April 16, 1940. A. B. PETERSON 2,197,224

ABRASIVE DEVICE

Filed June 11, 1938

Fig. 1.

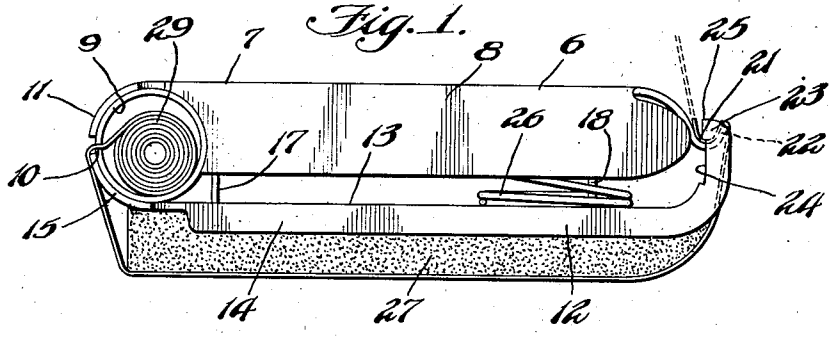


Fig. 2.

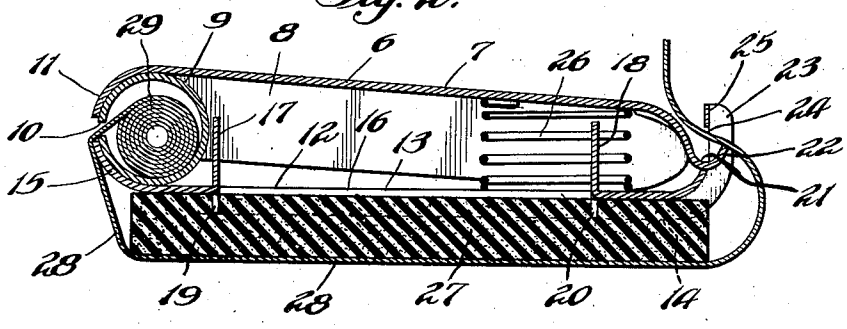


Fig. 3.

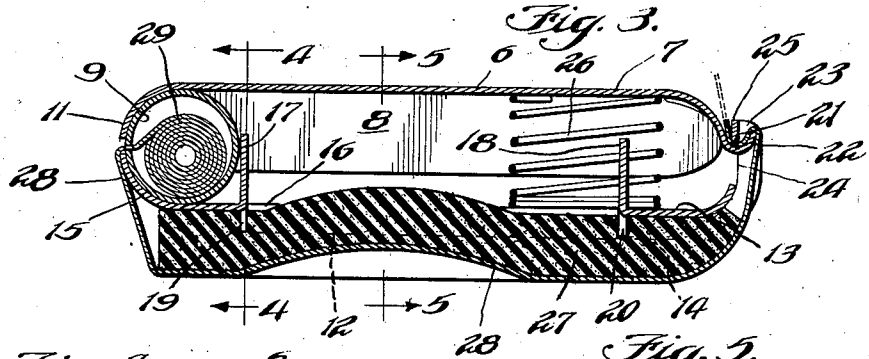


Fig. 4.

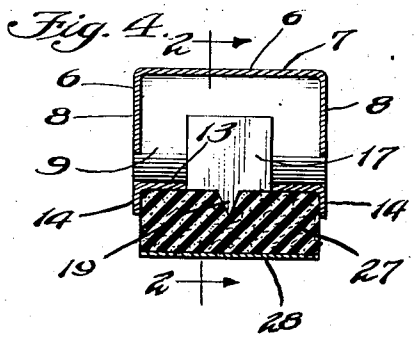
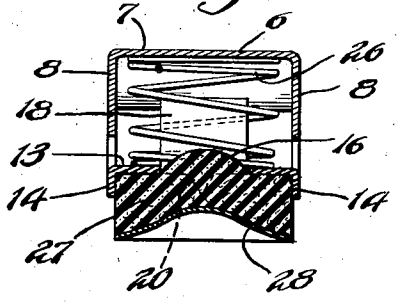


Fig. 5.



