Jan. 22, 1924. 1,481,737

M. PERSECH

COAL LOADING MACHINE

Filed April 6, 1922 6 Sheets-Sheet 1

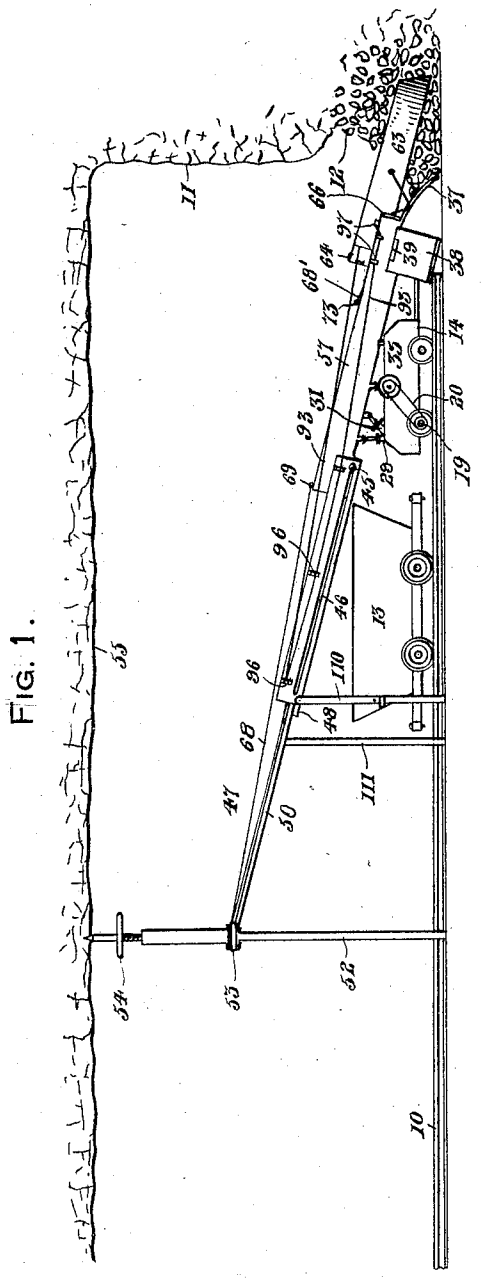


FIG. 1.

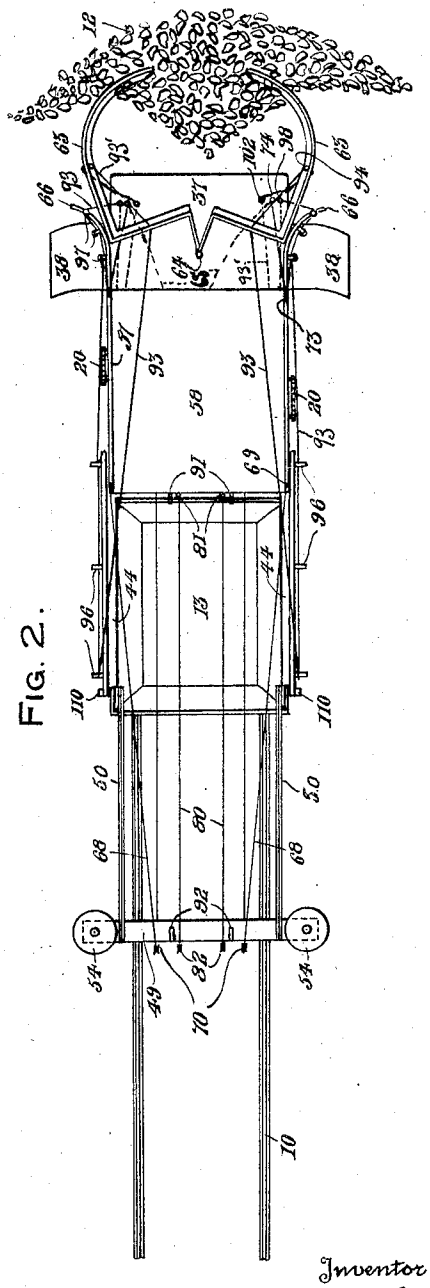


FIG. 2.

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COAL LOADING MACHINE

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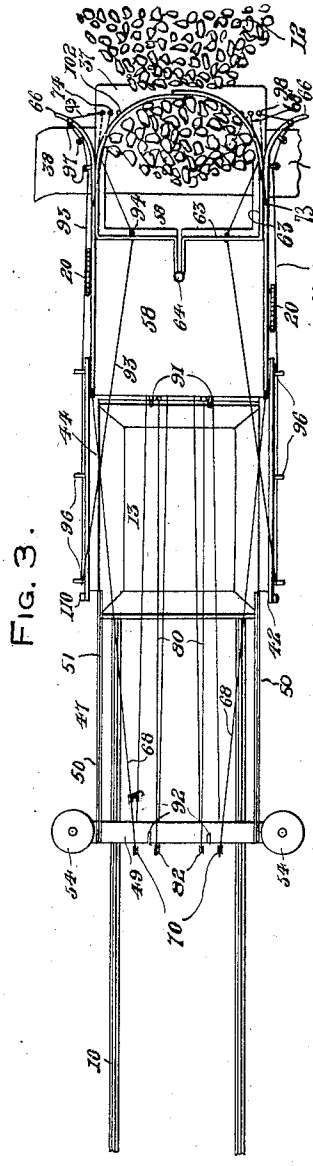


FIG. 3.

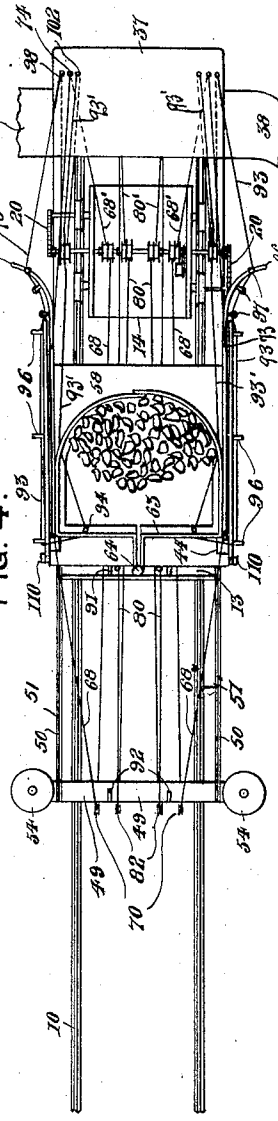


FIG. 4.

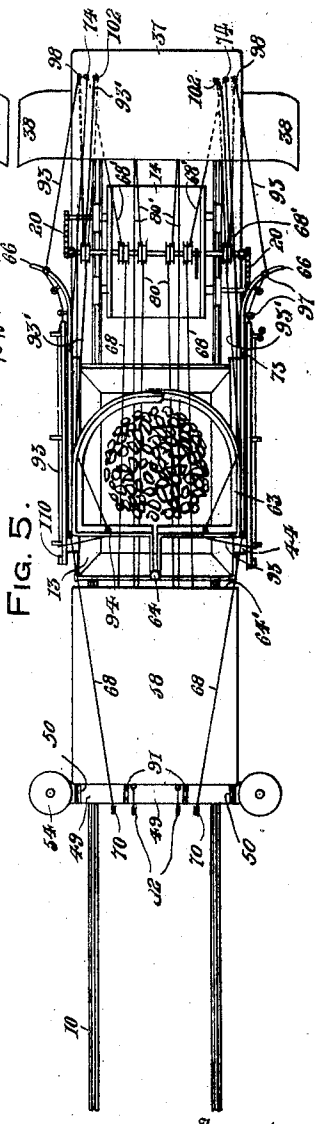


FIG. 5.

