June 17, 1924. 1,498,009

W. BALL

JAR LID OPENER

Filed July 30, 1923

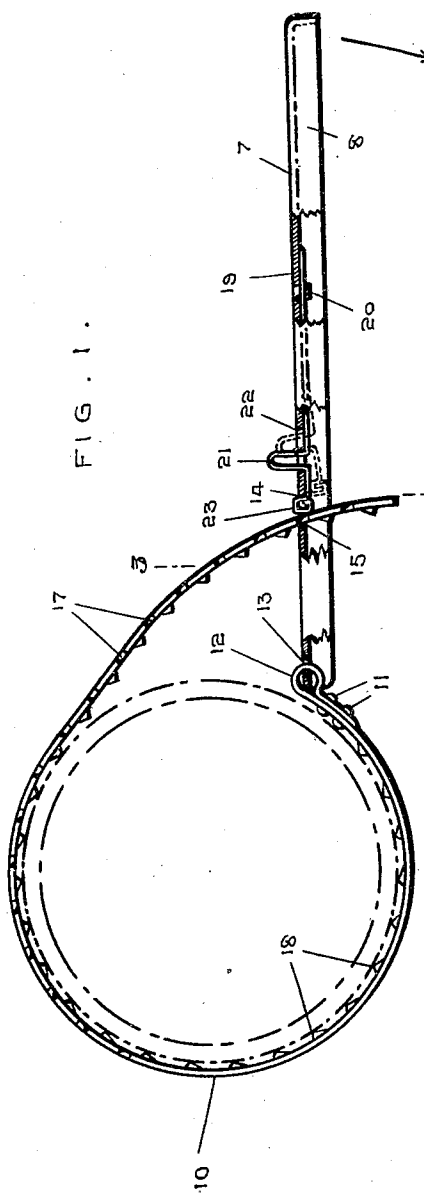


FIG. 1.

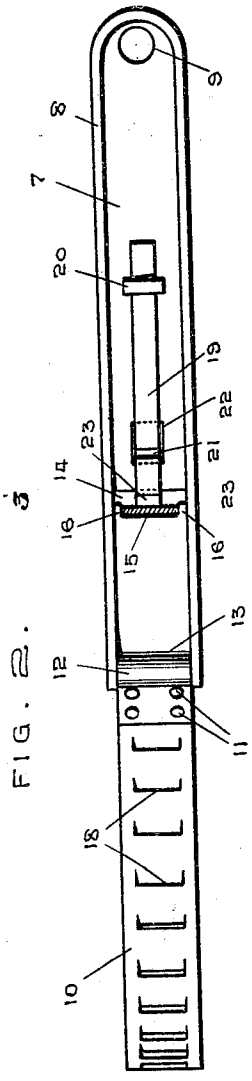


FIG. 2.

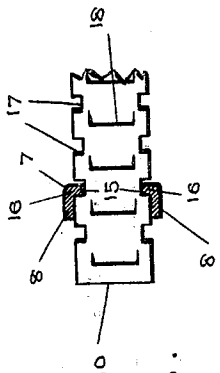


FIG. 3.

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UNITED STATES PATENT OFFICE.

WALTER BALL, OF HUBBARD, OHIO.

JAR-LID OPENER.

Application filed July 30, 1923. Serial No. 654,669.

To all whom it may concern:

Be it known that I, WALTER BALL, a citizen of United States, residing at Hubbard, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Jar-Lid Openers, of which the following is a specification, reference being had therein to the accompanying drawing.

The present invention relates generally to wrenches, and more especially to such devices as are used for opening or unscrewing jar lids, it being the object of the invention to provide a novel and improved wrench for conveniently and effectively tightening or loosening the screw tops or lids of fruit jars and the like, although the device can be used for other purposes for which it is suitable.

Another object is the provision of such a device comprising a handle and a flexible band or strap connected to the handle to embrace the jar lid or other object, said band or strap tending to contract itself on the lid or object, for holding the device in place, and also holding itself in engagement with the handle.

