May 10, 1949. A. TOTH ET AL 2,469,531

SHIELD DEVICE

Filed Sept. 14, 1945

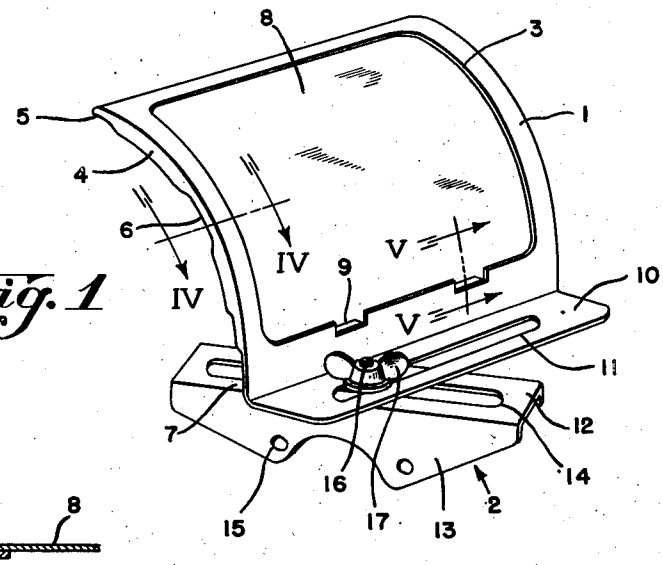


Fig. 1

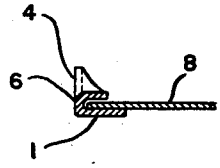


Fig. 4

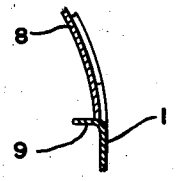


Fig. 5

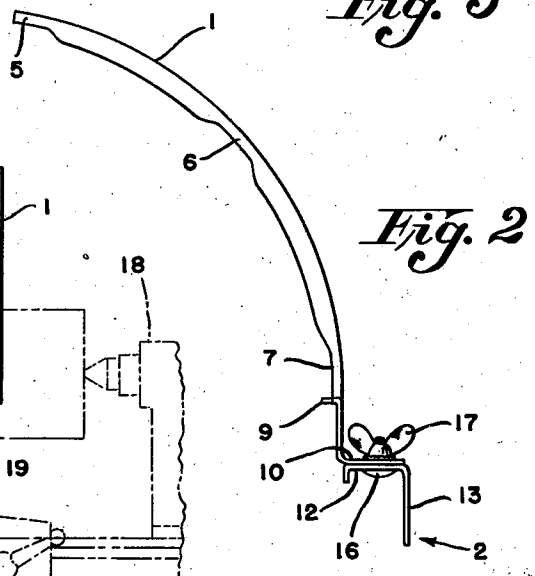


Fig. 2

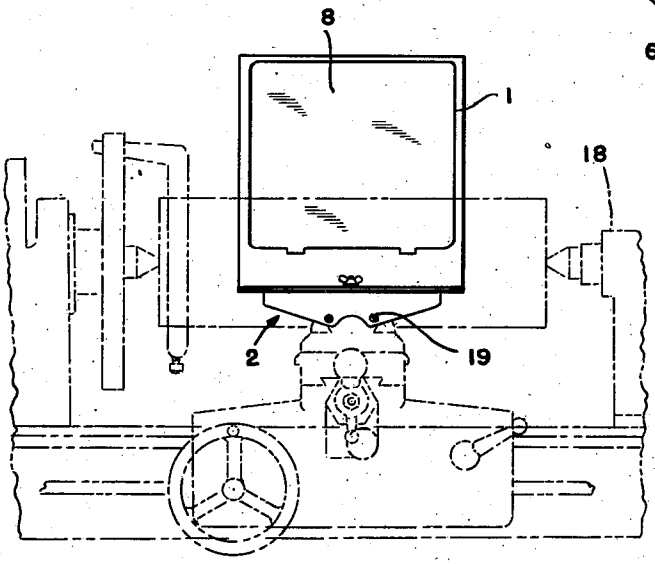


Fig. 3

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Patented May 10, 1949 2,469,531

UNITED STATES PATENT OFFICE

2,469,531

SHIELD DEVICE

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Application September 14, 1945, Serial No. 616,294

2 Claims. (Cl. 82—34)

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This invention relates to a shield device and, in particular, it relates to a guard for permitting visual inspection of certain mechanical operations while, at the same time, affording protection to the operator.

In machining operations, such as produced by lathes, milling machines, shapers, and the like, it frequently occurs that flying chips of metal present a hazard to the operator. In some cases, the operator wears goggles in order to protect the eyes. Metal chips which are thrown off from machines of this type are usually extremely hot and, therefore, are dangerous to other parts of the body even though the operator's eyes are protected. Furthermore, operators always object to the use of goggles and frequently do not wear them even under dangerous conditions.

