Sept. 16, 1941. D. MAULDIN 2,256,098

HAND SANDING AND RUBBING BLOCK

Filed Sept. 21, 1940

Fig. 1.

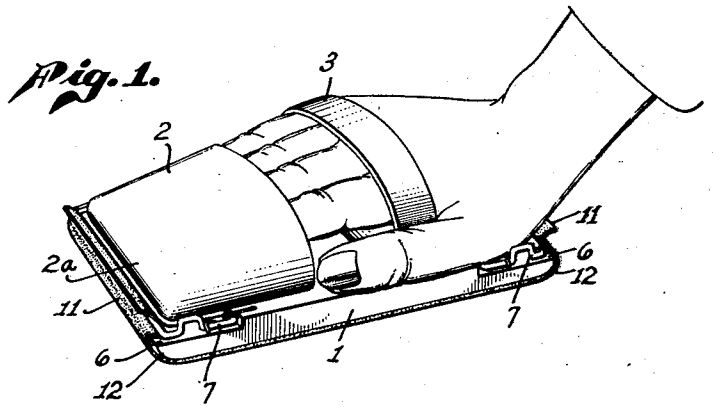


Fig. 2.

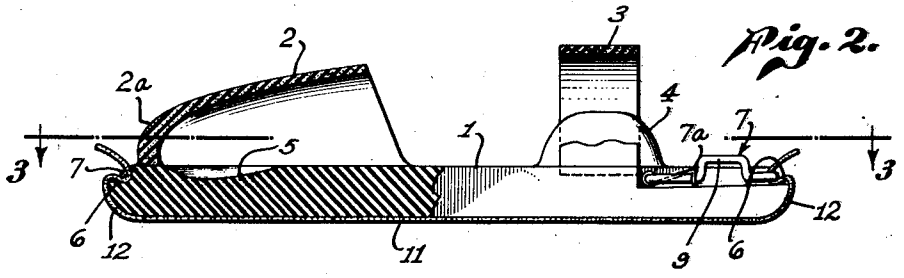


Fig. 3.

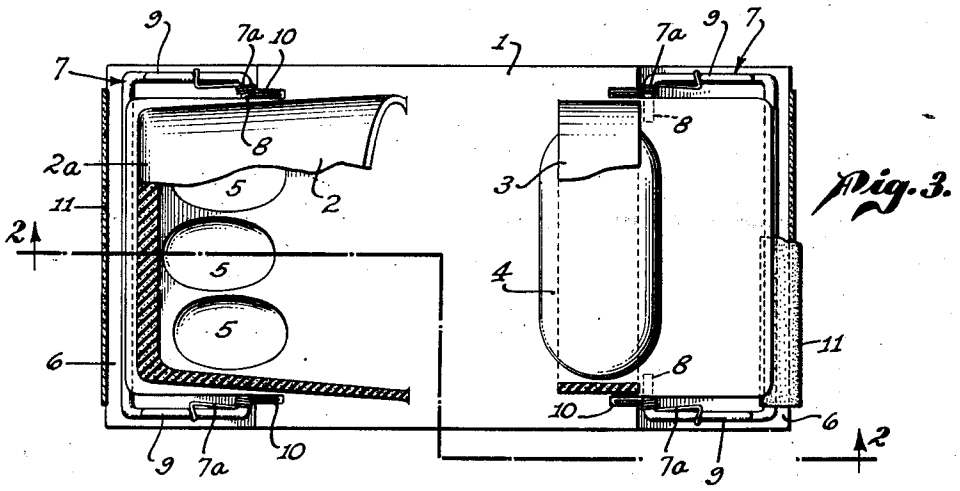
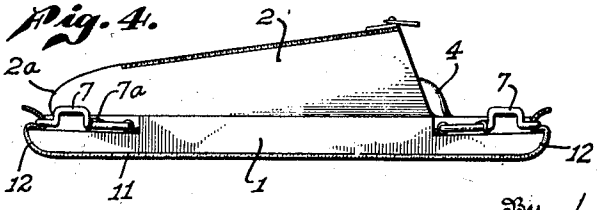


Fig. 4.



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HAND SANDING AND RUBBING BLOCK

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Application September 21, 1940, Serial No. 357,679

12 Claims. (Cl. 51—187)

My invention relates to a novel type of hand block which is used for sanding, abrading, rubbing, polishing, and the like.

My invention more particularly relates to an improved block of relatively flexible construction which possesses special advantages when used in conjunction with abrasive or other materials on rounded or curved surfaces.

