

Aug. 10, 1926.

F. N. BACKLIND

1,595,700

ABRADING TOOL

Filed Oct. 6, 1924

Fig. 1.

Fig. 6.

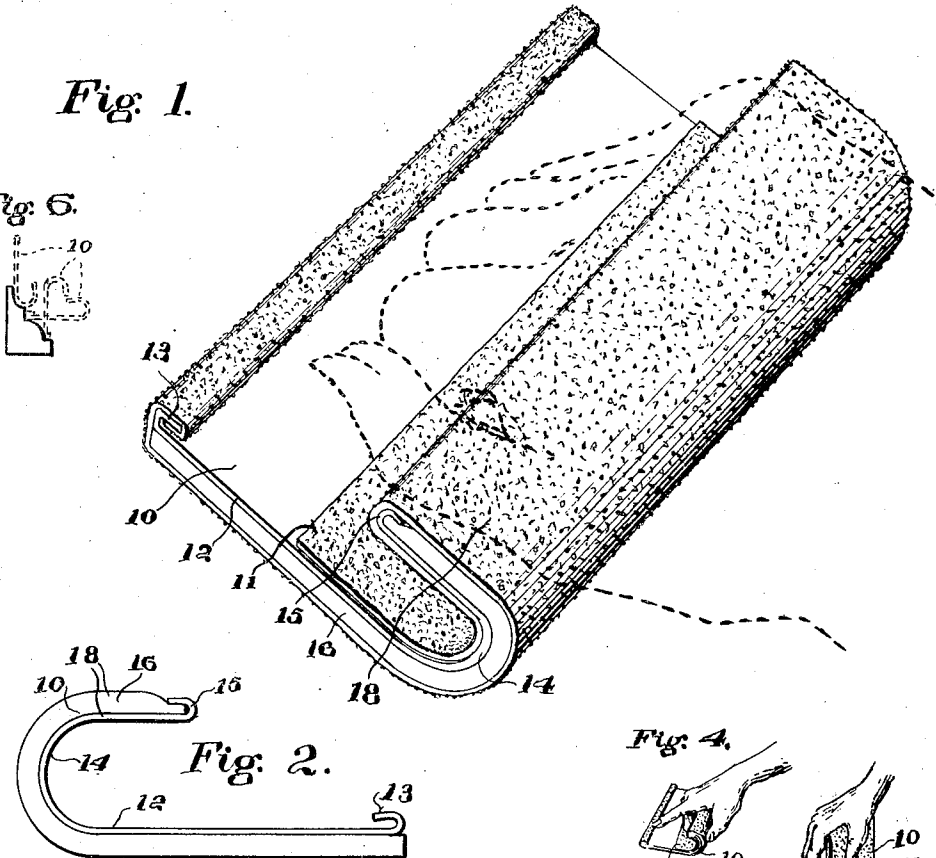


Fig. 2.

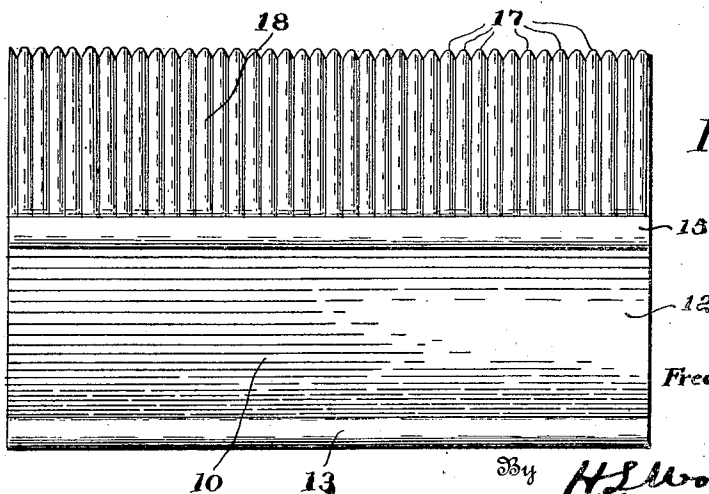


Fig. 4.

