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HAND OPERATED ABRADING AND POLISHING TOOL

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Fig. 1.

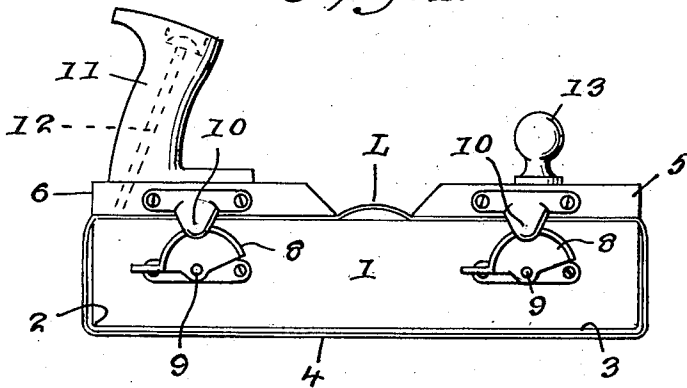


Fig. 2.

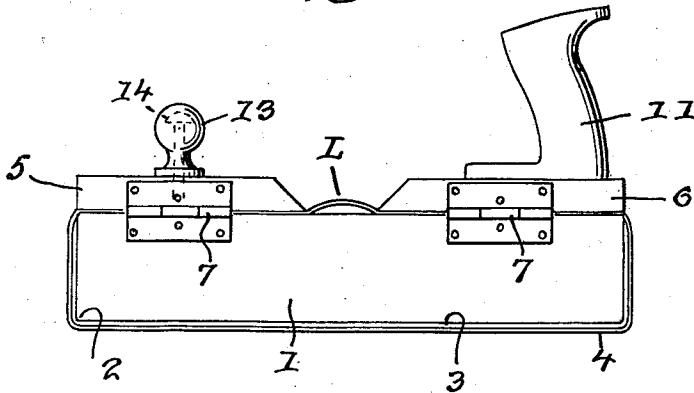


Fig. 3.

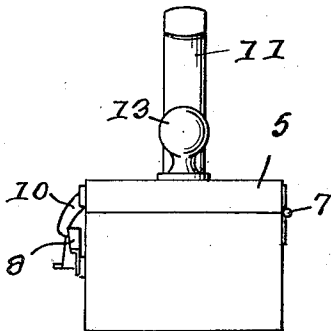
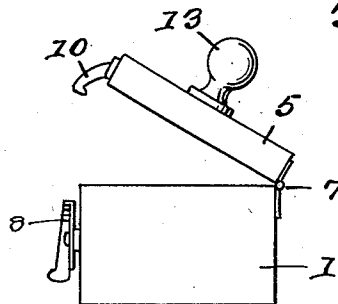


Fig. 4.



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HAND OPERATED ABRADING AND
POLISHING TOOL

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1 Claim. (Cl. 51-187)

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The present invention relates to an improved hand operated abrading and polishing tool or hand plane-sander of the carpenter's plane type, and adapted for cutting, polishing, and otherwise finishing plane surfaces of wood, metal, and other materials.

The primary object of the invention is the provision of a tool of this character that is simple in construction and operation and which consists of a minimum number of parts that may readily be manufactured at low cost of production, and assembled with facility; and the embodiment of the invention provides a tool that is inexpensive in cost of maintenance, and efficient in the performance of its functions.

In carrying out the invention I utilize a replaceable endless, abrading, polishing, or finishing band that may with convenience be mounted on the tool and quickly clamped in working position, and means are provided for longitudinally adjusting the band to compensate for wear in order that maximum service may be attained in the use of the band.

Quick-detachable clamps and fasteners utilized on the tool for replacement of worn bands, and means are provided whereby the worn band may be withdrawn and a fresh band substituted with facility and dispatch.

The invention consists in certain novel combinations and arrangements of a base block having quick-detachable clamps adapted to retain the endless band in working position, and other features of mechanical construction as will hereinafter be set forth and claimed.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention wherein the parts are combined and arranged in accord with one mode I have thus far devised for the practical application of the principles of my invention, but it will be understood that changes and alterations may be made in these exemplifying drawings and structures within the scope of my claims without departing from the principles of the invention.

Figure 1 is a side elevation of a manually operated tool in which the invention is embodied.

Figure 2 is a similar view of the tool from the side opposite to Fig. 1.

