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Huttenbrauck et al.

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[54] **MINERAL WINNING MACHINE HAVING CONTINUOUS HEIGHT ADJUSTMENT TO ACCOMMODATE VARYING SEAM THICKNESS**

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May 2, 1972 Germany 2221465

[52] **U.S. Cl.** **299/34,** 299/32
[51] **Int. Cl.** **E21c 27/35**
[58] **Field of Search** 299/1, 32, 34, 43

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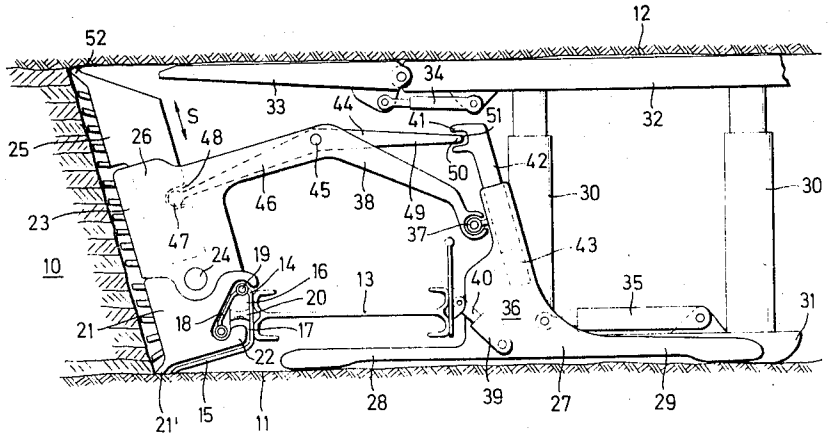
Primary Examiner—Ernest R. Purser
Attorney, Agent, or Firm—Sughrue, Rothwell, Mion, Zinn & Macpeak

[57] **ABSTRACT**

A coal planer or other mineral winning machine has provision for adjustment in order to take into account the thickness of the seam being worked. Continuous adjustment of the machine is effected by a control bar which extends along the face and cooperates with a follower which is carried on the machine and repositions one or more tool carrying parts of the machine by way of mechical or hydraulic linkages.