A further object is the provision of a novel adjustable connection between the handle and strap for accommodating lids, jars and other objects of different diameters.

A still further object is the provision of a novel latch for holding the handle and strap in engagement against accidental separation.

With the foregoing and other objects in view, which will be apparent as the description proceeds, the invention resides in the construction and arrangement of parts, as hereinafter described and claimed, it being understood that changes can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein—

Figure 1 is a plan view of the implement, portions being broken away and shown in section.

Fig. 2 is a side elevation thereof, the strap being shown in section.

Fig. 3 is a cross section on the line 3—3 of Fig. 1.

The handle 7 is of sheet metal or other suitable stock, and has the flange 8 extending along its longitudinal edges and around its rear end, to stiffen and strengthen the handle, said flange extending away from the side of the handle against which the pressure or force is applied. The handle 7 has a hole 9 therein near its rear end for hanging the device up from a nail or hook.

The strap or band 10 is composed of tempered resilient strip or sheet metal, and one terminal of the strap is bent back and riveted or otherwise secured, as at 11, to form a loop or eye 12 which is hingedly connected to the forward end of the handle, said handle having a transverse slot 13 therein at its forward end through which the loop 12 is engaged. This permanently connects the corresponding ends of the handle and strap with a loose or flexible connection, permitting the handle to be swung or turned relatively to the strap.

The strap is tempered in a curved or bent position so that it tends to assume a circle of a diameter less than the diameter of the smallest jar lid or object for which the wrench is intended, and the strap will thus have a tendency to contract or curl up. This is of advantage for two reasons, namely, (first) it causes the strap to contract and embrace the object, and (second) the free terminal of the strap is maintained in engagement with the handle, for holding the wrench in place on the object unassisted.

The handle 7 is provided with a transverse slot 14 near but spaced from the forward end of the handle, through which the loose terminal of the strap extends, for adjusting the loop of the strap for objects of different sizes. The slot 14 has a forwardly extending portion 15 of reduced length forming the lugs 16, and the strap 10 is provided in its opposite edges with the notches 17, whereby when the strap has been slid in the slot 14 to make the proper adjustment, the strap can be shifted forwardly into the portion 15 of the slot, causing the lugs 16 to engage in the corresponding notches 17, and thereby preventing the strap from sliding in the handle. This will maintain the adjustment, and the tendency for the strap 10 to curl up or contract into small diameter will cause the loose terminal of the strap to seat in or enter the portion 15 of the slot to hold the strap and handle in engagement. The strap 10 having a tendency to contract will embrace the object by itself, in order that the device will maintain itself in position.

The strap 10 has teeth 18 struck inwardly

therefrom and facing in the direction so as to bite the jar lid or other object to prevent the strap from slipping around the object. The strap can thus obtain a good grip or hold on the object. The teeth 8′ are struck from the outer side of the strap so as to project from the inner side of the strap, and said teeth are arranged at obtuse angles with the strap with their free edges presented for biting engagement with the object. The teeth 18 are located between and spaced from the edges of the strap. In striking the teeth from the strap, the strap is formed with slits extending transversely of the strap between the edges of the strap, with the terminals of the slits extending toward that end of the strap opposite to the end toward which the teeth project. The teeth are therefore of the same thickness as the strap itself, and when the teeth are bent inwardly this leaves recesses in the outer side of the strap.

A spring latch 19 is carried by the handle 7 for holding the strap and handle in engagement against accidental separation. Said latch is composed of a leaf spring bearing slidably against the side of the handle 7 from which the flange 8 extends, and a guide 20 is struck from the handle through which the latch 19 is slidable near its rear end, to retain the latch in place. The latch is formed near its forward end with a U-shaped finger piece 21 extending through an opening 22 provided in the handle, whereby to limit the longitudinal sliding movement of the latch, and to also enable the latch to be manipulated. The forward end of the latch is formed with a head or portion 23 to snap into the slot 14 behind the strap 10, when the strap is shifted forwardly in the slot to bring the interengageable portions of the strap and handle together. The latch 19 has a tendency to bow away from the handle 7, and the rear terminal portion of the latch being slidable in the guide 20, will hold the forward terminal portion of the latch under spring influence against the handle.