In accordance with the practice of our invention we provide a safety device in the form of a shield which enables the operator to obtain a broad view of the article in process of machining. The principal body of the shield is arcuate in form so as to be particularly suitable for use with a lathe. Also, the device includes a double slot arrangement whereby the shield may be adjusted readily in variable positions.

Among the objects of our invention are to provide a safety device in the form of a shield which is adaptable for use on machines, such as a lathe, and will form a semi-permanent part thereof; to provide a safety device in which the principal portion is readily removable if desired; to provide such a safety device which may be readily adjustable in various positions; to provide such a safety device in which the transparent shape forming a part thereof may be readily removed or replaced; and, to provide a safety device of the character described which is efficient in use and which may be manufactured economically.

These and other objects and advantages will appear more fully in the following detailed description when considered in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of a shield forming an embodiment of our invention;

Figure 2 is a side elevational view thereof;

Figure 3 is a front elevational view of the shield illustrating an assembly relation with a portion of a lathe;

Figure 4 is a transverse view, in section, of a detail of the shield frame taken along lines IV—IV of Figure 1; and

Figure 5 is a transverse view, in section, of another detail of the shield frame taken along lines V—V of Figure 1.

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With reference to the drawing, we show an embodiment of our invention in the form of a shield comprising essentially a frame 1 and a bracket 2. The frame 1 is arcuate in shape having an opening 3 constituting the major area of the frame. The arcuate sides of the frame 1 are provided with an angular extension member 4 for the purpose of adding stability to the frame.

At spaced portions along the angular member 4, such as at 5, 6 and 7, the angular member 4 is bent inwardly a short distance parallel to the face of the frame, as shown particularly in Figure 4. This provides a groove for the reception and retention of a sheet of transparent material 8. This sheet 8 may be formed of any transparent material, such as glass or any of the transparent plastics or synthetic resins. At the bottom of the frame 1 adjacent to the opening 3 a portion 9 of the frame 1 is bent inwardly of the opening 3 so as to provide a stop for the transparent sheet 8. By this arrangement, the transparent sheet 8 may be easily inserted or removed through the upper portion of the frame 1.

Extending from the frame 1 and substantially at right angles thereto is a base member 10 having a slot 11 running along the length of the base member.

The bracket 2, with which the shield is associated, comprises essentially an angular member including a top portion 12 and a side portion 13. A slot 14 extends along the length of the top member 12. The side portion 13 is provided with one or more apertures 15 for the purpose of attaching the bracket to a lathe, or other machine. A bolt 16 extends through the slots 14 and 11 and a wing nut 17 provides means for clamping the bracket and the shield portion together. Figure 3 illustrates the shield in assembly position with a machine such as a lathe 18. Machine screws 19 attach the bracket 2 with a suitable portion of the lathe.

The bracket portion 2 may be attached to the lathe as a permanent part thereof, and the remaining portion of the shield may be associated with the bracket 2 by means of the bolt and nut 16 and 17, respectively. The slots 11 and 14 permit the shield to be removed easily and quickly into various positions according to the best vantage to accommodate the operator.

As thus described, it is believed apparent that we have provided a novel and useful shield for the purpose stated which is conducive of safety and

efficiency in performing machine operations. While we have shown and described a preferred embodiment of our invention, it is to be understood that we contemplate those obvious modifications which appear within the spirit of our invention and which appear in the scope of the appended claims.

Having thus described our invention what we claim and desire to protect by Letters Patent is:

1. A protective shield of the character described comprising an arcuate frame having an opening therethrough, a sheet of transparent material supported by said arcuate frame and enclosing said opening, a reinforcing angle extending from the curved side of said arcuate frame, a base reinforcing angle forming an integral part of the frame extending from the bottom portion of said arcuate frame and including a slot extending along the length of the reinforcing angle, a projection forming a part of the vertical leg of the base reinforcing angle extending radially of the arcuate frame and serving as a stop for the sheet of transparent material, a supporting angle having a slot extending along the length of its upper leg, and a single pivotal means for clamping the reinforcing angle and the supporting angle together through said slots, said sheet of transparent material being slidably retained by the arcuate frame, and the upper edge of the frame being open for slidably receiving the sheet of transparent material.

2. A protective shield of the character described comprising an arcuate frame having an opening therethrough, a sheet of transparent material supported by said arcuate frame and enclosing said opening, a reinforcing angle extending from the curved side of said arcuate

frame, said reinforcing angle having spaced portions theerof extending parallel with the face of said frame for retaining said sheet of transparent material in an arcuate position with said frame, a base reinforcing angle forming an integral part of the frame extending from the bottom portion of said arcuate frame and including a slot extending along the length of the reinforcing angle, a projection forming a part of the vertical leg of the base reinforcing angle extending radially of the arcuate frame and serving as a stop for the sheet of transparent material, a supporting angle having a slot extending along the length of its upper leg, and a single pivotal means for clamping the reinforcing angle and the supporting angle together through said slots, said sheet of transparent material being slidably retained by the arcuate frame, and the upper edge of the frame being open for slidably receiving the sheet of transparent material.

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