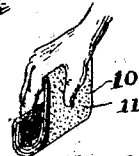
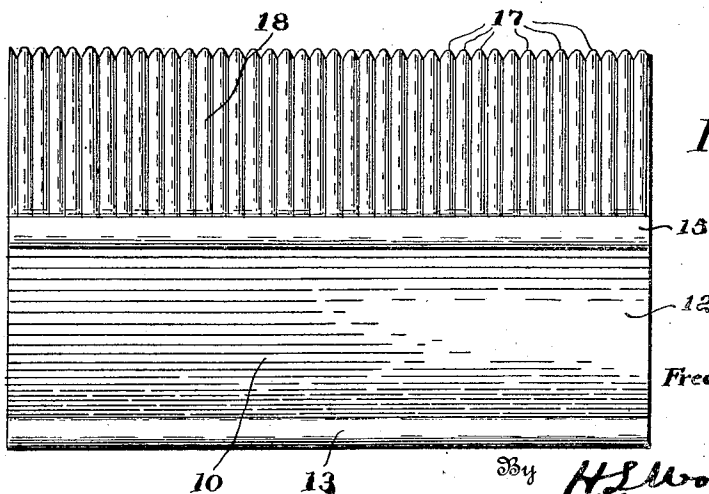


Fig. 5.

Fig. 3.



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ABRADING TOOL.

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The invention has for an object to provide an improved form of abrasive sheet holder for use in finishing various surfaces requiring to be treated with such abrasive by manual operations. Prior tools of this character have been objectionable in many respects, among which is the fact that the shaving produced by the abrasive accumulates irregularly on the face of the sheet, so as to raise it from the work before a satisfactory area of the abrasive has effected action on the work. My invention is of a character to largely overcome this defect and very materially increase the cutting efficiency of the abrasive. Another difficulty with prior devices of this nature is from the accumulation of dust between the abrasive sheet and the pad or block, the accumulated dust causing the abrasive to bear excessively upon the work under such accumulation, raising the remainder of the sheet as well as causing uneven cutting effect. These objections are entirely overcome in my device.

A further object is to provide a durable device of this nature of extremely simple form, involving a minimum of complication and movement in the removal and renewal of the abrasive sheet, as well as having advantages in its manufacture. It is also an important aim to enable the production of such a device at an extremely low cost, tending to obviate entirely the need for any fastening devices to hold a sheet of abrasive in place upon the body thereof. A further important advantage of my invention consists in enabling the device to be grasped comfortably for the application of force manually with a minimum of awkwardness and exertion. It is a further valuable attainment of the invention that the hand of the operator is protected at all times, so that there is a minimum liability of engaging splinters in fingers or damaging the knuckles of the hand. A further important aim of the device is to provide a formation therein whereby the same tool may be employed for planiform surfaces and for curved surfaces and angles, such as are encountered in moldings of various shapes, at the same time enabling the use of the entire sheet of abrasive efficiently. A further important object is the utilization of the abrasive sheet in affording a firm gripping surface for the

hand to provide a minimum liability of slipping of the hand on the tool.

Additional objects, advantages and features of invention reside in the structural form, relation and combination of parts, as may be more readily understood from the following description and the drawings, wherein—

Figure 1 is a perspective view of my invention with a sheet of abrasive engaged thereon as for operation, one position of the hand in use being indicated in dotted lines.

Figure 2 is an end view of the device.

Figure 3 is a top view thereof, the abrasive sheet being omitted in the last two views.

Figure 4 illustrates one method of grasping the device for use.

Figure 5 is a similar view showing a different manner of grasping the appliance.

Figure 6 is a section of a piece of molding showing various positions of my appliance for accommodating it to the various angles and surfaces.

There is illustrated an abrading tool consisting of a holder part 10 shown in Figures 2 and 3 upon which there is movably engaged a sheet of abrasive 11, such as sand or emery paper or cloth. The holder is of a type adapted to hold fine or coarse abrasive sheets, as may be seen. The holder comprises a plate 12 of sheet steel, material about three-sixty-fourths of an inch in thickness having been employed to good advantage. In practice, the blank for this plate has been formed five inches by five and a half inches. One end portion is turned inwardly to form a lip or flange 13 having somewhat the appearance of a hook with elongated bill as viewed from one side or end of the device (Figure 2). The flange portion extends in spaced relation with the body of the plate a short distance, usually about one quarter of an inch, the space under the flange being slightly greater than the thickness of the abrasive sheet to be used. The opposite end portion of the plate is bent toward the same side as the flange 13 on a much greater radius, however, beginning on a line closely adjacent or at the middle of the blank, to form the bend 14; the end portion 18 of the plate being extended in parallel relation to the body of the plate and spaced therefrom a distance

sufficient to easily admit the ends of the fingers of a workman while the palm rests on the part 18. The extreme end edge portion of the inturned part 18 is recurved outwardly as at 15, one edge of a sheet of cushion material being slipped under this recurved part, the latter being arranged to press upon the cushion material so as to hold it securely. The cushion material 16 comprises a sheet of soft rubber preferably smooth and without irregularities upon one side, as manufactured, while upon the other side parallel narrow V-shaped ribs 17 are formed very close together, the elasticity of the rubber as well as its quality being such that the material may be easily deformed by compression. The ribs are more readily yieldable for local pressure such as might be caused by a high grain of sand or the like than would a plain flat surface. The apices of the ribs are spaced not more than $\frac{1}{8}$ inch apart.