In order to adjust the strap 10, the finger piece 21 is pressed toward the handle 7, thereby moving the portion 23 out of the slot 14, and the latch can then be slid rearwardly, to the position as seen in dotted lines in Fig. 1. The strap 10 can then be shifted rearwardly in the slot 14 to enable the strap to be slid lengthwise in the slot for enlarging or reducing the loop formed by the strap, for objects of different sizes, as will be apparent. When the loop is of the proper size to embrace the object, the loose terminal of the strap is permitted to spring forwardly into the portion 15 of the slot 14, so that the corresponding notches 17 are engaged by the lugs 16, thereby engaging the strap and handle to prevent separation thereof. The finger piece 21 is then pressed forwardly, to slide the latch forwardly, and the portion 23 will spring into the slot 14, as seen in Fig. 1, thereby preventing the strap from shifting rearwardly in the slot, so that the strap and handle are prevented from being separated accidentally.

When the strap is placed around a jar lid or object, the tendency for the strap to contract will cause it to embrace the object, and by swinging or turning the handle 7 in the direction in which the free terminal of the strap extends, as indicated by the arrow in Fig. 1, the strap is caused to tighten on and grip the object. The handle acts as a lever to move the terminals of the strap in opposite directions for contracting the loop, and the gripping of the object is accomplished by the simple lever action of the handle, without it being required that the hand exert a squeezing or compressing action. The handle 7 is simply turned in the direction in which the force is to be applied to the jar lid or object, which will cause the strap to tightly embrace the object so that the object will turn with the handle. To loosen the strap, the handle 7 is simply turned in the opposite direction, to open the loop of the strap and release it from the object. The teeth 18 biting the jar lid or object will prevent the strap from slipping, and the wrench can be used in reversed positions for either tightening or loosening the screw tops or lids of jars, bottles and other containers.

Having thus described the invention, what is claimed as new is:—

1. A wrench comprising a handle having a slot, and a strap having one end connected to the handle and having its free terminal extending through said slot, the slot having a reduced portion forming lugs on the handle, and the strap having notches in its edges to permit the strap to be shifted into said reduced portion and the lugs to engage in the notches for preventing separation of the handle and strap.

2. A wrench comprising a handle, and a metal strap connected to the handle to embrace an object, said strap having slits therethrough forming teeth of the same thickness as the strap, said teeth being bent to project from the inner side of the strap at obtuse angles with the strap and having free edges presented for biting engagement with the object.

3. A wrench comprising a handle, a strap connected to the handle, the handle having a slot for the passage of the free terminal of the strap, the handle and strap having portions to interengage when the strap is moved longitudinally of the handle away from one edge of said slot, for preventing the handle and strap from separating, and a latch carried by the handle having a por-

tion to enter said slot from one side of the handle and to fit between the strap and said edge of the slot for holding said portions in engagement.

4. A wrench comprising a handle having a slot, a strap connected at one end with the handle and having its free terminal extending through said slot, the handle and strap having portions to engage when said strap is shifted transversely in said slot, and a resilient latch carried by the handle and having a portion to spring into said slot from one side of the handle for holding said portions in engagement.

5. A wrench comprising a handle having a slot, an opening and a guide portion, a strap connected at one end to the handle and having its free terminal extending through said slot, the handle and strap having portions to interengage when the strap is shifted transversely in said slot, and a spring latch slidable in said guide portion and having a portion to spring into said slot for holding the strap in engagement with the handle, the latch having a finger piece extending through said opening for sliding the latch and springing said portion thereof out of said slot.

In testimony whereof I hereunto affix my signature.

WALTER BALL.