

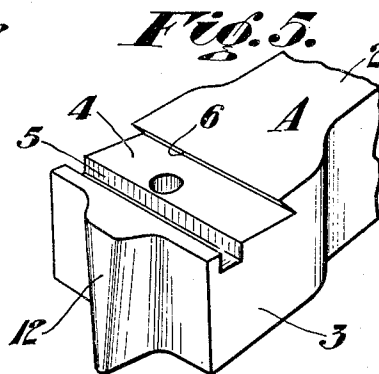
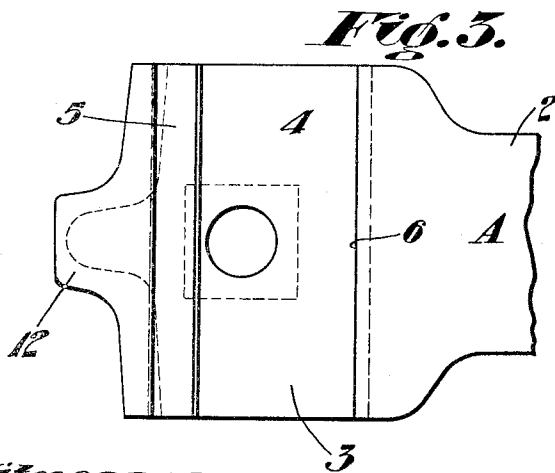
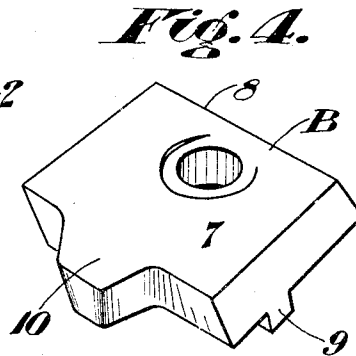
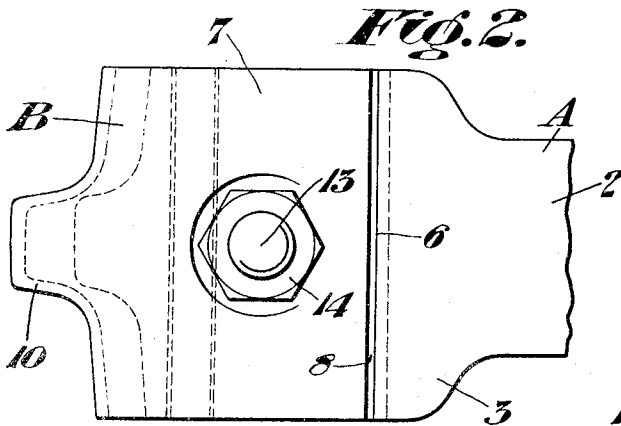
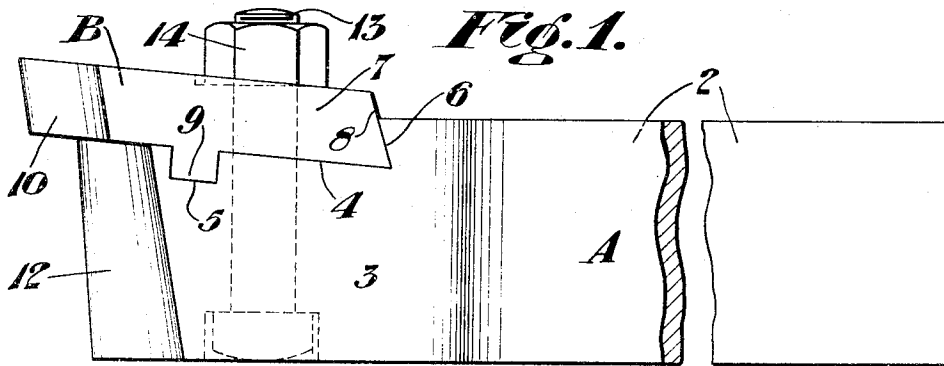
May 24, 1927.

1,629,667

J. D. KNIPPLE

METAL CUTTING TOOL

Filed Oct. 15, 1926



Witnesses:

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## UNITED STATES PATENT OFFICE

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## METAL-CUTTING TOOL.

Application filed October 15, 1926. Serial No. 141,751.

This invention relates to metal cutting tools and while not limited thereto, relates more particularly to tools for use in heavy duty planers such as are used in planing railway frogs, crossovers and other heavy steel structures.

