Feb. 6, 1951 J. FARROW 2,540,816

GRIDDLE CLEANING DEVICE

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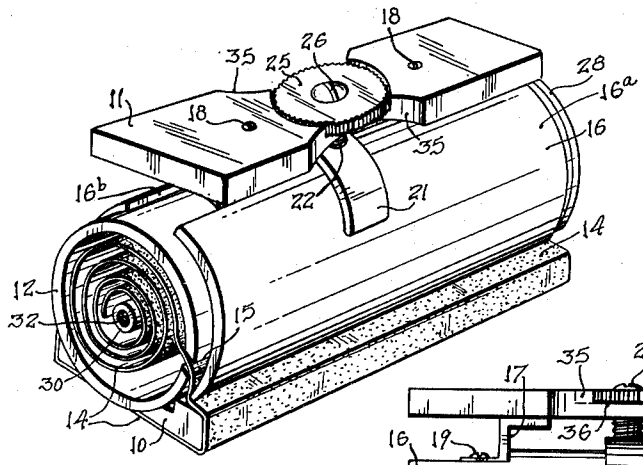

FIG. 1.

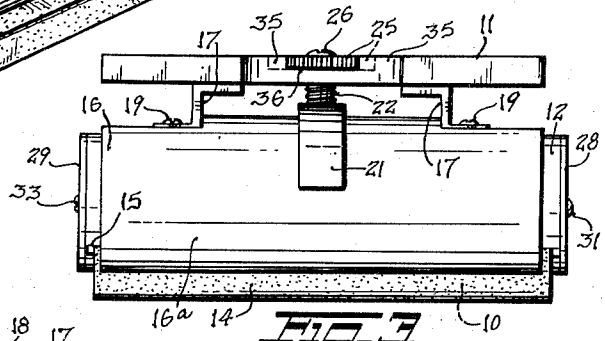

FIG. 3.

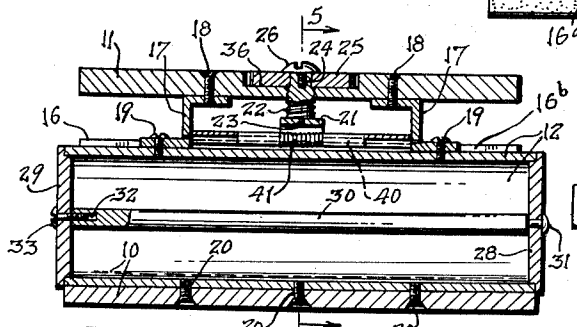

FIG. 4.

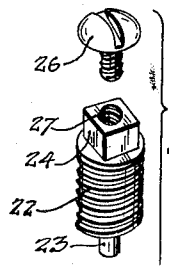

FIG. 7.

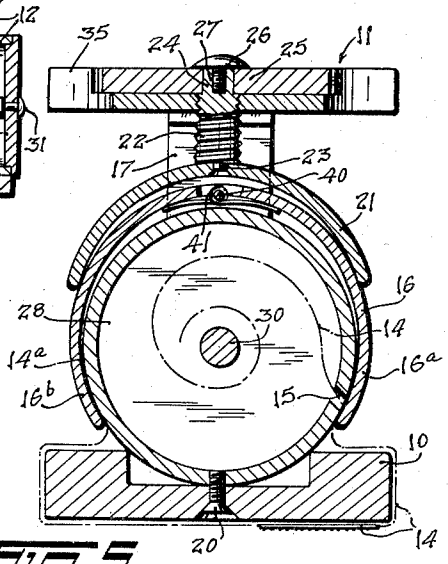

FIG. 5.

