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CAN OPENER

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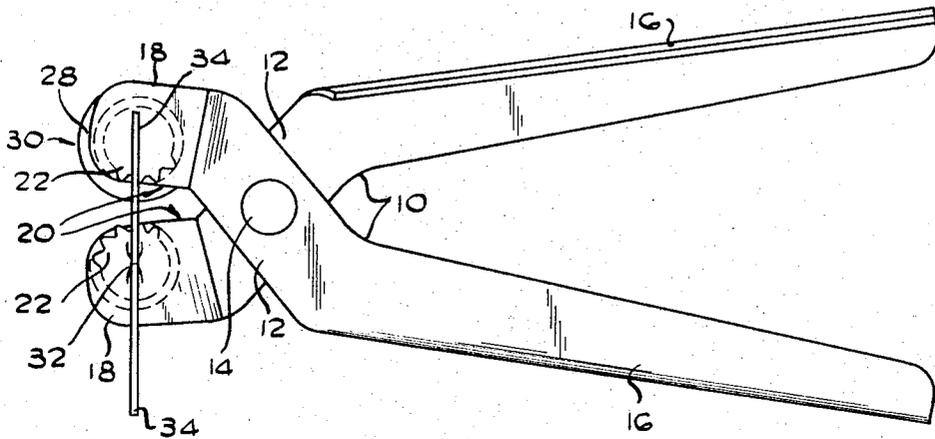


FIG. 1.

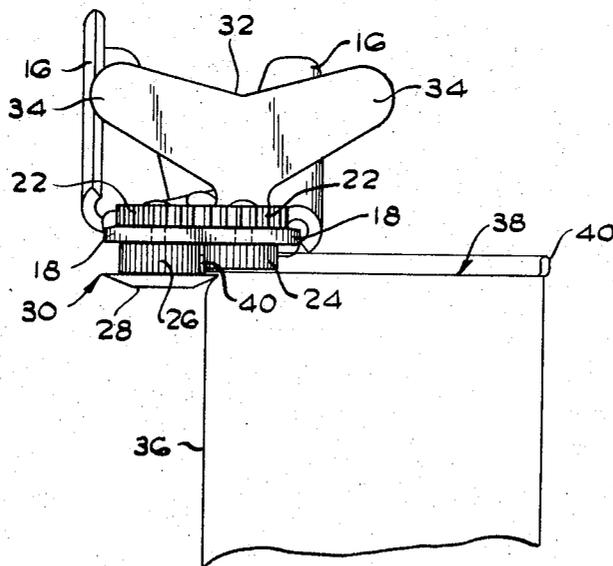


FIG. 2.

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CAN OPENER

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1 Claim. (Cl. 30—15.5)

ABSTRACT OF THE DISCLOSURE

A manually operated can opening tool having pivoted handle and jaw parts, and the intermediate portions are connected by a pivot pin. Each of the jaw parts is provided with a gear and a roller mounted on a shaft. One of the rollers is provided with a cutting disk and one of the shafts is provided with a winged element whereby when the gears are meshed the rollers will be rotated around the rim of a can with the cutting element severing the can top from the can.

This invention relates to improvements in can openers and more particularly to a can opening tool of the kind having a rotary part which is manually rotated for advancement of the tool along a corner region of the can to be opened.

An object of the invention is to provide a can opening tool whereby the can is severed along a circumferential region close to one end whereby such end, together with a circumferential protruding rim-like seam of the can, is removed.

According to the invention a can opening tool includes a pair of connected co-acting mountings movable towards and away from one another, a first rotatable element on one of the mountings and having a roller, a second rotatable element on the other mounting arranged substantially parallel with the first rotatable element and having a roller arranged substantially correspondingly relative to the roller of the first rotatable element, a circular disc-like part fast with either of the rollers and having a circumferential cutting edge protruding beyond the periphery of the roller, and means for manually rotating either of said rotatable elements whereby, on forcing the mountings towards one another with the rollers engaging inside and outside faces of a protruding rim-like seam of the can, the cutting edge engages into the wall material of the can inwardly of the seam while on applying rotary force by said means the tool is advanced along the seam for the cutting edge of the rotatable circular part to cut the wall of the can.

Either or both the rollers may be provided with serrated or otherwise roughened peripheral surfaces for engaging the inner or the outer face of the protruding rim-like seamed edge of the can in non-slipping fashion. The means for rotating the roller may comprise a pair of radial wings for engagement by the fingers of a hand. The said circumferentially edged disc-like part has its cutting edge locating plane displaced slightly outwardly relative to the free end face of the roller on the other rotatable element and which latter roller is adapted to engage the inner face of the rim-like seam of the can.

Preferably the rotatable elements are provided with gear wheels at positions displaced axially relative to the rollers and capable of meshing engagement when the rollers are in engagement with the rim-like seam of a can, for the applied rotary motion of one rotatable element to be transmitted to the other rotatable element.

The connected mountings may be provided with a device retaining them in a position with the rollers in the

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operative state while with such device means are preferably incorporated for quick release. The mountings may also include a resilient means for normally placing and retaining one roller in spaced relationship relative to the other and the disc-like cutting edge part for easy application onto the rim-like seam of a can, in order to prevent the gear wheels to be pressed hard onto one another.

Preferably the mountings comprise jaw members of a plier-like tool of which the handle parts are engaged by one hand of a user, while the other hand of the user applies the rotary motion to the roller or rollers.

