Oct. 19, 1948. J. PARASCHUK 2,451,574

CHIP GUARD

Filed June 21, 1945

Fig. 1.

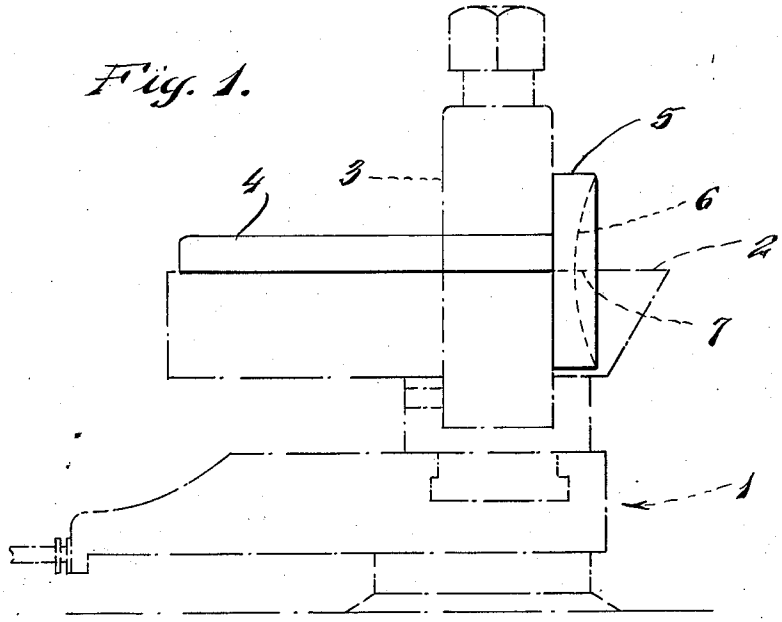


Fig. 2.

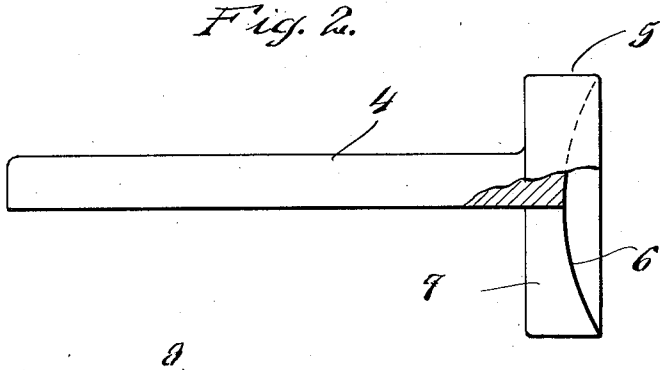


Fig. 3.

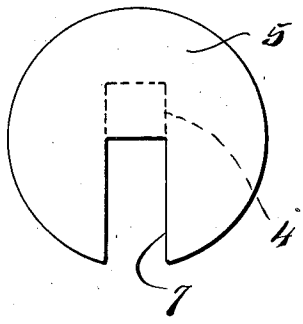
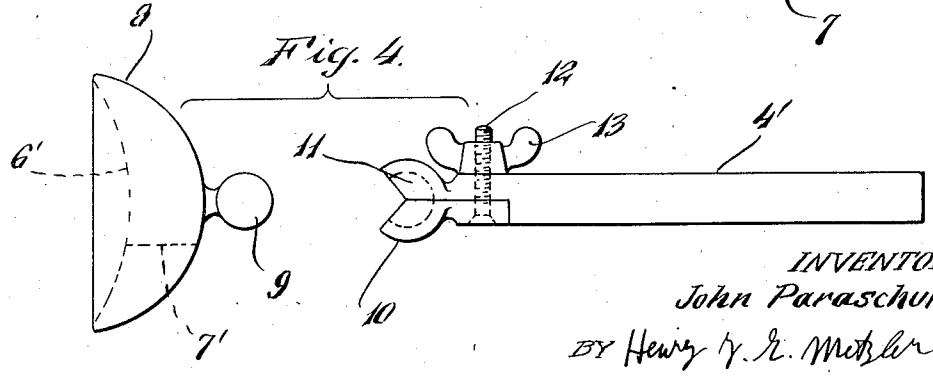


Fig. 4.



INVENTOR
John Paraschuk
BY Henry J. R. Mettler
Agt.

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CHIP GUARD

John Paraschuk, New York, N. Y.