20 Claims, 13 Drawing Figures



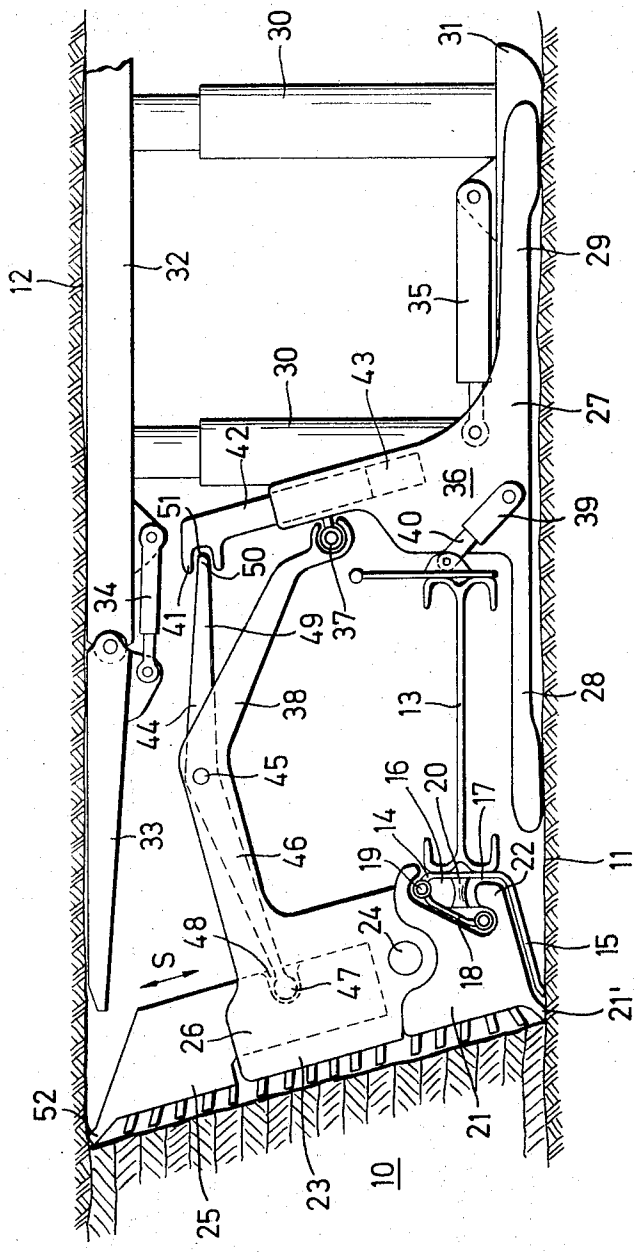

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FIG. 1

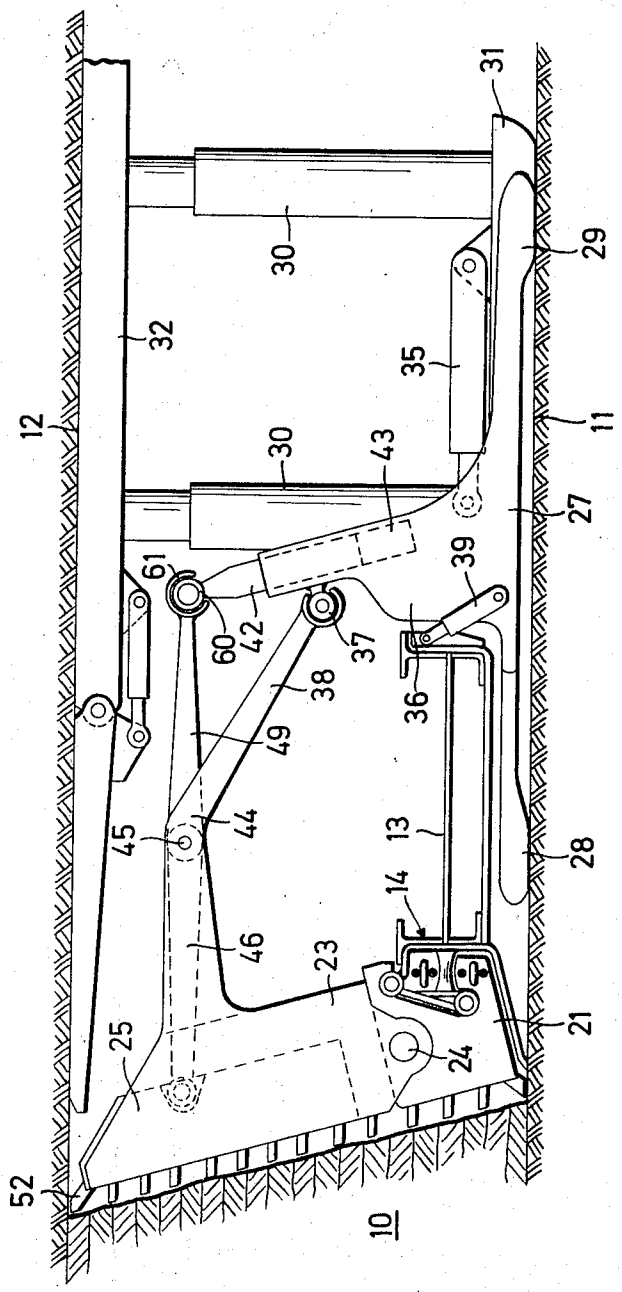
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FIG. 2

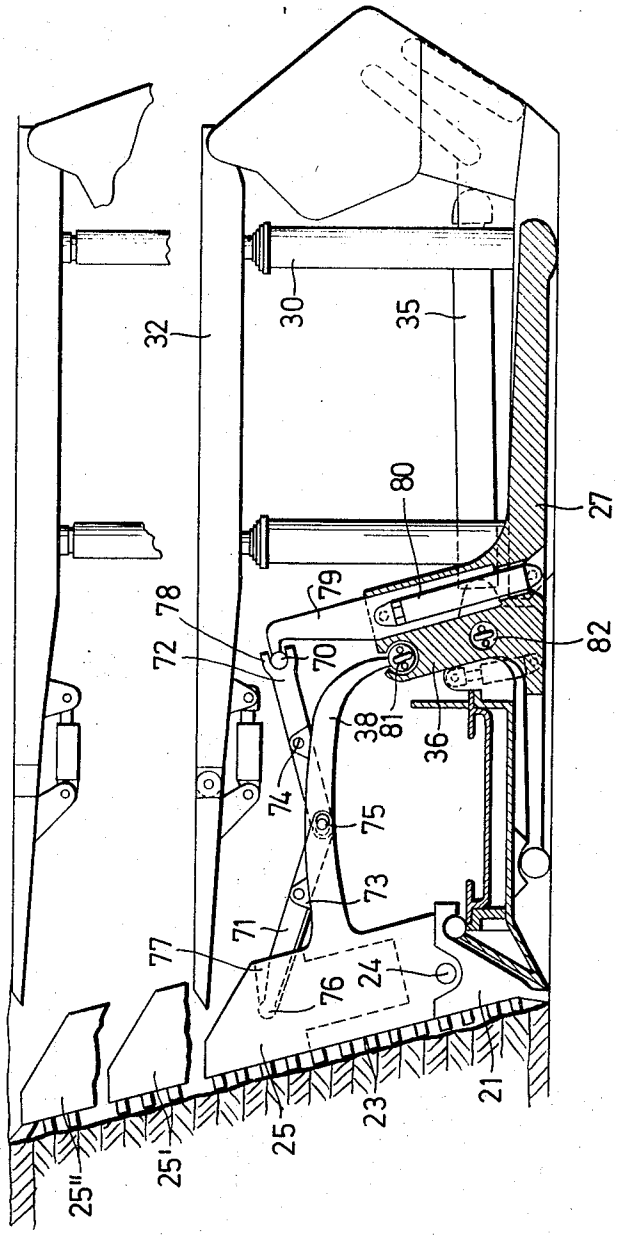
