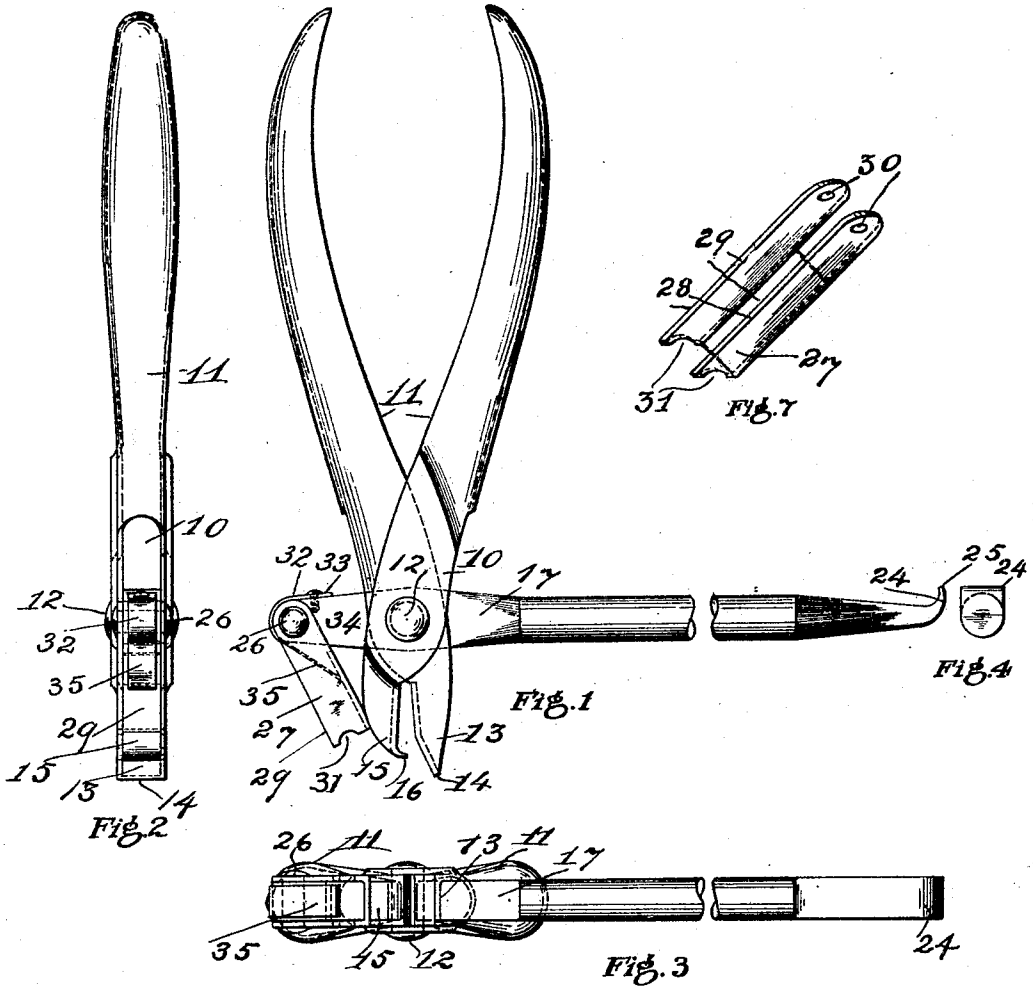
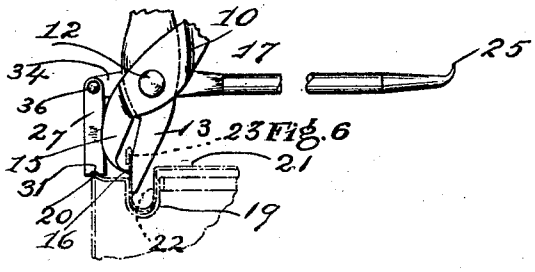
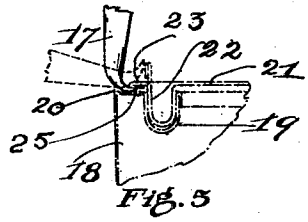
June 16, 1931. W. I. KASER 1,810,315