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COAL LOADING MACHINE

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FIG. 7.

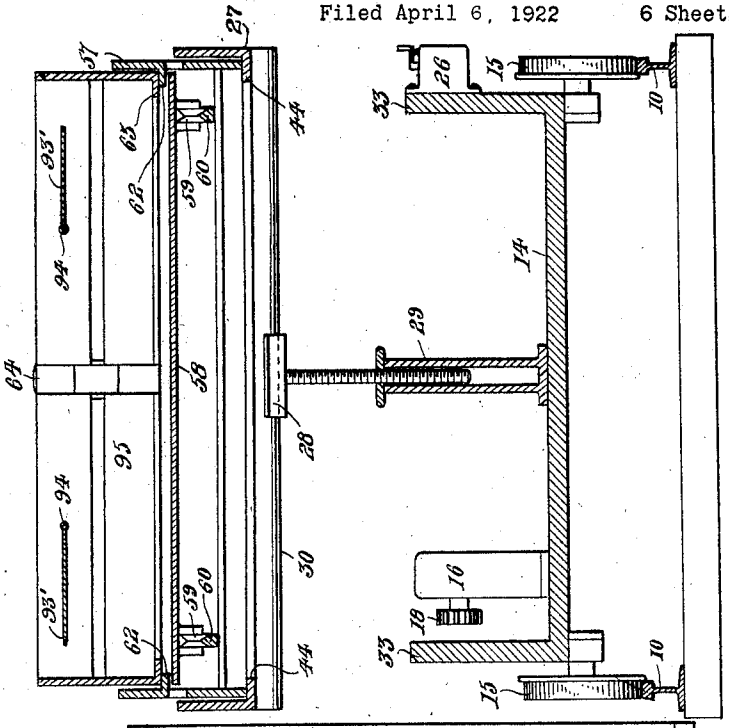
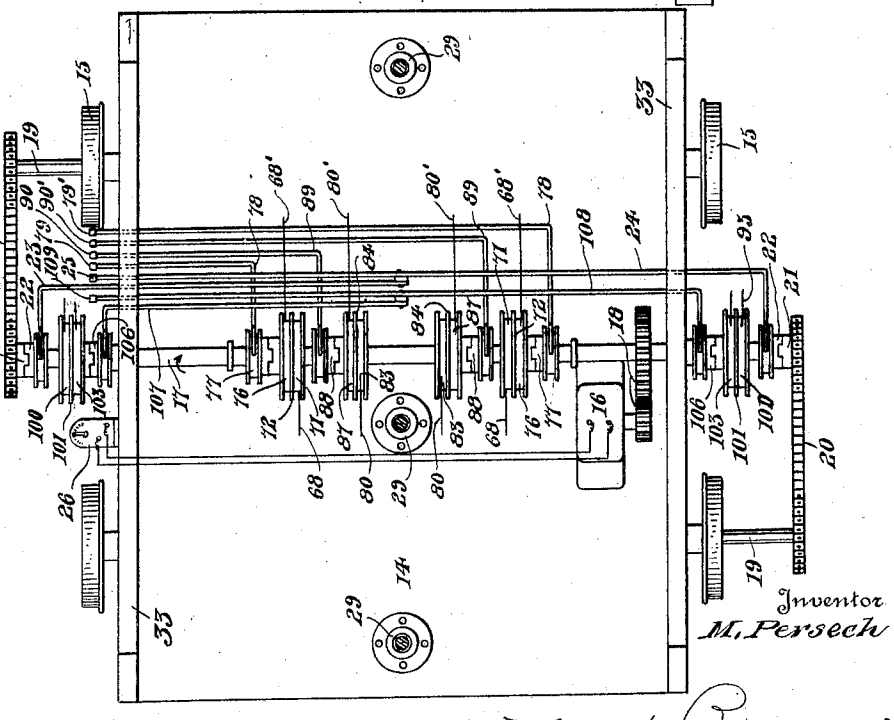


FIG. 6.



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COAL LOADING MACHINE

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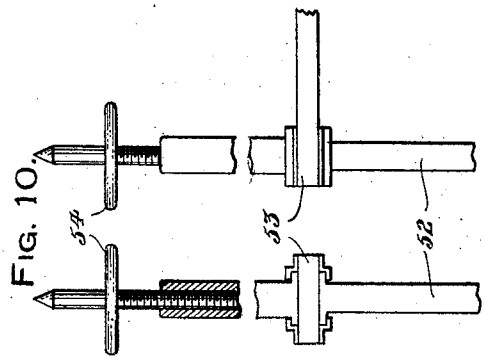


Fig. 10.

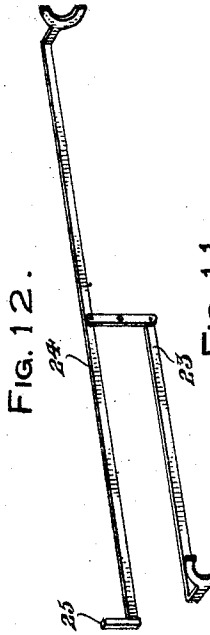


Fig. 12.

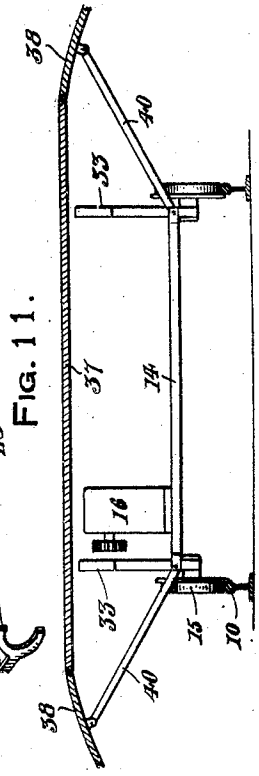


Fig. 11.

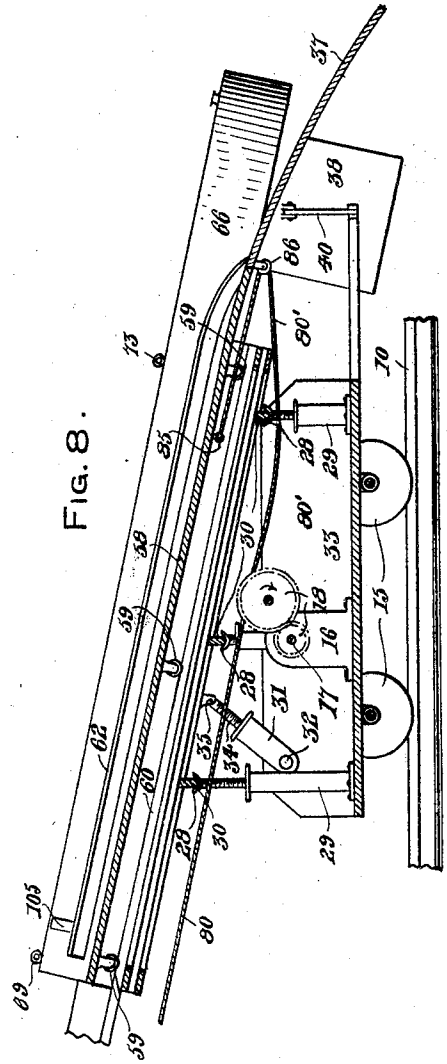


Fig. 8.