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FIG. 3

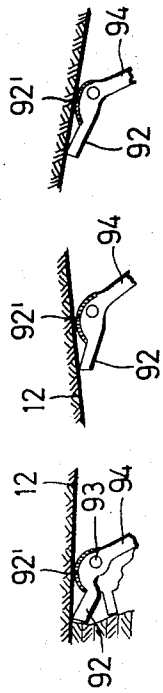
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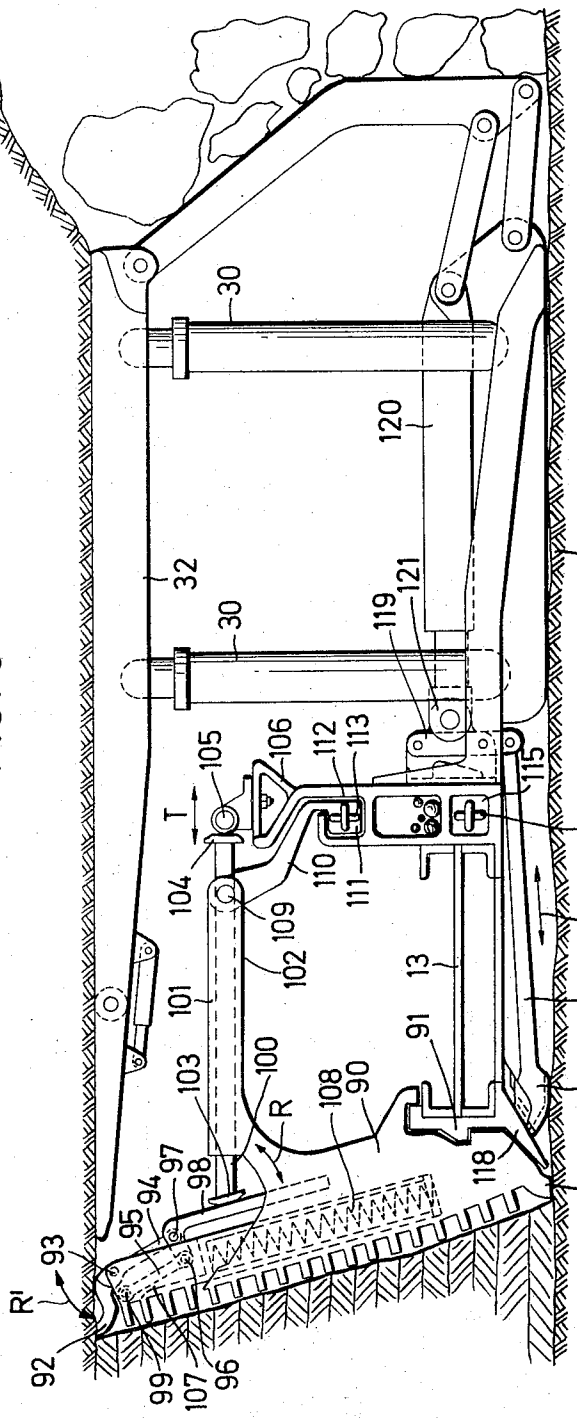
FIG. 5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R'
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FIG. 4

