Nov. 21, 1939. A. V. MIKALSON 2,180,640

FRUIT JAR GRINDER

Filed April 24, 1939

Fig. 1.

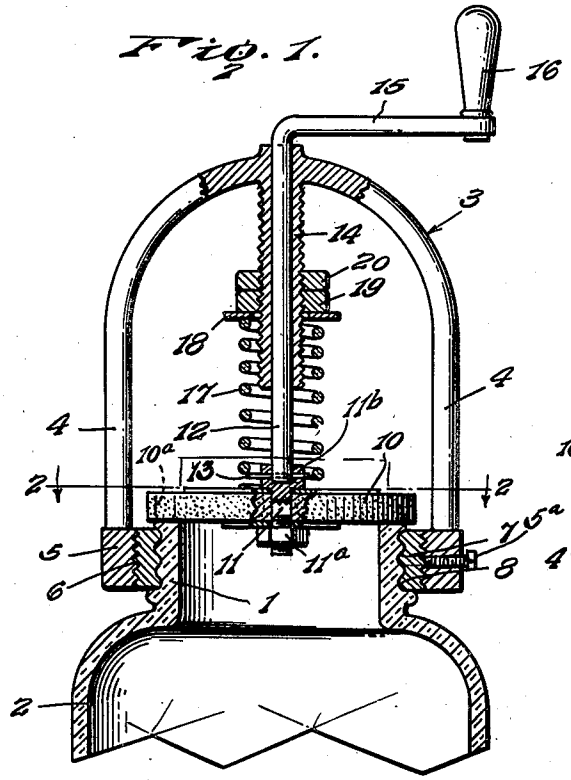


Fig. 2.

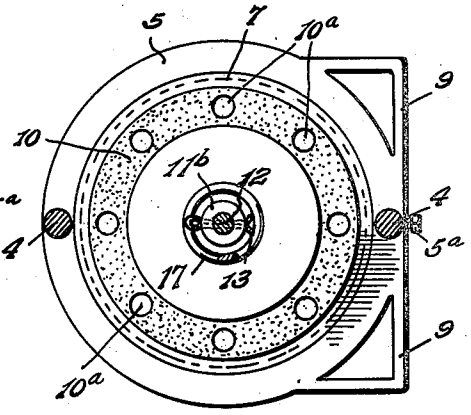


Fig. 3.

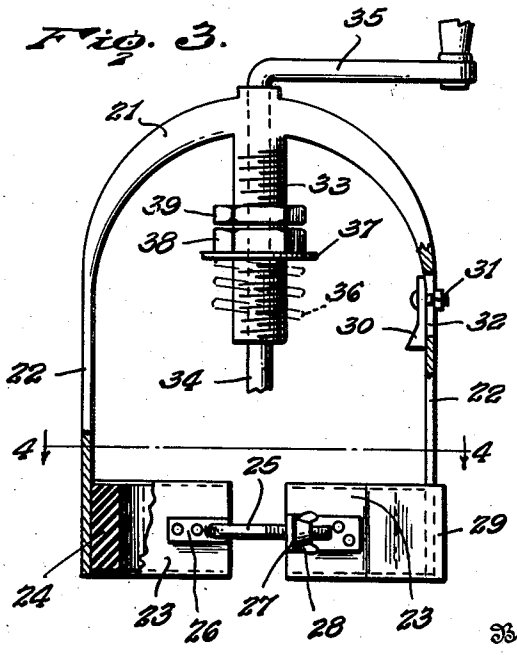
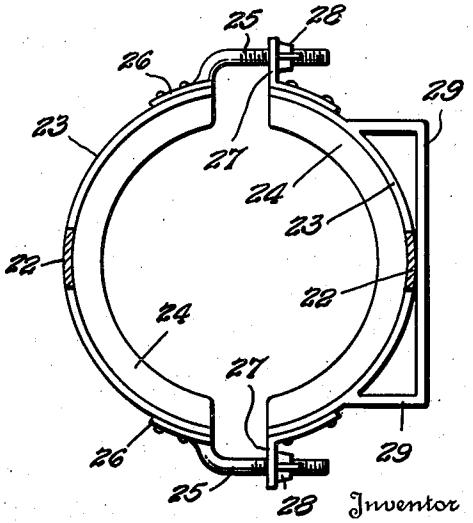


Fig. 4.