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ABRASIVE DEVICE

Arthur B. Peterson, Chicago, Ill.

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10 Claims. (Cl. 51—187)

This invention relates to a hand tool or abrasive device which may be used for various purposes, as in carpentry, cabinet work, or the like, but one of the particular uses is for cleaning eggs. It is well known that in many cases it is necessary or desirable to clean eggs by dry cleaning as distinguished from washing and the present invention is particularly useful for this purpose.

The objects of the invention are to provide an improved hand tool of the character set forth which will be simple and economical in construction and which will be particularly durable and efficient in use; to provide an abrading tool having means for holding a considerable supply of the abrading material, and means for moving and holding the strip of abrading material to present new working surfaces; to provide an abrasive device having a working face and means for clamping a strip of material at either end of the working face for holding the intermediate portion in position; to provide an abrasive or cleaning device for cleaning eggs, having a resilient supporting face or surface for supporting a flexible abrading or cleaning element; and to provide such other improvements in construction and advantages in operation as will appear from the following description.

In the accompanying drawing illustrating this invention,

Figure 1 is a side view;

Figure 2 is a longitudinal sectional view showing the parts in releasing position or position for adjusting the cleaning or abrading strip;

Figure 3 is a view similar to Figure 2 showing the parts in normal or clamping position and also illustrating the means provided for permitting the cleaning strip to conform to the surface of an egg or other curved surface;

Figure 4 is a cross section taken on the line 4—4 of Figure 3; and

Figure 5 is a cross section taken on the line 5—5 of Figure 3.

In the particular form of the invention illustrated, 6 is a handle or body member preferably formed of sheet metal and channel shaped in cross section having a top 7 and sides or flanges 8. The sides are cut away or recessed at one end to receive a cylindrical or tubular holder 9. This holder is split longitudinally as shown at 10 to provide an outlet or passageway for the abrading or cleaning strip, and is formed of resilient material so that the edges along the slot will serve to clamp the strip in adjusted position. The top portion 7 of the handle is bent to conform to the tube 9 as shown at 11 and is spot-welded or otherwise securely fastened thereto on the side adjacent to the slot.

The complete frame or supporting mechanism includes another cooperating handle and adjusting or clamping member 12. This member is also channel-shaped in cross section and has a flat wall or supporting plate 13 with depending flanges 14. One end of the plate is curved as shown at 15 to conform to and engage with the tubular holder 9 and is spot-welded or otherwise secured thereto adjacent to the slot 10. The plate or wall 13 has a longitudinal opening 16 and portions of the material cut out at either end of the opening are bent inwardly to provide projections 17 and 18 and small portions of the metal are also punched out adjacent these projections to form outwardly extending points or tangs 19 and 20.

One end of the plate or top 7 is bent inwardly and then upwardly to form a groove 21 with a clamping portion 22 as shown particularly in Figures 2 and 3. One end of the adjusting or clamping member 12 is also curved inwardly as shown at 23 and provided with a slot or opening 24 which takes over the adjacent curved or grooved portion 21 of the top plate and provides a cross strip or bar 25 which engages with the groove 21 when the parts are in normal or clamping position as shown in Figure 3, and which also provides a tearing edge for tearing off the used portion of the cleaning strip as will presently be described. A compression spring 26 is interposed between the top plate 7 and the coacting plate or bottom member 12 and is held in position by the projection 18. This spring tends to spread the outer or free ends of the plates apart and hold them in normal clamping position.

The lower frame or clamping member 12 is provided with a block or strip 27 of suitable material to form a backing or support for the cleaning strip. This block or backing is preferably formed of resilient material such as sponge rubber, and is partly held in position by the points or tangs 19 and 20 which pierce the upper surface thereof and tend to hold the block in the channel.