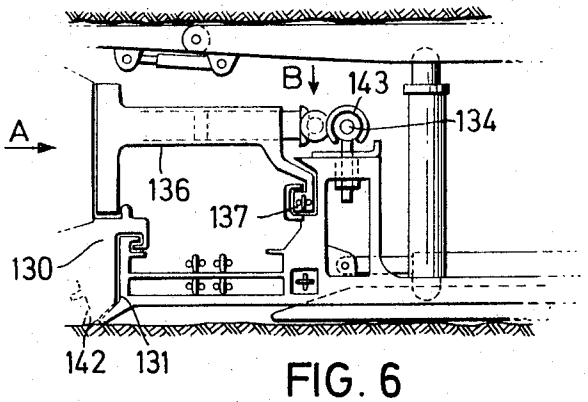

FIG. 6

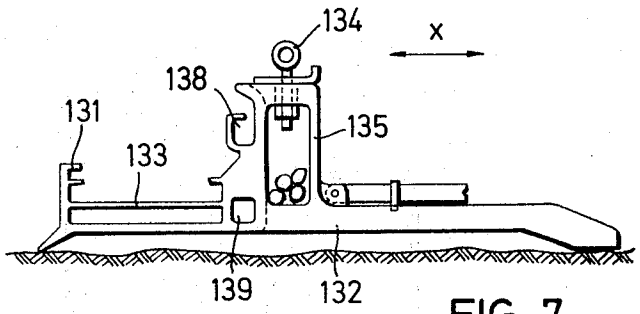

FIG. 7

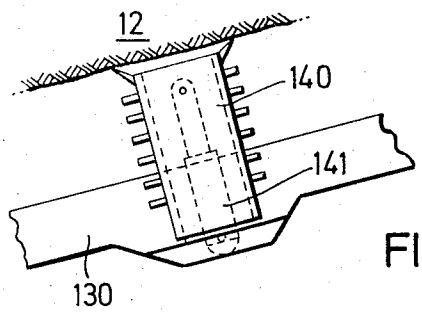

FIG. 8

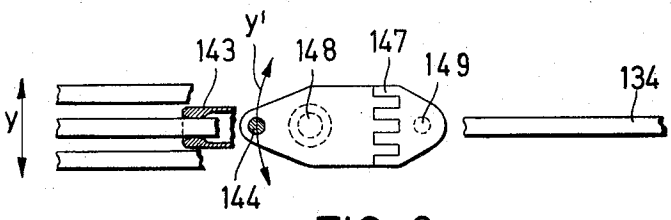

FIG. 9

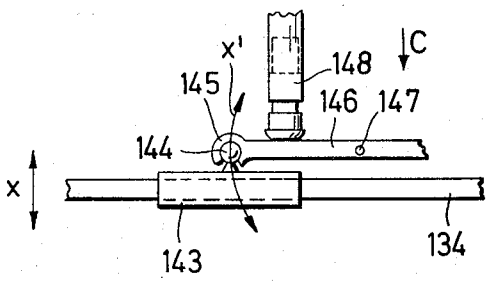

FIG. 10

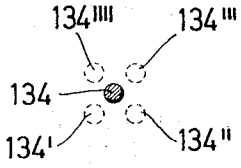

FIG. 11

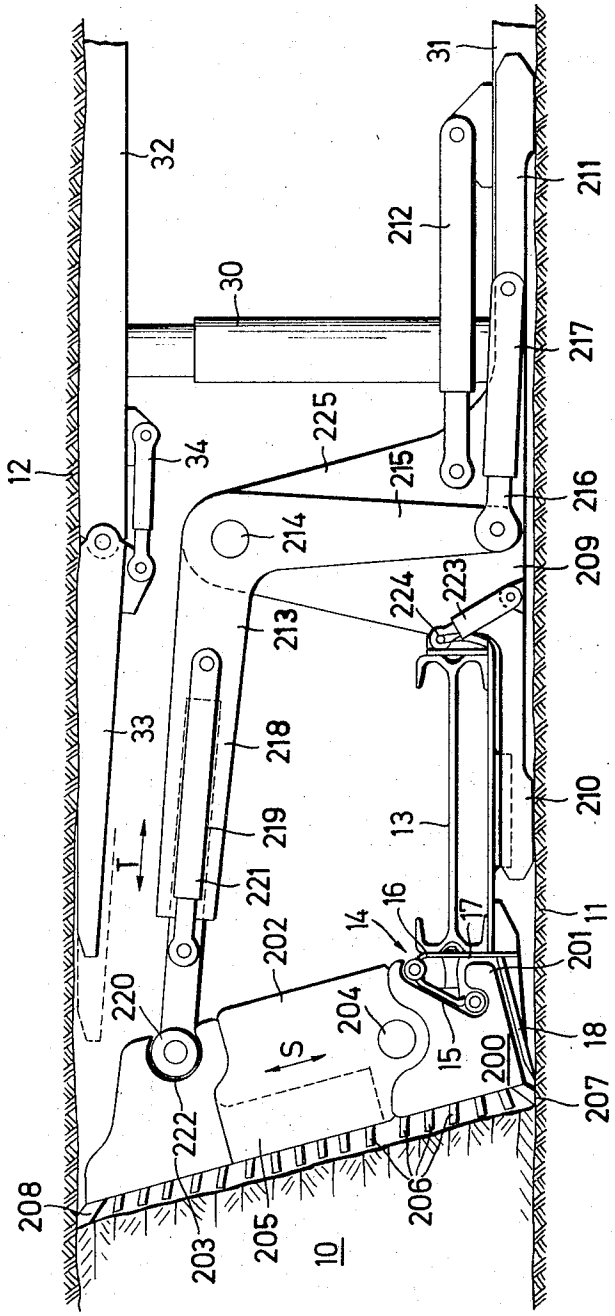
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FIG. 12

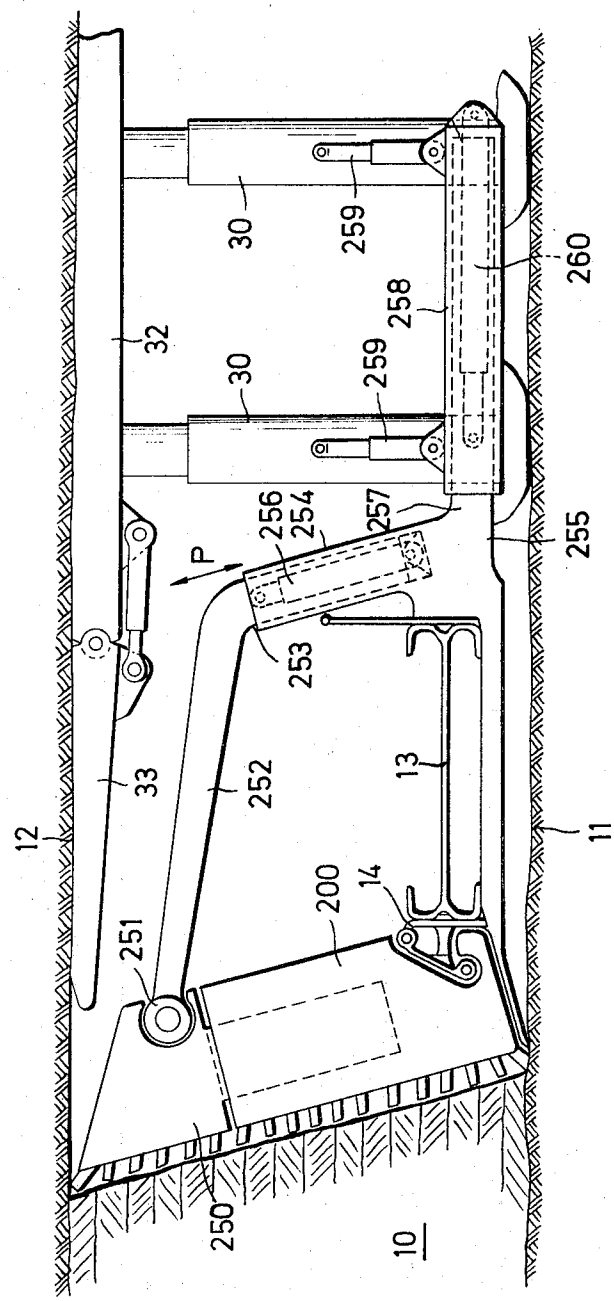
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FIG.13

MINERAL WINNING MACHINE HAVING CONTINUOUS HEIGHT ADJUSTMENT TO ACCOMMODATE VARYING SEAM THICKNESS

BACKGROUND OF THE INVENTION

It is usual for a coal plough to have a base structure which is guided along the coal face by a guide mounted on the conveyor. The plough can be adjusted by inclining the guide, that is, pivoting it about horizontal axis extending parallel to the face either independently of the conveyor or as a unit therewith. Because coal seams vary in thickness, it is an advantage for a plough to be adjustable in height. An object of the present invention is to provide an installation in which adjustment of a plough, or another type of mining machine may be readily made. To this end, an elongate control member is arranged to extend along the length of the face to be worked, and the plough or other winning machine has means for positioning a part of the plough in accordance with the location of the control member relative to the plough, as the latter travels along the face.

By forming the elongate control member from a plurality of interconnected segments, control of the plough can be exercised throughout its passage along the face. The location of the control member relative to the plough may be detected by various forms of follower, in one embodiment by means of a slider which travels along the control member and in another by a push rod which bears against it. In further embodiment, the control member is in the form of a channel in which is received one end of a lever. This lever itself may be engaged with the adjustable part of the plough or may form part of a system of levers which controls the position of the said part. The control member may be positioned on the goaf side of the conveyor so that the slider or other part which acts as a follower is supported by an arm which extends rearwardly from the plough Alternatively, the control member may be supported by cantilevered arms which extend across the conveyor so that the control member engages with a channel in the part to be adjusted. The control of the plough may be exercised by adjusting the control member in a single direction, either vertically or horizontally. Alternatively, in accordance with another preferred embodiment of the invention, the control member is adjustable in two mutually perpendicular directions so as to control a plough which has a more elaborate control system and uses the two co-ordinate positions of the guide bar to control two separate parts. Thus, one direction of adjustment of the control member may be used to control the position of a floor cutter and the other to control the position of a roof cutter. As a result, in a very simple way, the plough may be adjusted to cut a thinner or thicker seam, or rise or descend. Instead of a direct mechanical linkage between the follower and the part or parts to be adjusted, the control member may be used to control the supply of hydraulic fluid to hydraulic mechanisms which adjust the parts in question. The various segments of the control member may be supported by levers or slide pieces which are adjustable by mechanisms carried on individual guide frames which together constitute a guide frame assembly extending the length of the face.

