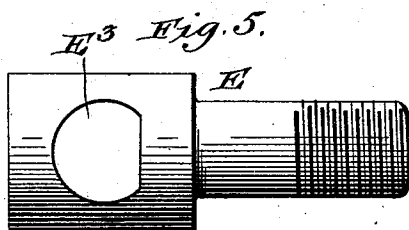
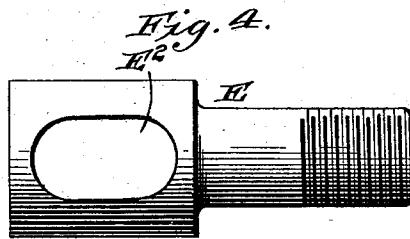
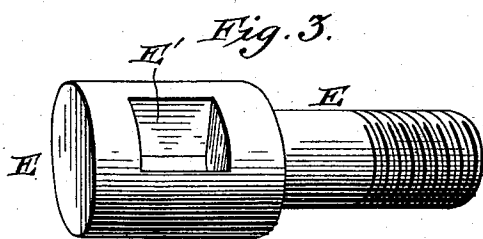
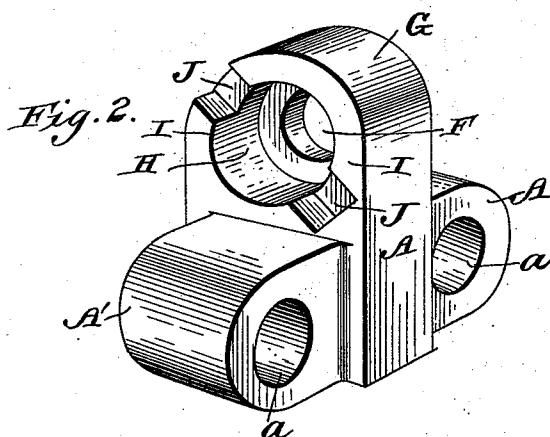
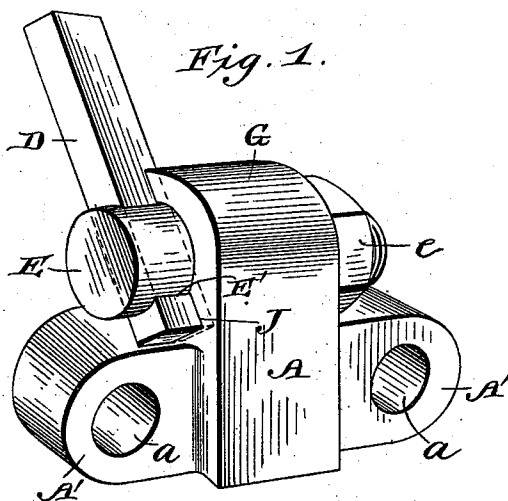


(No Model.)

J. A. WIGGS, Jr.
CUTTING CHAIN FOR MINING MACHINES.

No. 532,511.

Patented Jan. 15, 1895.



Witnesses
Geverance.
Curtis A. McBride.

Inventor
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UNITED STATES PATENT OFFICE.

JAMES A. WIGGS, JR., OF BIRMINGHAM, ALABAMA.

CUTTING-CHAIN FOR MINING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 532,511, dated January 15, 1895.

Application filed May 7, 1894. Serial No. 510,266. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. WIGGS, JR., a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented certain new and useful Improvements in Cutting-Chains for Mining-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the endless cutter chains used in mining machines for cutting out coal and similar substances, as shown in Letters Patent No. 450,971, granted to James H. McEwen and Burr E. Cartright, April 21, 1891.

In my application filed April 13, 1894, Serial No. 507,394, I have shown several different constructions of devices for fastening the knives or cutters of such chains to the cutter-carrying links thereof, all such forms having recessed head-blocks to which the cutters are clamped by the wedge-action or hook-like overlapping of solid fastening bolts. In the present application, therefore, I do not claim such forms or constructions. I have found it cheaper and on the whole more satisfactory to substitute for such solid bolts or hooks, a bolt having a square or other angular or elongated or irregular opening formed therein such as would prevent the turning of a cutter, blade or knife similar in form in cross-section, fitted into the said opening.

My improvement therefore consists chiefly in the combination of a bolt, having such an opening or eye, with a cutter-carrying link, having a suitably recessed part to receive the said bolt substantially as hereinafter set forth and claimed.

In the accompanying drawings Figure 1 represents in perspective a knife carrying link embodying my invention. Fig. 2 represents a detail view of one of the said cutter-carrying link without the cutter and the bolt whereby it is secured in place. Figs. 3, 4, and 5 represent detail views of different forms of the bolt.

A designates the knife-bearing or cutter-carrying links of the chain; B, the connecting links overlapping the reduced ends A' of links A, and C the coupling pins, which pass

through holes *a* and *b* of the said links respectively and have elongated or angular heads C', to prevent their turning in links B, all generally as described and shown in my application aforesaid.

D designates the cutters and E the fastening bolts, which are provided with nuts *e*. Each bolt E has an opening channel or eye E' formed through its head to receive one of the said cutters in vertical position. The shape of the said opening and the shape in cross-section of the said cutter correspond and must be such as to prevent the said cutter from turning in the said bolt. As a rule, I prefer this shape to be a square, as shown in Fig. 3; but it may be an ellipse or other elongated figure as shown in Fig. 4; or a triangle as shown in Fig. 5 or some other angular or irregular figure, as shown in Fig. 6. The shank of the said bolt extends through a central passage F in the cutter head or block G, which is formed with or rigidly attached to the said cutter-carrying link. The front face of the said head or block is formed with a deep recess H, which receives the enlarged head of the bolt, through which head the opening channel or eye E' is made as aforesaid. This recess may be open at the top partly or wholly, but has side walls I, for limiting the extent to which the cutter can be inclined laterally. The said bolt is free to turn when its nut is loosened, and I am thus enabled to adjust the position of the knife or cutter, so that it will be either perpendicular to the chain or at an angle in either lateral direction.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In the cutter-chain of a mining machine, the combination of a bolt having its head provided with an opening to hold a cutter with a link, a recessed cutter-head attached to the said link or integral therewith and a cutter fitting into the said opening of the bolt and said recess substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES A. WIGGS, JR.

Witnesses:

E. A. WATSON,
C. W. WINN.