Sept. 15, 1936. M. S. MOORE 2,054,386

CUTTER CHAIN FOR MINING MACHINES

Filed Oct. 25, 1935

Fig. 1.

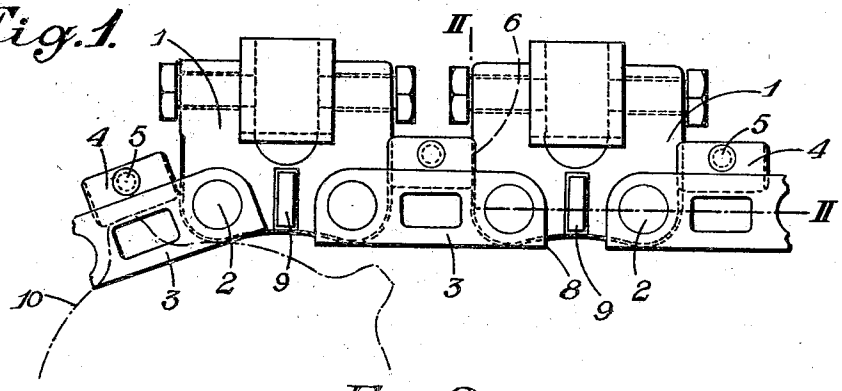


Fig. 2.

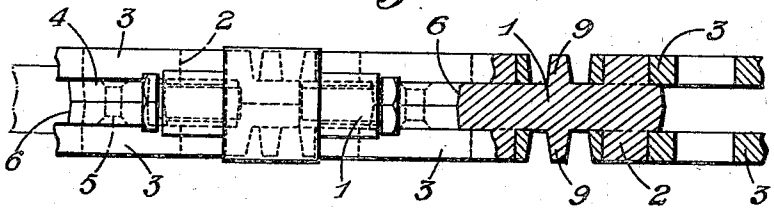


Fig. 3.

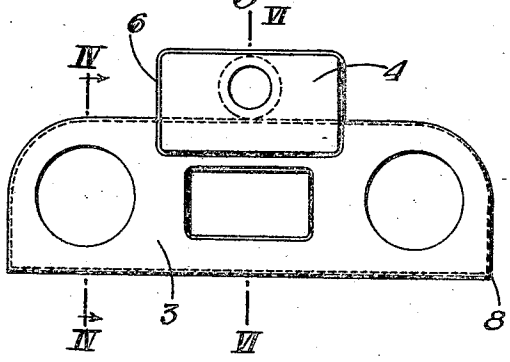


Fig. 4.

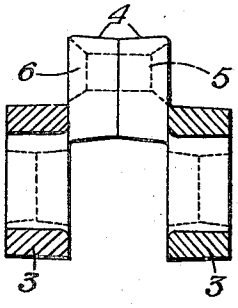


Fig. 5.

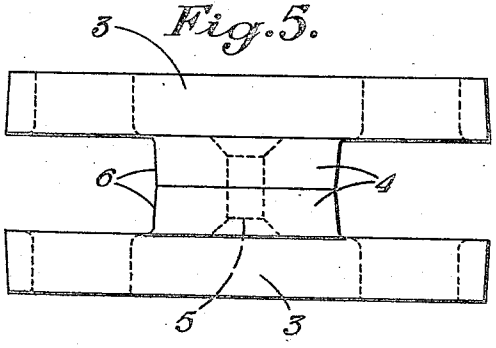
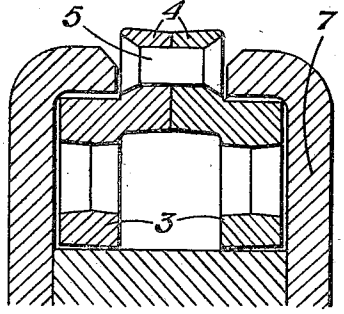


Fig. 6.



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CUTTER CHAIN FOR MINING MACHINES

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Application October 25, 1935, Serial No. 46,763
In Great Britain November 5, 1934

6 Claims. (Cl. 262—33)

This invention relates to cutter chains for mining machines, of the type comprising a series of boxes or blocks which carry the cutter picks or bits and are connected with each other by means of pivoted links. In a coal cutting machine such a chain travels in a guide or runway which may conveniently be provided between a pair of side plates having guiding surfaces adapted to engage the side links.

My present invention has for its objects to strengthen and to simplify the structure of cutter chains of this type, to improve the manner of assembling their parts and to provide convenient means for preventing the chain guide from being clogged with the holings or cuttings.