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1 Claim. (Cl. 29—96)

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This invention relates to improvements in safety devices and, more specifically, to a new and improved chip guard for lathes and similar devices.

It is well known to everyone working on lathes or similar machines that chips of certain material, such as steel and the like, when they are being cut off the work by the cutting tool of the machines, have a tendency to fly radially away from the tool edge and constitute a serious danger to the operator. Many injuries to the face, the eyes, and the hands of operators, who watch closely the progress of the work, have resulted from chips violently thrown away from the work of high speed machine tools and the like.

Therefore, the main object of the present invention is the provision of a device of the character described which will deviate the chips from their normal directly radial, dangerous course, so that they will fly in a more axial direction, that their force will be reduced by friction on the device, and that they no longer constitute a danger to the operator.

Another object of the present invention is the provision of a device of the character described which can be attached easily and quickly to the toolpost of a machine without requiring any structural changes on the toolpost, the tool, or the machine itself.

Still another object of the present invention is the provision of a device of the character described which is simple and inexpensive to manufacture but which is sturdy and well adapted to withstand the rough treatment to which devices of this kind are frequently subjected.

Further objects of the instant invention reside in any novel feature of construction or operation or novel combination of parts present in the embodiment of the invention described and shown in the accompanying drawing whether within or without the scope of the appended claim and irrespective of other specific statements as to the scope of the invention contained herein.

In the drawing:

Figure 1 is a side elevation of a preferred embodiment of my invention, as it appears when it is attached to the toolpost of a lathe;

Figure 2 is an enlarged side view of the embodiment of Figure 1 partially broken away;

Figure 3 is a front plan view of the device shown in Figure 2; and

Figure 4 is a side elevation of a preferred modification of the device.

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Similar numerals refer to similar parts throughout the several views.

In the drawing in Figure 1 the numeral 1 denotes a portion of a lathe having a tool 2 which is carried by a toolpost 3. The objects denoted by the numerals 1, 2 and 3 do not form a part of my present invention and are indicated in dash-and-dotted lines in Figure 1.

My invention relates to the chip guard which consists of a preferably rectangular stem 4, that is secured to or is made as a unit with (as in the instance Figs. 1, 2, and 3 shown) a disk 5 of steel or of any other suitable material. The front side 6 of disk 5 is concave, and a preferably rectangular slot 7 is provided on disk 5 in such a manner that it extends from the periphery of disk 5 to the lower side of stem 4, so that the upper extremity of slot 7 is on a level with the lower side of stem 4. The slot 7 is so dimensioned that the tool 2 can be extended therethrough, and the stem 4 is adapted for being extended through the toolpost together with the tool, which is preferably located directly below the stem 4, as may be seen in Fig. 1. While in the diagram of Figure 1 the disk 5 is indicated as being adjacent to the toolpost 3, it will be obvious that the length of the stem 4 allows the placing of disk 5 at a spaced relation to the toolpost 3. The chips hit first the concave surface 6 of the disk 5 and are by it deviated, and their force is reduced by the friction caused when the chips slide along the curved surface 6.

The disk 5 can be plano-concave as shown in Figs. 1, 2, and 3, which is preferable for heavy work, or it can be concavo-convex as shown in the modification of Figure 4. The arrangement of Figure 4 is preferably used for light work. It shows the stem 4 and the disk 8 separately as they appear before the latter is attached to the former. In this case the disk 8 has also a concave front portion 6' and a slot 7', and a ball 9 is secured to its rear portion. The stem 4' has a divided ball-socket-shaped front portion consisting of the stationary part 11 and the movable part 10, which is secured to the stem 4' by means of a screw 12 and a nut 13. In this way the disk 8 can be pivoted to the stem 4' by means of the ball-and-socket connection 9, 10, 11, 12, and it can be retained after angular adjustment in the proper position by tightening the nut 13.

Further modifications will be apparent to those skilled in the art and it is desired, therefore, that my invention be limited only by the prior art and the scope of the appended claim.

Having thus described my invention, what I

claim and desire to secure by Letters Patent in the United States is:

A chip guard comprising a concavo-convex disk having a rectangular slot which extends from the periphery of the disk toward its center, and a stem pivotally secured to the convex side of the disk and being adapted to be inserted into the toolpost of a lathe adjacent the cutting tool which extends through said slot.

JOHN PARASCHUK.

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