April 26, 1932. E. KELLEY 1,855,635

POLISHING AND SANDING TOOL

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Fig. 1

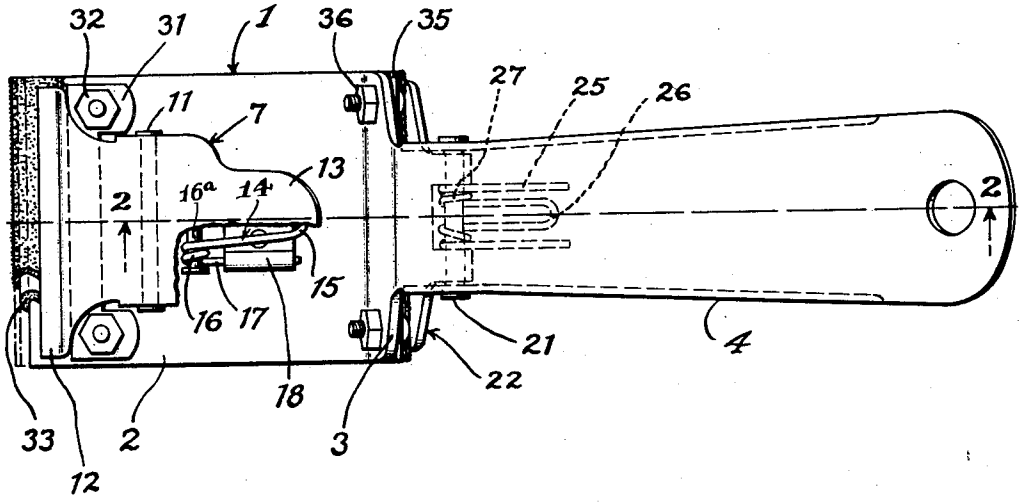
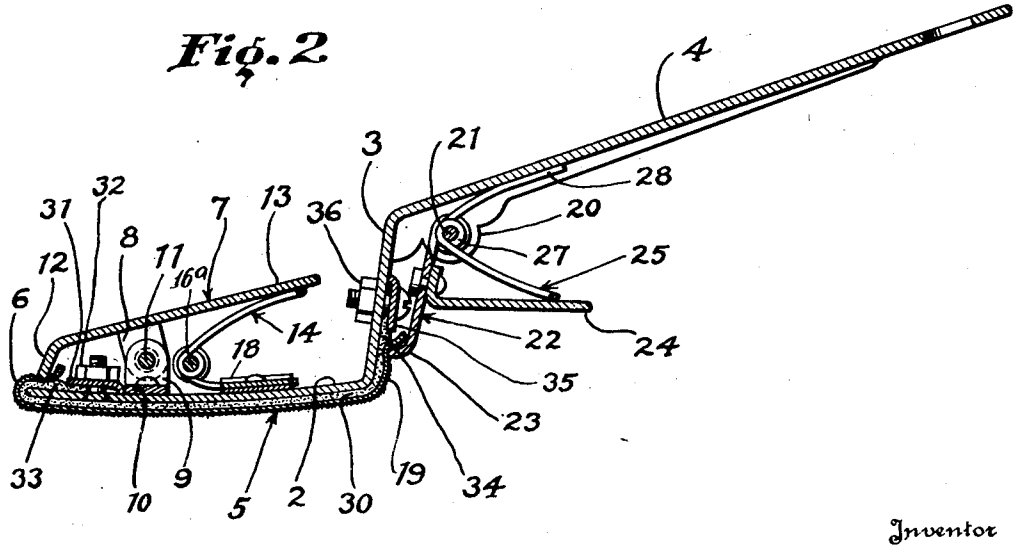


Fig. 2



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POLISHING AND SANDING TOOL

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This invention relates to a tool to be used in sandpapering or polishing surfaces. It is quite usual for workmen to sandpaper or polish surfaces by using a block of wood with the sandpaper or polishing material wrapped around or under the block. However, tools have been heretofore constructed having means for securing a sheet of sandpaper or a polishing pad to them.

The general object of this invention is to produce a tool which is simple in construction and which can be readily operated to enable the sheet of sandpaper or polishing pad to be removed when it is necessary to renew it, or to change the tool from a sandpapering tool to a polishing tool.

A further object of the invention is to produce a tool for this purpose of suitable construction in which the clamping means is readily accessible but at the same time not in the way of workmen when using the tool.

Further objects of the invention will appear hereinafter.

The invention consists in the novel parts and combinations of parts to be described hereinafter, all of which contribute to produce an efficient polishing and sanding tool.