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GRIDDLE CLEANING DEVICE

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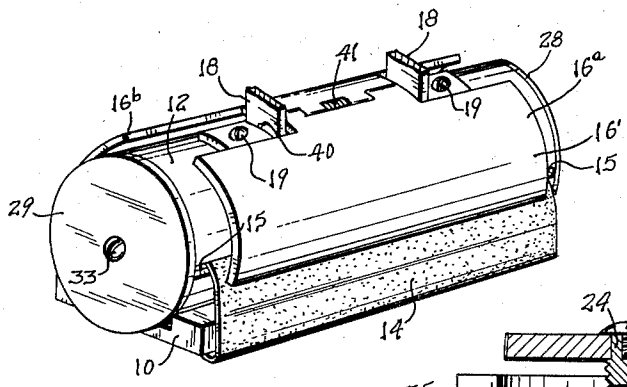

FIG. 2.

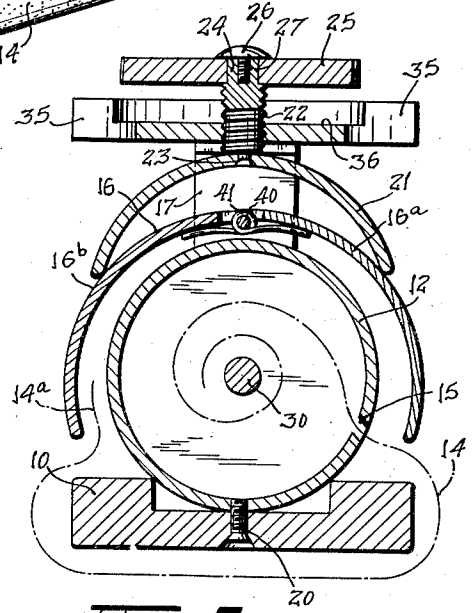

FIG. 6.

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GRIDDLE CLEANING DEVICE

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7 Claims. (Cl. 51—187)

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This invention relates to new and useful improvements in griddle cleaning and polishing hand-tools, and more particularly the aim is to provide a novel and valuable such tool for cleaning and abrasively polishing the flat upper surface of a griddle or heating plate such as used in many types of restaurants and eating places for the making of griddle cakes, the frying of eggs, bacon, etc.

According to the invention, a device is provided, which, having at its bottom an elongate plate-like backing structure or platen and at its top a comfortably grippable plate-like handle elongated in the direction of elongation of said platen, incorporates between the platen and handle a preferably cylindrically tubular magazine for storing therein and in coiled condition a supply length of emery cloth or the like, this last-named element in a roll of a width substantially equal to the length of the platen and of a length several or even many times the platen width; in combination with an egress opening for the emery cloth or the like, said opening preferably a slot extending longitudinally of the magazine at a side thereof, and also with a unique type of clamping means for a subdivision of the length of said cloth after said subdivision, having been drawn through said opening, is wrapped laterally around the platen and then upwardly directed at its free end at the exterior of the magazine at its side opposite to the location of said opening, said clamping means for holding taut the stretch of said cloth underlying the bottom of the platen and for anchoring said strip to absolute tautness, with the abrasive side of the cloth lowermost, and in further combination with means readily manually operable adjacent to the handle for loosening said clamping means and restoring the latter to its normal clamping function.

Also, preferably, said magazine is closable at both ends by disk-like caps forming part of a readily removable and remountable minor assembly; which assembly may include a rod permanently secured at one end to one of said caps and tubulated at its opposite end and there internally threaded to provide part of a means, including a screw having a thread matching said internal thread, for coupling the cap other than the one just-named to the tubular end of said rod, thereby securely temporarily to remount both end caps, and with said rod, incidentally forming a centering mandrel relative to the aforesaid coiled reserve portion of the abrasive cloth or the like.

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For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of the hand-tool constructed in accordance with the present invention.

Fig. 2 is a perspective view similar to Fig. 1, but with the top handle broken away.

Fig. 3 is a side elevational view of Fig. 1.

Fig. 4 is a central longitudinal vertical sectional view of the hand-tool.

Fig. 5 is an enlarged transverse vertical sectional view taken on the line 5—5 of Fig. 4.

