Nov. 5, 1940.

T. NORDLUND

2,220,727

HAND ABRADING TOOL

Filed June 10, 1939

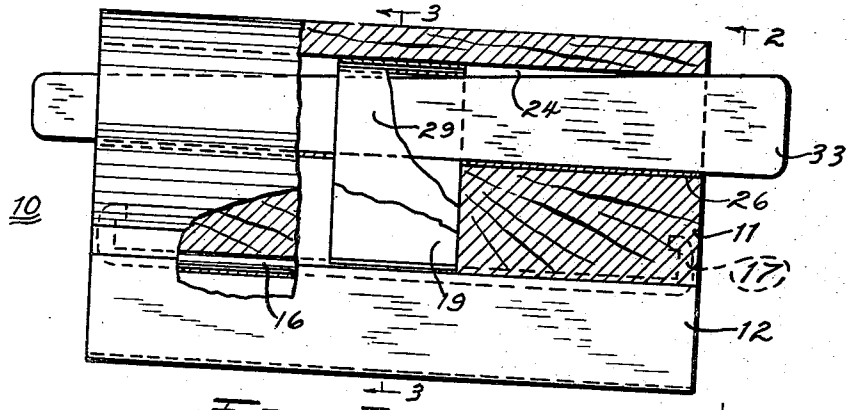


FIG-1

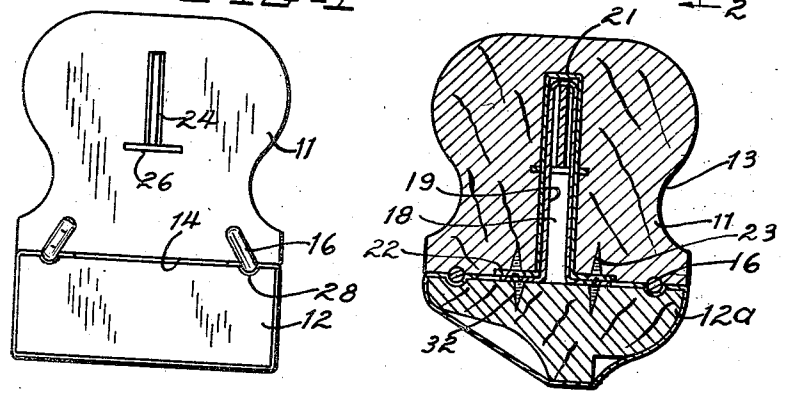


FIG-2

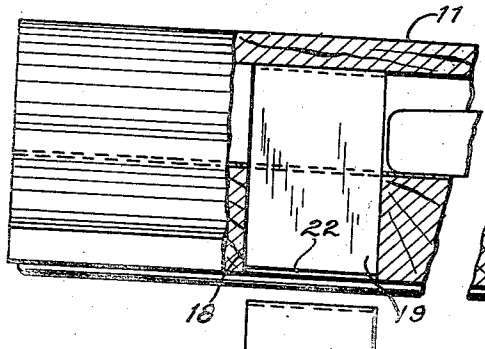


FIG-3

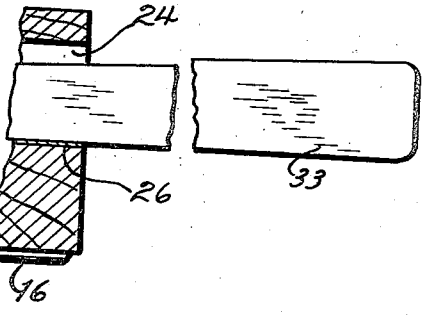
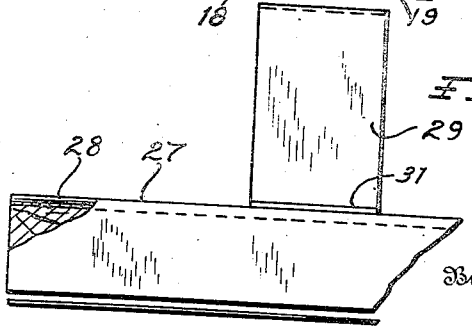


FIG-4



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UNITED STATES PATENT OFFICE

2,220,727

HAND ABRADING TOOL

Theodore Nordlund, Jamestown, N. Y.

Application June 10, 1939, Serial No. 278,532

6 Claims. (Cl. 51—187)

This invention relates to an improvement in abrasive tools and particularly to a holder for abrasives in sheet form.

One form of the present invention is directed to the provision of a holder for sheet abrasives of the nature of a hand tool and includes a grip or handle element and a shoe. A sheet of abrasive is placed against one surface of the shoe and the ends securely clamped between the shoe and the handle element.

The invention has for its objects and advantages the provision of a holder which is extremely simple and durable in construction, efficient in use, and also one that firmly clamps an abrasive sheet and yet is readily releasable to remove and replace a worn out sheet. The device is adaptable for use on surfaces of various contours by simply substituting a shoe of the desired contour.

Other and further objects and advantages of the invention will be more fully understood and appreciated from a consideration of the following specification taken in conjunction with the accompanying drawing; and in which

Figure 1 is a side elevation of one modification of the invention, parts being broken away to disclose structural details;

Figure 2 is an end view of the structure shown in Figure 1;

Figure 3 is a vertical sectional view, taken substantially on the line 3—3 of Figure 1, and shows a shoe of modified contour; and

Figure 4 is a side elevational view, partly in section, of the device about to be assembled.