My invention more particularly relates to a form of block which incorporates means whereby a sheet of sandpaper or other abrasive or rubbing and polishing material may be easily and quickly attached to and detached from the block.

My invention still more particularly relates to a novel form of block which embodies means for rapidly and easily attaching and holding the block to a man's hand.

Devices embodying my invention will be found to have a high degree of utility and numerous applications. My invention may be used for all types of work which require hand sanding, abrading, rubbing and polishing including wood work and finishing, the finishing of automobile bodies, electric refrigerators, furniture, and various other kinds of wood and metal work. Preparatory to applying paints, lacquers, enamels, varnishes and other preparations to the surface of such objects it is customary to apply a series of filler coats and to sand, rub or smooth each said coat in turn. My invention possesses special utility and advantages for all such purposes and can be adapted to practically any variation thereof.

My invention may be used where an abrasive is required to cut down a surface or where a rubbing operation is required including the use of oil and pumice and other materials to make surfaces smooth; likewise for polishing where various prepared polishes and compounds and wax are utilized in order to give a surface lustre and finish.

An object of my invention is to provide in a block of the character described a relatively flexible construction which when in use will adapt itself to surfaces which are curved or contoured and which will impart to the operator a sensitivity and feel of the work due to the relative thinness and flexibility of the block, and which, also, utilizes power features and control resulting from the use of pressure applied by the fingers and the heel of the hand.

The block is sufficiently resilient and flexible to cushion the hand and fingers, transmit the desired sensitivity and feel of the work to the user, and to conform to the shape and contour of the surface being worked, and yet of sufficient rigidity to provide a flat, firm sanding or abrading surface.

A still further object of my invention is to provide in a block of the character described depressions for holding in place the fingers of the user and likewise a rest against which the heel of the hand may be pressed and whereby manual power may be applied to the block and thereby transmitted to the work. The rest may actually conform to the shape of the heel of a man's hand. The forward finger pocket should preferably be formed of a relatively firm construction at its forward end so as to protect the fingers of the user against injury. The extension of the lower part of the block past the forward portion of the finger pocket will also afford protection from injury. The finger pocket should also provide sufficient rigidity against excessive stretch or distention thereof where the fingers contact same, the object being to provide a relatively firm closure and brace for the fingers and hand when pressure is applied to the device.

It would be an equivalent to employ a type of finger pocket which provides separate compartments for the fingers substantially as an ordinary glove is constructed. In such case, and otherwise, the finger depressions could be omitted from the upper face of the platform, as desired.

In the drawing:

Figure 1 is a perspective of a block embodying my invention, with the hand of a user in place.

Figure 2 is a side elevation of the block, partly in section, taken on the line 2—2 of Figure 3.

Figure 3 is a plan view, partly in section, taken on the line 3—3 of Figure 2.

Figure 4 is a side elevation illustrating a modified construction of my invention in which the back strap is omitted and the finger pocket is carried backward and is closed and opened by use of a zipper.

In the drawing the preferred form of block illustrating my invention comprises a platform 1 of relatively thin and flexible rubber, synthetic rubber, or other suitable material having some flexibility. The platform should be sufficiently thick and firm not to yield under fingers and to provide a relatively firm, unyielding sanding or abrading surface, but at the same time should be sufficiently flexible and resilient to cushion the hand and fingers and conform to an uneven, curved or contoured surface.

Sandpaper and emery paper are manufactured and sold to the public in standard sizes. Devices embodying my invention are preferably adapted in size to support and sustain a third of a sheet

of either sandpaper, emery paper or other abrasive. The means for attaching the paper to the block is such that substantially all of the surface of the abrasive material may be utilized for abrading purposes.

Molded with or otherwise attached to the platform is a finger pocket 2 which should preferably be of relatively firm construction at its forward end 2a so as to protect the fingers of the user against any injury by striking against various objects while the block is in use, and also to securely seat the fingers under the stress of reciprocal movement of the block.

A resilient hand strap 3 is molded with or otherwise attached to the platform and lies directly over a heel rest 4 which latter is designed to offer a rest for the heel of a man's hand, and may be shaped to conform to the heel of the hand. Instead of a molded resilient strap, a strap of non-resilient material may be utilized and may incorporate a buckle for adjusting same if desired. The use of such a strap would be considered an equivalent.

