J. M. HUGHES.

BIT.

APPLICATION FILED MAY 25, 1915.

1,286,008. Patented Nov. 26, 1918.

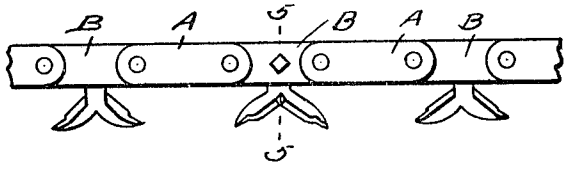


Fig. 4.

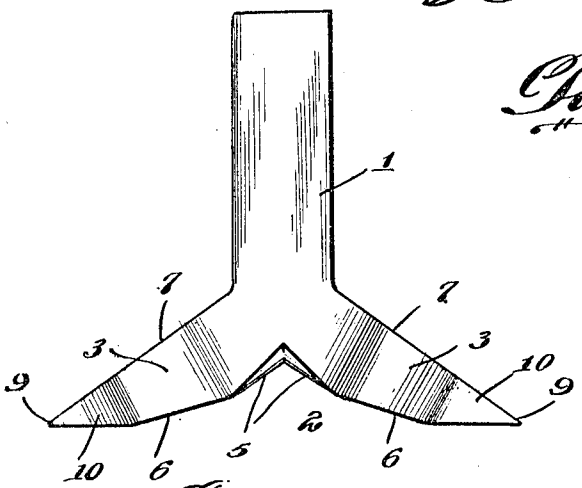


Fig. 1.

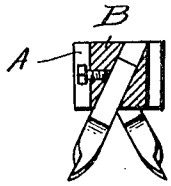
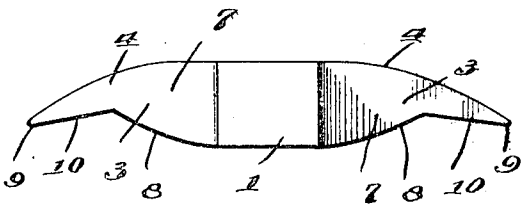


Fig. 5

Fig. 2.



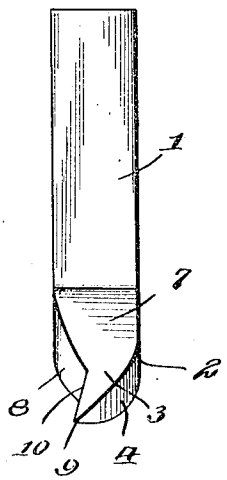


Fig. 3.

Witnesses

Frederick L. Fox.

Inventor

John M Hughes

By Victor J. Evans,

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN M. HUGHES, OF HOUSTON, PENNSYLVANIA.

BIT.

1,286,008. Specification of Letters Patent. Patented Nov. 26, 1918.

Application filed May 25, 1915. Serial No. 30,400.

To all whom it may concern:

Be it known that I, JOHN M. HUGHES, a citizen of the United States, residing at Houston, in the county of Washington and State of Pennsylvania, have invented new and useful Improvements in Bits, of which the following is a specification.

The present invention relates to improvements in the construction of bits employed upon reciprocating chains in coal cutting machines, and the object of the invention is to provide a bit of this character which includes a cutting or routing finger and a cleaning finger arranged directly to the rear of the cutting finger, both of said fingers being of a substantially similar construction, wherein either of the said fingers may be employed as a cutter, cleaner or router member in accordance with the direction of travel of the machine upon which the bit is arranged.

Another object of the invention is to provide a cutting member adapted to be attached to the reciprocatory chains for coal or other mining machines including a body portion or shank having one of its ends formed with oppositely disposed laterally arranged cutting members or bits proper whereby the cutter may be attached to the machine and the machine operated in one of two directions to permit of the cutting members of the bit operating upon the bed of coal or the like regardless of the direction in which the machine is moved.

A further object of the invention is to provide a bit member for the reciprocatory chains of coal cutting machines that includes a shank which may be easily and quickly positioned upon the machine, the said shank having a head portion providing oppositely extending cutting members or bits, both the said bits being sharpened by operation upon one of the faces thereof adjacent its outer edge, so that the said sharpening may be accomplished in an easy and expeditious manner, and also whereby the bit may be reversed upon the machine to bring either of its cutting edges into action.

In the drawing:

Figure 1 is a front elevation of a bit constructed in accordance with the present invention,

Fig. 2 is a top plan view of the same, and

Fig. 3 is a side elevation of the same.

