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2,626,490

HAND SANDER

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Fig. 1.

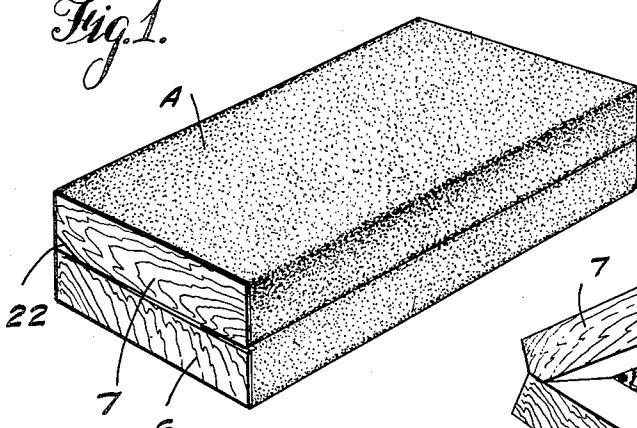


Fig. 2.

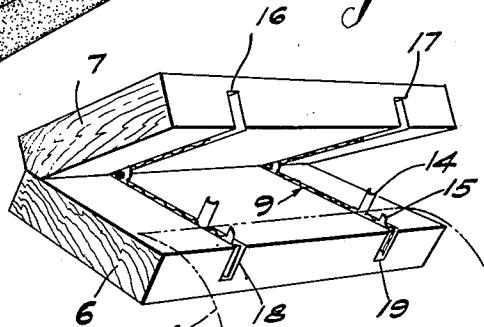


Fig. 3.

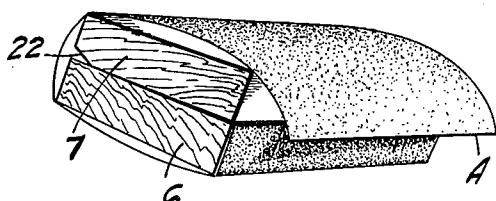
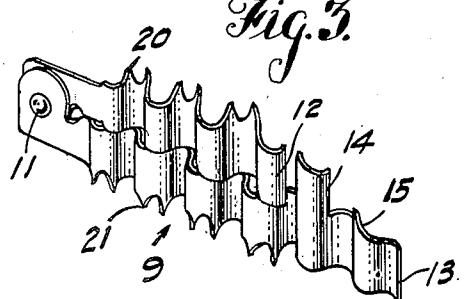


Fig. 5.

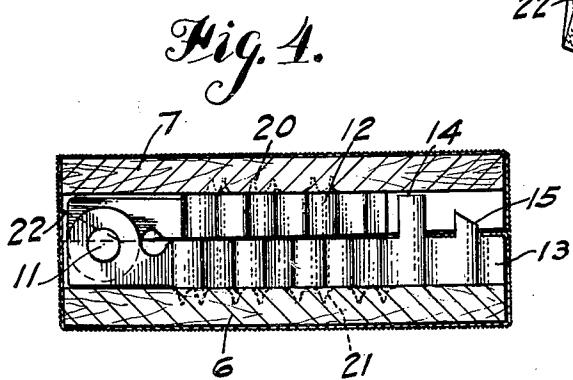


Fig. 6.

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HAND SANDER.

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Application March 4, 1952, Serial No. 274,727

8 Claims. (Cl. 51—187)

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This invention relates to a hand sander in which a hinge constituting the principal improvement is provided.

It is not new in the art to which the present invention pertains to mount an abrasive material upon two hinged together blocks for sanding purposes, for such a construction is disclosed in Patent No. 2,371,374, dated March 13, 1945, of which I am sole assignee.

However there is not disclosed in such patent nor in others which resulted in a survey of the prior art the improved hinge construction which constitutes the principal improvement of the present invention.

Important objects which it is the aim of this invention to achieve are: simplification, cheaper manufacturing costs, and easier mode of assembly.

It is a further object to improve upon the holder for the abrasive material whereby in the co-action of the parts a new and useful result is accomplished.