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FRUIT JAR GRINDER

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7 Claims. (Cl. 51—241)

This invention relates to a grinder by means of which the upper edges of fruit jars may be operated upon and an even edge produced which will be smooth and disposed in a single plane throughout the circumference of the neck of the jar. Therefore, when a cap is applied to the neck of a jar and tightened, pressure will be evenly applied throughout the circumference of the neck and a gasket compressed evenly at all points to form a tight seal.

Another object of the invention is to so form the grinder that when it is in use, it may have gripping engagement about the upper portion of a jar and a grindstone moved into position to bear against the upper edge of the neck of the jar and form a smooth edge during rotation of the stone.

Another object of the invention is to provide a grinder having the grindstone carried by a rotatably mounted shaft which is urged toward the jar so that the stone will be pressed against the jar neck and a good grinding action take place.

Another object of the invention is to provide a grinder which may be disposed horizontally and rest upon a table without rolling along the surface of the table.

Another object of the invention is to provide a grinder which when engaged with a jar may be mounted over a table and supported in position for use by a portion having clamping engagement with the table.

Another object of the invention is to so mount the stone that a certain amount of play upon the shaft carrying the stone will be permitted and the stone thus allowed to adapt itself to the neck being ground.

The invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is a view partly in vertical section and partly in elevation, showing a grinder applied to the threaded neck of a jar.

Fig. 2 is a view taken along the line 2—2 of Fig. 1.

Fig. 3 is a view partially in side elevation and partially in vertical section, of a modified form of grinder.

Fig. 4 is a view taken along the line 4—4 of Fig. 3.

This improved grinder is to be employed for smoothing the upper marginal edge of the neck of a fruit jar and, in Fig. 1, has been shown applied to the externally threaded neck 1 of a jar 2. The yoke 3, which is formed of metal, is of U-shape formation and the lower ends of its arms 4 are integrally united to a ring or collar 5 which is internally threaded, as shown at 6, for engagement with the external threads of a bushing 7. The bushing is provided with coarse internal threads 8 for engaging the threads of the neck. After the bushing has been screwed into the collar it is secured by a set screw 5a. By providing a number of bushings of various thicknesses, which are selectively screwed into the collar, the grinder may be applied to jars having necks of different sizes or threads of different types or pitch. Angular webs 9 are formed upon the collar at opposite sides of one leg of the yoke and cooperate with each other to form a chock for resting upon a table and preventing the jar from rolling if it is placed in a horizontal or reclining position upon a table during the grinding operation.

The grindstone 10, which may be formed of emery or any other suitable material, fits about the bolt 11, where it is held by a nut 11a and this bolt has a bored head 11b at its upper end which fits about the lower end of a shaft 12 where it is secured by a cotter key 13. The bolt has loose fit about the lower end of the shaft and the stone may, therefore, tilt transversely of the shaft sufficiently to have proper engagement with the upper end of the neck of the bottle. Openings or pockets 10a are formed in the stone 10 and through these openings dust and grindings are expelled during the grinding operation. The face of the stone will, therefore, be kept clean and a good grinding action will take place. The shaft 12 extends vertically in concentric relation to the collar 5 and is rotatably and slidably received through a sleeve 14 formed integral with and depending from the bridge portion of the yoke 3. The upper portion of the shaft is bent to form a crank handle 15 having an upwardly or outwardly extending hand hold 16 at its outer end, and it will be readily understood that by grasping this hand hold the handle may be manipulated to rotate the shaft and turn the grindstone.

During the grinding operation, the grindstone must be held in close contact with the upper edge of the neck 1. In order to accomplish this, there has been provided a spring 17 coiled about the sleeve and the portion of the shaft projecting downwardly therefrom. The lower end of the spring abuts the stone and the upper end of the spring bears against a washer 18 fitting about the sleeve under nuts 19 and 20. The nut 19 serves as means for placing the spring under desired tension and the nut 20 is a lock nut for holding the nut 19 in set position.