A preferred embodiment of the invention is described in the following specification, while the broad scope of the invention is pointed out in the appended claims.

In the drawings:

Figure 1 is a plan of a sanding and polishing tool embodying my invention, certain parts being broken away.

Figure 2 is a longitudinal section through the tool illustrated in Figure 1 taken about on the line 2—2 of Figure 1.

Referring more particularly to the parts, the body 1 of the tool is preferably formed of a single piece of plate metal, the forward portion of which is in the form of a shoe 2 to carry the sandpaper or polishing pad. This shoe is formed integrally with an upwardly extending part constituting a shank 3 that connects integrally at its upper edge to an upwardly inclining handle 4 for operating the tool.

In Figure 2, 5 represents the sheet of sandpaper which has its forward end 6 bent over so that it lies upon the upper face of the shoe 2 at the forward end. At this point I provide clamping means for clamping the sand paper in position, and this clamping means is preferably in the form of a clamping plate 7 pivotally mounted on the upper side of the shoe so as to rock on a horizontal axis. For this purpose the side edges of the clamping plate 7 may be provided with integral downwardly projecting ears 8 that cooperate with similar ears 9 projecting upwardly from the cross bar 10 riveted to the upper face of the shoe 2. A pivot bolt 11 connects these ears and on this pin or bolt the clamp plate rocks. The forward end of the clamping plate 7 is turned downwardly to form a jaw 12, the edge of which rests against the sandpaper and holds it against the face of the shoe or against the cushion which may be applied between the sandpaper and the shoe, as will be described hereinafter.

The rear portion of the plate 7 is formed into a tapered tongue 13 that operates as a lever for releasing the clamping plate. The clamping plate is normally held in its clamping position by a spring 14 which may have a bifurcated tongue 15 pressing against the under side of the lever plate 13 and having a coil spring 16 on each side of the tongue. The spring wire that forms this spring is provided beyond the coil spring 16 with extensions 17 that are secured to the shoe by means of an anchor plate 18. If desired, these coil springs 16 may be held in line with each other by a pin 16*a* passed through them.

Means is provided under the handle 4 and adjacent to the shank 3 for securing the rear end 19 of the sandpaper against the shank. For this purpose I prefer to provide the side edges of the handle 4 with integral ears 20 which support a pivot pin 21 on which a clamping plate 22 is mounted to rock, the lower end of said clamping plate being bent to form a jaw 23 that clamps the sandpaper in position. This clamping plate is provided with an extension 24 riveted to it, that operates as an actuating lever for the plate to enable it to be released when pressed upwardly toward the handle 4. This clamping plate, which constitutes a rear clamping plate, is

held normally in its clamping position by a spring 25 which may be similar in construction to the spring 14, that is to say, it has a bifurcated tongue 26 pressing downwardly on the lever 24 and extending from coils 27 beyond which the spring wire has extensions 28 that press against the under side of the handle 4.

The tool described above presents satisfactory means for securing a sandpaper sheet or polishing pad to a tool of this kind, but I prefer to back up the sandpaper or polishing pad with a cushion 30 in the form of a sheet of soft rubber or thin felt. This soft cushion is permanently secured in position under the shoe and passes at its forward end around the forward edge of the shoe, at which point I provide suitable means such as a transverse clamping bar 31 and removable nuts 32 for clamping the bar down against the forward end 33 of the cushion. This clamping means for the cushion is located wholly above the cushion, so that the lower face of the cushion is unobstructed by any fastening means such as rivets.

At the rear of the tool the rear end 34 of the cushion extends up along the rear side of the shank 3 and is clamped in place by a transverse clamping bar 35 secured in place by removable bolts having clamping nuts 36 located on the forward face of the shank. It should be understood that this cushion is permanently secured in place but if it becomes worn, it can be readily removed and another cushion substituted.

One of the advantages of this tool is that the lever 24 is carried in a position where it can readily be pressed upwardly by one's fingers when the handle 4 is grasped in one's hand, but it is out of sight and not in the way when the handle is grasped in using the tool.

A tool of this kind should not have a shoe that is perfectly flat because in that case there is a tendency at the end of a forward and rear stroke to exert too much pressure at the forward and rear ends of the shoe, thereby giving a bad effect in sandpapering or polishing and also tending to wear out sandpaper quickly. For this reason I prefer to give the shoe 2 a slight curvature as viewed in side elevation or in the section of Figure 2. This, however, is the only curvature of the shoe and the transverse elements of the shoe are straight lines.

