This invention relates to an abrasive device and more particularly to a combined sandpaper block and brush holder.

Sandpaper blocks have long been employed in the prior art to support sandpaper or other abrasives for ease and regularity of sanding or abrasive by hand. When such devices are employed in the finishing of wood, for example, the sandpaper becomes quickly clogged with wood dust and in a short time the saturation of the abrasive is so complete as to render the material incapable of performing its function. This results in frequent renewals of the abrasive material with consequent loss of time and money. Moreover, the collection of wood dust on the surface being abraded impedes the sanding action and at the same time makes it difficult to determine the exact progress of the operation.

The present invention eliminates or substantially reduces these deficiencies of the prior art and thus provides a device for sanding by hand which is both efficient and economical.

Accordingly, it is an object of the invention to provide a novel abrasive device.

Another object of the invention is to provide a unique sandpaper block.

A further object of the invention is to provide an abrasive device which cleans the work piece.

Yet another object of the invention is to provide a combined sandpaper block and brush holder.

These and other objects of the invention will become more apparent from a consideration of the following detailed description of the invention when taken in conjunction with the accompanying drawing wherein:

Figure 1 is a perspective view of the invention, illustrating the combined sandpaper and brush mounting means;

Figure 2 is a side elevation view, partly in section, taken along line 2—2 in Figure 1 and illustrating specific means for retaining the sandpaper on the block;

Figure 3 is a rear end view of the invention shown in Figure 1; and

Figure 4 is a detail of the sandpaper retaining means seen from the bottom of Figure 2 with the sandpaper removed.

Referring to Figure 1, the invention comprises a combined sandpaper block and brush holder, generally designated by reference numeral 10, for mounting a physical cleaning element or brush, generally designated by reference numeral 12, and a sheet of friction material such as sandpaper 22. The brush is mounted in the path of the normal stroke of the sandpaper block, i.e., across the longitudinal axis of the block.

The sandpaper-brush holder comprises a generally rectangular block 14, which may be composed of wood, plastic, metal, or the like, and a flexible pressure plate or clamping plate 16, which may be composed of sheet metal or plastic, for example. The pressure plate has a pair of longitudinal depending portions or protuberances 19 which are designed for cooperation with a correspondingly shaped pair of longitudinal notches or grooves 20 in the block 14. A sheet of sandpaper or similar abrasive 22 of appropriate size is wrapped about the block 14 so that end portions 23 of the sandpaper are juxtaposed with the upper or clamping surface 25 of the sandpaper block and lie under the pressure plate 16. The lower surface 27 of the block constitutes an abrasive backing surface.

Pressure plate 16 is releasably urged against block 14 by a wing nut 26 threaded onto a bolt 24, which passes through corresponding bores in the block 14 and the pressure plate 16. The head 28 of the bolt is recessed or counterbunk into the block 14 by virtue of an enlargement of the bore in the block as indicated at 30. The Shank of the bolt 24 may be provided with a cubical portion 32 which, by cooperation with a corresponding cubical portion in the bore through block 14, prevents the bolt from rotating on its axis when the wing nut is threaded thereon. A retaining pin 34 may be recessed in the block 14 adjacent the head 28 of the bolt to retain the bolt in its bore when the wing nut 26 is removed (see Figures 2–4). If desired, the retaining pin may be aligned with and driven into the slot in the bolt head 28 to prevent rotation of the bolt, and thereby eliminate any need for the cubical portion 32.

An aligning pin 36, which may be screwed or driven into the block 14, cooperates with an aperture in the pressure plate, so that when the pressure plate is applied to the block 14, the combined aligning action of bolt 24 and pin 36 ensures that depending portions 18 of the pressure plate are aligned with and enter the notches 20 of the block. Thus, when the pressure plate is applied to the block and the wing nut 26 is tightened down onto the bolt 24, the depending portions 18 of the pressure plate force the end portions 23 of the sheet of sandpaper into the notches 20 and reliably secure the sandpaper to the block. If the cover plate is made of a flexible material, the edges of the depending portions 18 cannot be driven against the sandpaper with sufficient force to sever the ends of the latter, for if the wing nut 26 is tightened more than necessary to retain the sandpaper, the central portion of the pressure plate will merely be depressed causing the pressure plate to bow slightly and preventing excessive pressure on the ends of the sandpaper.

The pressure plate is provided with a narrow extension 38 from which the brush 12 may be suspended by a pair of screws 42. The brush, which may be of conventional construction, per se, comprises a support 46, which may be wood or plastic, for example, in which a plurality of bristles 48 are embedded. The pressure plate may be bent (as indicated at 40) where it forms the narrowed brush supporting portion 38, to accommodate the height of the brush 12 and to allow adjustment of the bristles 48 with respect to the surface being abraded (as to compensate for bristle wear). The level of the bristles may be adjusted by simply bending the pressure plate at 49 to the desired degree. This ensures that the cleaning surface constituted by the ends of the bristles is in contact with the work piece.

The sandpaper block 14 may extend beyond the extremity of the sandpaper 22 as indicated by reference numeral 50. This allows sanding up to the edge of an adjoining wood member which may be slightly higher than the member being abraded.

In the use of the invention, a sheet of sandpaper is mounted on the block 14, as indicated previously, by the cooperation of the pressure plate 16 and the block. The sandpaper block is held in the hand and the sandpaper is rubbed against the surface of the work piece in substantially parallel strokes in the general direction of the longitudinal axis of the block 14. The brush 12 is adjusted in level by bending the pressure plate at 40 so that the bristles 48 contact the surface of the work piece.
this manner wood dust or shavings created by the abrad-
ing process are brushed from the path of the sandpaper
block and the work area is kept clean. Removal of the
wood dust and shavings greatly decreases the clogging of
the sandpaper and accordingly greatly increases its useful
life.

While a preferred embodiment of the invention has been
shown and described, it will be clear to those skilled in
the art that this embodiment is merely illustrative of the
principles of the invention and not restrictive thereof.
The scope of the invention may be determined from the
following claims.

I claim:
1. In combination, a block having a backing surface
for engagement with the central portion of a sheet of 15
abrasive material and an oppositely disposed clamping
surface for engagement with a pair of opposite end por-
tions of said sheet, a clamping plate, means for releasably
urging said clamping plate toward said clamping surface,
whereby the ends of said material may be clamped be-
tween said clamping plate and said clamping surface, a
brush, and means for mounting said brush on said clamp-
ing plate adjacent an end of said block with the free ends
of its bristles lying substantially in the plane of the abra-
sive face.

2. The combination of claim 1, wherein said clamping
plate includes a portion extending beyond said block and
supporting said brush, the connection of said extending
portion to the remainder of said plate being flexible,
whereby the height of said brush with respect to said
backing surface may be adjusted by bending the plate.

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