Other objects, advantages and features of invention will hereinafter appear.

Referring to the drawing, wherein is shown a preferred, reduced to practice embodiment of the invention,

Fig. 1 is a perspective view showing the device ready for use.

Fig. 2 is a perspective view of the device in the open position in readiness to have the abrasive material applied thereto.

Fig. 3 is a perspective view of one of the improved hinges per se.

Fig. 4 is an enlarged transverse cross section showing one of the hinges in side elevation.

Figs. 5 and 6 are perspective views illustrative of the manner in which the abrasive material is applied to the mounts.

Referring in detail to the drawing, the invention therein disclosed comprises a pair of mounting blocks 6 and 7 hinged together at one side edge by means of a pair of spaced apart hinges 9. A rivet pin 11 secures the wings 12 and 13 of each hinge together.

The two small strips of metal constituting the hinge wings 12 and 13 are corrugated, the wing 12 being shorter than the wing 13 and the corrugations of each hinge wing are, in the mounted condition as seen in Figs. 3 and 4, staggered in relation to each other the reason for which will be explained later.

By virtue of the fact that the hinge wing 13 is longer than its co-operating hinge wing 12, so that in the mounted condition its free end will

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project in advance of the free end of its companion wing, a way is provided for extending one of the corrugations on the adjacent inner edge of each wing 13 without interfering with the other hinge wing to provide a guide prong 14 and another corrugation in advance of said prong to form a pointed tooth 15. Said prongs and teeth are aligned lengthwise of the block so that an edge of a sheet of sand paper A may be placed against the prongs to properly align it incident to being manually pressed down over the teeth by a closing operation and subsequently wound around the mounts as shown in Fig. 5.

Transversely extending spaced apart grooves 16 and 17 are provided in the block 7 and like grooves 18 and 19 are provided in the block 6. Grooves 16 and 17 overlie and register with grooves 18 and 19 so that in the mounted position of the hinge, wing 12 will overlie wing 13 and their corrugations will be positioned so as to be staggered in relation to each other.

Wing 12 is provided with a plurality of serrations forming teeth 20 along its outer secured long edge constructed by extending and pointing said serrations. Wing 13 is likewise provided with a plurality of teeth 21 along its outer secured edge so that when the wings 13 are inserted in said grooves 18 and 19 with the hinge wings 12 overlying them as shown in Fig. 3 and the block 7 is superposed in a registering relation thereupon and manually pressed together in an abutting relation until the teeth of each hinge part are driven to the depth of their roots into the bottoms of the grooves. the operation of securely hinging the blocks together will have been completed. When the teeth are pressed home the opposite edge of each hinge wing will lie flush with the face of the block it occupies.

By outer secured edges of the hinge wings is meant the edges which lie outside the angle formed by the opposed jaws of the hinge.

It will therefore be obvious that when the hinge wings 13 are seated in the grooves 18 and 19 of the block 6 and the block 7 is brought into a superposed relation to the block 6, that on account of the staggering of the corrugations so that they overlie one another in a bisecting fashion, a way is provided for driving the points of the oppositely directed rows of teeth 20 and 21 into a penetrating relation with the bottoms of the grooves which they occupy.

Grooves 18 and 19 are made just wide enough so that when the wings 13 are pressed into them they will occupy the grooves with a snug fit until their teeth as well as the teeth of the com-

panion hinge wing are driven home by the pressing operation aforeslated. When the hinge wings 13 are caused to occupy their respective grooves the front end of each hinge wing 13 should aline with the front face of the block 6 as seen in Fig. 4 in properly associating the pivot of the hinge and the chamfer of the superposed block.

The wing 12 is made shorter than the wing 13 in order that when the jaws of the hinge are closed there will be no interference on account of the fact that certain of the corrugations of the wing part 13 have been extended to provide the prong 14 and tooth 15. Also since the front portion of the grooves 16 and 17 are unoccupied due to the shortening of the hinge wing 12, a way is provided for nesting the prongs and teeth in said grooves 16 and 17.

