G. McKERAHAN.

CUTTING TOOL.

APPLICATION FILED OCT. 19, 1917.

1,267,782. Patented May 28, 1918.

Fig. 1.

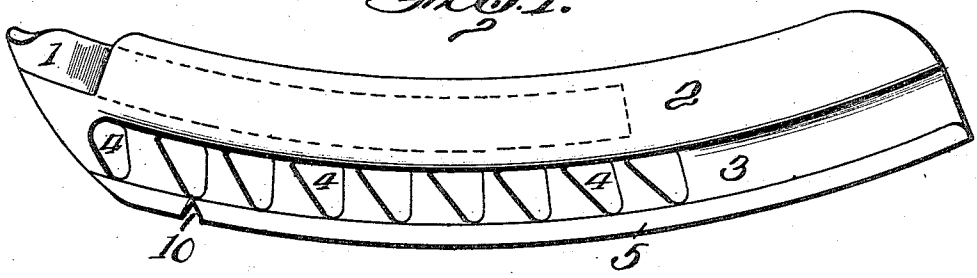


Fig. 2.

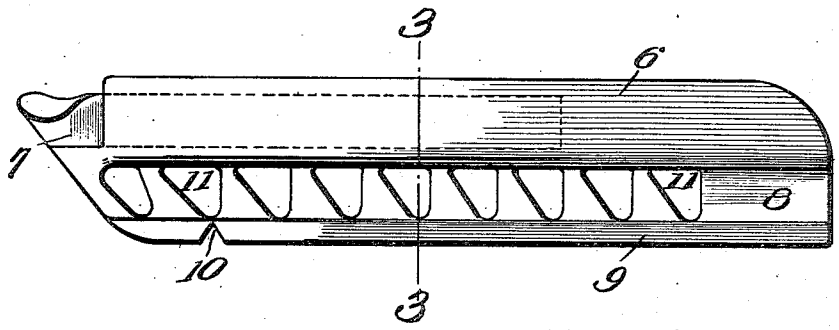


Fig. 4.

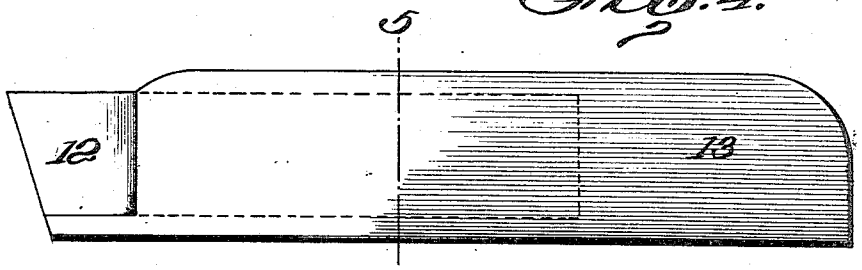


Fig. 3.

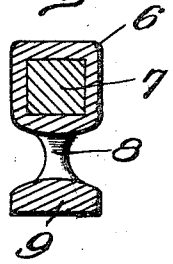
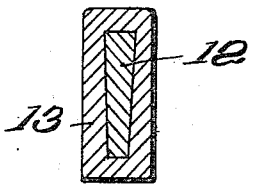


Fig. 5.



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CUTTING-TOOL.

1,267,782. Specification of Letters Patent. Patented May 28, 1918.

Application filed October 19, 1917. Serial No. 197,427.

To all whom it may concern:

Be it known that I, GEORGE McKERAHAN, a citizen of the United States, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented certain new and useful Improvements in Cutting-Tools of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in cutting tools for metal working machines, the object being to provide a cutting tool formed of high speed steel inclosed by a holder formed of cast iron which is cast around the tool in such a maner that a combination tool is formed which has many advantages over tools of this character now in use.

Another object of my invention is to provide a cutting tool in which the holder is formed with a channel rib portion having perforations to facilitate the breaking away of the integral base portion thereof to enable the holder to be readily ground away as the high speed steel of the tool wears.

Another object of my invention is to provide a curved form of holder with a high speed steel cutter in order to present the cutting point to the material being operated on in a more advantageous manner than in tools of this character now in use as the cutting tool is given an upward tilt by the shape of the holder.