DESCRIPTION OF THE DRAWINGS

FIG. **1** is a view taken transversely of the coal face showing in side elevation a mining installation embodying the invention,

FIG. **2** is a view similar to that shown in FIG. **1**, but of a mining installation in accordance with a second embodiment of the invention,

FIG. **3** is a view similar to FIG. **1**, but of a mining installation in accordance with a third embodiment of the invention,

FIG. **4** is a view similar to FIG. **1**, but of a mining installation in accordance with a fourth embodiment of the invention,

FIG. **5** shows in separate fragmentary views three different positions of a roof cutter of the embodiment shown in FIG. **4**,

FIG. **6** is a view taken in the same direction as FIG. **1** but of part only of mining installation in accordance with a fifth embodiment of the invention,

FIG. **7** is a view taken in the same direction as FIG. **6** but showing a guide frame used in connection with the embodiment of mining installation shown in that Figure,

FIG. **8** illustrates a detail of the installation shown in FIG. **6**,

FIG. **9** is a view of the control member and of the adjusting devices interacting therewith of the embodiment shown in FIG. **6**, the view being taken in the direction looking towards the face along a line perpendicular thereto,

FIG. **10** shows the system shown in FIG. **9** but in a plan view,

FIG. **11** is a diagram illustrating various positions of the control member of the installation shown in FIGS. **6** to **10**,

FIG. **12** is a view similar to FIG. **1** but of a mining installation in accordance with a sixth embodiment of the invention,

FIG. **13** is a view similar to FIG. **1** but of a mining installation in accordance with a seventh embodiment of the invention.

Each of the preferred embodiments of the invention is concerned with a mining installation in which a face conveyor extends parallel to a mineral face and is equipped with a guide for a mining machine of the plough (or planer) type which is reciprocated along the face by an endless chain. The utility of the invention is not, however, confined to machines of this type, and the invention may be applied to other machines employing various types of rotary cutters, for example. For the purposes of describing the embodiments of the invention, it will be assumed that the installation illustrated is intended for winning coal from a face **10**, the floor and roof of the mine working being depicted at **11** and **12** respectively in FIGS. **1** to **4**, **12** and **13**.

In each embodiment, the conveyor and a guide for the plough consists of a number of sections articulated one to another. Positioned on the goaf side of the conveyor is a guide frame assembly and roof support system. In the embodiment illustrated, it is to be assumed that the guide frame assembly is constituted by a plurality of individual articulated guide frames although only one frame is illustrated in any of the figures. Likewise, the roof support system includes a plurality of individual units, which may each be guided for movement upon an individual guide frame or between two adjacent such frames.

Referring to FIG. **1**, the face conveyor **13** is of the known scraper-chain type and is provided on its face

side with a plough guide 14 having a ramp plate 15 which extends downwards into contact with the floor 11. A ramp-like cover plate 18 encloses channels 16 and 17 for the return and working runs of the endless chain used to reciprocate the plough and is articulated to the ramp plate 15 at 19. Adjustable spacers 20 are provided between the channels 16 and 17 for the chain. The plough guided for movement along the plough guide 14 has a body of multi-part construction with a base 21 which is shaped to conform to the ramp plate 15 and the cover plate 18. The base of the plough has a rearwardly projecting guide block 22 which projects into the lower guide channel 17 and is connected to the pulling run of the chain. Supported upon the base 21 and pivoted thereto at 24 for adjustment about a horizontal axis parallel to the face is a plough superstructure 23. The superstructure 23 is provided with a guideway 26 in which an upper part 25 is fitted for sliding movement in the direction indicated by the arrow S. Each of the parts of the plough body is fitted with tools for stripping coal from the face, while the base is additionally fitted with a floor cutter 21 and the upper part is fitted with a roof cutter 52.

On the goaf side of the conveyor indicated at 27 is depicted one of the series of guide frames mentioned above. The frame has a support foot 28 which extends towards the face underneath the conveyor 13 and guide beams 29 which extend away from the face and, in pairs, guide skids 31 of the associated roof support unit. This unit includes a main roof bar 32 to which is pivotally connected a forwardly extending roof bar section 33 adjustable by a cylinder 34. The roof bar 32 is supported by two props 30 bearing on the skids 31 which are connected by an advancing ram 35 with the guide frame 27. Extension of the ram 35 moves the guide frame towards the face while retraction of the ram advances the roof support unit.

The guide frame 27 has an upwardly extending post 36 which, above the level of the conveyor 13, and in cooperation with similar posts of the other guide frames of the assembly, supports a guide member 37 in the form of an elongate bar extending parallel to and along the length of the face. The superstructure 23 of the plough has a rearwardly extending arm 38 which is bifurcated at its end to form a slider which embraces the guide bar 37. The plough is thus guided by the guide 14 and by the bar 37, which is situated above and rearwardly of the former.

