

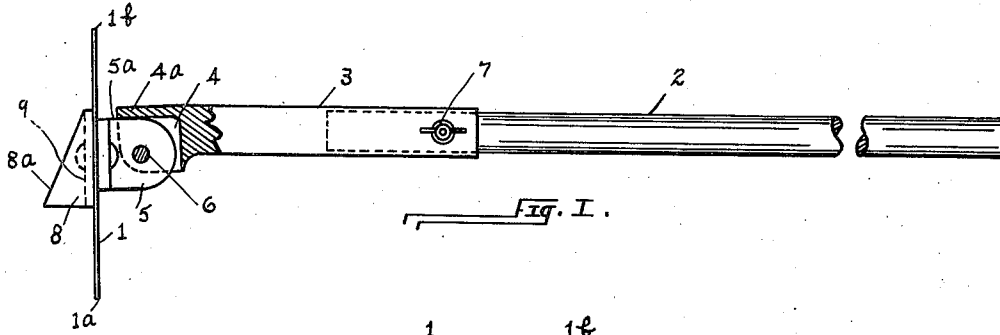
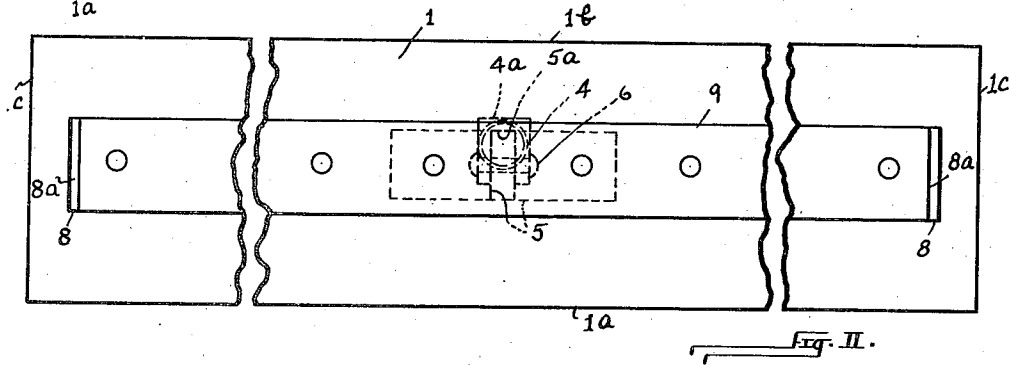
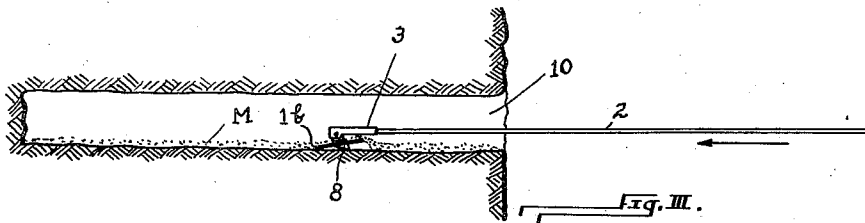
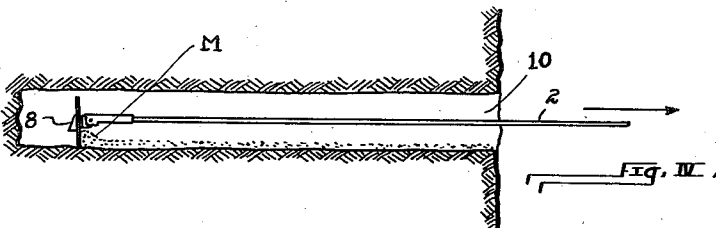
Aug. 10, 1937.

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2,089,245

MINING TOOL

Filed June 19, 1936



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2,089,245

MINING TOOL

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Application June 19, 1936, Serial No. 86,096

3 Claims. (Cl. 294—53)

My invention relates to a coal-mining tool, and more particularly is directed to a hoe or scraper for removing dust and loose particles of coal from undercuts.