Fig. 6 is a view similar to Fig. 5, but illustrating a different position of the parts.

Fig. 7 is an exploded view of a portion of the clamp means.

The cleaning and polishing hand-tool, according to the present invention, includes a platen, preferably of a lightweight metal, as aluminum or an aluminum alloy, and of shallow U cross-section as shown in Figs. 5 and 6, is designated 10. The plate-like elongate structure comprising the handle, this marked 11, may well be a die or other casting, in the former case practicably of a metal as ordinarily used in die-cutting. The magazine 12, for a roll of emery cloth 14 of the dimensional characteristics already stated, may be made of any material, as brass or other metal; and it will be noted that the same is merely a squarely cut-off length of what may well be a standard extruded tubing. Extended from end to end of the magazine 12 along one side, there is a slot 15, constituting the already mentioned egress opening for a subdivision of the emery cloth 14, as indicated in Figs. 1 and 2.

The clamping means for functioning as already explained incorporates a bottom-gapped clamping barrel 16 which overlies and straddles the major part of the circumference of the magazine 12, with the concave side of the barrel, of course, facing the convexity of the magazine. A pair of lugs 17 are secured to the bottom face of the handle 11 by screws 18, the bottom ends of the lugs are extended in opposite directions and secured to the top of the magazine 12 by screws 19. The platen 10 along its central longitudinally extending thinner portion is permanently secured to the bottom of the magazine 12 in any suitable way, as by the three screws 20 shown, thereby

to cradle the lower rotundity of the magazine 12 in the space provided along said central portion of the upper side of the platen.

The clamping barrel 16 is formed of opposed halves 16a and 16b. The adjacent top edges of the barrel halves 16a and 16b are pivotally curled about a rod 40 which extends between the upstanding portions of the lugs 17, as shown in Fig. 4, the ends of the rod 40 are reduced and received in complementary holes formed in the upstanding portions of the lugs 17. A coil spring 41 is coaxially wound on the rod 40 intermediate of its ends. The ends of the coil spring 41 bear against the undersides of the barrel halves 16a and 16b, as clearly shown in Figs. 5 and 6, for urging the halves 16a and 16b into the open or inoperative position of the halves 16a and 16b the length of emery cloth 14 is free to be drawn from the slot 15 of the magazine 12 to be adjusted with relation to the magazine 12 and the platen 10.

Manually operable clamp means is provided for urging the barrel halves 16a and 16b, against the action of the spring 41 into their closed or operative position shown in Fig. 5 and for holding the halves in that position. That clamp means comprises an arch-bar 21, which may be made of a metal or other material, and which should either be inflexible or substantially so. The bar 21 is elongate and longitudinally curved to a less, and preferably a considerably less, radius of curvature than the clamping barrel 16, when closed, and even, also desirably, less than that of the tubing of which the magazine 12 is made.

Other elements of said clamping means are an actuating screw 22 arranged so as when rotated in one direction to result in the imparting to the arch-bar 21 at the center of its length of a downthrust against the upper part of the clamping barrel 16. The screw 22 is threadedly engaged through the handle 11 and is formed at its bottom end with a reduced portion 23 which is rotatively extended through a complementary hole in the bar 21. The face end of the portion 23 is milled over as shown in Figs. 4 to 6 for retaining the bar 21 rotatively in position thereon. The slightly reduced head 24 of the screw 22 is of square cross-section for fitting keyingly in a square hole through the center of a knurled manually turnable disk 25; which latter is the aforesaid actuator of the clamping means. The square head 24 of the screw 22 is axially recessed and tapped, and a screw 26 having a thread matching the thread in said recess 27 is provided for securely coupling the disk 25 to the screw 22.