The guide 14 is adjustable in inclination together with the conveyor 13 by a series of rams 39 provided on the guide frames 27. Extension of the piston rod 40 of each ram 39 therefore tends to tilt the conveyor and guide 14 about the edge of the ramp plate 15. The rams 39 can be actuated in unison, or by different amounts as may be required in any given situation. Adjustment of the guide 14 in this way pivots the base 21 of the plough about the pivot 24 and adjusts the height of the floor cutter 21' to vary the cutting horizon of the plough, the superstructure of the plough being maintained steady by cooperation of the slider with the guide 37. The post 36 of the guide frame 27 is formed with a cylinder 43 serving to guide a piston 42 which, together with similar pistons of the other guide frames, supports a control member in the form of a bar 41 which extends the entire length of the coal face and is preferably formed from a plurality of individual segments which are hinged to one another so that the shape of the bar 41 can be varied. The guide bar 41 defines a channel 51 in which is received the end 50 of one arm 49 of a two armed lever 44 which is pivoted at 45 to the arm 38 and has the end 47 of its other arm 46 received in a socket 48 of the upper plough part 25. The end 47 and socket 48 are shaped to form a ball and socket joint. It will be appreciated that variations in the height of the bar 41 will automatically adjust the height of the upper plough part 25 whereby the roof cutter 52 can be adjusted in accordance with the height of the seam. The provision of the guide 14 for adjusting the height of the floor cutter 21' and the control bar for adjusting the roof cutter 52 allows the seam to be removed accurately.

The embodiment shown in FIG. 2 is generally similar to that shown in FIG. 1, but differs primarily in the construction of the control bar, depicted at 60, which controls the movement of the lever 44 adjusting the upper plough part. Instead of defining a channel, the guide bar in this embodiment is in the form of a tube or other member having an external guide surface which is embraced by a slider 61 carried by the end of the lever arm 49 of the lever 44. As in the first embodiment, the guide bar 60 preferably consists of a plurality of hingedly interconnected segments so that the position of the roof cutter may be varied continuously throughout the pass of the plough.

In the embodiment shown in FIG. 3, the upper plough part is adjustable by a mechanism consisting of two levers 71 and 72 which are pivoted at positions 73, 74 intermediate their ends to the rearwardly directed arm 38 of the plough superstructure. The levers 71 and 72 pivot in a vertical plane perpendicular to the face and are freely linked at 75. The end 76 of the lever 71 and a socket 77 in the upper plough part form a ball and socket joint as in the previously described embodiments while the lever 72 has a bifurcated end 78 which embraces the control bar 70. A segment of this bar is supported on each guide frame 27 by a slide piece 79 which slides in guides of the upstanding post 36 of the guide frame. The slide piece 79 has an axial bore in which is received a hydraulic ram 80 for adjusting its position and hence the position of a respective segment of the control bar. It will be seen that the control bar 70 is movable in a plane parallel to the coal face which, as shown, is slightly inclined. The upper plough part is also displaceable parallel to the inclined coal face by means of the lever system 71, 72. This embodiment also differs from those previously described in the arrangement of the endless drive chain which in this case is arranged on the goaf side of the conveyor and has its upper, pulling run attached to a block 81 at the end of the rearwardly directed arm 38, the block 81 being located in the upper guide channel in the upper part of the post 36 of the guide frame. A guide channel 82 for the return chain run is formed in the lower part of the post 36. The ends of the channels in each post align with those in the adjacent posts. Different positions of the roof cutter holder 25 are depicted at 25' and 25''.

In the embodiment shown in FIG. 4, the plough body has a bse 90 guided along a guide 91 secured to the face side of the conveyor 13 and a roof cutter 92 is pivotable about a shaft 93 in the upper part of the plough body.

The roof cutter forms part of a linkage which includes a pair of parallel links 94, 95 pivoted to the cut-

ter at 93 and 99 and to a toggle lever 98 at 97 and 96. This linkage is so arranged that when the lever 98 pivots in the direction shown by the arrow R. the cutter 92 pivots about its shaft 93 in the direction shown by the arrow R'. This motion of the lever 98 is brought about by a push rod 100 which is slidable in a guide 101 of the rearwardly extending arm 102. The push rod has at one end of head 103 which bears against the lever and at the other end a head 104 which bears against a control bar 105. The control bar is supported upon a bracket 106 extending along the chain guide and is adjustable in the direction indicated by the arrow T. This adjustment of the bar is carried out by means of mechanical or hydraulic mechanisms not illustrated in the drawings. As in the embodiments previously described, the control bar 105 consists of interconnected individual segments which are angularly adjustable relative to one another. It is evident from the Figure that the setting of the bar 105 determines the position of the rod 100 and thus of the lever 98 which, in consequence, adjusts the position of the roof cutter. The roof cutter and the lever mechanism is supported on the plough superstructure 107 which is extensible relative to the base 90 in the direction of the roof, a spring 108 or other resilient means being provided to press the part 107 against the roof.

The rearwardly extending arm 102 of the plough base has hinged to it at 109 an extension 110 which is provided at its end with a block 111 guided in a chain channel 112 above the conveyor 13. The pulling run 113 of the chain is connected to the guide block and the return run 114 is guided within a guide channel 115 at a lower level. The cutting horizon of the plough is controlled by adjusting the inclination of the ramp part 118 of the plough guide 91 by means of a wedge member 117 at the end of a slide 116. The slide 116 is adjustable in the direction of the arrow Q by means of a toggle lever 119 to which is connected the piston rod 121 of a ram 120. The toggle lever 119 can be secured by means of bolts or other means in selected ones of the various positions in which it can be positioned.

As shown in FIG. 5, the roof cutter has a convex slide surface 92' which is located rearwardly of the tool and bears against the roof, the normal arrangement being as shown in the left hand diagram. From this position, as the mining operation proceeds, the tool can be pivoted downwards to the position shown in the central diagram so that the roof is given a downward inclination, or upwards to the position shown in the right hand diagram so that the roof is given an upward inclination.