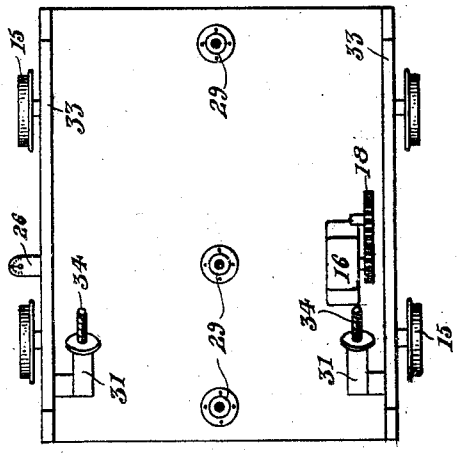


Fig. 9.

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COAL LOADING MACHINE

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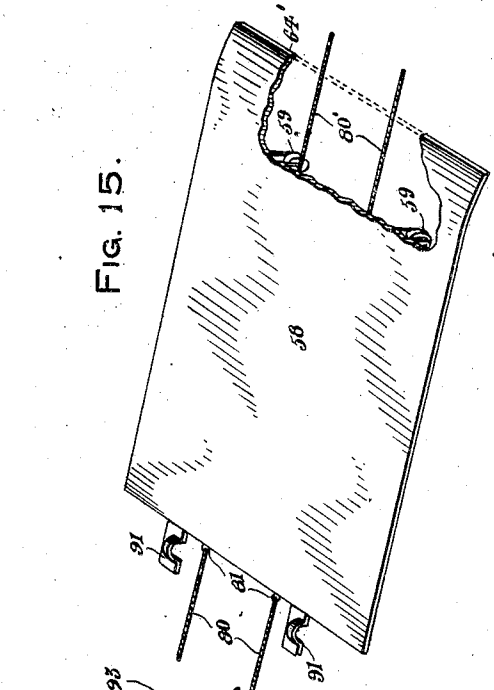


Fig. 15.

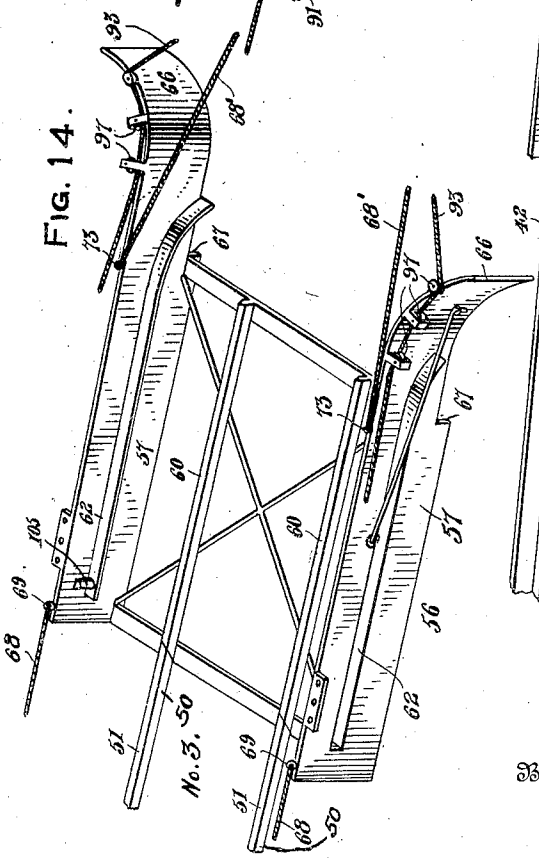


Fig. 14.

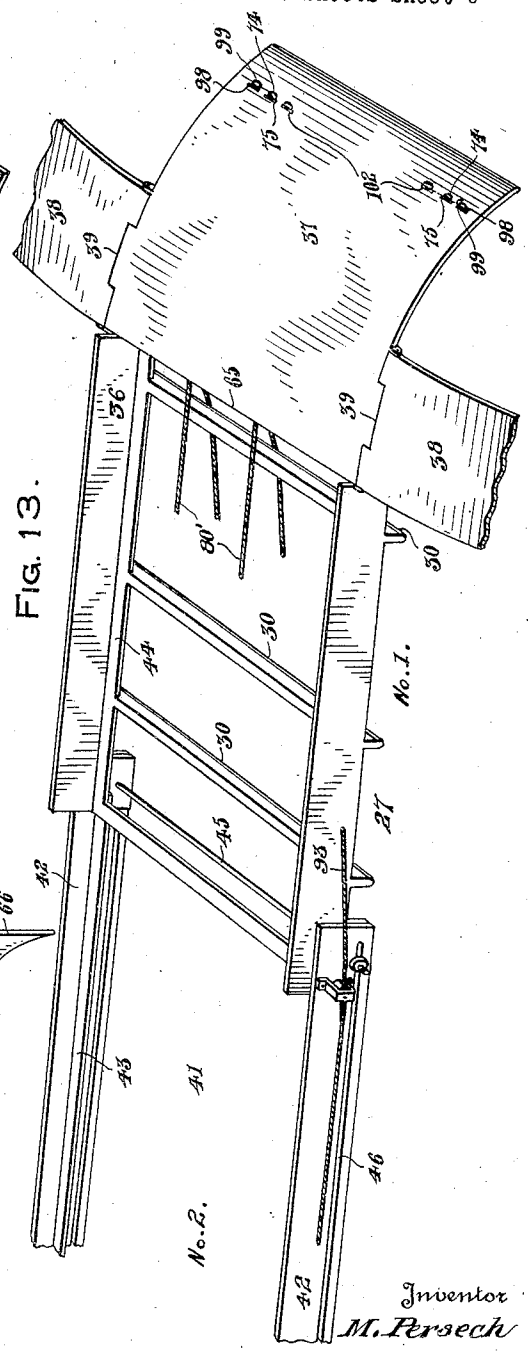


Fig. 13.

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COAL LOADING MACHINE

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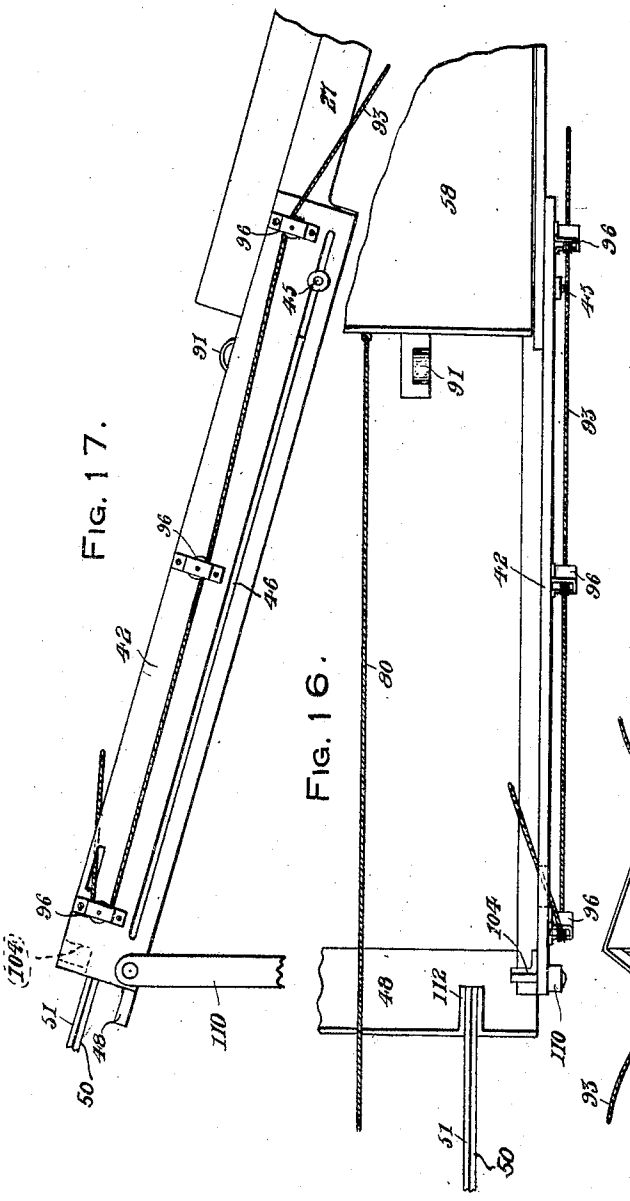


Fig. 17.