The resilient sheet is applied with the ribs running longitudinally of the plate so that they extend around the bend 14, and they are also exposed at the outer side of the sheet as applied, the flat surface being securely cemented to the metal 12 throughout the area of the sheet 16. The sheet 16 is cut off nearly, or quite, flush with the bight portion of the lip 13. As shown in Figure 2, it might be found preferable to allow the resilient sheet to project slightly beyond the plate 12 at this end, and it may similarly project at each side. The inturned upper part 18 of the plate thus affords a grip when covered with the abrasive sheet, as will be explained. The abrasive sheet has an end edge engaged under the flange 13, and is then extended longitudinally outward over the flange, then downwardly and inwardly under the sheet of resilient material 16, then around the bend 14, inwardly over the edge 15 as shown in Figure 2, in snug contact with the sheet 16, and the surplus portion is laid snugly within the bend 14, where its inherent elasticity will cause it to tend to open out to its original planiform shape and so bind between the body of the plate and the grip 18, resisting tendency of the sheet to become disengaged, as may be understood.

In the use of this device, the holder 10 is held in one hand while a sheet of sand paper of the proper width and length—usually one-half of the standard sheet of carpenters' paper—is taken in the other hand, and one end inserted under the flange 13 while the abrasive side is turned toward the holder. The end of the sheet being snugly adjusted under the flange 13, the sheet is swung outwardly and then longitudinally over the end of the holder, being next brought close against the bottom side and then around the bend 14, over the edge 15

and into the bight under the grip parts 18 as shown in Figure 1. The device may then be grasped by resting the palm on top of the grip portion while the fingers are extended around the edge 15 and inserted under the grip. While grasping the device in this manner, the device may be applied most efficiently to the finishing of plain surfaces. If it is desired to work in a corner, or close to a vertical surface, the device is readily adapted to use as shown in Figure 4, or the grip may be varied, as indicated in Figure 5. The handling and application of the tool will be readily understood by those versed in the art. The bend 14 is adapted to use in finishing the concave surfaces of moldings, and in that event the device may be grasped as shown in Figure 5, and applied to the molding as shown at the upper part of Figure 6. Where angular recesses are involved, the angle between the end of the holder adjacent the flange 13 and the bottom side shapes the abrasive in a manner most suitable to such work, and the device may be used, as dotted in the lower portion of Figure 6 for such purposes.

After one part of the sheet 11 has been used to the limit of efficiency, the sheet may be disengaged by a reversal of the adjustment movements first described, and the opposite or unused end of the sheet engaged under the flange 13 and the sheet again adjusted as first described, when the portion which has been over the grip and exposed in the bight under the grip will then be presented over the lower side of the device ready for use.

In applying the device to the work, in case there happens to be a high grain on the sheet, the pressing of the device upon the work will cause the cushion material 16 to yield over such high grain, so the other parts of the sheet may come into intimate contact with the work, preventing the filling of a limited part of the sheet 15 with cuttings, which would render the sheet inefficient before other parts have been used at all. Any dust that may gain access to the device between the abrasive sheet and the resilient material 16 will be readily accommodated in the grooves between the ribs 17, preventing any local portion of the sheet from being raised or pressed excessively into engagement with the work thereby.

It will be seen that the device is adapted to be produced at a very low cost and it will be found highly efficient in use. It is liable in a minimum degree to damage or deterioration from the most severe use, and materially increase the amount of work which may be done by an operative.

I claim:

1. A device of the character described comprising a sheet metal plate of rectangular form in the blank, one edge being in-

turned to form a flange closely adjacent the body of the plate for the purpose described, the opposite end portion of the plate being bent upwardly, then inwardly over the body of the plate in a relation to receive the digits of a hand grasping said last named edge portion. 5 of a sheet of resilient material and the edge of said last named end portion of the plate 10 is turned outward and downwardly upon the resilient material.

In testimony whereof I affix my signature.

2. The device of claim 1 having a facing

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