Feb. 7, 1950 C. E. BROWN 2,496,694

MINING MACHINE PROTECTIVE COVER UNIT

Filed March 8, 1946

2 Sheets-Sheet 1

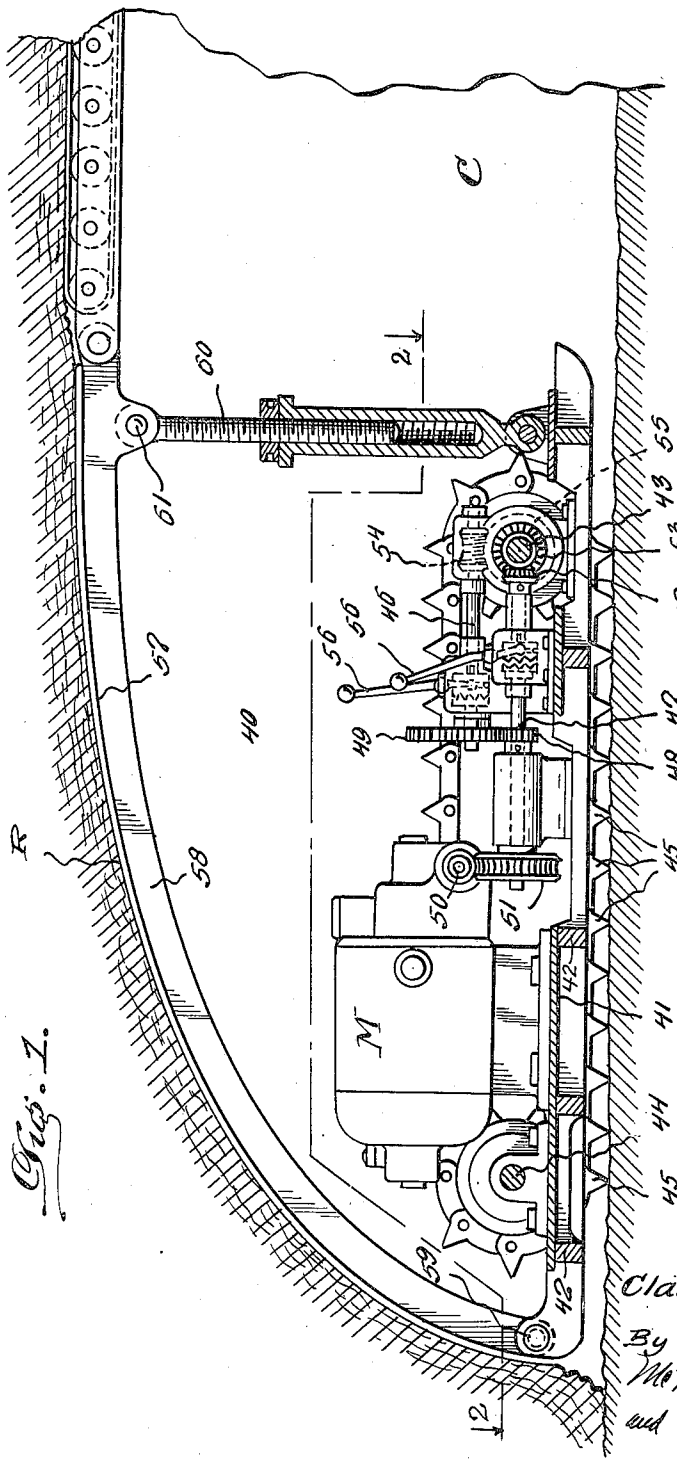


Fig. 1.

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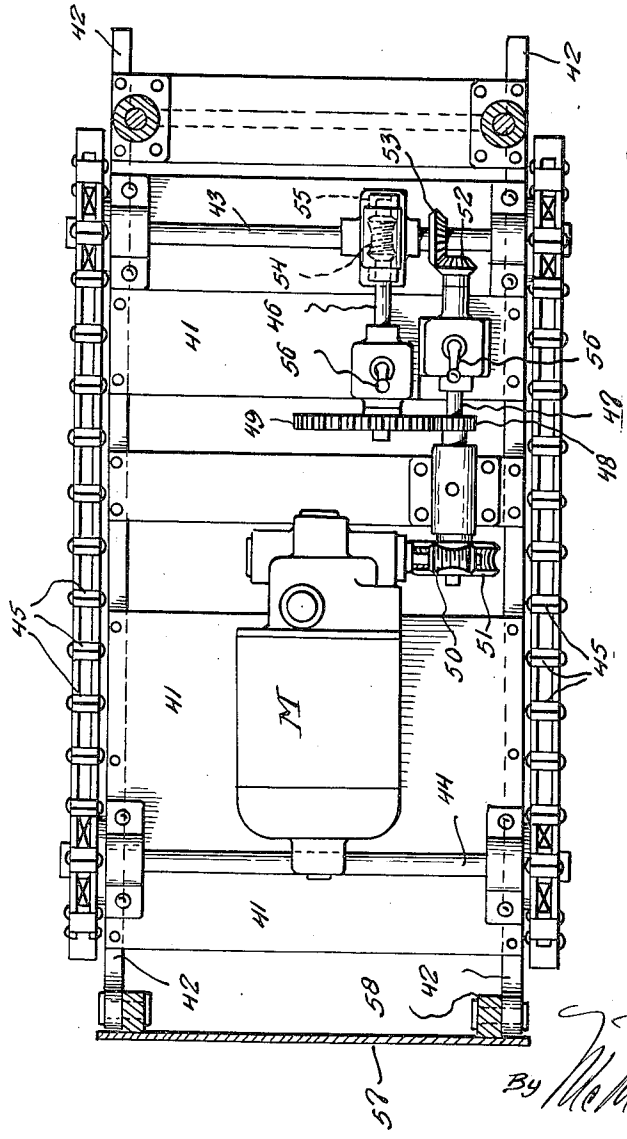