When the grinder is in use, the bushing 7 is screwed into the collar and secured by the set screw 5a, the collar and bushing being then screwed upon the neck of the jar. As the device is screwed into place, the grindstone comes to rest upon the upper end of the neck and the spring is compressed to place it under tension. The hand hold 16 may then be grasped and rotary motion imparted to the shaft 12, so that the stone will be turned and any uneven places ground off of the upper edge of the neck. If it is found that the stone does not have proper frictional engagement with the neck, it is merely necessary to loosen the lock nut 20, adjust the abutment nut 19 to reduce or increase tension of the spring 17, and again tighten the lock nut. As the grindstone is permitted to have a certain amount of transverse play relative to the shaft 12, it may have sufficient tilting movement to dispose it in proper angular position to the upper end of the neck. During the grinding operation, the jar may be set on a table in an upright position or it may be disposed in a reclining or horizontal position, the webs 9, when the jar is in reclining position, resting on the table at opposite sides of the neck and serving to provide a firm support which will brace the jar against rolling movement and thus permit the jar to be easily held stationary while turning the shaft.

In Figs. 3 and 4 of the drawing, there has been illustrated a modified form of jar grinder wherein the yoke 21 is formed of resilient material and its arms 22 are united to clamping jaws 23 lined as shown at 24, so that firm gripping engagement with a jar may be obtained when the jaws are drawn tightly about the jar. One jaw carries threaded stems or bolts 25 having attaching feet at their inner ends which are riveted to the jaw and the other jaw carries ears or brackets 27 through which the bolts slidably pass. Wing nuts 28 are threaded on the bolts and when these nuts are tightened, the jaws will be drawn toward each other until the jar is firmly gripped between them. Webs 29 corresponding to the webs 9, are carried by one jaw so that when the jar is disposed in a reclining position on a table, it will be prevented from rolling. The webs 29 may be formed integral with the jaw or they may be formed by bent end portions of a strip extending transversely of one arm of the yoke and welded at its ends and intermediate its length to the jaw. A stop 30 for engaging a jar below the neck thereof and properly locating the jaws about the jar, is carried by one arm of the yoke. This stop is formed of metal and is held in place by a bolt 31 which passes through a slot 32 formed in the arm longitudinally thereof.

A sleeve 33 corresponding to the sleeve 14, is carried by the yoke and through this sleeve passes a shaft 34 corresponding to the shaft 12 and having a crank 35 at its upper or outer end corresponding to the crank 15 and by means of which the shaft is to be turned. While the lower portion of the shaft 34 has been broken off, it is to be understood that it carries a grindstone corresponding to the grindstone 10 and engaged by the lower end of the spring 36 which surrounds the shaft and the sleeve 33 with its upper end abutting the washer 37 which fits about the sleeve under the abutment nut 38 and the lock nut 39.

The operation of the grinder illustrated in Figs. 3 and 4, is the same as that illustrated in Figs. 1 and 2, except that the jaws fit about the jar below the neck and are drawn into tight gripping engagement with the jar instead of having threaded engagement with the neck of the jar. Therefore, the operation of this form of grinder need not be specifically set forth.

Having thus described the invention, what is claimed is:

1. A jar grinder comprising a yoke for straddling the neck of a jar, an internally threaded collar carried by arms of said yoke for fitting about the neck of a jar, a bushing in said collar and having external threads for engaging threads of the collar and internal threads for engaging threads of the neck of the jar, a tubular sleeve carried by said yoke concentric to said collar, a shaft slidably and rotatably received through said sleeve and having a crank at its outer end for turning the shaft, a bolt carried by the inner end of said shaft in alinement therewith, a grind stone mounted about the bolt below the inner end of said shaft, a spring surrounding said sleeve and the portion of the shaft protruding from the inner end of the sleeve, said spring having its inner end abutting said grind stone, a washer surrounding said sleeve and engaging the outer end of said spring, a nut threaded on said sleeve and engaging the outer face of said washer, and a lock nut threaded on said sleeve for engaging the first nut and securing the same in set position with the spring under predetermined tension.