Reference is had to the drawing wherein the numeral 10 is employed to generally designate a tool for use in polishing or abrading surfaces by hand. The tool comprises a body or handle element 11 and shoe 12. Suitable recesses 13 are made in the body 11 to provide a convenient hand grip. The under face 14 of the body 11 is provided with a pair of rods 16, located adjacent the side edges. These rods may be partially embedded in the under face 14, as shown in the drawing, and terminate in hook-like ends 17. The ends 17 are embedded in the ends of the body portion 11 and serve to secure the rods against displacement.

Referring particularly to Figures 3 and 4 of the drawing, it will be noted that a vertical opening or slot 18 is made centrally of the body portion 11. This opening extends to adjacent the top of the body portion, and the walls thereof may be fitted with a liner 19. The liner is closed at the upper end of the slot as by a fold 21 and terminates in flanges 22 at its lower end. The flanges 22 fit into suitable recesses in the under face 14 of the body portion and are secured to said body portion in any suitable manner, as by screws 23. A further slot 24 is made in the body portion 11. This slot extends longitudinally of the body portion and intercepts the upper end of the vertical slot 18. The bottom wall of the slot 24 is defined by a plate 26 that is suitably slotted to receive the liner 19.

The shoe 12 may be the same length and width as the body portion 11 and have an under surface of any desired contour. For example, if it is desired to use the device in abrading or polishing flat surfaces, the shoe shown in Figures 1 and 2 would be appropriate. However, it is possible to finish molding surfaces by simply substituting the shoe 12—*a*, shown in Figure 3 of the drawing, for the flat surface shoe described. Regardless of the contour of the under surface of the shoe the upper surface 27 thereof is flat and provided with longitudinally extending marginal grooves 28 that are adapted to receive the rods 16 of the body portion 11. Centrally of the upper surface of the shoe is an upstanding U-shaped strap 29, the ends of which terminate in flanges 31 that are secured by screws 32 to the shoe. The strap 29 is adapted to project upwardly of the slot 18 between the walls of the liner 19 and into the slot 24. A tapered locking bar 33 is projected into the slot 24 through the looped end of strap 29 and serves to secure the shoe against displacement from the body portion 11.

In operation a sheet of abrasive of suitable size is placed against the under face of the shoe 12, being wrapped around to position the ends on the upper surface 27 overlying the grooves 28. With the sheet in this position, the strap 29 of the shoe is projected into the slot 18. The bar 33 is then moved into the slot 24 and, since this bar is tapered, continuous inward movement thereof causes it to engage the looped portion of the strap 29 and the plate 26, drawing the block and the edges of the abrasive sheet into pressure engagement with the under surface 14 of the body portion 11. As may be seen from the drawing, the sheet is forced into the grooves 28 by contact with rods 16 and thus provided full length securement. When the abrasive surface of the sheet has become worn or it is desired to substitute a shoe of different contour, the small end of the bar 33 may be tapped slightly to loosen it and said bar may then be readily withdrawn and the body portion and shoe disengaged.

It is apparent that the above described invention is susceptible of many uses with some struc-

tural variations and such variations are contemplated insofar as they are within the spirit and scope of the invention as defined in the hereunto annexed claims.

Having thus set forth my invention what I claim as new and for which I desire protection by Letters Patent is:

1. A holder for an abrasive sheet comprising a pair of members, the adjacent faces of said members being flat, said sheet enclosing one of said members and having its ends overlying the flat face thereof, means operable to resist relative lateral displacement of said members when in superposed relationship, and clamp means operable to draw said members into pressure abutment with the ends of said sheet whereby said ends will conform to the contour of said interfitting means and be secured against displacement.

2. A holder for an abrasive sheet comprising a pair of members, the adjacent faces of said members being flat, said sheet enclosing one of said members and having its ends overlying the flat face thereof, rods on the flat face of one of said members, the other of said members having grooves for receiving said rods when said members are in superposed relationship, and means operable to draw said members into pressure abutment and cause the ends of said sheet to fit the contour of said grooves.

3. A holder for an abrasive sheet comprising a pair of members, one of said members being enclosed by said sheet, a U-shaped strap on one of said members adapted to project into an opening in the other of said members when said members are superposed, and means engageable with the closed end of said strap, said means being adjustable to draw said members into pressure abutment with the ends of said sheet whereby to secure said sheet against displacement.

4. A holder for an abrasive sheet comprising a body element and shoe, adjacent faces of said element and shoe being flat, said sheet being adapted to enclose said shoe with the ends thereof overlying the flat face, a U-shaped strap projecting upwardly of the flat face of said shoe, said body element having an opening to receive said strap, a wedge shaped member projectable through a further opening in said body element into engagement with the closed end of said strap, and interfitting means on said adjacent faces, the ends of said sheet, when said body element is joined to said shoe, fitting said means whereby to prevent displacement during use.

5. A holder for an abrasive sheet comprising a body element and shoe, adjacent faces of said element and shoe being flat, said sheet being adapted to enclose said shoe with the ends thereof overlying the flat face, a U-shaped strap projecting upwardly of the flat face of said shoe, said body element having an opening to receive said strap, a wedge shaped member projectable through a further opening in said body element into engagement with the closed end of said strap, rods projecting beyond the face of said element, the face of said shoe having grooves for receiving said rods and the ends of said sheet when said holder is assembled whereby to prevent displacement of said sheet during use.

6. A holder for an abrasive sheet comprising a pair of members, the adjacent faces of said members being substantially flat, said sheet enclosing one of said members and having its ends overlying the flat face thereof, upstanding means on one of said members projecting into an aperture in the other of said members, and wedge means in said other member engageable with said means to draw said members into pressure abutment with the ends of said sheet whereby to secure said sheet against displacement.

THEODORE NORDLUND.