PLIER COVER REMOVER

Filed May 2, 1929




INVENTOR
WALTER I. KASER
BY Frank D. Gray
ATTORNEY

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# UNITED STATES PATENT OFFICE

WALTER I. KASER, OF CLARK TOWNSHIP, HOLMES COUNTY, OHIO, ASSIGNOR OF ONE-HALF TO JOSEPH F. GLIDDEN, OF LAKEWOOD, OHIO

## PLIER COVER REMOVER

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This invention relates to plier cover removers, and is especially designed as a compound tool to lift a sheet metal can cover which has been securely fitted into closed position into the opening in the top of a can, but not soldered or welded in closed position. A great demand has arisen for a suitable hand tool that may grip the peripheral edge of the cover which is provided with a peripheral flange normally forming a down-turned curve intended to be seated by great pressure, into a circular trough in a horizontal rim of a can especially adapted to contain various paint oils, varnishes, turpentine and kindred liquid products.

The above mentioned down-turned curve in the cover forms a kind of bead which, when the covers are formed, has a size in transverse section, at least as great as the said trough into which it is to be pressed, when the cover is applied to the can. The strong pressure applied results in a relative position of the bead and trough which no ordinary tool now on the market, is effective in separating, to my knowledge. One difficulty in such opening operation, results from the bead being sunk so low that tools intended for the purpose, cannot grip the edge of the cover to lift it.

For a full explanation of my invention, reference is to be had to the following description, the appended claims, and accompanying drawings, in which:—

Figure 1 is a side elevation of my cover remover with the parts shown in open position, and a portion omitted for economy of space;

Figure 2 is an end elevation looking toward the block member of the tool;

Figure 3 is a plan view;

Figure 4 is an end view of the hook member;

Figure 5 is a detail view of the hook member, showing only the hook end in full lines as first applied to the edge of a cover, and in broken lines to the resulting operation, a portion of the can rim being also shown in broken lines;

Figure 6 is a detail view in side elevation shown in position in the second stage of the removal operation, parts being broken away, and

Figure 7 is a perspective view of the power block member as seen from the outer direction.

I have illustrated one form of my compound tool as comprising a pair of pliers 10 formed of conventional handles 11 pivoted by a suitable bolt 12 and provided with unlike jaw members, the longer jaw 13 having a sharp tip 14, and the shorter jaw 15 having a bent, sharp hook edge 16 directed toward the inner surface of the jaw 13, so that when the pliers are closed, the hook 16 will very tightly grip any thin material positioned against the jaw 13, as will be obvious. The gripping position of the jaws is shown in Fig. 6 as applied to an upstanding edge of a can cover. The jaws are shown in open position in Fig. 1. A transverse lever member 17 is shown pivoted upon the said bolt 12 for rocking movement thereon and relative to the pliers.

In Figs. 5 and 6 of the drawings, a portion of a can 18 is shown for convenience of description, the same having the groove 19 referred to and the peripheral rim 20. Such can is shown as adapted to receive a circular cover 21 having a peripheral down-turned bead 22 which will be seated in the said groove very tightly when the cover is pressed into closed position, with the peripheral fold 23 shown in Fig. 5, as pressed down outside the groove 19, and also shown in dotted lines in its raised position at one point, as the result of the first operation of my improved tool.

The long end of the lever 17 is provided with an up-turned toe 24 which has a very sharp edge 25 which is well adapted to be inserted underneath the fold 23 at one point for the purpose of lifting the fold at that point in the manner shown in Fig. 5. While it is possible that the hook 16 of the jaw 15 can be used for this purpose the edge or hook 25 is stronger and more effective because of the much greater length of the lever 17. One of the great difficulties encountered in the use of former tools for lifting such a beaded cover from a grooved can top, has been the lifting of this first fold over sufficiently great

an arc, that was adequate for engaging such fold with sufficient force to positively lift the top while removing the bead from the groove. Heretofore, if the fold was lifted at but one point, no tool was suitable for adequately gripping the fold at that point. It was therefore often found necessary to raise the fold by some edge or toe over an arc of as much as 120° to provide adequate gripping area for the gripping operation.

