

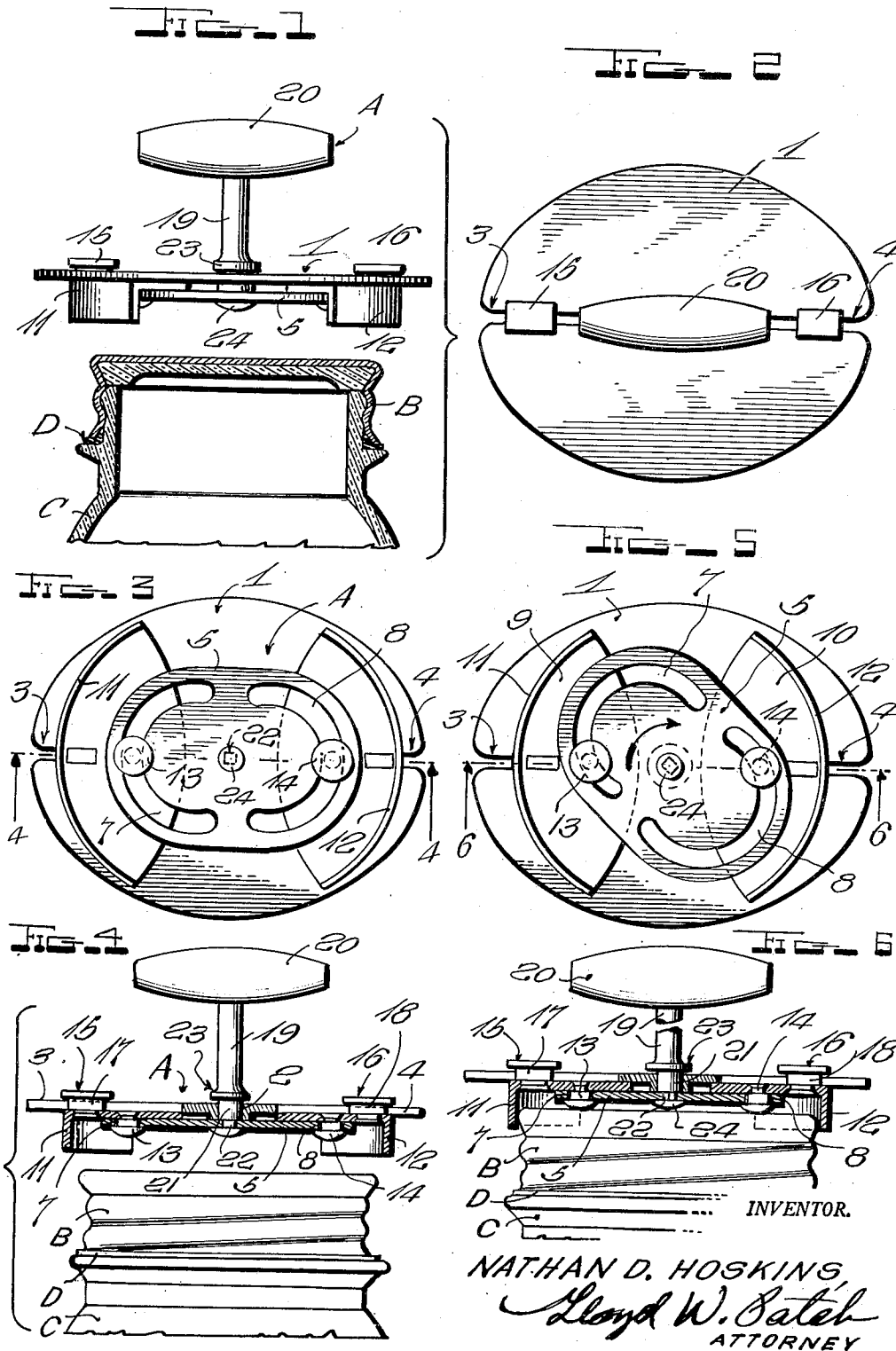
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CAM OPERATED JAR CAP WRENCH

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CAM OPERATED JAR CAP WRENCH

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1 Claim. (Cl. 81-3.42)

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This invention relates to improvements in jar top wrenches, and particularly to a wrench or tool intended and adapted to be used in applying and loosening jar tops or caps such as used on screw cap fruit jars, and the like.

An object of my invention is to provide a tool of this character which can be used with equal facility to apply or screw on and to loosen or screw off, the screw tops or caps of "Mason" or other screw-topped jars, and which is of such construction that it is readily applied to and removed from the jar top or cap, and with which the force employed to move and turn the jar top will tighten the wrench and assure a firm grip of the tool upon the top or cap, for both tightening the screw cap into place and removing the same.

