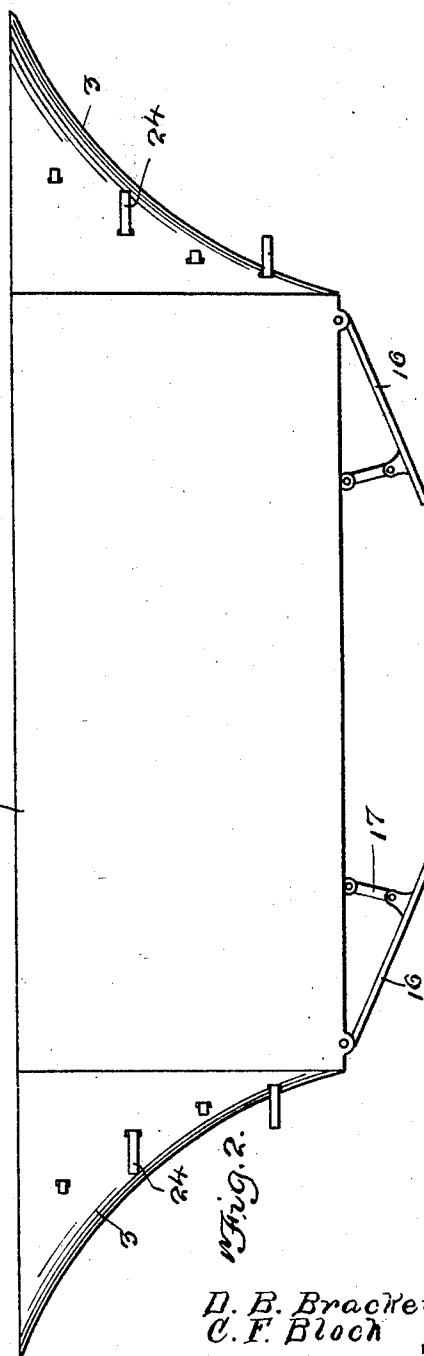


Fig. 2.

D. B. Brackett
C. F. Bloch

INVENTOR

BY Victor J. Evans

ATTORNEY

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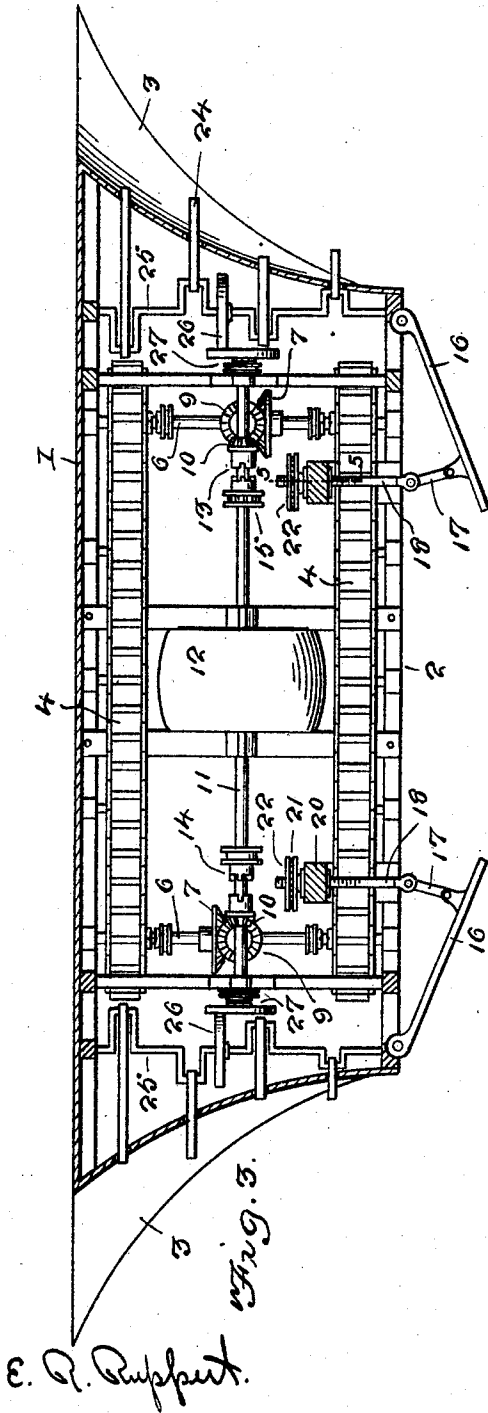
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WITNESS:

Fig. 5.

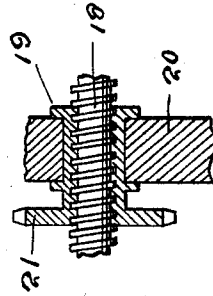
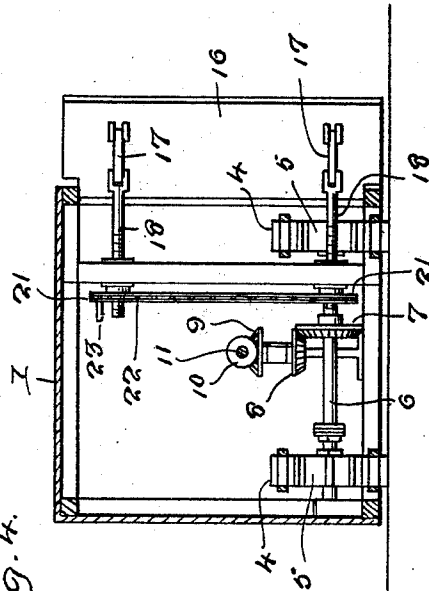


Fig. 4.



D. B. Brackett
C. F. Bloch

INVENTOR

BY *Victor J. Evans*

ATTORNEY

UNITED STATES PATENT OFFICE.