Figure 3 is a front end view of the tool.

Figure 4 is a front end view of the tool with the clamps released and the band omitted.

In the form of the invention illustrated in the drawings I have shown a rectangular base block or stock 1, which may be manufactured in desired size of wood, metal, or other desirable ma-

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terial, and provided with rounded corners 2, 2, at the opposite ends of its working face.

I prefer to mount on the working face of the base-block a pad 3, of felt or other similar material, which pad extends upwardly at the opposite ends of the base block and is attached thereto by glue, or other adhesive material to provide a soft cushion for the endless band 4.

The endless band 4 may be of any suitable abrading, polishing, or finishing material, such as sand-paper for use with wood and similar soft material, and emery cloth for metals and other hard surfaces. The band is of such length that it may be slipped over one side of the base block with its working face against the pad 3, and its upper flight lying flat on the upper face of the base block when not in use.

For clamping the band in working position on the base-block I employ a front clamp block or cleat 5 and a rear clamp block or cleat 6, which are spaced apart and located adjacent the opposite ends of the base-block, leaving an open space between their adjoining ends for a purpose to be described.

The clamp blocks or cleats are of such size as to cover portions of the upper flight of the band, and they are hinged at 7, 7, to the base block, along one side thereof leaving the other side unobstructed for mounting and dismounting the interchangeable bands.

As indicated in Figs. 1 and 2 by the pucker or loop L in the band between the spaced inner ends of the two clamp blocks, the band is preferably slightly oversize in length in order that it may readily be slipped over the base block and then be drawn taut and so held for service.

For fastening the clamp blocks or cleats in retaining position any appropriate, separable, quick detachable fasteners may be employed, as for instance the sash-lock type shown in the drawings, the members of which are separable in order to provide an unobstructed space between the uplifted cleats and the base block in Fig. 4 to permit insertion and withdrawal of the interchangeable bands.

These fasteners are located at the side of the base block opposite to the hinges, and as here shown a flanged cam-plate 8 is pivoted on a vertical face of the block adjacent each cleat, as at 9, for co-action with a keeper or hasp 10 on each cleat or clamp, for ready manipulation in locking and unlocking the clamps.

For convenience in handling the tool in manner similar to the use of a carpenter's plane, a handle 11 is mounted by bolt 12 on the rear clamp

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block, and a hand-knob 13 is fixed, as by bolt or screw 14 to the front clamp block or cleat; the handle and knob being readily accessible for use in both hands of the operator.

In affixing the slightly oversize band on the tool, and with both clamps in open position, as in Fig. 4, the band is slipped laterally over the base block into position and then clamped in place by one of the blocks. While so retained the upper flight of the band is pulled upwardly to take up the slack and form the loop or pucker L, thereby tightening the band on the block and providing a smooth, padded, working under surface for the base block. Then the taut band is clamped by the second clamp block, and the fasteners of course hold the band against displacement. When the first working face of the band has become worn, the clamps may be released to loosen the band, and the latter may be adjusted around the block 1 to expose a fresh working face; then the band is again clamped in working position as before described.

Due to the compact arrangement of its parts, its light weight, and convenient size, the manually operated tool is especially useful for either large or small projects, and in places usually inaccessible for power sanders or machine tools for similar purposes; and the portable tool is readily adapted for many types of finishing, when operated by amateur craftsmen, skilled craftsmen, carpenters, and others.

The simplicity in construction and operation of the slightly oversize band, and the convenience in mounting, adjusting, and interchanging the bands provide means that eliminate excess expenditure of time and labor in maintaining the tool in efficient working condition.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

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In a manually actuated sander, an elongated rectangular-shaped brick-like block, a felt pad covering the lower surface of the block, an endless band having an abrasive outer surface longitudinally positioned around said block, a vertically disposed plane handle positioned on the rear end of said block, a clamp block on which said handle is mounted, a gripping knob positioned on the forward end of said block, a clamp block complementary to the former clamp block positioned on the forward end of the block on which the knob is mounted, hinges hinging the said clamp blocks to the block at one side, projections extending downwardly from the opposite sides of the said clamp blocks, and latches with arcuate cam surfaces clamping the clamp blocks against the abrasive band on the block, the inner edges of said clamp blocks spaced apart providing a gap to receive slack in the abrasive band.

WERNER JOHN LUND.

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