Another object is to provide a wrench of simple and inexpensive and yet sturdy construction, made up of parts easily manufactured and assembled, and which will not be likely to become damaged or broken even through constant and long use.

Still another purpose of this invention is to so construct the tool that the parts thereof can be assembled and mounted and secured together in operating relation by the use of ordinary machines and equipment, and with the parts brought together in sub-assemblies; whereby the employment of special machinery and complicated assembly procedures and technique is avoided. With the above and other objects in view, some of which will be apparent to those skilled in the art, and others of which are inherent in the construction and use and operation of the parts, this invention includes certain novel features of construction and combinations and arrangements of elements, which will be hereinafter set forth in connection with the drawings, and then pointed out in the claim.

Figure 1 is a side elevation, and partly in section, showing adaptation of my invention in a jar top wrench, and illustrating a jar and cap portion in position to be engaged thereby.

Fig. 2 is a top plan view of my improved wrench.

Fig. 3 is a bottom plan view of the structure disclosed in Fig. 2, with the wrench parts in opened and expanded position.

Fig. 4 is a longitudinal vertical sectional view substantially on line 4-4 of Fig. 3, and illustrating a jar top or cap in position to be gripped by the wrench.

Fig. 5 is a view similar to the showing in Fig. 3, with the wrench parts in their contracted and gripping relation.

Fig. 6 is a longitudinal vertical sectional view taken substantially on line 6-6 of Fig. 5, showing the wrench gripping a jar top or cap.

In the adaptation of the invention here illustrated, the wrench is generally indicated at A, with the screw cap or top B being shown upon a jar C, with the usual sealing ring shown at D.

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The supporting plate or member 1, is here shown as being of substantially elliptical shape. This member is preferably made out of sheet metal, or other suitable material, and while the generally elliptical outline shape has been found particularly advantageous in use, it is to be understood that the member 1 can be of substantially circular outline, can be rectangular, or diamond shaped, or in fact can be of any outline shape that may be desired, and which will at the same time permit support and movement of the parts carried thereby. A bearing opening 2 is provided in the middle portion of the supporting plate or member 1, and guide slots 3 and 4 are formed in the supporting plate or member to extend inwardly from each end of the ellipse, and substantially along the line of the long axis of the ellipse. These guide slots 3 and 4 are open at their outer ends, and at their inner ends are stopped short of and are spaced outwardly from the central bearing opening 2.

An operating plate 5 has a polygonal opening through its middle portion, and this plate is preferably of somewhat elongated form with the ends thereof rounded. Arcuate slots 7 and 8 are provided through the operating plate 5 within the confines of the rounded ends thereof, and these arcuate slots have their ends closer to the polygonal opening than their middle portions, for reasons which will be presently described.

Gripping members 9 and 10 are of generally segmental shape, and are provided with arcuate gripping flanges 11 and 12. These flanges 11 and 12 have inside curvatures to substantially conform to and fit around and upon the upper part and side of the usual jar top or cap B; and, to provide additional gripping, these flanges 11 and 12 might be provided with corrugations or projections, and may be milled or knurled, or otherwise shaped or formed or treated.

The operating plate 5 and the two gripping members 9 and 10 are assembled as operatively connected parts, by means of headed rivets or pins 13 and 14, which pass loosely through the arcuate slots 7 and 8 and are riveted or otherwise secured substantially rigidly in conjunction with the gripping members 9 and 10. In assembling these parts, it is preferable that the gripping members 9 and 10 have the body portion thereof disposed to both lie in the same plane on one side of the operating plate 5, and the gripping members 9 and 10 will be disposed with their arcuate gripping flanges 11 and 12 in substantially opposed relation.

Headed slide members 15 and 16 are mounted on the body portions of the gripping members 9 and 10 to be outstanding therefrom on the sides away from the operating plate 5. The headed members 15 and 16 have elongated body portions 17 and 18 of a transverse width that will fit to be freely slidable within the guide slots 3 and 4. Thus, as the elongated body portions 17 and 18 of the headed slide members 15 and 16 are fitted

within the guide slots 3 and 4, the gripping members 9 and 10 will be freely movable toward and away from the bearing opening 2, but will be held against twisting movement, to thus restrain the gripping members 9 and 10 against twisting or other movement that would throw or dispose the gripping flanges 11 and 12 out of proper relationship to cooperate in gripping and holding upon the cap or top B.