Two generally like stepped end caps 28 and 29 are provided for readily detachable securement to close both ends of the emery cloth housing chamber provided at the interior of the magazine 12. A round rod 30 is at one end permanently secured to the center of the end cap 28, so as to extend therefrom, in any suitable way, as by having a reduced end portion for extension through a central aperture in the cap 28, and then for being headed over, all as indicated at 31 in Fig. 4. There is a tubulation 32 in the opposite end of said rod, which tubulation is internally threaded. The other end cap 29 has a central aperture for the passage therethrough of an attaching screw 33 having a thread matching the thread in the tubulation 32 of the rod 30. Thus, merely by removing the screw 33, the chamber in the magazine 12 may be opened at both ends, and with the caps 28 and 29 arranged as shown in the drawings, all that is needed fully to close the magazine, except for the slot 15, is to apply and tighten up the screw 33.

With the end caps removed, a suitably elongated roll of the emery cloth 14 or the like may be stored in the magazine 12 and is placed on the rod 32 which facilitates rotation of the roll of emery cloth, as clearly shown in Fig. 1, and so that an end portion of the flexible abrasive element 14 traverses the slot 15 and is extended to beyond the adjacent lower end edge of the clamping barrel half 16a; with, it being understood, the disk 25 rotated sufficiently to raise the arch-bar 21, as shown in Fig. 6, and so to allow the already mentioned resilient bias of the clamping barrel 16 to distend the same, despite the presence of the arch-bar 21, and thereby open up a passageway for the being withdrawn end portion of the abrasive roll 14 below the slot 15 and beyond the lower end of the adjacent barrel half 16a.

This having been done, said flexible abrasive element 14 is withdrawn further for extension around the platen 10 as shown, and for entry of the free outer end of said element 14 up into the space between the exterior of the magazine 12 and the other barrel half 16b, as indicated in dot and dash lines at 14a in Fig. 6. Now, without excessive slack being allowed in any part of the roll 14 exterior to the clamping barrel 16, all that is required in order to hold taut the stretch of said element 14 across the bottom of the platen 10 and over the entire length of the latter, and to anchor said element 14 between the clamping barrel 16 and the magazine 12, in a way to hold said tautness, is to turn the disk 25 in the direction required to restore the parts to the condition shown in Fig. 5.

It is to be noted that the flexible abrasive element of the roll 14, extends across the entire width of the platen 10 and also substantially along its entire length; and that, when the portion of said element 14 underlying the bottom of the platen has been so long used that its abrasive efficacy has considerably deteriorated, it is a simple matter, by first turning the disk 25 in one direction, to open the opposed halves of the barrel, 16a and 16b thus allowing the deteriorated element to be torn from the roll 14 and then withdrawing by hand a sufficient portion of the abrasive element from the roll 14 to cover the bottom of the platen. By turning the disk 25 in the opposite direction, the opposed halves of the barrel will return to their original position. One result is that the platen bottom is always covered with a fully effective abrasive covering; another result is that there is no unnecessary wastage of the flexible abrasive element; another result is that recovering the bottom of the platen is a simple and easy matter; and another result is that a very large reserve supply of the element 14 may be stored in the magazine 12.

The control disk 25 of the clamp means is of a diameter less than the width of the handle and of a thickness less than the thickness of the material used to form the handle. The center of the handle 11 is recessed at 36 to the thickness of the disk 25, so that the disk will be received therein with its top face flush with the top of the handle 11, as shown in Figs. 3, 4 and 5, when the clamp barrel 16 is in its operative position. The sides of the handle 11 are formed with cutouts 35 which expose diametrically opposite sides of the knurled disk providing a finger grip by which the disk can