Any suitable cleaning or abrading material may be used, some of such materials being commonly known as sandpaper, emery paper, or the like, but I prefer to use a strip 28 of material of this character formed with a cloth backing such as emery cloth, which strip is provided in the form of a roll 29 which may be inserted in the holder 9 with the end of the strip projecting through

the slot 10 and carried along the outer surface of the block or backing 27 and then over the curved end 22 of the plate 7 and under the cross piece 25 as shown in Figure 2. In order to adjust the strip or insert it in this manner the free ends of the frame members are pressed together against the tension of the spring 26 which causes the slot 10 to be opened by spreading apart the adjacent edges of the tube 9. This also causes the strip or cross piece 25 to be freed from the groove 21 so that the strip 28 may be inserted in the opening thus provided as shown in Figure 2. After the strip has been tightened the tension on the spring is released and the spring moves the adjacent parts to clamping position as shown in Figure 3.

The operation of the device when in use will be apparent but it may be noted that on account of the resiliency of the backing or block 27 and the yielding character of the abrasive cloth, the engaging surface will conform to the surface of the work-piece even if the work-piece is of irregular or curved shape. The slot or opening in the bottom plate also permits the rubber backing to be pressed upwardly therein as shown in Figures 3 and 5 so that the engaging surface may assume a concave shape to fit over an egg whereby the egg may be rapidly cleaned when the device is applied thereto. After the exposed section of the abrasive tape has been used a desired length of time the frame ends are again pressed together to open up the outer clamp and the slot in the holder clamp, and a sufficient length of tape drawn from the supply roll through the holder to present a new work surface. The clamping members are then released and the used end of the tape is torn off over the tearing edge 25 so that the tool is ready for further use.

I have disclosed a practical commercial form of my invention but changes may be made without departing from the scope thereof as set forth in the following claims, in which I claim:

1. In a device of the character set forth, the combination of a handle member, a tube secured transversely to one end of the member and having a longitudinal slot in the outer portion thereof, the edges of the slot forming a clamp, an auxiliary member secured to the opposite side of the tube and extending longitudinally of the first named member and adapted to coact therewith for opening said slot, a spring interposed between the free ends of said members, a clamp formed by the interengaging ends of said members, and a roll of cleaning or polishing material mounted in said tube and extending out through the slot and along the auxiliary handle member and engaging with the clamp, the arrangement being such that the longitudinally extending portion of the cleaning material may be renewed by releasing the clamping means and drawing the same forward.

2. In a device of the character set forth, the combination of a channel shaped handle member, a holder for a rolled strip of material secured at one end of said handle member, an auxiliary channel shaped handle member connected with said holder and extending longitudinally of the first named member, clamping means for holding the strip adjacent to the holder, said first named handle member having a transverse groove portion at its free end extending through an opening in the free end of the auxiliary handle member to form holding and clamping means, a compression spring interposed between the free ends of said handle members and tending to press them apart, and a pad of yielding material secured to the auxiliary handle member and extending longitudinally thereof.

3. A device for use with a strip of abrasive, cleaning, or polishing material, comprising a channel-shaped handle member, a slotted tube secured to one end of said member and serving as a holder for a supply of the strip, an auxiliary handle member secured to the tube and thereby hinged to the first named member and adapted to coact with the first named member to open the slot, the free end of the auxiliary member being bent inwardly and having an opening therethrough, a projection on the first named member extending through said opening and interlocking with the end of the auxiliary member and forming a clamp, said auxiliary member having a longitudinal opening therein and having projections extending inwardly and sharpened points extending outwardly at the ends of said opening, a pad of resilient material extending lontudinally of the outer surface of the auxiliary member and engaging with said points, a compression spring interposed between the free ends of said handle members and fitting over one of said inwardly extending projections, a roll of said strip positioned in the holder and extending out through the slot and along the face of said pad with its outer end engaging with the clamp formed at the ends of the handle members, said strip being held by the clamping members at either ends of the handle in working position along the pad and being released by the clamps when the free ends of the handle members are pressed toward each other.