FIGS. 6 to 10 illustrate a further embodiment in which each individual guide frame 132 is combined with a section of the plough guide 131 and of the frame of the scraper chain conveyor 133. The guide frame 132 has an upstanding part 135 on which the segmented control bar 134 is supported. This bar is adjustable both in the horizontal plane, that is in the direction indicated by the arrow X, and in the vertical plane, that is perpendicular to the direction of the arrow X, by mechanical or hydraulic mechanisms not illustrated.

The plough 130 has a rearwardly directed arm 136, a downwardly directed extension of which is provided at its end with a block 137 which is received in a guide channel 138. The pulling run of the endless chain is located in this channel and is connected to the block. At a lower level a channel 139 is provided for the return run of the chain. The plough has a roof cutter holder 140, as shown in FIG. 8, which is extensible in the direction of the roof 12 under the action of a hydraulic ram 141 mounted on the plough and preferably within the holder 140 itself. Referring back to FIG. 6, the plough is also fitted with a floor cutter 142 which is pivotally or displaceably mounted on the plough body so as to be extensible to a greater or lesser distance towards the floor.

To control the roof and floor cutters, a slide piece 145 is arranged to embrace and slide along the control bar 134 and has a ball end 144 received in a hemispherical socket 145 at the end of a horizontal lever 146 movable in the horizontal plane about a hinge 147 having a vertical axis. A push rod 148 is slidably supported within the rearwardly directed arm 136 of the plough and has a head which bears against the lever 146 at a point between the ball joint and the hinge 147. At its end remote from the ball joint, the lever 146 is connected with a pivot pin 149 having a horizontal axis and supported by the rearwardly directed arm of the plough. If the guide bar 134 is adjusted in the direction indicated by the arrow X shown in FIG. 10, that is, moved towards or away from the face, the lever 146 pivots around the axis 147, in the direction of arrow X', and displaces the push rod 148. If, however, the guide bar 134 is adjusted in the direction of the arrow Y, shown in FIG. 9, that is in a vertical sense, the lever 146 pivots in the direction of the arrow Y', and rotates the pivot pin 149.

This construction therefore makes it possible to use the control bar to transmit two separate signals to the plough by the simple measure of repositioning the guide bar horizontally and vertically. Thus, for example, the floor cutter 142 can be connected through a linkage with the push rod 148 and the roof cutter through another linkage with the pivot pin 149. Although mechanical linkages may be employed, a hydraulic circuit is more convenient. For example, the arrangement can be such that push rod 148 is equipped with a piston displaceable in a cylinder so that on retraction or extension of the push rod fluid is supplied to a piston and unit for adjusting the floor cutter 142. Likewise, the cylinder 141 of the roof cutter 140 can be pressurised by a circuit including a rotary piston rotated by the pivot pin 149. Alternatively, the plough body or the rearwardly extending arm thereof may be equipped with a hydraulic pressure accumulator from which pressure fluid is fed to the cylinders controlling the floor and roof cutters by valves responsive to movement of the parts 148 and 149. With either arrangement, the floor cutter is adjusted by varying the position of the bar 134 in a horizontal sense and the roof cutter is adjusted by varying the position of the bar 134 in the vertical sense.

As shown in FIG. 11, the control bar can be moved from the central position shown at 134 to any of the positions shown at 134' to 134''''. Assuming that the coal face is towards the left of the Figure, if the bar is moved from its neutral position into the position 134', the system may be so arranged that in accordance with a depression in the seam, the roof cutter is retracted and the floor cutter is extended so as to cause the plough to tend to cut into the floor. Positioning the bar at 134'' results in the roof and floor cutters both being retracted in accordance with a decrease in seam thickness. With the bar at the position shown at 134''', the roof cutter

is extended while the floor cutter remains retracted thereby causing the plough to tend to climb. With the bar in the position shown at 134'''', both the roof cutter and floor cutter are extended in accordance with an increase in seam thickness.

The embodiments illustrated in FIGS. 12 and 13 bear some resemlance to those described above but differ primarily in the arrangement of the adjustable upper plough part relative to the control bar used to adjust it. Whereas in the previously described embodiments the plough has an arm provided with a slider cooperating with the bar, in these last two embodiments the bar is carried on the ends of cantilevered arms projecting across the conveyor and is received within a channel or recess in the adjustable plough part or a clevis member carried thereon.

Referring to FIG. 12 the multi-part plough has a base 200, superstructure 202 and an adjustable upper part 203 having therein a channel 221 in which the segmented control bar 220 is received.

The base of the plough is guided along a guide 4 and has a block 201 which is enclosed within the channel 17 for the pulling run of the chain and is connected thereto. The plough superstructure 202 is pivotally connected to the base by a joint 204 having an axis substantially parallel to the face 10. The adjustable upper part has a downward extension 205 which is guided in a guide in the plough superstructure so as to be adjustable in the direction indicated by the arrow S. Each of the parts is fitted with winning tools 206 and the base part 200 has a floor cutter 207 while the upper part is fitted with a roof cutter 208. Each individual guide frame 209 has a forwardly extending foot 210 upon which the conveyor is supported and a rearwardly extending foot 211 on which a roof support unit is mounted. The roof support consists of at least one prop 30, a roof bar system 32 to 34, and a floor bar 31.

Each guide frame 209 has an upstanding post 225 supporting a horizontal shaft 214 parallel to the face. A bell crank lever 213 is individually adjustable by a hydraulic ram 217 having a piston rod 216 connected to the end of the vertical arm of the lever and the cylinders pivoted to the rearward foot 211. The other arm of the bell crank lever extends across the conveyor 13 and has a guideway 219 for an arm 220 which is displaceable in the direction of arrow T by means of a ram 221 supported on the lever arm 218 and having a piston rod pivoted to the arm 220.

At their ends nearer the face, the arms 220 of all of the guide frames are connected to respective flexibly interconnected segments of the tubular or cylindrical bar 222 which extends the full length of the face and is received in the channel 222.

