July 9, 1935. W. A. LOGAN 2,007,806

MINING MACHINE

Filed Nov. 8, 1934 2 Sheets-Sheet 1

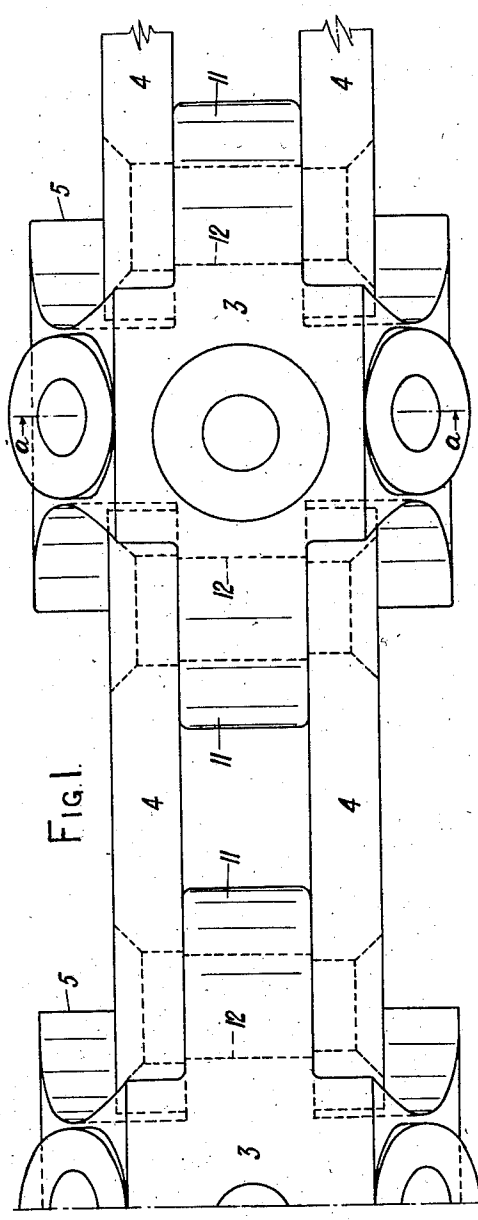

FIG. 1.

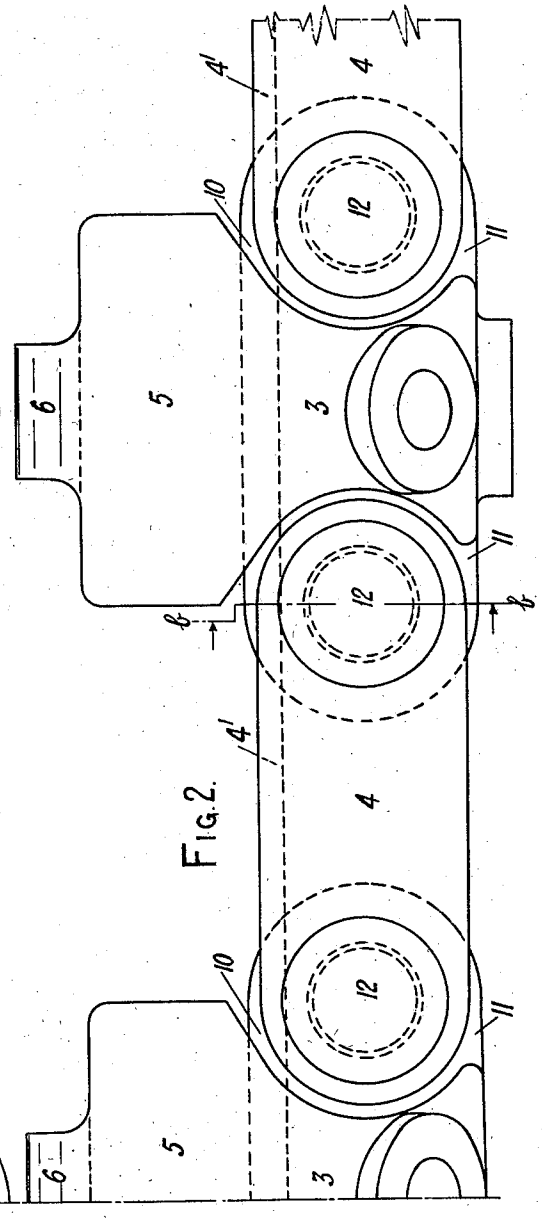

FIG. 2.