be conveniently turned in one direction or the other for similarly turning the screw 22.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. A cleaning and polishing device for the purpose stated, comprising a bottom structure shaped to provide an elongate plate-like platen, a top structure shaped to provide an elongate plate-like handle the direction of elongation of which is in the same direction as that of said platen, a tubular magazine for a flexible roll carrying an abrasive surface, said magazine being elongate with its direction of elongation in the same direction as that of the handle and platen, said roll being of a width substantially equal to the length of the platen and of a length equal at least several times to the width of the platen and said magazine at a side thereof having a straight slot as long as the width of said roll, said handle being secured to and spaced above the top of said magazine and said platen being secured to the bottom of said magazine with its general plane substantially parallel to the general plane of the handle, and a clamping means for holding extended across the bottom of the platen a subdivision of the length of said roll, said clamping means including a manual actuator for loosening and tightening the clamping means and carried by the handle, said clamping means including a bottom-gapped clamping barrel of a length approximating that of said magazine, and means for thrusting against said barrel near its top for elastically reducing its said radius, thereby to constitute said barrel a double-acting clamping instrumentality at its bottom gap relative to parallel linearly extended portions of said roll along lines angularly displaced one from another at the exterior of the magazine, said clamping means further including an arch-bar overlying the clamping barrel and extending laterally of the length of the magazine and having its concave side downwardly directed, said bar having a substantially circular direction of longitudinal extension, the radius of curvature thereof at its said side being less than that of said barrel, and a threadedly mounted operative interponent between said manual actuator and said arch-bar.

2. A cleaning and polishing device for the purpose stated, comprising a bottom structure shaped to provide an elongate plate-like platen, a top structure shaped to provide an elongate plate-like handle the direction of elongation of which is in the same direction as that of said platen, a tubular magazine for a flexible roll carrying an abrasive surface, said magazine being elongate with its direction of elongation in the same direction as that of the handle and platen, said roll being of a width substantially equal to the length of the platen and of a length equal at least several times to the width of the platen and said magazine at a side thereof having a straight slot as long as the width of said roll, said handle being secured to and spaced above the top of said magazine and said platen being secured to the bottom of said magazine with its general plane substantially parallel to the general plane of the handle, and a clamping means for holding extended across the bottom of the platen a subdivision of the length of said roll, said clamping means including a manual actuator for loosening and tightening the clamping means and carried by the handle, said clamping means including a bottom-gapped clamping barrel of a length approximating that of said magazine, and means for thrusting against said barrel near its top for elastically reducing its said radius, thereby to constitute said barrel a double-acting clamping instrumentality at its bottom gap relative to parallel linearly extended portions of said roll along lines angularly displaced one from another at the exterior of the magazine, said clamping means further including an arch-bar overlying the clamping barrel and extending laterally of the length of the magazine and having its concave side downwardly directed, said bar having a substantially circular direction of longitudinal extension, the radius curvature thereof at its said side being less than that of said barrel, and a threadedly mounted operative interponent between said manual actuator and said arch-bar, said interponent being secured to said manual actuator for rotation thereof, and comprising a screw rotatively connected to said arch-bar.

3. In a cleaning and polishing device for the purpose stated, a tubular magazine for a roll of abrasive material having a flat bottom platen and a slot along one side thereof through which the end of the roll of abrasive material can be projected to be extended across the bottom face of said platen and then upward along the other side of said magazine, spaced lugs extended upward from the top of said magazine, a handle mounted on the top of said lugs, a clamp barrel of opposed halves pivotally supported on said lugs between said magazine and said handle to be clamped against the sides of said magazine for securing the projected end of the roll of abrasive in position with a portion thereof extended below the platen, resilient means normally urging said barrel halves away from the sides of said magazine, and manually operable means for holding the halves of said clamp barrel in their operative position clamped against the sides of said magazine.