By pressurising the double acting cylinders 221 of selected guide frames 209, the bar 220 is adjustable and the plough superstructure 202 and the part 203 can pivot together relative to the plough base about the joint 204 in a vertical plane and can be pressed against the mineral face with a positive pressure. The lower guide 14 can be pivoted in relation to the plough on the floor by means of rams 223 mounted to the individual guide frames and having piston rods which are pivotally attached on the goaf side at 224 to the conveyor 13.

The actuation of the rams 217 of the various guide frames results in the bell crank levers 213 pivoting about their shafts 214 in order to raise or lower the bar 222 and hence the roof cutter holder 203 in the direction of the arrow S. It is therefore possible by pivoting the bar 222 to adjust the plough in accordance with varying seam thicknesses and to mine the seam accurately to its entire thickness.

In the embodiment shown in FIG. 13 the construction of the plough is similar to that shown in FIG. 2, having a base 200 which is guided on the lower guide 14 and supports a plough superstructure 250. The superstructure has a downwardly directed extension received in a guide in the base 200. As with the embodiment of FIG. 12, an upper control member 251 extending the length of the face and consisting of flexibly interconnected sections is received within an open channel in the superstructure 250. The member 251 is carried at the end of a series of arms 252 which extend over the conveyor and have downwardly directed portions 253 guided in oblique guides 254 of the upstanding parts of the guide frames 255. Each of the various arms 252 can be raised or lowered by means of a ram 256 in order to adjust the member 251 in the direction of arrow P. In this way, the plough superstructure can be repositioned relative to the base by a greater or smaller distance as the plough moves along the face. Whereas in the embodiments previously described the guide frames have rested upon the floor, in this embodiment each of the guide frames is supported above the floor by a part 257 which is directed away from the face and is telescopically received in a guide 258. This guide is supported from the advancing roof support system by rams 259 which can be selectively actuated to tilt the entire guide frame section and the parts including the conveyor carried by it to vary the cutting horizon of the plough in relation to the floor. By means of the ram 260 associated with the guide 258 the guide frame can be shifted, in which process the part 257 slides in the telescopic guide 258.

What we claim is:

1. A mining installation comprising a conveyor extending alongside a face to be worked, a guide on said conveyor; a planer having a base guided for movement along said guide, a superstructure articulated to said base, and an upper part supported on the superstructure and adjustable relative thereto, said superstructure having an arm extending rearwardly across the conveyor, a guide member extending parallel to said conveyor, along which said arm is adapted to slide, a control member extending generally parallel to said guide member, means carried by said planer and adapted to follow said control member and to adjust the position of said upper part as it varies in position in contact with the control member.

2. A mining installation including a conveyor extending along a face to be worked, a mineral winning machine having a first adjustable body part equipped with tools for removing mineral from the face as the machine is moved along the face parallel to the conveyor, an elongate control member extending along the face generally parallel thereto and a follower cooperating with the control member and arranged to adjust the position of the said part of the machine in accordance with the location of the said member relative to the machine.

3. A mining installation as claimed in claim 2, wherein the follower cooperating with the control member is formed or provided on a lever pivoted on another part of the machine.

4. A mining installation as claimed in claim 3, wherein the lever is a two-armed lever one arm of which engages with the control member and the other arm of which engages with the said first part.

5. A mining installation as claimed in claim 3, wherein a lever arranged to follow the said control member is linked to a second lever which engages with the said first part and adjusts the same in accordance with the motion of the linkage consisting of the two levers.

6. A mining installation as claimed in claim 2, wherein the follower includes an axially displaceable push rod slidably supported by another part of the machine.

7. A mining installation as claimed in claim 6, wherein the said push rod bears against a lever system linked to and arranged to adjust the position of the said first part of the machine.

8. A mining installation as claimed in claim 6, wherein a further part of the machine is adjustable and the push rod is displaced axially through the intermediary of a lever supported for pivotal motion in two planes at right angles and provided with the follower, motion of said lever in one plane serving to displace the push-rod and motion of the lever in the other plane serving to actuate other means for controlling the position of the further adjustable part of the machine.

9. A mining installation as claimed in claim 8, wherein said push rod and other means are arranged to control the supply of pressure fluid to pressure fluid operated means controlling the position of the said parts of the machine.

10. A mining installation as claimed in claim 9, wherein the lever is carried upon a shaft, rotation of which controls the supply of pressure fluid to said further part.

11. A mining installation as claimed in claim 10, wherein the fluid is controlled by means which pressurise the fluid or by means which control its flow.

12. A mining installation as claimed in claim 2, wherein the said first plough part has therein an open channel in which the control bar is received.

13. A mining installation as claimed in claim 2, comprising a guide frame assembly disposed on the side of the conveyor remote from the face, said assembly being constituted by a plurality of individual guide frames, adjustable support means on each said frame, the control member being segmented and extending parallel to the face and being carried on said supports, the segments of said member being angularly adjustable in position thereby to vary the overall shape of the control member, the control member being disposed at a level above the conveyor.

14. A mining installation as claimed in claim 13, wherein each of at least some of the segments so supported is carried by a component of a pressure fluid operated piston and cylinder unit.

15. A mining installation as claimed in claim 14, wherein each of said units is supported by or housed within an upstanding part of the frame assembly.

16. A mining installation as claimed in claim 13, wherein each of at least some of the segments is carried at the end of an arm which extends across the conveyor.

17. A mining installation as claimed in claim 16, wherein each of the arms is pivoted to an upstanding part of the frame assembly.

18. A mining installation as claimed in claim 17, wherein each arm is one arm of a bell crank lever, relative to which the guide member is adjustable, and which bell crank lever is itself adjustable about its pivot axis.

19. An installation as claimed in claim 16, wherein said arm is supported in cantilevered fashion by an upstanding part of the frame assembly.

20. A mining installation as claimed in claim 13, wherein each guide frame is supported above the floor in a guide and is movable towards the face by a ram.

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