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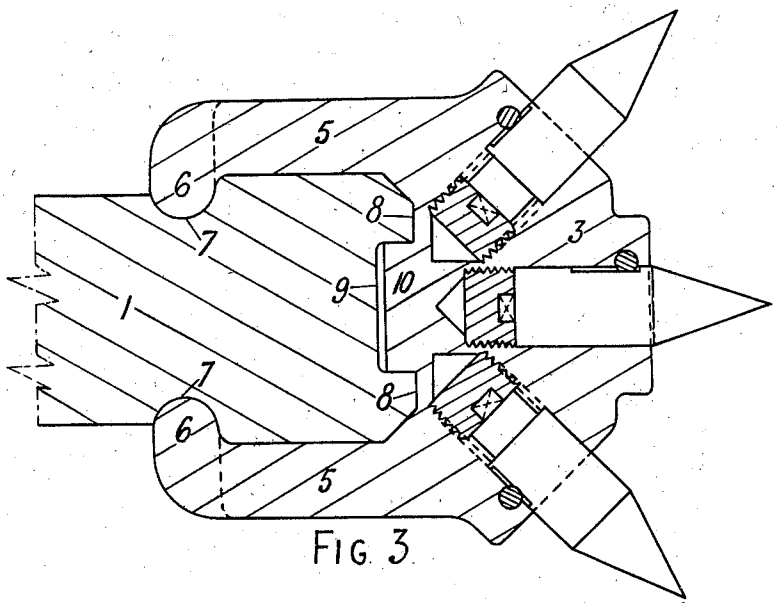

FIG. 3

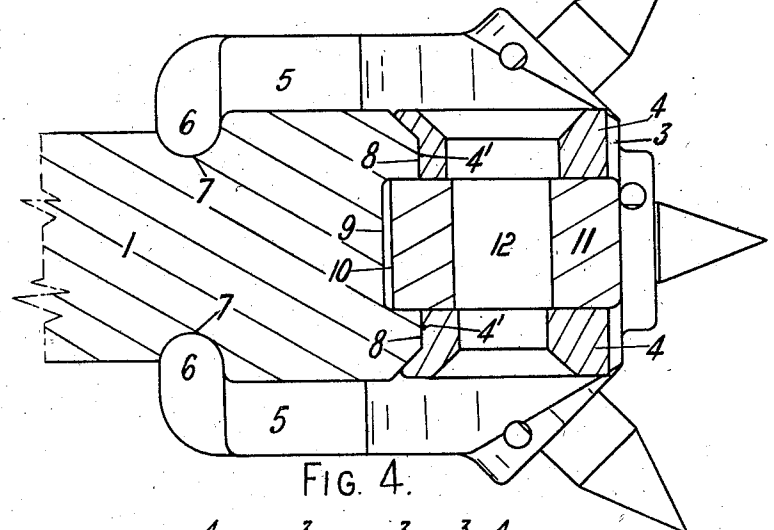

FIG. 4.

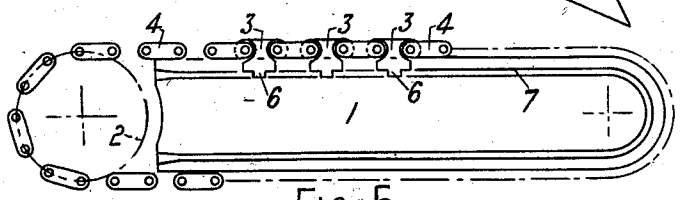

FIG. 5

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UNITED STATES PATENT OFFICE

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MINING MACHINE

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Application November 8, 1934, Serial No. 752,007
In Great Britain November 9, 1933

4 Claims. (Cl. 262—33)

This invention relates to improvements in mining machines.

As is understood, in jib cutters of the type heretofore in use the cutter boxes are guided between spaced jib plates, the inner end of each box having out-turned toes engaging guideways in the jib plates.