DANIEL B. BRACKETT AND CLARENCE F. BLOCH, OF WHIPPLE, WEST VIRGINIA.

COAL PLOW.

Application filed March 18, 1925. Serial No. 16,517.

To all whom it may concern:

Be it known that we, DANIEL B. BRACKETT and CLARENCE F. BLOCH, citizens of the United States, residing at Whipple, in the county of Fayette and State of West Virginia, have invented new and useful Improvements in Coal Plows, of which the following is a specification.

An object of this invention is the provision of a self-propelled means for breaking down loose or projecting portions of coal in the side walls of galleries in mines and to arrange the said coal in a convenient position to be received on a conveyor or other means for removing the coal.

Another object is the provision in a device of this character of a self-propelled member having plows at both ends thereof, the said member being movable straight ahead in two directions, and the plows designed to forcibly contact with loose or projecting slabs of coal in a mine wall to break down the same and to deliver the broken coal to one side of the device.

A still further object is the provision of a mechanism for this purpose in which the plow ends of the device are provided with punches which may be operated by the same means that propel the apparatus, the said punches, in the reciprocation thereof, contacting with coal in mines which has not been loosened in the ordinary picking operation to break down the same and to sweep such coal to one side of the apparatus.

To the attainment of the above broadly stated objects, and others which will appear as the nature of the invention is better understood, reference is to be had to the drawings which accompany and which form part of this application.

In the drawings:—

Figure 1 is a side elevation of the improvement.

Figure 2 is a top plan view thereof.

Figure 3 is a sectional view approximately on the line 3—3 of Figure 1.

Figure 4 is a sectional view on line 4—4 of Figure 1.

Figure 5 is a detail sectional view approximately on the line 5—5 of Figure 3.

As disclosed by the drawings, our improvement comprises a substantially rectangular body 1, preferably of metal and strongly constructed. The body is open on one of its sides, the said open side for dis-

tinction being indicated by the numeral 2. The ends of the body are provided with plow shares 3, the land side of which being arranged in a line with the closed side of the body, and the concaved or furrow side of the plow shares being directed to the open side 2 of the body 1. The body 1 is electrically propelled and may be mounted upon any suitable traction means. In the showing of the drawings the propelling means are in the nature of chain tractors, two of which being employed. The chain leads of the chain tractors 4 are trained around sprocket wheels 5 that are mounted on shafts 6 which have their ends journaled in suitable bearings. Each of the shafts has fixed thereon a beveled gear 7 which is in mesh with a similar gear 8 on a vertically arranged shaft. The last mentioned shaft, is of course, journaled in suitable bearings, and each of the said shafts has secured on its outer end a gear 9 which is in mesh with one of the gears 10 that are loosely arranged on the shaft 11 of a motor 12. The gears 10, while loose on the shaft 11, are held from longitudinal movement thereon in any desired manner, and each of the said gears 10 has a hub provided with a clutch surface 13. Movable on splines on the shaft 11 there are clutch members 14 and 15, respectively, the said clutch members being operated by the usual levers. When the body is to be propelled in one direction, the clutch member 15 is brought to engage with the clutch face on one of the gears 10, and when propelled in an opposite direction the clutch 14 is brought to engage with the clutch surface 13 on the opposite gear 10. Of course, the clutch 15 is in inoperative position when the clutch 14 is operative and vice versa. Also of course, when the clutch members 14 and 15 are in inoperative position the machine is at a standstill even when the motor is running. The motor has a cable connected to the source of electricity in the mine, the said cable not being illustrated. On the ends of the open side 2 of the body 1 there are hinged plates 16 respectively. These plates are in the nature of directing elements, and are brought to designed angles with respect to the furrow side of the plow 3 to direct coal removed by the plows to one side of the member 1. Each plate 16 has pivotally secured on its inner face links 17, and these links are pivotally

connected to threaded rods 18. The rods pass through nut members 19 whose outer faces are round and find bearings in up-rights 20. The nut members 19 are flanged
5 to hold the same from longitudinal movement, and have on their inner faces sprocket wheels 21. Trained over the upper and lower sprocket wheels 21 for the respective directing plates 16 there is a sprocket chain
10 22 and each of the upper sprocket wheels 21 is provided with a handle 23. By turning the sprocket wheels the nuts 19 will be likewise turned, so that the bolt members will be moved longitudinally through the said
15 nuts, and thereby the angle position of plate 16, with respect to the body 1 may be nicely regulated and the said plates firmly supported when so regulated.

The concaved or furrow side of each of
20 the plows 3 is provided with spaced openings and movable through each of these openings there is a rod member 24 which we shall term a punch. The inner ends of these punches are connected to means, such
25 as eccentrics, or the cranked portions of a shaft so that the turning of the said means 25 will impart a reciprocatory movement to the punches. The means 25 is hitched to the drive shaft 11 of the motor 12, as indicated by the numeral 26, and the said means

26 is thrown into active or inactive position by means 27.

Having described the invention, we claim:—

In a device for the purpose set forth, a substantially rectangular hollow body having an open side and having plow shares on the ends thereof, chain traction devices for the body, motor operated means for imparting motion to the chain tractors, means
35 controlling said motion imparting means and also for causing the body to be propelled in either of two directions, plow shares on the ends of the body, plates pivoted at the ends of the open side of the
40 body and disposed opposite the inner concaved faces of the plow shares, means connected to the plates and operated from the interior of the body for swinging and sustaining the plates angularly on the body,
50 punches movable through the concaved faces of the plow shares, means operated by the propelling means for imparting a reciprocatory motion to the punches and means rendering said punch operating
55 means inactive.

In testimony whereof we affix our signatures.

DANIEL B. BRACKETT.
CLARENCE F. BLOCH.