4. A cleaning device of the character set forth, comprising two substantially parallel handle members hinged together at one end and having coacting jaws at the opposite end to form a clamp, said jaws being arranged to remain in interlocking position at all times and prevent the spreading of the ends of the handle members beyond a predetermined position, a spring interposed between the clamping ends of said members and tending to hold the jaws in closed position, a support at the hinged end of said handle members for supporting a rolled strip of cleaning material, said handle members also having coacting jaws adjacent to the support through which the strip is drawn, said jaws also being urged to closing position by the spring, the arrangement being such that the strip of cleaning material may be drawn through the last-named jaws along one face of one of the handle members with its end positioned between the first-named jaws and held in working position along said face by said jaws, both of said pairs of jaws being operated simultaneously by the handle members.

5. In a device of the character set forth, the combination of two substantially parallel handle members having clamping jaws at each end thereof and hinged intermediate of said clamping jaws, and a spring interposed between said handle members and tending to hold the jaws at each end in closed positions, whereby both of said jaws will be operated simultaneously by said handle members and a strip of material may be held in engagement with one of the faces of said handle members by said jaws.

6. In a device of the character set forth, the combination of two coacting substantially par-

allel members having pivotal connection adjacent to one end thereof, the ends of said members also coacting to form clamps at each end of the device which are opened and closed simultaneously by the movement of said parallel members, a spring positioned between said members at one end of the device and tending to urge the members into position to close the clamps, means for supporting a strip of material adjacent to one end of the device, said strip being extended through one of the clamps along the face of one of said members with its outer end secured in the other clamp to hold said portion of the strip in working engagement with the face.

7. In a device of the character set forth, the combination of a handle member, a holder for a rolled strip of material secured to one end of said handle member, an auxiliary member connected with said holder and extending longitudinally of the first-named member, clamping means for holding the strip adjacent to the holder, said handle member having a transverse groove portion at its free end extending through an opening in the free end of the auxiliary member to form holding and clamping means for holding the ends in interlocked engagement and for clamping the strip of material, a compression spring interposed between the clamping ends of the handle member and the auxiliary member tending to press them to clamping position, and a pad of yielding material secured to the auxiliary member and extending longitudinally thereof.

8. In combination, a receptacle for holding a roll of material for polishing or abrading, said receptacle having a longitudinal opening through which the strip of material is passed, means at the opening for clamping the strip to hold it in working position, an arm attached to the receptacle and extending laterally therefrom and serving as a backing for the working portion of the strip, a second arm secured to the receptacle and extending along the first-named arm, the outer ends of said arms having interengaging portions to form a clamp for holding the strip of material at such end, a spring positioned between the arms and urging them to clamping position, the clamping portions of the arms being such that the ends are always held against disengagement by the action of the spring, the arrangement being such that when the ends are pressed towards each other against the tension of the spring both of the clamps will be released from the strip to permit the strip to be drawn from the supply roll along the backing to present a new working surface, and when the ends are released the clamps will engage with the strip to hold the working portion in position along the backing.

9. An abrading device comprising a holder for a rolled strip of abrading material, said holder having an outlet opening at one side thereof, clamps along said opening for clamping the strip, a pair of arms coacting with the holder and clamp and serving to open the clamp when their outer ends are pressed towards each other, the outer ends of said arms having inter-engaging portions forming a second clamp between which clamps the working portion of the strip of abrading material is to be held, said inter-engaging portions being arranged so that they are always in connected relationship and prevent the spreading of the ends of the arms beyond a predetermined point, and yielding means interposed between the arms for urging the arms apart, the arrangement being such that when the interengaging ends of the arms are pressed toward each other both of the clamps will be released, and when the ends are freed both of the clamps will be closed to hold the strip.

10. In a device of the character set forth, the combination of a handle member, a holder for a rolled strip of material secured at one end of said handle member, an auxiliary handle member connected with said holder and extending longitudinally of the first-named member, clamping means for holding the strip adjacent to the holder, said first-named handle member having a transverse grooved portion at its free end extending through an opening in the free end of the auxiliary handle member to form clamping means, a compression spring between the free ends of said handle members and tending to press them apart, and a pad of yielding material secured to one of said handle members and extending longitudinally thereof.

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