Fig. 2.

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UNITED STATES PATENT OFFICE

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MINING MACHINE PROTECTIVE COVER UNIT

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2 Claims. (Cl. 262—1)

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The present invention relates to a protective cover unit for use in the mining of coal.

The primary object of the invention is to provide a protective cover for the mining machine which protects not only the mining machine but also the workmen.

Another object of the invention is to provide a protective cover unit which affords protection in the event of a cave in of the roof.

Other objects and advantages will become apparent from the following description taken in conjunction with the accompanying drawings.

In the drawings:

Figure 1 is a side elevational view, partly in section, of the protective cover unit of the present invention.

Figure 2 is a plan view of the unit taken on the line 2—2 of Figure 1.

Referring to the drawings, the protective cover unit of the present invention is disposed in the room designated R adjacent a corridor C, such unit being a self propelled overhead safety cover unit and designated by the numeral 40. The unit 40 comprises a platform 41 supported on a pair of spaced transversely disposed beams 42. This platform is provided on its top with bearings for front and rear axles 43 and 44 carrying sprockets in engagement with an endless chain having treads 45 thereon. A power unit including a motor M for rotation on the forward driving axle 43 is mounted on the platform 41. By means of dual shafts 46 and 47 and suitable reduction gearing 48 and 49 which are powered by motor M, the drive axle 43 is capable of two different speeds, thus the platform 41 which carries the cover unit 40 can be advanced at high or low speed, as desired.

The high speed shaft 47 is directly coupled to the motor and rotated by worm 50 on a shaft driven thereby. The worm engages a worm gear 51 on the adjacent end of shaft 47. This shaft bears a bevel-gear 52 on the other end which meshes with a bevel-gear pinion 53 on the forward axle 43 of the movable platform. Intermediate its ends the shaft 47 carries the gear pinion 48 which meshes with the larger gear 49 and thereby provides for the reduction of speed of the shaft 46 which is rotated thereby.

Shaft 46 carries on its forward end a worm 54 which meshes with a worm gear 55 on the forward axle 43. Both the high and low speed shafts 47 and 46 are of the split type with clutches and clutch levers 56 to throw them into gear as desired. When the clutch on shaft 47 is in the forward axle 43 rotates at relatively high speed.

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When such speed of the moving platform is desired the low speed shaft 46 is de-clutched and the large gear 49 is allowed to idle. By de-clutching shaft 47 and throwing the clutch of shaft 46 in the platform 41 will travel forward at a greatly reduced speed.

As the primary function of the overhead unit 40 is to provide for the safety of the workmen engaged in the mining operation, a protective cover 57 is constructed over the platform 41 and supported thereby. This cover is designed to catch falling slate and soapy material from the roof of the mine as well as to afford protection in the event of a cave-in of roof. To this end the cover supporting beams 58 as well as the cover plates 57 secured thereon are constructed of suitable structural steel and properly trussed.

The beams 58, which are arcuate in form, are hinged at their rear ends to the extremities of the side platform beams by pivot bolts, as at 59, and are disposed longitudinally of the platform 41. They are extended somewhat in front of the platform and supported by hinged screw-jacks 60 which are pivotally mounted on the forward part of platform 41 and pivotally secured to the underside of the cover-supporting beams 58, as at 61.

The protective cover afforded by the plates 57 is normally underneath and contiguous to the ceiling and any falling slate will be caught thereby and discharged by the rearward slope thereof as this safety unit advances.

What I claim is:

1. A mobile protective cover unit for use in mining coal comprising a mobile platform having a motor supported thereon, driving means on said platform connected to the motor for driving the unit, a pair of longitudinally extending downwardly and rearwardly inclined arcuate cover supporting beams spaced from each other and pivotally connected at one end to one end of said platform, cover plates carried by said beams, and means supported by the other end of said platform and connected to the other end of said beams for raising and lowering the other end of said beams.

2. A mobile protective cover unit for use in mining coal comprising a mobile platform having a motor supported thereon, driving means on said platform connected to the motor for driving the unit, a pair of longitudinally extending downwardly and rearwardly inclined arcuate cover supporting beams spaced from each other and pivotally connected at one end to one end of said platform, cover plates carried by said beams, and jacks arranged adjacent the other end of the

platform and having one end pivotally connected to said other platform end, the other end of said jacks being pivotally connected to the other end of said beams.

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