Fig. 16.

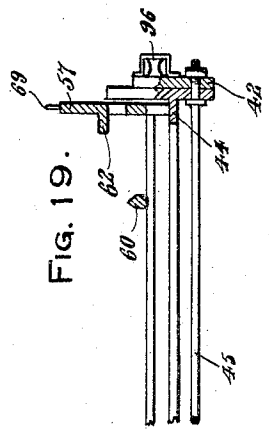


Fig. 19.

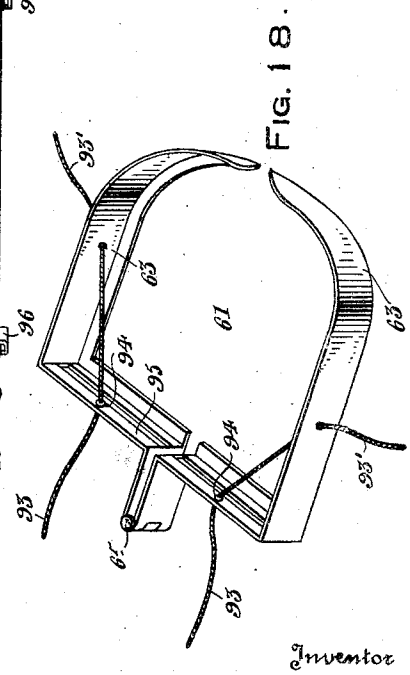


Fig. 18.

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By T. K. Bryant

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Patented Jan. 22, 1924. 1,481,737

UNITED STATES PATENT OFFICE.

MIKE PERSECH, OF WALSEN, COLORADO.

COAL-LOADING MACHINE.

Application filed April 6, 1922. Serial No. 550,047.

To all whom it may concern:

Be it known that I, MIKE PERSECH, a citizen of the United States of America, residing at Walsen, in the county of Huerfano and State of Colorado, have invented certain new and useful Improvements in Coal-Loading Machines, of which the following is a specification.

The primary object of the invention is the provision of a machine adapted for loading shattered coal from the working face of a mine wall into the pit cars for removal from the mine, the operation of the machine being rapid and easily controlled by a single operator.

A further object of the invention is the provision of a machine serviceable in a coal mine for quickly loading large quantities of coal upon the pit cars whereby one machine operated by a single man will load the coal quicker than a small gang of men, thereby economizing both time and expense.

A still further object of the invention is the provision of a mining machine which is motor-driven adapted for approaching in close proximity to a pile of coal for attacking the same and drawing the coal in considerable quantities upwardly and away from the pile for deposit in pit cars positioned for transporting the coal to a distant point.

With these general objects in view the invention consists of the novel combination and arrangement of parts hereinafter more fully described in connection with the accompanying drawings and in which like reference characters designate corresponding parts throughout the several views.

In the drawings,

Figure 1 is a vertical sectional view taken through a coal mine illustrating my machine in the act of gathering coal from the broken-down portion of the working face or wall,

Figure 2 is a top plan view of the machine and the pile of coal with the machine positioned for operation as illustrated in Figure 1,

Figure 3 shows the bucket member partially retracted with its load of coal,

Figure 4 shows the bucket member mounted upon a bottom slide door both of which are carried by a frame member, the bucket, slide and frame member being positioned above the pit car,

Figure 5 is a view similar to Figure 4 with the bottom slide retracted for depositing the coal in the pit car therebeneath,

Figure 6 is a top plan view of the platform portion of my machine with parts removed and the vertical adjacent supports shown in horizontal section,

Figure 7 is a vertical transverse sectional view taken through the machine with the parts in juxtaposed relations,

Figure 8 is a vertical longitudinal sectional view through the main portion of the machine with the bucket removed,

Figure 9 is a view similar to Figure 6, with parts removed,

Figure 10 illustrates a form of roof brace employed for rigidly positioning the machine in the mine,

Figure 11 is a transverse sectional view through the forward apron portion of the machine platform,

Figure 12 is a perspective view of a double clutch-operating lever,

Figure 13 is a perspective view of the mounting section designed to be supported by the platform and also showing a portion of the intermediate section of the machine frame-work,

Figure 14 is a perspective view of the frame member adapted for sliding upon the mounting and intermediate sections shown in Figure 13,

Figure 15 is a perspective view of the bottom slide designed for movement upon the track of the frame member shown in Figure 14,

Figure 16 is a top plan view of portions of the two sections shown in Figure 13 with a portion of the bottom slide shown upon the mounting section,

Figure 17 is a side elevation of the construction shown in Figure 16,

Figure 18 is a perspective view of the bucket member and

Figure 19 is a transverse detail sectional view taken through the point of overlapping between the mounting and intermediate sections.

In the mining of coal it is usual to blast the face of the mine for shattering the wall and then employ unskilled labor for loosening the coal with picks and carting the same away for deposit in the pit cars. My machine is primarily designed for gathering the shattered and broken-up coal and transferring the same direct from the coal pile into the pit cars to be hauled away. My machine is also serviceable in loading coal from any form of coal pile wherever located,

the operation of gathering up the coal, elevating it above a car, and dropping the coal into the car being quickly accomplished in the manner hereinafter described.

In Figure 1 of the drawings, a view in a coal mine is shown having a track 10 running perpendicular to the working face or wall 11 of the mine, a pile 12 of loosened coal being shown at the base of the wall 11 with my machine mounted upon the track 10 illustrated in the act of gathering coal from the pile 12 for deposit in the pit car 13 running upon the track 10.

My machine includes a platform 14 in the form of a platform car having its wheels 15 upon the track 10, the said wheels being driven by a motor 16 mounted upon the platform. A main power shaft 17 extending transversely of the platform 14 is operatively connected to the motor 16 by gears 18. The axles 19 of the wheels 15 are connected by sprocket chains 20 with clutch members 21 freely journaled at the opposite ends of the shaft 17. Clutch members 22 adapted to cooperate with the members 21 are slidably splined upon the shaft 17 with operating levers 23 and 24 of the construction shown in Figure 12. A handle 25 upon the free end of the lever 24 is positioned at one side of the platform 14 for convenience in opening and closing the clutches 21—22 simultaneously for imparting movement to the platform car just described. The motor 16 is of the reversible type permitting the platform car to be propelled in either direction upon the track 10, a suitable controller 26 being arranged for the motor 16 to govern the speed and direction of movement of said motor.