4. In a cleaning and polishing device for the purpose stated, a tubular magazine for a roll of abrasive material having a flat bottom platen and a slot along one side thereof through which the end of the roll of abrasive material can be projected to be extended across the bottom face of said platen and then upward along the other side of said magazine, spaced lugs extended upward from the top of said magazine, a handle mounted on the top of said lugs, a clamp barrel of opposed halves pivotally supported on said lugs between said magazine and said handle to be clamped against the sides of said magazine for securing the projected end of the roll of abrasive in position with a portion thereof extended below the platen, resilient means normally urging said barrel halves away from the sides of said magazine, and manually operable means for holding the halves of said clamp barrel in their operative position clamped against the sides of said magazine, and a rod mounted between said lugs and said opposed halves of said clamping barrel having adjacent edge portions curled about said rod forming the pivotal mounting of the halves of said clamp barrel.

5. In a cleaning and polishing device for the

purpose stated, a tubular magazine for a roll of abrasive material having a flat bottom platen and a slot along one side thereof through which the end of the roll of abrasive material can be projected to be extended across the bottom face of said platen and then upward along the other side of said magazine, spaced lugs extended upward from the top of said magazine, a handle mounted on the top of said lugs, a clamp barrel of opposed halves pivotally supported on said lugs between said magazine and said handle to be clamped against the sides of said magazine for securing the projected end of the roll of abrasive in position with a portion thereof extended below the platen, resilient means normally urging said barrel halves away from the sides of said magazine, and manually operable means for holding the halves of said clamp barrel in their operative position clamped against the sides of said magazine, and a rod mounted between said lugs and said opposed halves of said clamping barrel having adjacent edge portions curled about said rod forming the pivotal mounting of the halves of said clamp barrel, said resilient means comprising a spring on said rod having its ends acting against the bottom faces of said opposed halves and pivoting them away from the sides of said magazine.

6. In a cleaning and polishing device for the purpose stated, a tubular magazine for a roll of abrasive material having a flat bottom platen and a slot along one side thereof through which the end of the roll of abrasive material can be projected to be extended across the bottom face of said platen and then upward along the other side of said magazine, spaced lugs extended upward from the top of said magazine, a handle mounted on the top of said lugs, a clamp barrel of opposed halves pivotally supported on said lugs between said magazine and said handle to be clamped against the sides of said magazine for securing the projected end of the roll of abrasive in position with a portion thereof extended below the platen, resilient means normally urging said barrel halves away from the sides of said magazine, and manually operable means for holding the halves of said clamp barrel in their operative position clamped against the sides of said magazine, said manually operable means comprising a rigid arch-bar extended across said clamp barrel with its concave side facing downward, said arch-bar having its ends engaging the top faces of the opposed halves of said clamp barrel on opposite sides of said pivot, and means carried by said handle for holding said arch-bar in positions in which the opposed halves of said clamp barrel are clamped against the sides of said magazine or free to be urged away from the sides of said magazine by said resilient means.

7. In a cleaning and polishing device for the purpose stated, a tubular magazine for a roll of abrasive material having a flat bottom platen and a slot along one side thereof through which the end of the roll of abrasive material can be projected to be extended across the bottom face of said platen and then upward along the other side of said magazine, spaced lugs extended upward from the top of said magazine, a handle mounted on the top of said lugs, a clamp barrel of opposed halves pivotally supported on said lugs between said magazine and said handle to be clamped against the sides of said magazine for securing the projected end of the roll of abrasive in position with a portion thereof extended below the platen, resilient means normally urging said barrel halves away from the sides of said magazine, and manually operable means for holding the halves of said clamp barrel in their operative position clamped against the sides of said magazine, said manually operable means comprising a rigid arch-bar extended across said clamp barrel with its concave side facing downward, said arch-bar having its ends engaging the top faces of the opposed halves of said clamp barrel on opposite sides of said pivot, and means carried by said handle for holding said arch-bar in positions in which the opposed halves of said clamp barrel are clamped against the sides of said magazine or free to be urged away from the sides of said magazine by said resilient means, said means carried by said handle comprising a screw threaded through said handle, said screw having its bottom end rotatively connected to said arch-bar intermediate of its ends, and disk on the top end of said screw by which said screw can be turned to raise and lower said arch-bar with relation to said clamp barrel.

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