For the invention to be clearly understood and carried into effect reference is now made to the accompanying sheet of drawings in which:

FIGURE 1 is an elevation of a can opening tool according to the invention; and

FIGURE 2 is an end elevation of the tool shown in FIGURE 1.

The can opening tool comprises a plier-like device comprising two parts 10, secured together by obliquely arranged portions 12 in intersecting relationship by a fulcrum element forming rivet 14 or the like. Each part 10 presents a handle forming portion 16 and a mounting 18. In the end regions of the mounting forming portions 18, journal forming holes, not shown, are provided while the inwardly directed edge faces 20 of such mountings 18 at a slight angle to the portions 16 form co-acting faces which, due to offsetting of such mountings 18 relative to the obliquely arranged portions 12, are adapted to engage flat onto one another to form stops limiting the extent of movement of the plier-like device parts 10 relative to one another and in one direction.

In the holes of the mountings 18, which are arranged with their axes parallel, short shafts are journaled. On corresponding ends each shaft is provided with a fixed gear wheel 22 and on the other ends one shaft is provided with a roller 24 and the other with a roller 26. The rollers are fixed to their respective shafts and both are provided with fine serrations or other surface roughening formations for non-slipping engagement when in operation. The roller 26 is slightly longer than the roller 24.

On the free and outwardly directed face of the roller 26 a disc 28 is rigidly fixed. The disc 28 is circumferentially bevelled to present a cutting edge 30 and which cutting edge 30 extends outwardly from the circumferential surface of the roller 26.

With the edge faces 20 of the mountings 18 in engagement with one another, the gears 22 are in meshing engagement with one another for motion transmission and in which condition the circumferential surfaces of the rollers 22 and 26 are disposed in narrow spaced relationship. On one of the gear wheels 22 an outwardly projecting and diametrically arranged plate-like member 32 is rigidly secured and adapted to present a pair of radial wings 34 for engagement by the fingers of a hand and whereby rotary motion is applied to the roller 22 and, on meshing of the gears 22, also to the roller 26 and the cutting edged disc 28.

For opening of a can 36 (shown fragmentarily only) the mountings 18 are separated and the roller 22 placed on an end surface 38 of the can 36 with the roller 22 against the inside circular surface of the axially outwardly protruding circumferential rim-like seam 40 of the can. Pressure is then applied on the handle forming portions 16 of the plier-like device parts 10 whereby the roller 26 is moved towards the said seam 40 and into engagement of the exterior circumferential surface of such seam 40. During the final action, the cutting edge 30 cuts into the circumferential surface or wall of the can 36 at a position slightly below the end 38 of the can 36. By engaging the wings 34 by the fingers of the other hand of the user and

applying of rotary motion thereto, the rollers 24 and 26 are caused to rotate while the tool device is advanced along the said seam 40 and simultaneously the cutting edged disc 28 is also rotated and on complete movement around the can the end of the can is severed from the walls of the can.

The cutting edge 30 of the disc 28 may have one side substantially co-planar with the outwardly directed side of the roller 26 to which it is fixed and is disposed slightly outwardly spaced relative to the corresponding side of the other roller 28. The extent of overlapping of the circular cutting edge 30 over the roller 22 need be only just more than the thickness of the wall material of the can in order that only a slight inward displacement of the wall material results so that the cut off end of the container may be loosely replaced onto the opened container.

With the can opening tool according to the invention, the end of the can, complete with the circumferential rim-like seam 40, is severed from the walls of the can so that, on complete severing, the cut off end of the can cannot drop into the can.

I claim:

1. A can opening tool comprising a pair of substantially similar levers having off-set handle and jaw parts having oblique intermediate portions, a pivot pin passing through said oblique portions thereby forming a pair of said handle parts for grasping in one hand and a pair of said jaw parts disposed in a common plane at an angle relative to said handle parts having coacting longitudinal abutment edge faces, a first rotatable element comprising a first shaft journalled by an intermediate portion in one jaw part parallel to the abutment face of said part and in spaced relationship to said pivot pin, a roller having a roughened circumferential surface fixed concentrically to one end of said shaft rotatably located against a face of the jaw part disposed at an obtuse angle to said handle parts, a gear wheel concentrically fixed to the opposite end of said shaft rotatably located against the opposite face of said jaw part, a winged manual rotation applying part extending from the latter end of said shaft for rota-

tion of said first rotatable element; a second rotatable element comprising a second shaft journalled by an intermediate portion in the other jaw part parallel to the abutment face of said part and in substantially similar spaced relationship from said pivot pin as said first shaft, a second roller having a roughened circumferential surface fixed concentrically to one end of said second shaft rotatably located against a face of the jaw part disposed at an obtuse angle relative to the handle part, a circular cutting disc fixed concentrically to said second shaft onto the face of said second roller directed away from the jaw part with a circumferential cutting edge portion protruding radially from the circumferential surface of said second roller, a gear wheel fixed concentrically to the opposite end of said second shaft rotatably located against the opposite face of the jaw part so that on forcibly closing of said jaw parts the roller of said first and second rotatable elements engage inner faces and outer faces of a rim-like seam of a can respectively, said gear wheels are placed in meshing engagement and the cutting edge cuts into the can inwardly of the seam and on application of a rotary motion by means of said winged part the can opener is advanced along the seam and the cutting disc is rotated to sever an end of the can with the seam from the rest of the can while the abutment faces, when engaged, prevents excessive radial pressure between the meshing gear wheels.

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