A mounting section 27 herein referred to as section number 1 of the machine frame is adjustably supported upon the platform 14 by a plurality of saddles 28 operated by jack screws 29 and with transverse depending ribs 30 of the section 27 positioned in the said saddles 28. This adjustable manner of mounting section 27 upon the platform car is illustrated in Figure 8 of the drawings, an adjustable brace 31 being pivoted as at 32 to each side 33 of the platform 14 with an adjustable screw portion 34 pivoted at 35 to one side 36 of said mounting section 27. By adjusting the jack screws 29 and the screw 34, the inclination of the mounting section 27 is readily controlled and rigidly held at the desired adjustment.

A forwardly curved and downwardly inclined sheet metal plate 37 forms the front nose of the machine and is called a nose plate, being designed to be pushed into the loose coal 12 during the forward movement of the machine when positioning the same for the gathering operation. Side wings 38 are pivoted as at 39 to the plate 37 while foldable braces 40 beneath the wings 38 normally retain the wings in outstretched position at the opposite sides of the plate 37. An intermediate section 41 termed section No. 2 consists of parallel sides 42 with side ledges 43 forming a continuation of similar ledges 44 of the sides 36 of section No. 1. Sections Nos. 1 and 2 are pivoted together by a rod 45 carried by section No. 1 and extending through slots 46 in the sides 42.

A further section of frame 47 termed section No. 3 is positioned at the rear of the machine with its forward end connected to the rear end of section No. 2. Section 47 consists of a rear cross beam 49 and side members 50, the latter member being attached by brackets 112 to the rear end 48 of section No. 2. The members 50 are oppositely beveled on their upper sides as at 51, forming a bearing surface for employing the side members 50 as track rails. Adjustable roof braces 52 are mounted upright on the floor of the mine being suitably attached at 53 with the opposite ends of the beam 49 for supporting the rear end of the machine while an adjustable screw 54 in the upper end of each brace 52 engages the mine roof 55.

A frame member 56 shown in Fig. 14 has side rails 57 normally positioned for sliding upon the flanges 44 and between the sides 36 of section No. 1. The frame member 56 is capable of rearward movement for sliding upon the flanges 43 of the sides 42 of section No. 2, the movement of said frame member 56 being to and fro from its forward position upon section No. 1 as illustrated in Figures 1, 2, 3 and 8 of the drawings, and its rearward position upon section No. 2, as shown in Figures 4 and 5 thereof. A bottom slide 58 illustrated in Figure 15 is mounted by means of rollers 59 upon track rails 60 longitudinally carried by the frame member 56, the rearward movement of the bottom 58 being continued upon the track 50 of the rear section No. 3, after the frame member 56 has assumed its rearward position upon section No. 2, during the delivering and dumping operation. A foldable scoop 61 illustrated in Figure 18 is normally slidably mounted upon opposite ledges 62 of the sides 57 of the frame member 56 and consists of shovel-shaped side sections 63 centrally hinged together at 64 at the rear end of the scoop. The scoop 61 being normally mounted in the frame member 56 will move forward into the pile of coal 12 as illustrated in Figures 1 and 2 of the drawings and is then capable of retracting rearwardly with a quantity of coal, the scoop 61 taking its position with the coal upon the bottom slide 58 and whereupon the frame section 56 with the slide 58 and the filled scoop 61 will be propelled rearwardly upon section No. 2 of the frame. The slide bottom 58 will then be moved rearwardly

upon section No. 3, permitting the coal in the scoop 61 to drop through the frame member 56 and section No. 2 into the pit car 13 provided upon the track 10 beneath said intermediate section No. 2. After unloading the load of coal in this manner, the slide 58 is returned to the track 60 of frame member 56, it being noted that the scoop 61 remains upon the ledges 62 of said frame member 56. The frame member 56 is then forcibly moved forwardly and downwardly of section No. 2 and section No. 1 carrying the slide 58 and scoop 61 therewith until the frame member 56 and the slide 58 reach their normal positions upon section No. 1 as shown in Figure 3, the scoop 61 continuing its forward movement and automatically opening with its side 63 projected into the coal pile 12.

The forward edge 64′ of the slide 58 has abutting engagement with the rear edge 65 of the plate 37 when said slide 58 is in its normal forward position as illustrated in Figure 8. Curved deflectors 66 at the forward end of frame member 56 project over the side wings 38 assisting in giving direction and closing movement to the scoop 61 during its rearward travel when the frame member 56 is at the forward limit of its movement. The sides 57 of the frame member 56 are cutaway as at 67 permitting the deflectors 66 to ride over the sides 36 of mounting section 27.

Metal cables 68 are attached adjacent the rear end of the frame member 56 to the sides 57 thereof as at 69 and pass rearwardly of the machine over pulleys 70 upon the rear cross beam 49 of section No. 3. The cables 68 then pass beneath section No. 3 and section No. 2, forwardly above the platform 14 to the inwardly positioned grooves 71 of double grooved pulley wheels 72 freely journaled upon the power shaft 17. Similar cables 68′ are attached adjacent the forward ends of the sides 57 of the frame member 56 as at 73 and pass forwardly through perforations 74 in the forward plate 37 and over rollers 75 in the rear sides of said perforations, the cables 68′ thence passing to the outer sides or grooves 76 of said wheels 72. Clutch members 77 slidably splined to the power shaft 17 are adapted for simultaneous clutching engagement with the pulley wheels 72, similar angular levers 78 being provided for each shiftable clutch member 77 with handles 79 and 79′ upon the free ends of the levers 78 adjacent the clutch-operating handle 25. When the clutch handles 79, 79′ are moved in opposite directions for closing the clutches 77, the wheels 72 will revolve with the shaft 17 in whichever direction the motor 16 is operating and thereby the cables 68 will be wound upon the wheels 72 while the cables 68′ are being unwound or vice versa. The winding up of the cables 68 pulls the frame member 56 rearwardly, the movement thereof being limited to its rear position upon section No. 2. The reverse rotation of the shaft 17 winds up the cables 68′ thereby pulling the frame member 56 forwardly to its normal position upon section No. 1.

In a similar manner, cables 80 are attached as at 81 to the rear end of the slide 58 and pass to the rear of the machine over pulleys 82 upon the rear beam 49, the cables 80 then passing beneath the machine sections No. 3 and No. 2 and above the platform 14 beneath the section No. 3 to the inner grooves 83 of pulleys 84 journaled upon the power shaft 17. Similar cables 80′ are attached to the under side of the slide 58 adjacent its forward edge 64′ as at 85 and pass forwardly over pulleys 86 beneath the rear edge of the plate 37 and thence to the outer grooves 87, of said pulleys 84. Clutch members 88 are slidably splined upon the shaft 17 adapted for clutching engagement with the pulley wheels 84 for turning said wheels in either direction according to the rotation of said shaft 17. Clutch levers 89 are provided for the members 88 having handles 90 and 90′ for clutching the wheels 84 into and out of operative engagement with the shaft 17. When the slide 58 reaches the rearward limit of its movement as shown in Fig. 5, the springs 91 upon the rear edge of the slide 58 engage resilient hooks 92 upon the rear cross bar 49 of the machine assisting to retain the slide 58 upon section No. 3, until forcibly drawn forward by the cables 80′ when the motor 16 is reversed.