By the use of my tool, the fold 23 need be raised over an arc no greater than the width of the toe 24, after which the up-turned fold will be tightly gripped between the hook 16 and the flat surface of the jaw 13 to provide a strong grip.

The short end of the lever 17 has pivoted thereto by the pin 26 a hinged standard or block 27 which is formed by edge flanges 28 bent from the plate 29, and provided at one of their ends with apertures 30 for the pivot pin, and at their opposite ends with notches 31 adapted to seat upon the rim 20 of the can. This block 27 is normally held rearwardly against the jaw 15 by means of a spring member 32 having one end 33 fixed to the upper surface of the short arm 34 of the lever, while the opposite end 35 engages the plate 29 between the flanges and thus serves to yieldingly press the block against the jaw 15. The lever 17 is therefore one of the second class pivoted at the fulcrum 26.

My improved tool, as shown in action in Fig. 6, may readily be operated by both hands of the user at one time, one hand being applied to the long end of the lever 17 to lift the pin 12 together with its jaws 13 and 15 while the block 27 maintains the fulcrum 26 at a fixed distance from the rim 20, and the other hand may grasp the ends 11 of the gripping device, to securely grip the upturned edge of the cover between the parts 13 and 16. Such action of my compound tool does not require an initial edge of the fold 23 of very great extent, an area sufficient to receive the hook 16 thereagainst being quite sufficient. The pivoting of the lever member 17 upon the same pin 12 that serves as the fulcrum for the handle members 11 thus makes possible the application of the utmost power of one hand to the pliers 10 for tightly engaging the upturned edge of the cover while the entire force of the other hand may be devoted to lifting the pliers by grasping the lever 17.

The usual force required for lifting a can cover from its seat is readily furnished by the operative's hands, but former tools have not been of the sort to apply such force to the cover effectively. This I have now attained by my improved tool.

While I have shown the handle members 11 as trough-shaped in cross section, it is evident that such form of pliers is not essential, and I do not claim the particular form of actuating members 11 illustrated.

The members 11 of the pliers 10 are pivoted upon the pivot 12, and such members are apertured at their intersection about the pivot 12, to provide an opening to receive the lever 17 therethrough and thereby pivot the lever upon the pin 12 common to the members 11.

While the lever 17 may swing about the pin 12, it is clear that when the standard 27 rests upon the rim 20 of a receptacle, the pin 26 becomes a fixed fulcrum of the lever 17, and the latter is a lever of the second class, as explained in a former paragraph.

Having now described my invention and set forth its merits, what I claim, and desire to secure by Letters Patent is,—

1. A can top removing device comprising a pair of pliers and a lever member pivoted between its ends upon the pivot of the said pliers and having a standard hinged at one of its ends to one end of the lever member and adapted to rest upon the rim of a can whose top is to be removed.

2. A can top removing device comprising a pair of pliers and a lever member pivoted upon the pivot of the pliers, and having a standard hinged upon one end of the member, and means adjacent the said hinge for normally holding the standard toward the pliers while resting upon the rim of a can.

3. A can top removing tool comprising a gripping device for engaging the peripheral edge of a can top, and a lever member pivoted intermediate its ends to said device and having a standard hinged upon one end of said member, the end of the standard farthest from the hinge having a notch for receiving the edge of a can therein, and spring means adjacent the hinge for yieldingly swinging the standard toward the gripping device.

4. A plier cover remover comprising a pair of plier members pivoted together intermediate their ends in intersecting relation, both of said members having substantially common openings about their pivot, a lever member pivoted upon the pivot of the intersecting members and in said openings, and all said members being movable in a common plane, a standard hinged upon one end of said lever member for resting upon the rim of a can, whereby the plier members may be grasped manually to cause them to grip the peripheral edge of a can cover, while the said lever member may be grasped by the other hand of the operator to lift the plier members and the can cover away from the can.

In witness whereof I have hereunto set my hand this 8th day of April, 1929.

WALTER I. KASER.