In accordance with this invention the pivoted side links which connect with each other the blocks or members forming the pick boxes are provided with inwardly projecting extensions adapted to bridge the gap between said links. The inward extensions of links facing each other may be connected with each other by means of rivets or otherwise, e. g. by welding. They prevent the ingress of holings to the chain guide, strengthen the chain and keep it from bending back. The end surfaces of said extensions are preferably bevelled or wedge-shaped to engage corresponding surfaces on the pick boxes, thus preventing sidewise rocking of the chain.

On their outer sides the links may be formed with square corners adapted to scrape against the bottom of the chain guide or runway. In order to engage the side faces of the runway, further scraping surfaces may be provided by forming projections on the sides of the pick boxes between the pivots connecting them to the links. By this means the whole space inside the runway is scraped clear of dirt or holings as the chain travels along the guide, the scrapings being thrown out where the joints between the pick boxes and links open up in the region of the sprocket wheel.

Referring to the accompanying drawing illustrating by way of example an improved chain constructed in accordance with my present invention

Fig. 1 is a side elevation of a portion of said chain.

Fig. 2 is a corresponding top view, partly in section on line II—II of Fig. 1.

Fig. 3 is a side elevation on a larger scale of a side link of such chain.

Fig. 4 is a cross-section on line IV—IV of Fig. 3.

Fig. 5 is a top view of the side link illustrated in Fig. 3.

Fig. 6 is a cross-section of a side link engaged in a guide or runway.

The chain illustrated in the drawing comprises pick boxes or blocks 1, which are made integral with laterally projecting pins 2, on which are pivoted the links 3 arranged in pairs, one on each side of the blocks 1. As best shown in Fig. 3, the links 3 are provided centrally at the top with inwardly projecting extensions 4 that bridge the gap between them and cooperate with the blocks 1 in preventing dust or holings from getting between links. Preferably the extensions 4 of associated links are rigidly connected together, as by means of rivets 5. Moreover their end surfaces 6 (Figs. 1 and 6) are made to engage the adjacent end surfaces of the blocks 1, and they may be so shaped, by bevelling or otherwise, that the blocks and links mutually lock each other against sidewise movement.

In a coal cutting machine the chain runs in a hollow guide or runway as 7, and in order to keep the inside thereof clear of dirt, I provide on the links 3 sharp corners 8 adapted to scrape against the bottom of the runway 7. The blocks 1, furthermore, may be provided at or near the bottom with outwardly directed side projections 9 adapted to scrape against the sides of the runway.

It will be understood that with this construction I provide a chain which is particularly strong and rigid. The ingress of holings between the links is effectively prevented by the projections 4 and any dirt that may find its way to the runway is scraped by the chain and thrown out when it tends around the sprocket wheel 10.

It will further be understood that changes may be made in the shape and construction of the parts described without departing from the scope of my invention as set forth in the appended claims.

I claim:

1. In a cutter chain for mining machines, the combination of members forming pick-boxes, said members having laterally projecting pins integral therewith, and pairs of side links arranged in alternate relation to and pivotally engaging said pins, said side links having inwardly projecting extensions adapted to close the gap between said links.

2. In a cutter chain for mining machines, the combination of axially arranged members, pins integral with said members and projecting lat-

erally therefrom, pairs of side links arranged in alternate relation to said members and pivotally engaging said pins, inwardly projecting extensions on said side links, said extensions in each pair closing the gap between said links and being rigidly connected with each other, the end faces of said extensions engaging the end faces of said members.

3. In a cutter chain for mining machines, the combination of pick boxes having bevelled end faces, pairs of side links in alternate relation to said pick boxes and pivotally connected therewith, inwardly projecting extensions on said links, the end faces of said extensions being bevelled to engage the end faces of said pick boxes.

4. In a cutter chain for mining machines, pick boxes, pairs of side links in alternating relation to and pivotally connected with said pick boxes, projections on said side links for protecting the chain against the ingress of holings and co-acting means on said projections and on said pick boxes for interlocking same against sidewise movement.

5. In a cutter chain for mining machines, pick boxes, outwardly extending pins on the sides of said pick boxes, pairs of side links in alternating relation to and pivotally engaging said pins, inwardly projecting extensions on said side links bridging the gap between paired links, said pick boxes having vertical side projections between successive pairs of links.

6. In a mining machine, the combination with a chain runway, of a cutter chain comprising pick boxes, pairs of side links in alternating relation to and pivotally connected with said pick boxes, inwardly projecting extensions on said side links closing the gaps between paired links, said links having rectangular bottom edges adapted to scrape against the bottom of said runway.

MATTHEW SMITH MOORE.