Cables 93 pass through the sides 63 of the scoop 61 having knots or buttons 94 for engaging inwardly of the rear end members 95 of the scoop 61, the cables 93 passing rearwardly over sheaves 96 on the outer sides of the members 42 and forwardly over pulleys 97 on the deflectors 66 and through perforations 98 in the plate 37. The cables 93 pass over rollers 99 in the perforations 98 and thence beneath the plate 37 to the outer grooves 100 of pulley wheels 101 journaled upon the shaft 17. The turning of the shaft 17 in the direction indicated by the arrow in Fig. 6 winds up the cables 93 and rearwardly moves the scoop 61. The forward end portions 93′ of the cables 93 pass forwardly through similar perforations 102 in the plate 37 and thence beneath said plate to the inner groove 103 of the wheels 101. The reverse operation of the shaft 17 when operating the pulleys 101 winds up the cable portions 93′ and pulls the scoop 61 downwardly toward the plate 37. During the downward and forward movement of the frame member 56, the slide 58 and the scoop 61, the frame member and slide will stop upon the machine section 1 while the scoop 61 will continue its movement by reason of its own momentum and the pulling cable

sections 93′ until the scoop 61 moves over the plate 37 and automatically assumes an open position by reason of the fact that the cable portions 93′ act as anchors for the scoop side 63 causing relative movement upon the hinge 64. The operator may adjust the scoop 61 in the coal pile 12 for receiving a suitable load.

Abutment brackets 104 inwardly projecting from the sides 42 limit the rearward movement of the frame member 56 when sliding outwardly in section 2 of the machine, the scoop 61 being likewise prevented from moving rearwardly out of the frame member 56 by means of abutments 105. The pulley wheels 101 being loosely journaled upon the shaft 17 are simultaneously clutched to said shaft for rotating therewith by clutch members 106 slidably splined to the shaft 17 and provided with operating levers 107 and 108. These levers are of the same construction as illustrated in Fig. 12 of the drawings, and are controlled by a handle 109. It will be seen that by moving the handle 109 outwardly of the platform 14, the clutch members 106 will be moved inwardly for releasing the pulley wheels 101 while an inward movement of the handle 109 clutches up the pulley wheels 101 with the shaft 17 for rotation in either direction according to the operation of the motor 16.

The complete operation of the invention will be fully understood from this detailed description thereof, the manipulation of the handles 79, 79′, 90, 90′ and 109, readily positioning the scoop 61 for receiving the coal, then rearwardly moving the scoop onto the slide 58 and then moving said scoop and slide together with the frame member 56 rearwardly off of the machine section No. 1, and onto machine section No. 2. The said handles also control the retraction of the slide 58 from between the scoop 61 and frame member 56 when these parts are so positioned upon section 2, the slide 58 taking its position temporarily upon section No. 3, with the springs 91 engaging the hooks 92. The coal dropping through section No. 2 into the mine car 13, the handles are again operated for first returning the slide 58 beneath the ledges 62 and beneath the empty scoop 61; then returning the frame member 56 with the slide 58 and scoop 61 forwardly in the manner heretofore described for again taking up a load of coal.

When not desired to use the machine, the side wings 38 may be pulled inwardly upon the plate 37 by disengaging the braces 40 and the roof braces 52 may then be taken down. Foldable legs 110 provided on the sides 42 may be pulled up and such temporary supports as 111 removed. Section No. 3 may then be slid forwardly upon section No. 2 and section No. 2 telescoped with mounting section No. 1 by reason of the slots 46 which receive the bolt 45. The side members 50 of section No. 3 are slidable through suitably shaped brackets 112 upon the rear end 48 of the section 41 to permit section No. 3 to be folded into section No. 2. When so folded, the entire machine is compactly arranged and by operating the clutch actuating handle 25, and manipulating the controller 26, my entire mining machine may be moved upon the track 10 in the desired direction. It will be seen that a quick manner of loading coal either in a mine or in a dump is provided adapted for operation by a single workman.

While the form of the invention herein set forth is believed preferable, it will be undertsood that minor changes may be made therein without departing from the spirit and scope of my inventon.

I claim:

1. A coal mining machine including a motor truck adapted for travel adjacent a coal pile, a mounting section adjustably mounted on the truck, a frame member rearwardly slidable on the mounting section, a rearwardly shiftable slide upon said frame member and a coal-gathering scoop slidable on the frame member forwardly of said slide during the coal-gathering operation.

2. A coal mining machine including a motor truck adapted for travel adjacent a coal pile, a mounting section adjustably mounted on the truck, a frame member upon the mounting section adapted for rearward movement to dumping position, a slide on the frame member adapted for movement with the frame member to said dumping position, the said slide being adapted for further rearward movement when the frame member reaches said dumping position and a coal-gathering scoop adapted for positioning upon the frame member when loaded with coal.

3. A coal mining machine including a motor truck adapted for travel adjacent a coal pile, a mounting section adjustably mounted on the truck, a frame member upon the mounting section adapted for rearward movement to dumping position, a slide on the frame member adapted for movement with the frame member to said dumping position, the said slide being adapted for further rearward movement when the frame member reaches said dumping position, a coal-gathering scoop normally mounted upon the frame member adapted for travel therewith to the dumping posision when filled with coal and means for moving said scoop forwardly into the coal and for retracting the filled scoop onto the frame member when the latter is at the limit of its forward path of movement.

4. A mining machine comprising a motor truck, a mounting section adjustably secured on said truck, an intermediate section ad-

justably attached to the mounting section rearwardly thereof, a rear section adjustably carried by the intermediate section, means adapted for supporting the said sections downwardly and forwardly inclined for operation, the rearward and intermediate sections being adapted to telescope with each other and with said mounting section when the device is not in use.

5. A mining machine comprising a motor truck, a mounting section adjustably secured on said truck, an intermediate section adjustably attached to the mounting section rearwardly thereof, a rear section adjustably carried by the intermediate section, means adapted for supporting the said sections downwardly and forwardly inclined for operation, the rearward and intermediate sections being adapted to telescope with each other and with said mounting section when the device is not in use, a frame member slidable upon said mounting and intermediate sections, a coal-gathering scoop mounted for movement with said frame member and adapted for movement on and off of the frame member forwardly of the latter.

6. A mining machine comprising a motor truck, a mounting section adjustably secured on said truck, an intermediate section adjustably attached to the mounting section rearwardly thereof, a rear section adjustably carried by the intermediate section, means adapted for supporting the said sections downwardly and forwardly inclined for operation, the rearward and intermediate sections being adapted to telescope with each other and with said mounting section when the device is not in use, a frame member slidable upon said mounting and intermediate sections, a coal-gathering scoop mounted for movement with said frame member and adapted for movement on and off of the frame member forwardly of the latter, a bottom slide normally carried by the frame member beneath the holding position of the scoop and means for moving the slide rearwardly of the frame member during dumping operation.

7. A coal mining machine comprising a motor truck, a mounting section tiltably adjustable thereon, a curved forwardly extending plate carried by the mounting section adapted for positioning adjacent a coal pile when operatively positioned, foldable side wings carried by said plate, a rearwardly movable frame member upon the mounting section and a coal gathering scoop adapted for movement forwardly of said frame member and over said plate to the coal and for rearward return movement upon the frame member when filled with coal.

8. A coal mining machine comprising a motor truck, a mounting section tiltably adjustable thereon, a curved forwardly extending plate carried by the mounting section adapted for positioning adjacent a coal pile when operatively positioned, foldable side wings carried by said plate, a rearwardly movable frame member upon the mounting section, a coal gathering scoop adapted for movement forwardly of said frame member and over said plate to the coal and for rearward return movement upon the frame member when filled with coal, and means for moving the frame member and scoop simultaneously rearwardly to the dumping position.