An operating handle is made up of a spindle 19 and a cross-handle portion 20, the latter being preferably shaped to be conveniently grasped and held within the hand of the user. The spindle 19 is made integral with the handle 20, or is in some manner secured thereto to be held against independent rotational movement, whereby when the cross-handle 20 is rotated, the spindle 19 will be correspondingly rotated. Adjacent to its end, the spindle 19 has a bearing portion 21 adapted to fit and turn within the bearing opening at 2, within the supporting plate or member, and beyond this bearing portion 21, the spindle 19 has a polygonal portion 22 adapted to fit within the polygonal opening 6 of the operating plate 5. It is perhaps preferable that a bearing flange be provided at 23, on the spindle 19, outside of or above the bearing portion 21, and when, in the final assembly, the polygonal portion 22 is headed over, as at 24, the operating plate 5 will be substantially rigidly connected on the end of the spindle 19, and the flange 23 will serve to hold and maintain the parts in substantially the position and relation shown in Figs. 1 and 4 and 6 of the drawings.

As has been stated, the operating plate 5 can have the two gripping members 9 and 10, with the headed slide members 15 and 16 previously assembled thereon, mounted movably in place by the rivets or pins 13 and 14. With this assembly, one of the headed slide members can be inserted through the open outer end of one of the guide slots, and can be moved substantially to the inner end of this slot, following which the parts can be adjusted or manipulated to bring the opposite headed slide member into position to be moved into the opposite guide slot through its open end. The spindle 19, with the cross-handle 20 assembled thereon, can then have its lower end fitted in place with the polygonal portion 22 within the polygonal opening 6 of the operating plate, and the bearing portion 21 freely rotatable within the bearing opening 2 of the supporting plate or member 1. With the parts in this relation, the end of the spindle 19 can be headed over, as at 24, and the parts are then securely held in the assembled relation.

With the tool or wrench thus assembled, the cross-handle 20 is moved to rotate spindle 19 so that the rivets or pins 13 and 14 will be substantially in the middle portions of the arcuate slots 7 and 8, and in this position, substantially as shown in Fig. 3, the gripping flanges 11 and 12 are separated or spread apart so that they present an opening wider than the diameter of the screw top or cap B, substantially as disclosed in Fig. 4. The tool or wrench can then be moved downwardly to rest upon the upper side of the top or cap B, and when the cross-handle 20, and consequently the spindle 19, and the operating plate 5 connected therewith, are turned in the direction indicated by the arrow in Fig. 5, the operating plate 5 will be moved to draw the headed rivets or pins 13 and 14 inwardly, or toward the axis of rotation within the bearing 2, due to the fact that the ends of the arcuate

slots 7 and 8 are nearer to the center of the opening 6. Thus, the two gripping members 9 and 10 will be drawn in so that the arcuate gripping flanges 11 and 12 thereof will firmly grip around and hold upon the top or cap B. Continued turning force applied through the cross-handle 20 will rotate the spindle 19, and in fact the entire tool or wrench, to apply rotational or turning force upon the cap B to screw the cap on to or from the screw threaded neck of the jar C. While the operation has been described with rotation of the parts in the direction indicated by the arrow on Fig. 5, it will be appreciated that when rotating force is applied in the opposite direction, the operation of the parts will be substantially the same. Thus, it is possible to tighten the tool or wrench upon a jar top or cap and to apply turning force thereto in either direction, that is, to screw a cap upon the jar and to unscrew a cap from the jar.

From the foregoing, it will be seen that I have provided a jar top wrench particularly adapted for use in applying and loosening screw caps such as used on screw cap fruit jars, which is of simple and inexpensive and yet sturdy construction, made up of parts easily manufactured and assembled, and which will not be likely to be damaged or broken, even through long and constant use.

While I have herein shown and described only certain specific embodiments of my invention, it will be appreciated that changes and variations can be made in the form and construction and arrangement and assembly of the parts, in the materials used in the various portions, and in other respects, without departing from the spirit and scope of my invention.

I claim:

A jar top wrench for use in tightening and removing screw caps comprising a supporting plate member of generally elliptical outline provided with a bearing opening in its middle and having guide slots extending inwardly in substantially opposed radial relation substantially along the longer axis of the plate and open at their outer ends, an elongated operating plate provided with a central opening and having an arcuate slot through each end curved with its ends nearer the central opening than its middle portion, a pair of generally segmental shaped gripping members each having an arcuate gripping flange, headed slide members with elongated body portions carried by the outer side of the gripping members and adapted to fit through the ends of and slide in the guide slots to movably mount the gripping members on the supporting plate member, pin means on each gripping member loosely received through the arcuate slot at one end of the operating plate, and a spindle provided with an operating handle at one end having the other end mounted in the bearing opening of the supporting plate and then secured in the opening of the operating plate.

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