2. A jar grinder comprising a yoke, means for removably mounting said yoke in straddling relation to the neck of a jar with the yoke extending from the neck longitudinally of the jar, a sleeve carried by said yoke and extending inwardly therefrom in concentric relation to the neck of the jar, an abutment nut threaded on said sleeve, a washer fitting about said sleeve against the inner end of said nut, a shaft rotatably and slidably received through said sleeve and having its outer portion bent to form a crank handle for turning the shaft, a grind stone carried by the inner end of the shaft and formed with pockets spaced from each other circumferentially of the stone and opening through the under face thereof, and a spring surrounding the sleeve and the portion of the shaft projecting from the inner end thereof, said spring having its inner end abutting said grind stone and its outer end abutting said washer, and the spring being placed under predetermined tension by adjustment of the abutment nut along said sleeve.

3. A grinder for a jar neck comprising a U-shaped yoke, a tubular sleeve carried by said yoke and extending inwardly therefrom, a shaft slidably and rotatably received through said sleeve and having a crank at its outer end for turning the shaft, means for mounting said yoke in straddling relation to the neck of a jar with the sleeve in concentric relation to the jar neck, a grindstone carried by the inner end of said shaft, a spring surrounding said sleeve with its inner end abutting said grindstone, and an abutment for the outer end of said spring carried by said sleeve and adjustable longitudinally thereon for placing the spring under predetermined tension.

4. A grinder for a jar neck comprising a U-shaped yoke, a tubular sleeve carried by said yoke and extending inwardly therefrom, a shaft slidably and rotatably received through said sleeve and having turning means at its outer end, means for removably mounting the yoke in straddling relation to the neck of the jar, a grindstone carried by the inner end of said shaft, a spring for urging the shaft and stone toward the inner end of said

yoke, and abutment means for the outer end of said spring carried by said sleeve and adjustable longitudinally thereof for placing the spring under predetermined tension.

5. A grinder for a jar neck comprising a U-shaped yoke, a tubular sleeve carried by said yoke and extending inwardly therefrom, a shaft slidably and rotatably received through said sleeve and having turning means at its outer end, means for removably mounting the yoke in straddling relation to the neck of a jar, adapted for engagement about a portion of a jar circumferentially thereof, webs carried by said mounting means and extending in opposite directions therefrom for preventing rolling movement of a jar placed upon a surface in a reclining position, a grindstone carried by the inner end of said shaft, a spring for urging the shaft and stone toward the inner end of said yoke, and abutment means for the outer end of said spring carried by said sleeve and adjustable longitudinally thereof for placing the spring under predetermined tension.

6. A grinder for a jar neck comprising a U-shaped yoke, a tubular sleeve carried by said yoke and extending inwardly therefrom, a shaft slidably and rotatably received through said sleeve and having turning means at its outer end, means for removably mounting the yoke in straddling relation to the neck of a jar consisting of jaws carried by arms of said yoke for fitting about a portion of a jar, ears extending from ends of one jaw, threaded stems carried by ends of the other jaw and passing through said ears, nuts carried by said stems for drawing the jaws into tight gripping engagement with a jar, a grindstone connected to the inner end of said shaft, a spring for urging the shaft and stone toward the inner end of said yoke, and abutment means for the outer end of said spring carried by said sleeve and adjustable longitudinally thereof for placing the spring under predetermined tension.

7. A grinder for a jar neck comprising a yoke, a sleeve extending inwardly from said yoke, a shaft rotatably and slidably mounted through said sleeve, means for mounting said yoke in straddling relation to the neck of a jar with the shaft concentric to the jar neck, a grindstone, a bolt secured through said stone centrally thereof and having a head at its upper end formed with a socket loosely receiving the lower end of said shaft, a fastener passing through the bolt head and the shaft to hold the bolt to the shaft, a spring for urging the shaft and stone towards the inner end of said yoke, and abutment means for the outer end of said spring carried by said sleeve and adjustable longitudinally thereof for placing the spring under predetermined tension.

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