9. A coal mining machine comprising a motor truck, a mounting section tiltably adjustable thereon, a curved forwardly extending plate carried by the mounting section adapted for positioning adjacent a coal pile when operatively positioned, foldable side wings carried by said plate, a rearwardly movable frame member upon the mounting section, a coal gathering scoop adapted for movement forwardly of said frame member and over said plate to the coal and for rearward return movement upon the frame member when filled with coal, means for moving the frame member and scoop simultaneously rearwardly to the dumping position, a bottom slide normally carried by the frame member beneath the scoop when positioned on the frame member and rearwardly movable with the frame member to said dumping position, means for moving said slide rearwardly of the frame member when the frame member and scoop are in dumping position and means for returning the slide within the frame member beneath the scoop and for returning the frame member, slide and scoop to their initial positions subsequently to the dumping operation.

10. A coal mining machine comprising a mounting section adapted for positioning adjacent a coal pile, a downwardly curved plate forwardly of the mounting section adapted for positioning adjacent the pile of coal when the machine is positioned for the coal gathering operation, outwardly foldable wings hinged to the opposite sides of the plate, an intermediate and a rear frame section adjustably attached to the rear of the mounting section, means for supporting said sections forwardly inclined toward the coal to be worked upon and a frame member, scoop and slide adapted for travel upon said sections.

11. A coal mining machine comprising a mounting section adapted for positioning adjacent a coal pile, a downwardly curved plate forwardly of the mounting section adapted for positioning adjacent the pile of coal when the machine is positioned for the coal gathering operation, outwardly foldable wings hinged to the opposite sides of the plate, an intermediate and a rear frame section adjustably attached to the rear of the

mounting section, means for supporting said sections forwardly inclined toward the coal to be worked upon, a frame member slidable upon said mounting and intermediate sections with forward deflector portions restrainingly positioned overlying said wings when the frame member is forward, and a collapsible scoop adapted for forward and rearward movement over the plate from and to said frame member.

12. A coal mining machine comprising a mounting section adapted for positioning adjacent a coal pile, a downwardly curved plate forwardly of the mounting section adapted for positioning adjacent the pile of coal when the machine is positioned for the coal gathering operation, outwardly foldable wings hinged to the opposite sides of the plate, an intermediate and a rear frame section adjustably attached to the rear of the mounting section, means for supporting said sections forwardly inclined toward the coal to be worked upon, a frame member slidable upon said mounting and intermediate sections with forward deflector portions restrainingly positioned overlying said wings when the frame member is forward, a collapsible scoop adapted for forward and rearward movement over the plate from and to said frame member, opposite sides of the scoop being further adapted for engagement with said deflector portions during the rearward closing movement of the scoop over said plate and a retractible bottom slide for the scoop normally carried by the frame member.

13. A coal mining machine comprising a mounting section adapted for positioning adjacent a coal pile, a downwardly curved plate forwardly of the mounting section adapted for positioning adjacent the pile of coal when the machine is positioned for the coal gathering operation, outwardly foldable wings hinged to the opposite sides of the plate, an intermediate and a rear frame section adjustably attached to the rear of the mounting section, means for supporting said sections forwardly inclined toward the coal to be worked upon, a frame member slidable upon said mounting and intermediate sections with forward deflector portions restrainingly positioned overlying said wings when the frame member is forward, a collapsible scoop adapted for forward and rearward movement over the plate from and to said frame member, opposite sides of the scoop being further adapted for engagement with said deflector portions during the rearward closing movement of the scoop over said plate, a wheeled slide normally positioned upon the frame member beneath the position assumed by the scoop when upon the frame member, means adapted for moving the slide rearwardly simultaneously with the frame member to the dumping position upon said intermediate section, and means for moving the slide rearwardly of the frame member onto the rearward section and for returning the slide forwardly onto the frame member for subsequent travel with the frame member to normal position upon the mounting section.

14. A coal mining machine including a mounting section, a motor truck, tiltable mounting means for the mounting section carried by the truck, mounting sections adjustably attached rearwardly of said truck carried section, a slidable frame member upon the truck carried section having outwardly flaring sides forwardly thereof, a downwardly curved coal-engaging plate extending forwardly beneath said flaring sides, oppositely hinged wings carried by the plate adapted for inward folding thereon when the frame member is retracted and a forcibly actuated scoop adapted for travel over said plate toward and away from said frame member and means for automatically opening and closing the scoop when in close proximity to the coal to be gathered forwardly of said plate.

15. A coal mining machine including a mounting section, a motor truck, tiltable mounting means for the mounting section carried by the truck, mounting sections adjustably attached rearwardly of said truck carried section, a slidable frame member upon the truck carried section having outwardly flaring sides forwardly thereof, a downwardly curved coal-engaging plate extending forwardly beneath said flaring sides, oppositely hinged wings carried by the plate adapted for inward folding thereon when the frame member is retracted, a forcibly actuated scoop adapted for travel over said plate toward and away from said frame member, means for automatically opening and closing the scoop when in close proximity to the coal to be gathered forwardly of said plate, means adapted for moving the frame member and scoop simultaneously rearwardly adjacent said truck mounted section and means for returning said frame member and scoop to its initial position upon the truck mounted section subsequent to the dumping operation.

16. A coal mining machine including a mounting section, a motor truck, tiltable mounting means for the mounting section carried by the truck, mounting sections tiltably attached rearwardly of said truck carried section, a slidable frame member upon the truck carried section having outwardly flaring sides forwardly thereof, a downwardly curved coal-engaging plate extending forwardly beneath said flaring sides, oppositely hinged wings carried by the plate adapted for inward folding thereon when the frame member is retracted, a forcibly actuated scoop adapted for travel over said

plate toward and away from said frame member, means for automatically opening and closing the scoop when in close proximity to the coal to be gathered forwardly of said plate, means adapted for moving the frame member and scoop simultaneously rearwardly adjacent said truck mounted section, means for returning said frame member and scoop to its initial position upon the truck mounted section subsequent to the dumping operation, a bottom slide for the scoop anti-frictionally mounted upon said frame member adapted for rearward movement with the frame member and scoop to the dumping position, means for rearwardly moving the slide to a point adjacent the rear end of the machine and rearwardly of the point of extreme rearward movements of the frame member and scoop.

17. A coal mining machine including a mounting section, a motor truck, tiltable mounting means for the mounting section carried by the truck, mounting sections tiltably attached rearwardly of said truck carried section, a slidable frame member upon the truck carried section having outwardly flaring sides forwardly thereof, a downwardly curved coal-engaging plate extending forwardly beneath said flaring sides, oppositely hinged wings carried by the plate adapted for inward folding thereon when the frame member is retracted, a forcibly actuated scoop adapted for travel over said plate toward and away from said frame member, means for automatically opening and closing the scoop when in close proximity to the coal to be gathered forwardly of said plate, means adapted for moving the frame member and scoop simultaneously rearwardly adjacent said truck mounted section, means for returning said frame member and scoop to its initial position upon the truck mounted section subsequent to the dumping operation, a bottom slide for the scoop anti-frictionally mounted upon said frame member adapted for rearward movement with the frame member and scoop to the dumping position, means for rearwardly moving the slide to a point adjacent the rear end of the machine and rearwardly of the point of extreme rearward movements of the frame member and scoop, means for returning the slide to its normal position within the frame member subsequently to the dumping operation, and means for returning the frame member and slide to normal position upon the truck-mounting section subsequently to the return of the slide to said frame member.

18. A coal mining machine comprising an adjustable tiltable mounting section, a frame member longitudinally slidable upon said mounting section, a downwardly curved nose plate at the forward end of the mounting section adapted for contacting the coal to be gathered, forwardly foldable wings hinged to the opposite edges of the plate adjacent the mounting section, outwardly flaring deflectors forwardly carried by the frame member overlying said wings when the machine is arranged for gathering coal and reciprocating means for the frame member.