The cushion 30 insures an even pressure of the sandpaper on the surface being operated upon and performs a similar function when a polishing pad is substituted for the sandpaper.

In using this tool, by reason of the slight curvature, the shoe is always pressing on a straight transverse zone but pressure is never concentrated at a sharp edge as may occur when sandpaper is being used on a block or on the under side of a straight plate or shoe.

What I claim is:

1. In a polishing and sanding tool, the combination of a body of plate form having a shoe with an upwardly extending shank at one end, and an operating handle projecting from said shank, a cushion covering the under side of said shoe extending up over the forward end of the same and extending up the rear side of said shank, a transverse clamping bar on the upper side of the shoe with removable fasteners located toward the edge of the shoe for removably securing the cushion to the shoe to clamp the forward end of the cushion, a clamping plate pivotally mounted on the shoe overlying the said clamping bar and having a clamping jaw for clamping the end of sandpaper or polishing pad against the said cushion adjacent the forward end of the shoe, means located on the said shank for securing the rear end of the cushion to the shank, and a pivotally mounted clamping plate located under the said handle adjacent its junction with the shank for clamping the rear end of the sandpaper or polishing pad to said shank.

2. In a polishing and sanding tool, the combination of a body of plate form having a shoe with an upwardly extending shank at one end, and an operating handle projecting from said shank, a cushion covering the under side of said shoe extending up over the forward end of the same and extending up the rear face of said shank, cushion-securing means for securing the ends of the cushion to the shoe and to said shank, a clamping plate independent of the cushion-securing means, pivotally mounted over the forward portion of the shoe, having a spring and a jaw pressed by the force of said spring against the cushion to clamp the forward end of sandpaper or polishing pad against the said cushion, said clamping plate having a lever portion projecting toward the shank and receiving the pressure of said spring, the body having integral ears adjacent the handle and shank, a rear clamping plate pivotally mounted between said ears and having a jaw for securing the rear end of the sandpaper or polishing pad against the cushion, a lever extending from the rear clamping plate for releasing the same, and a spring located between the handle and said last named lever and exerting its force in a direction toward the shank.

3. In a polishing and sanding tool, the combination of a body of plate form having a shoe with an upwardly extending shank at one end, and an operating handle projecting from said shank, a cushion covering the under side of said shoe extending up over the forward end of the same and extending up the rear face of said shank, means for securing the forward end of the cushion to the forward end of the shoe, a transverse remov-

able clamping bar located on the rear face of the shank for clamping the rear end of the cushion thereto, with bolts for securing the same, a spring-pressed forward clamping plate pivotally mounted on the upper side of the shoe toward its forward end, and having a jaw for clamping the sandpaper or polishing pad against the said cushion at the forward end of the shoe, and also having a lever for releasing the same, a rear clamping plate pivotally mounted under the handle, having a jaw for engaging the sandpaper or polishing pad to hold the same against the cushion, and having an operating lever extending longitudinally with the handle and below the same, and a spring mounted on the pivotal axis of the last named plate and exerting pressure against the under side of the handle and the upper side of the lever.

4. In a polishing and sanding tool, the combination of a body of plate form having a shoe with an upwardly extending shank at one end, and an operating handle projecting from said shank, clamping means on the upper side of the shoe adjacent its forward end for clamping the sandpaper or polishing pad against the upper face of the shoe, said clamping means including a pivotally mounted member having a jaw for engaging the sandpaper or polishing pad, and having an extension projecting toward the shank and operating as a lever for releasing the jaw, and a spring exerting its force between the shoe and the clamping plate for holding the same in its clamping position, a rear clamping plate pivotally mounted under the handle adjacent the junction point of the shank and handle and having a jaw for clamping the rear end of the sandpaper or polishing pad against the shank, said rear clamping plate having a handle for operating the same, and a spring for pressing the same toward its clamping position.

5. In a polishing and sanding tool, the combination of a body of plate form having a shoe with an upwardly extending shank at one end, and an operating handle projecting from said shank, a cushion covering the under side of said shoe extending up over the forward end of the same and extending up the rear side of said shank, removable cushion-securing means located wholly on the upper side of the cushion for securing the ends of the cushion to the shoe and to said shank, clamping means independent of the cushion-securing means, located on the upper side of the shoe for securing sandpaper or a polishing pad on the said cushion, and means mounted adjacent said shank and handle for clamping the other end of the sandpaper or polishing pad.

Signed at Riverside, Calif., this 15th day of October, 1929.

ESCA KELLEY.