Fig. 4 is a side elevation of a chain showing my bit applied thereto and

Fig. 5 is a cross sectional view on the line 5—5 of Fig. 4.

As illustrated in the drawing, the bit or cutting member includes a shank 1 which is preferably rectangular in cross section. This shank is formed upon one of its ends with what I will term a head and which is designated by the numeral 2. The head is formed with laterally extending members 3 which are round upon one of their faces, as indicated by the numeral 4, the said rounded walls starting from a central transverse groove in the head 2, the walls of the said groove being beveled outwardly in opposite directions, as indicated by the numerals 5, and the laterally extending members from the terminals of the said beveled walls 5 are inclined in opposite directions to the terminal of the extending members 3, the last mentioned curved or inclined walls being indicated by the numeral 6. The under or lower faces of the laterally extending members 3 are inclined downwardly from the terminals of the said extensions to the sides of the shank 1, as indicated by the numeral 7. The lateral members provide the cutting elements of the device, and the front face of the head, or the face thereof opposite that provided with the rounded sides or walls 5 of the laterally extending members 3 is, for a certain distance, arranged flush with the face of the shank, but is from thence beveled in opposite outward directions, as indicated by the numerals 8, so that what I will term the outer faces of the bits from the head, to a suitable distance away from their points, are inclined inwardly toward the round rear walls 4 thereof, and the laterally extending cutting members from the points 9 thereof to the terminal of the beveled faces 8 are inclined inwardly, as at 10. The inclined surface 10 may be formed by hammering upon the points or cutting members of the device, and as the lateral or cutting members are arranged upon each of the opposite sides of the bits, it will be noted that the points as well as all of the corners of one of the said

members may be adapted to enter and cut the strata while the peculiar formation of the opposite cutting element, serves as a cleaner or router.

The bit is primarily adapted for use in coal mines and is primarily designed for use upon a channeling chain of the class known to the trade as the "Sullivan coal cutting chain machine." The chains in these machines are disposed to travel in one direction for a determined length of time but are also susceptible to movement in a second or opposite direction. When moved in the second or opposite direction it is necessary to change or reverse the bits or cutting elements, and with a construction as set forth it will be noted that such a chain provided with a bit constructed in accordance with my invention will obviate the necessity of reversing the cutting elements or bits and likewise that when one of the cutting members or fingers of the improvement is not employed in cutting it is designed to clean the slack made by the other finger of the bit.

In use, a plurality of such bits are associated with a chain A as shown in Figs. 4 and 5 of the drawing, in which I have shown the bits as extending angularly from the links B, the bit on one link extending angularly beyond one side edge thereof, and the bit on the next adjacent link extending angularly beyond the opposite side edge. This arrangement is continued in alternation throughout the length of the chain and provides a structure which will produce a cut of greater width than the chain to provide clearance therefor so that a cut of any desired depth may be made. It will be seen that each bit will cut regardless of the direction of motion of the chain.

From the above description it will be seen that I provide a cutter having substantially horn-shaped bits extending laterally from its head, that the points of the said bits are each disposed an equal distance from the center of the shank or head and further that the said points project each a similar distance from one of the faces of the tool and are parallel to the said face of the tool. The points of the bit are arranged longitudinally of the leads of the chain.

Having thus described the invention what I claim is:

1. A bit for the purpose set forth including a shank having one of its ends provided with lateral extensions, the upper faces of the said extensions being rounded from their outer points to the center of the head of the bit, the inner faces being inclined from the points to the sides of the shank, the front faces of each of the members being dished to provide opposite angular portions, all as and for the purpose set forth.

2. A cutting device including a substantially rectangular shank terminating in a head, and said head being formed with laterally extending upwardly inclined bits terminating in points, the said points being disposed approximately an equal distance from the center of the shank and extending beyond the plane of the head and shank in one direction, the pointed ends of the said members being disposed in an imaginary line that is parallel with each other and parallel with the face of the shank beyond which they extend.

3. A bit, for the purpose set forth, comprising a shank which terminates in a head that is formed with lateral extensions and has its end wall centrally provided with transverse depressions, the walls of which being beveled in opposite directions, the upper walls for the said extensions being inclined at opposite angles, the rear wall of the head and extensions being rounded in the same direction from approximately the central portion of the head and terminating in points which are disposed in a line with each other and which have their outer faces inclined toward the outer face of the head, the said outer face being beveled from its juncture with the points in the direction of the head and the underface of the said extensions from the walls provided by the groove being inclined in opposite directions to the said points.

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

JOHN M. HUGHES.

Witnesses:
RICHARD HUGHES,
GEORGE HOLMES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."