19. A coal mining machine comprising an adjustable tiltable mounting section, a frame member longitudinally slidable upon said mounting section, a downwardly curved nose plate at the forward end of the mounting section adapted for contacting the coal to be gathered, forwardly foldable wings hinged to the opposite edges of the plate adjacent the mounting section, outwardly flaring deflectors forwardly carried by the frame member overlying said wings when the machine is arranged for gathering coal, reciprocating means for the frame member, a scoop including pivotally connected arms adapted for sliding movement longitudinally of the frame member and plate, means adapted for forwardly moving and automatically opening the arms of the scoop when at the forward limit of its movement projecting forwardly of the plate and detachable supporting braces beneath the wings.

20. A coal mining machine comprising an adjustable tiltable mounting section, a frame member longitudinally slidable upon said mounting section, a downwardly curved nose plate at the forward end of the mounting section adapted for contacting the coal to be gathered, forwardly foldable wings hinged to the opposite edges of the plate adjacent the mounting section, outwardly flaring deflectors forwardly carried by the frame member overlying said wings when the machine is arranged for gathering coal, reciprocating means for the frame member, a scoop including pivotally connected arms adapted for sliding movement longitudinally of the frame member and plate, means adapted for forwardly moving and automatically opening the arms of the scoop when at the forward limit of its movement projecting forwardly of the plate, detachable supporting braces beneath the wings, means adapted for rearwardly moving the open scoop over said plate in engagement with said deflectors and onto said frame member whereby the scoop is automatically closed with its supply of coal during the retraction of the scoop.

21. A coal mining machine comprising an adjustable tiltable mounting section, a frame member longitudinally slidable upon said mounting section, a downwardly curved nose plate at the forward end of the mounting section adapted for contacting the coal to be gathered, forwardly foldable wings hinged to the opposite edges of the plate adjacent the mounting section, outwardly flaring deflectors forwardly carried by the

frame member overlying said wings when the machine is arranged for gathering coal, reciprocating means for the frame member, a scoop including pivotally connected arms adapted for sliding movement longitudinally of the frame member and plate, means adapted for forwardly moving and automatically opening the arms of the scoop when at the forward limit of its movement projecting forwardly of the plate, detachable supporting braces beneath the wings, means adapted for rearwardly moving the open scoop over said plate in engagement with said deflectors and onto said frame member wher by the scoop is automatically closed with its supply of coal during the retraction of the scoop, an intermediate dumping section, a rearward section adjustably carried by said mounting section, and means adapted for moving said frame member and scoop simultaneously to and from the dumping position upon said intermediate section.

22. A coal mining machine comprising an adjustable tiltable mounting section, a frame member longitudinally slidable upon said mounting section, a downwardly curved nose plate at the forward end of the mounting section adapted for contacting the coal to be gathered, forwardly foldable wings hinged to the opposite edges of the plate adjacent the mounting section, outwardly flaring deflectors forwardly carried by the frame member overlying said wings when the machine is arranged for gathering coal, reciprocating means for the frame member, a scoop including pivotally connected arms adapted for sliding movement longitudinally of the frame member and plate, means adapted for forwardly moving and automatically opening the arms of the scoop when at the forward limit of its movement projecting forwardly of the plate, detachable supporting braces beneath the wings, means adapted for rearwardly moving the open scoop over said plate in engagement with said deflectors and onto said frame member whereby the scoop is automatically closed with its supply of coal during the retraction of the scoop, an intermediate dumping section, a rearward section adjustably carried by said mounting section, means adapted for moving said frame member and scoop simultaneously to and from the dumping position upon said intermediate section, a slide member normally positioned upon the frame member when the latter is upon the mounting section, means for rearwardly moving the slide section with the frame member to the limit of movement of said frame member and subsequently continuing the rear movement of the slide to the rear end of the machine, and means for returning the slide to its position in the frame member while mounted upon the intermediate section for simultaneous forward return with the frame member to normal position upon the mounting section.

23. In a coal loading machine, a mounting section, a frame member adapted for sliding movement upon said mounting section, a slide adapted for travel upon the frame member and a coal-gathering scoop mounted upon the frame member above the slide.

24. In a coal mining machine, a mounting section having sides, inwardly projecting flanges carried by said sides, a frame member having longitudinal portions slidable within the mounting section upon said flanges, a track longitudinally of the frame member, a wheeled slide mounted for movement upon said track within the frame member, inwardly projecting ledges carried by the longitudinal portions of the frame member above the plane of the slide when positioned in the frame member and a scoop slidably mounted in the frame member upon said ledges.

25. In a coal mining machine, a mounting section having sides, inwardly projecting flanges carried by said sides, a frame member having longitudinal portions slidable within the mounting section upon said flanges, a track longitudinally of the frame member, a wheeled slide mounted for movement upon said track within the frame member, inwardly projecting ledges carried by the longitudinal portions of the frame member above the plane of the slide when positioned in the frame member, a scoop slidably mounted in the frame member upon said ledges, abutments upon said ledges adapted to limit the rearward movement of the scoop within the frame member, a dumping section rearwardly of the mounting section and means for moving said frame member backward and forward between said mounting and dumping sections.

26. In a coal mining machine, a mounting section having sides, inwardly projecting flanges carried by said sides, a frame member having longitudinal portions slidable within the mounting section upon said flanges, a track longitudinally of the frame member, a wheeled slide mounted for movement upon said track within the frame member, inwardly projecting ledges carried by the longitudinal portions of the frame member above the plane of the slide when positioned in the frame member, a scoop slidably mounted in the frame member upon said ledges, abutments upon said ledges adapted to limit the rearward movement of the scoop within the frame member, a dumping section rearwardly of the mounting section, means for moving said frame member backward and forward between said mounting and dumping sections, a rear section for the machine including a track secured to the rear end of the intermediate section, the track of said frame member being adapt-

ed to aline with the track of the rear section when the frame member is at its rearmost position upon the intermediate section.

27. In a coal mining machine, a mounting section having sides, inwardly projecting flanges carried by said sides, a frame member having longitudinal portions slidable within the mounting section upon said flanges, a track longitudinally of the frame member, a wheeled slide mounted for movement upon said track within the frame member, inwardly projecting ledges carried by the longitudinal portions of the frame member above the plane of the slide when positioned in the frame member, a scoop slidably mounted in the frame member upon said ledges, abutments upon said ledges adapted to limit the rearward movement of the scoop within the frame member, a dumping section rearwardly of the mounting section, means for moving said frame member backward and forward between said mounting and dumping sections, a rear section for the machine including a track secured to the rear end of the intermediate section, the track of said frame member being adapted to aline with the track of the rear section when the frame member is at its rearmost position upon the intermediate section, whereby the slide is adapted for travel over said track to the rear end of the machine during the dumping operation and subsequent return to its normal position in the frame member and means adapted for supporting the rear and intermediate sections at a forward and downward inclination.

28. In a coal mining machine, a motor truck adapted for travel upon the track of a mine, jack screws upon said truck, transverse saddles upon the tops of said screws, a main mounting section having depending ribs resting in said saddles, opposite sides provided for the truck, and adjusting screws pivotally connected between said sides and the opposite sides of the mounting section whereby the latter is rigidly held in adjusted position in said saddles.

In testimony whereof I affix my signature.

MIKE PERSECH.