One particular advantage of this type of hinge construction is that no screws or nails are required in attaching the hinges to the blocks. It is only necessary to insert them in the grooves provided for them. During the operation of pressing the two blocks firmly together, the securing edges of the corrugated hinges are caused to penetrate the wood along the bottoms of the grooves sufficiently to bind the entire assembly against displacement.

Block 7 is provided with a chamfer 22 extending the full length of the block and as a consequence removes that portion of the corner of the block which lies adjacent its hinged side. This construction provides the operator with a knowledge of just how far to open the blocks for applying the sand paper thereto. When the blocks are opened to the angle resulting from bringing the face of the chamfer flush with the inner face of the block 6 as shown in Fig. 2 and the paper A then applied, upon closing the existing angle between the blocks as shown in Fig. 6 it will be found that no slack remains in the paper and it will assume the proper taut condition shown in Fig. 1. Therefore it is not necessary for the block 7 to open wider than the position shown in Figs. 2 and 6.

Fig. 2 shows in phantom lines a sheet of sand paper one edge of which has been squared and attached to the lower block through the medium of the prongs 14 and teeth 15 after bringing the blocks together as shown in Fig. 5. Then the opposite edge of the sheet is infolded after the halves have again been opened to the position shown in Fig. 6. Finally the gap between the two blocks is closed again as shown in 1, completing the operation. In the final closing the teeth 15 puncture the upper infolded edge of the paper.

I claim:

1. In a hand sander of the kind described, a pair of superposed blocks, a pair of hinges having hinge wings hinging said blocks together at one side edge, said blocks having co-operating, spaced apart, transversely extending grooves cut into their adjacent faces, one of the wings of each pair of hinges occupying the grooves in one block and the other wing of each of said pair of hinges occupying the grooves in the other block, each of said wings of said pair of hinges comprising corrugated strips of sheet metal riveted together at one end, and serrations in the outer, long edges of each of said hinge wings forming teeth securable in the bottom portions of said grooves when said hinge wings are caused to occupy said grooves and said blocks are firmly pressed together.

2. The structure set forth in claim 1 and one

of the hinge wings of each pair of hinges being extended to form a hinge wing that is longer than the other hinge wing.

3. The subject matter of claim 2 and said longer hinge limb of said pair of hinges having in its extended portion one of its corrugations elongated to form a guide prong adapted to occupy a portion of the groove unoccupied by the shorter of said hinge wings.

4. The subject matter of claim 2 and said longer hinge limb of said pair of hinges having in its extended portion one of its corrugations elongated to form a tooth adapted to occupy a portion of the groove unoccupied by the shorter of said hinge wings.

5. A pair of abuttable blocks one of which is superposed upon the other, a pair of hinges having hinge wings hinging said blocks together at one side edge, the uppermost of said blocks having its hinged edge portion provided with a chamfer which extends the full length of the block to limit the angular opening of said superposed block in relation to the other block.

6. The structure set forth in claim 5 and a length of sand paper wrapped around said blocks with infolded edge portions extending between the abutting faces of said blocks, means to aline and secure one edge portion of said paper to the abuttable face of one of said blocks when the superposed block has been angled to the position wherein said chamfer occupies a flatwise position in relation to the face of the block facing it, said infolded edge portion of the unsecured edge portion of the paper being manually infolded until the hinged together blocks have their abuttable faces brought into contiguity, at which time the securing means for said one infolded edge also secures the other infolded edge and by virtue of the chamfered edge the paper is rendered taut about the two blocks.

7. A pair of superposed blocks, and a pair of hinges hinging said blocks together, the wings of said hinges being constructed of corrugated strips of sheet metal and occupying opposed grooves cut into the adjacent faces of said blocks, certain edges of the corrugations of said wings being serrated to form teeth to penetrate the bottoms of said grooves when said blocks are firmly pressed together.

8. The structure set forth in claim 7 and one of the hinge wings of each pair of hinges being constructed longer than the other and said longer wing having in its extended portion certain of its corrugations longer than the others to project into the groove occupied by the shorter length hinge wing.

LEO J. MEERS.

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