Finger depressions 5 are disposed in the upper surface of the platform at its forward end. The combined heel rest, finger depressions and finger pocket afford a secure grip when the block is being used and whereby considerably more power may be applied to the work.

The platform at its front and rear ends is cut back so as to form a shelf 6.

Wire clamps 7 are attached to the platform at each end by springing the ends 8 of the clamps into shallow holes disposed in the sides of the platform, which permit the ends of the wires to move or rotate freely therein and which are so spaced from the end of the platform as to allow each wire clamp when depressed to lie flat against the shelf. Each wire clamp is formed with an inverted U 9 therein midway between the imbedded ends and the forward edge of the clamp. It would be an equivalent to dispense with the bend in the clamp entirely and use a straight wire.

A coil spring 9 is wound about the wire clamp near where each end enters the hole in the platform. One end of the spring is adapted to lie over and engage the wire clamp and the other end is adapted to lie flat in a shallow grooved slot 10 formed in the surface of the platform. The spring is adapted to hold the wire clamp in a depressed position when not normally raised against the resistance of the spring. An alternative means would be a wire clamp formed with coils near each end thereof, such as commonly employed in mouse traps, and with the ends anchored in the platform. In such form the springs would be entirely dispensed with and the clamp would act as a resistance spring and bear tightly against the shoulder on the platform unless forcibly lifted therefrom. Still other forms and types of clamping means could be utilized and would constitute equivalent means within the scope of my invention. Indeed, the upper face of the platform, at each end thereof, might be extended over the shelf and slightly beyond the wire, so as to form a flexible lip over which the clamp could be forcibly lifted or depressed.

A sheet of sandpaper, emery paper or other abrasive or polishing or rubbing material 11 is shown in position on the under side of the platform with the ends thereof drawn over the ends of the shelf and under the wire and thereby clamped in position.

The forward and rear ends of the platform may be chamfered as indicated at 12 and such construction will have special utility in sanding, polishing and rubbing grooved or recessed surfaces.

Devices which incorporate my invention are compact and neat in appearance and possess special features which afford protection to the hand of the user against injury. Such devices are relatively inexpensive to manufacture and may be embodied in a number of equivalent forms. For example, instead of molding the block and the hand strap and heel rest in one compact unit, the said strap and rest may be separately attached to the block and vulcanized or otherwise secured thereto in any convenient manner.

The entire unit may be manufactured of rubber or synthetic rubber such as the composition known under the trade name "Duprene", or such blocks may be composed of wood or other rigid material. A rigid construction would be considered an equivalent. The rigid form of block will be found to possess certain advantages when employed for rubbing and polishing operations on flat surfaces but a flexible type of block is generally preferred for use on curved and rounded surfaces.

The operation of my invention may be described as follows:

A sheet of sandpaper or other abrasive or other material of standard size is cut into three equal parts. The block may be of a size to accommodate a one-third sheet, although other sizes of course may be used within the spirit of my invention. The ends of the sheet are drawn over the shelf at either the front or rear end of the platform and under the wire clamp which latter may be conveniently raised against the resistance of the coil spring by grasping the inverted U shaped portion thereof. The wire is then released and the action of the spring will forcibly depress the wire so as to clamp the sheet of abrasive between the wire and platform shelf and thereby hold the end of the sheet securely in place. The same operation is then performed at the opposite end of the block, the sheet being drawn as taut as possible so as to avoid wrinkles and inequalities in its surface. When both ends of the sheet are clamped in position it will be found that the block may be utilized without any appreciable movement of the sheet in relation to the under surface of the platform.

The block and abrasive or other material are then ready for use and the hand of the user may be inserted under the hand strap with the heel of the hand pressed firmly against the heel rest and the fingers placed in the depressions provided for that purpose. If a resilient hand strap is not used, its equivalent form of non-resilient material and buckle may be adjusted to conform to the size of the hand. A zipper or other commonly employed closure means may be substituted for the buckle.

Figure 1 illustrates the manner in which the hand is inserted under the resilient strap with the fingers placed in the forward pocket so as most efficiently to use the device.

Various modifications constituting equivalents may be made in the details of the device within the scope of my invention and my invention is not to be limited to the preferred form which I have illustrated and described in this application.

The finger pocket and back strap may be molded to the block or may be separately attached thereto in any well known way.