With this arrangement the overhang of the picks is considerable, so that with any play of the cutter boxes the picks are liable to deviate considerably from the desired line of cut.

Further, the jib plates are liable to be splayed and so permit abnormal play of the cutter boxes.

The present invention has for an object to provide an improved construction in which the cutter boxes are made to straddle the edge of the jib which can be made much narrower than hitherto.

Desirably, the cutter boxes are provided with inturned toes engaging guideways in the top and bottom faces of the jib.

With this arrangement the overhang of the picks from the point of support is reduced considerably and the chain is retained in its path in a more rigid manner than heretofore.

The cutter boxes may be additionally guided by providing each cutter box with a tongue engaging a peripheral guideway in the edge face of the jib.

The cutter boxes are identical and interchangeable, being interconnected by and alternating with links the inner edge of which may be guided on the edge face of the jib.

The invention is illustrated in the accompanying drawings in which Fig. 1 is an elevation, Fig. 2 a plan view, Fig. 3 a section on the line *a*—*a* of Fig. 1, Fig. 4 a part elevation part section on the line *b*—*b* of Fig. 2, and Fig. 5 a diagrammatic plan view of the cutter jib drawn to a smaller scale.

As shown, 1 denotes the cutter jib and 2 (Fig. 5) denotes the sprocket wheel for circulating the cutter chain 3, 4 around the jib 1.

The cutter chain comprises cutter boxes 3 interconnected by pairs of links 4, the cutter boxes 3 and the links 4 being slidingly guided on the jib 1. Each cutter box 3 is of U-form, being unitary with spaced limbs 5 which straddle the edge of the jib 1 and which present inturned toes 6 engaging guide grooves 7 formed one in the top face and one in the bottom face of the jib 1. Each cutter box 3 slidingly engages at 8 the edge face of the jib 1, as do also the inner edge faces 4' of the links 4. A peripheral guideway 9 formed in the edge of the jib 1 receives a guide tongue 10 integral with and projecting inwardly from each cutter box 3, said tongue 10 extending between a pair of lugs 11 integral with the cutter box and pivotally connected to the links 4 by means of stepped rivets 12 penetrating registering apertures in the lugs 11 and links 4.

Manifestly, the construction is such that the cutter boxes are efficiently guided and supported by the top, bottom and edge faces of the jib, the inturned toes 6 serving merely to resist centrifugal action on the slack flight of the cutter chain. Further, shallower jibs can be used than hitherto, permitting narrower cuts, while the overhang of the cutters or picks is substantially reduced, giving a more rigid and durable construction.

The invention is not limited to the particular construction illustrated.

For example, the cutter boxes may be otherwise linked together. The links 4 may be dispensed with and the cutter boxes directly connected to one another by means of extended lugs integral with the cutter boxes and serving to provide the requisite inter-box spaces for engagement by the teeth of the chain-driving sprocket wheel 2. Again, the links may be fitted to overlap the top and bottom faces of the jib.

I claim:—

1. In a mining machine, in combination, a cutter jib formed on its edge face with a peripheral guideway, and a circulating cutter chain supported by said jib, said cutter chain comprising cutter boxes, each of substantially U-form to straddle the edge of said jib and having a tongue engaging said guideway, and links interconnecting said cutter boxes.

2. In a mining machine, in combination, a cutter jib presenting guideways in its top and bottom faces and a peripheral guideway in its edge face, and a circulating cutter chain supported by said jib, said cutter chain comprising cutter boxes, each of substantially U-form to straddle the edge of said jib and having inturned toes engageable with the guideways in the top and bottom faces of said jib and a tongue engaging said peripheral guideway, and links interconnecting said cutter boxes, the inner edges of said links being guided on the edge face of said jib.

3. A cutter box for a mining machine, said box being of substantially U-form to straddle the edge of the machine jib and presenting on its inner face a tongue to engage a guideway in the edge face of said jib.

4. A cutter box for a mining machine, said box being of substantially U-form to straddle the edge of the machine jib and having inturned toes to engage guideways in the top and bottom faces of said jib, and a tongue to engage a peripheral guideway in the edge face of said jib.

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