I am aware that I am not the first in the art to attach a holder to a high speed steel cutting tool, but in prior constructions the tool is secured to the holder in various manners, while in my device the holder which is formed of cast iron is cast around the tool whereby I obtain a great advantage over prior constructions in tools of this character now in use.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the accompanying drawings,

Figure 1 is a side elevation of a combination cutting tool constructed in accordance with my invention;

Fig. 2 is a side elevation of a slightly modified form;

Fig. 3 is a section taken on line 3—3 of Fig. 2;

Fig. 4 is a side elevation of a cutting tool in the form of what is known as a cutting-off tool; and

Fig. 5 is a section taken on line 5—5 of Fig. 4.

Like numerals of reference refer to like parts in the several figures of the drawing.

In Figs. 1, 2, and 3 I show the application of my construction of cutting tool constructed in the form of what is known as surfacing tools used in connection with metal working machines such as lathes, planes, etc.

In Fig. 1, 1 indicates a curved cutter formed of high speed steel over which is cast a cast-iron body 2 forming a holder for the cutter 1, said body having a channel rib portion 3 provided with perforations 4 substantially triangle in shape as clearly shown in Fig. 1.

The channel rib portion 3 of the holder forms an enlarged base portion 5 connected to the body portion 2 by a web, and it will be seen that by this construction an exceedingly strong holder is provided for the cutting tool which presents the cutting tool to the material being operated in such a manner that better results can be obtained as the tool is given an upward tilt.

When the tool wears and it is desired to resharpen the same by notching the base portion 5 in alinement with one of the perforations 4, the web portion and base can be broken off so as to reduce the grinding of the holder, as after the base portion and web portion have been broken off it is only necessary to grind away the body portion in order to expose the cutting tool.

In the slight modified forms shown in Figs. 2 and 3, the holder 6 is formed straight and is formed of cast iron which is cast around a straight cutting tool 7 which is formed of high speed steel, said holder having a channel rib portion formed by web 8 connecting the base 9 to the body 6, and in Fig. 2 I have shown the base 9 notched at 10 in alinement with one of the substantially triangular-shaped openings 11 formed in the web 8 in order to allow the base and web to be broken away from the body portion to reduce the grinding of the holder in sharpening the cutting tool.

In either of the forms as shown in Figs. 1, 2 and 3 when the high speed steel cutting tool becomes worn, and it is necessary to resharpen the same by notching the base of the holder by the grinding steel, the web and

base portion can be broken away from the body and the body portion ground away from the high speed cutting tool quickly.

In the form shown in Figs. 4 and 5 the cutting-off tool 12 is illustrated over which is cast the cast-iron body 13 in order to provide a holder for the cuttting tool proper which holder can be ground away on the high speed cutting tool as the same wears.

For particular purposes tools Figs. 2 and 4 can be curved in a horizontal plane instead of the vertical curvature shown in Fig. 1.

From the foregoing description it will be seen that I have provided a cutting tool and holder formed of a high speed steel cutting tool having a cast-iron body cast around the shank portion of the cutting tool in order to provide a rigid support for the tool and to facilitate the grinding away of the holder as the tool wears.

I claim:

1. A cutter for metal working machines formed of high speed steel having cast around it a body or holder which completely incloses the cutter except at the projecting cutting end thereof.

2. A cutter for metal working machines, comprising a high speed steel cutter having a holder cast over said cutting tool, said holder having an apertured channel rib portion.

3. A cutter for metal working machines formed of high speed steel of considerable length compared with its width and thickness, said cutting steel having cast around it a cast-iron body or holder which completely incloses the steel except at the projecting cutting end, said holder having a perforated channel rib portion.

4. A cutter for metal working machines comprising a high speed cutting tool having a holder formed of cast-iron cast over the greater portion of the body of the cutting tool provided with an extension at one end extending under the outwardly projecting cutting portion of the cutter.

5. A cutter for metal working machines, comprising a cutting tool formed of high speed steel having a holder formed of cast-iron cast around the body portion of the cutting tool and provided with a channel portion producing a base portion connected to the body portion of the holder by an apertured web, said base portion being adapted to be nicked in alinement with one of the apertures to allow said base portion and web portion to be broken away from the body portion of the holder.

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

GEORGE McKERAHAN.

Witnesses:

E. W. Stevens,

Robt. C. Storar.