The hand strap which is adapted to go over the back of the hand of the wearer may be omit-

ted in one equivalent form of construction, in which case the finger pocket may be extended back to a point adjacent the heel rest as illustrated in Figure 4. In that form of construction a zipper may be used for closing and opening the pocket, as desired. The strap and/or finger pocket may be formed either of flexible rubber as aforesaid or of any desired practicable fabric or material.

I claim:

1. A handsanding and rubbing block for supporting and retaining abrasives and the like, comprising a rectangular relatively flexible platform, a wire clamp secured to each end of the block for holding a sheet of abrasive and the like, and means for holding the block on the hand including a hand strap and finger pocket spanning the upper surface of said platform.

2. A handsanding and rubbing block for supporting and retaining sheets of abrasives and the like, comprising a relatively thin and flexible platform with a shoulder formed on each end thereof, a wire clamp mounted near each end of the platform, a plurality of coil springs engaging and depressing the said clamps and designed to hold a sheet of abrasive in position between the wire clamps and the said shoulder, a resilient hand strap and a finger pocket for holding the block on the hand.

3. A handsanding and rubbing block for supporting and retaining abrasives and the like, comprising a rectangular shaped platform with chamfered ends, means for securing a sheet of abrasive to the under side of and over each end of the said platform, means for gripping the block with the hand including a raised portion to conform to the heel of the hand and a depression for the fingers, and means for holding the block on the hand.

4. A handsanding and rubbing block for supporting and retaining abrasives and the like, comprising a solid, flexible body having a wire clamp disposed toward each end thereof, an inverted U bend in each side of the said wire clamp, a plurality of coil springs adapted together with said wire clamps to hold abrasives on the body, a hand rest on the upper surface and toward the rear end of the body, and a hand pocket joining the said body.

5. In combination: a relatively flexible body having means for holding abrasives and the like on said body, a hand rest and finger depressions on the upper surface of said body, a hand strap and a finger pocket joining said body and a flexible abrasive sheet covering the bottom portion of said body and secured thereto by said abrasive holding means.

6. In combination: a solid, flexible body for supporting and retaining abrasives, means for attaching and detaching abrasives to and from the body, a flexible sheet of abrasive, a hand rest formed on the upper surface of the body and adapted to conform to the heel of the hand, a hand pocket joining the upper surface of the body, and means for opening and closing said pocket.

7. A molded flexible rubber block for supporting and retaining abrasives comprising a platform, a heel rest for the hand and finger depressions formed on the upper face of said platform, a hand strap, a finger pocket and means for securing and holding sheets of abrasives and the like to the platform consisting of bent wires with the ends anchored in the said platform and coil springs wrapped about said wires near the ends thereof with one end bearing against the platform and the other end engaging the wire and designed frictionally to hold the wire firmly against said platform except when the wire is forcibly lifted therefrom.

8. In combination: a supporting and retaining body for abrasives, means for holding abrasives to the body, means for applying hand power thereto comprising a raised portion on the upper surface of said body to conform to the heel of the hand, and means for holding the device on the hand including a strap and a finger pocket.

9. In combination: a supporting and retaining body for abrasives, means for holding abrasives to the body, means for applying hand power thereto comprising a raised portion on the upper surface of said body to conform to the heel of the hand and a depression on said upper surface of the body for the fingers to rest in, and means for holding the device securely on the hand including a strap and a finger pocket.

10. In combination: a solid body of relatively flexible construction for supporting and retaining abrasives, a clamp mounted on each end of said body for attaching and detaching abrasives to and from the body, a flexible sheet of abrasive for attachment to the said body, a hand rest formed on the upper surface of the body and adapted to conform to the heel of the hand, and a hand strap for holding the block on the hand while in use.

11. A relatively flexible block for supporting and retaining abrasives comprising, a relatively thin platform, a clamp at each end of the platform for securing and holding sheets of abrasive thereto, a flexible sheet of abrasive for attachment to the under side of said platform, means for gripping the block with the hand so as to prevent any undue loss in transmission of hand power to the block including a raised portion to conform to the heel of the hand and a depression for the fingers, and means for holding the block on the hand.

12. In combination: a molded block of relatively flexible construction for supporting and retaining abrasives comprising, a relatively flat platform, means for holding abrasives to the platform, a rest for the hand on the upper surface of the platform and by means of which hand power can be applied to the block, means adjacent the said rest for enclosing a portion of the hand and adapted to hold the said block on the hand, means joining the upper portion of the platform near its forward end for enclosing the fingers and adapted to permit the movement of the block in any direction without slippage of the fingers and loss in transmission of power between hand and block.

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