In the commercial production of railway track structures such as frogs, crossovers, and the like, it is necessary to form certain parts by planing operations and, in order to reduce the cost of these operations to a minimum, heavy duty planing machines have been developed capable of making deep cuts by using a high grade of special high-speed tool steel tools.

Heretofore the high-speed tool steel tools for use in these machines have consisted of a standard steel holder with a high-speed tool steel cutter or bit welded thereto, and when the cutting edge of the cutter or bit was worn down, due to continual sharpening, the entire tool had to be discarded, resulting in the loss of the tool-holder and the remaining portion of the high-speed tool steel bit.

The present invention provides a tool composed of a tool or bit holder having a demountable high-speed tool steel cutter or bit which may be replaced when worn, and the worn bit may be reused in tools having shorter heads, thereby entirely reducing the loss resulting from discarding the tool-holders and materially reducing the loss resulting from the discarding of the worn bits or cutters.

In the drawings—

Figure 1 is a side elevation of a tool constructed in accordance with this invention.

Figure 2 is a plan view of the bit supporting head of the tool holder.

Figure 3 is a similar view with the tool bit removed.

Figure 4 is a perspective view of the tool bit.

Figure 5 is a perspective view of the head end of the tool holder.

Referring more particularly to the drawings, the letter A designates the tool-holder as a whole, which supports a cutter or bit B.

The tool-holder A comprises a squared shank portion 2 terminating at its lower end in an enlarged bit supporting head 3. The head 3 has its forward face recessed from its lower end upwardly and inwardly forming a cutter or bit seat 4. The rear wall of the seat 4 is provided with a slot 5 ex-

tending at right angles to the longitudinal axis of the tool and the top wall of said seat is undercut to provide an overhanging beveled retaining flange 6.

The high-speed tool steel bit B is mounted in the seat 4 and comprises a body portion 7 having its upper end face beveled, as at 8, so as to project and engage under the retaining flange 6. The rear face of the bit B is provided with a transversely extending supporting rib 9 adapted to extend into the slot 5, and serves to prevent twisting of the bit under heavy duty. The lower end of the bit B is cut away to form a projecting cutting nose 10, and the lower end of the head 3 of the holder A is provided with a centrally disposed rib 12 adapted to engage the bit and reinforce and support the nose 10.

A bolt 13 is passed through the head 3 and the bit B and provided with a nut 14 for locking the bit B in position and preventing displacement thereof.

In use the bits B may be sharpened by grinding without removing them from the holders A, as is usual until their cutting edges are cut down too close to the holders. After the bits B have their cutting edges ground down too close to the holders A, the bits are removed and new bits substituted therefor.

The bits removed from the holders as above described, may then be fitted to new holders having shorter heads 3 so as to again expose their cutting edges and permit their use, or such bits may be mounted in lighter and smaller tool holders for use in other machines as desired, so that the maximum amount of the high-speed tool steel bits may be utilized before they need be discarded.

While I have shown and described one specific embodiment of my invention, it will be understood that I do not wish to be limited thereto since various modifications may be made without departing from the scope of my invention as defined in the appended claims.

I claim—

1. A tool of the class described, comprising a shank, an enlarged cutter supporting head formed integral with the lower end of said shank, said head having its forward face recessed from its lower end upwardly and inwardly to form a cutter bit seat, the rear wall of said seat being provided

with a slot extending at right angles to the longitudinal axis of the tool and the top wall of said seat being undercut to provide an overhanging retaining flange, and  
5 a high-speed tool steel cutter bit mounted in said cutter seat, said bit having its upper end beveled so as to project and engage under said retaining flange, a supporting rib projecting from the rear face of said bit  
10 and engaged in said slot in the rear wall of said seat, and means for locking said bit against displacement relative to said seat.

2. A tool of the class described, comprising a shank, an enlarged cutter supporting  
15 head formed integral with the lower end of said shank, said head having its forward face recessed from its lower end upwardly and inwardly to form a cutter bit seat, the rear wall of said seat being provided with

a slot extending at right angles to the longitudinal axis of the tool and the top wall of said seat being undercut to provide an overhanging retaining flange, and a high-speed  
20 tool steel cutter bit mounted in said cutter seat, said bit having its upper end beveled so as to project and engage under said retaining flange and its lower end cut away  
25 to form a cutting nose, a supporting rib projecting from the rear face of said bit and engaged in said slot in the rear wall of said  
30 seat, a bolt passing through said cutter supporting head and said bit to lock said bit against displacement, and means formed integral with the lower end of said head for  
35 supporting said cutting nose.

In testimony whereof, I have hereunto signed my name.

JAMES D. KNIPPLE.