5 An undercut is a kerf or slot drilled or cut in the body of a coal vein for the reception of a charge of explosive. For manifest reasons it is essential that such kerf or undercut be cleansed of coal dust before the explosive charge is introduced and fired, to break-out the coal. The tool of this invention consists in an elongate handle carrying at one end a flat scraping blade of relatively great width with respect to its height. The blade is pivotally attached to the handle in such manner that the blade may be slid inward, with its flat face downward, into an undercut. When the tool reaches the inner end of the undercut, its movement is reversed, and the blade swings into erect position. During its outward movement, the lower edge of the blade scrapes the floor of the undercut, and the loose coal and dust are swept before the erect blade and removed through the mouth of the undercut. Repeated manipulations of this sort are effective to cleanse the undercut and prepare it for the introduction of explosive.

My invention consists in specific elaborations in a tool of this type, to the end that the described operation of the blade may be more positively and effectively obtained. More particularly, I provide means on the tool for insuring that the scraping blade will swing into erect position, and, advantageously, such means consist in one or more cleats mounted on the blade.

35 In the accompanying drawing Fig. I is a view, partly in side elevation and partly in vertical section, of a tool embodying the invention, the handle of the tool being shown fragmentarily; Fig. II is a fragmentary view in front elevation of the tool; Fig. III is a view of the tool being inserted in an undercut, and Fig. IV is a view of the tool in course of withdrawal.

Referring to the drawing, the tool includes a thin metal blade 1 pivotally secured to an elongate wooden handle 2. The handle is secured in a metal sleeve 3 that carries at its end a yoke 4 of inverted U-shape in cross section; an "eye" lug 5 is riveted or welded to the rear face of the blade, and the "eye" portion of the lug is by a pin 6 pivotally secured to the yoke, with the opposite legs of the U embracing the "eye" portion, as shown in dotted lines in Fig. II. The handle 2 is, conveniently, removable from the sleeve, so that it may be used in known way as a tamper in packing in explosive in an undercut.

A removable through bolt and wingnut 7 normally secure the handle in the sleeve.

On the front face of the blade, I secure one or more pointed cleats 8, and, advantageously, I provide two or more of such cleats at the ends of a metal strip 9, as shown in Fig. II. The strip 9 is riveted or otherwise secured to the rear face of the blade, and provides reinforcement therefor, while affording support for the two cleats 8. The cleats are thus positioned above lower edge 1a of the blade. When the tool in the hands of a miner is thrust into an undercut 10, the blade swings about the pin 6 into a substantially flat position (cf. Fig. III), and slides on the floor of the undercut with the rear face of the blade presented downward. It will be observed that the cleats are so fashioned that they offer little or no resistance to the movement of the tool into the undercut. Indeed, the rear edges 8a of the cleats are formed to provide runners, upon which the head of the tool rides over the floor of the undercut. Additionally, it will be observed that the rear edges of the cleats are so inclined, and are so located on the back of the blade, that the top edge 1b of the blade is directed downward in such manner as to slip beneath the particulate material M to be removed. Thus, the objectionable tendency of the inwardly moving tool to carry the loose material before it and to the rear of the undercut is minimized.

When the blade reaches the base or inner end of the undercut, its withdrawal is begun. Immediately the sharp points of the cleats catch upon the floor of the undercut, in such manner that the blade swings into erect position. In such position the upper edge 5a of the lug 5 engages the top 4a of the yoke 4 (that is, the base of the inverted U) and prevents the blade, under the pull of the handle 2, from swinging beyond such erect position, indicated in Figs. I and IV of the drawing. During the continued outward movement of the tool, the edge 1a of the blade scrapes over the floor of the undercut, and the erect body of the blade carries the loose material M before it to the mouth of the undercut, whence it is disposed of in usual way. By repeating such operation several times the undercut is quickly and thoroughly cleansed.

The ensuing claims contemplate variations from the specific embodiment of the invention illustrated and described.

I claim as my invention:

1. A mining tool including a handle, a scraper blade pivotally attached to said handle, and cleats

mounted on said blade and adapted to cooperate with a supporting surface in response to pull applied to the handle in swinging said blade into substantially vertical position, with the bottom 5 edge of the blade resting on said surface.

2. The structure of claim 1, in which said cleats provide runners for supporting the blade in sub-

stantially flat position when thrust is applied to said handle.

3. The structure of claim 1, in which a reinforcing member is secured to said blade and said cleats are integrally formed on said reinforcing 5 member.

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