May 2, 1967

G. McFAUL

3,317,232

DETACHABLE HANDLE

Filed April 30, 1965

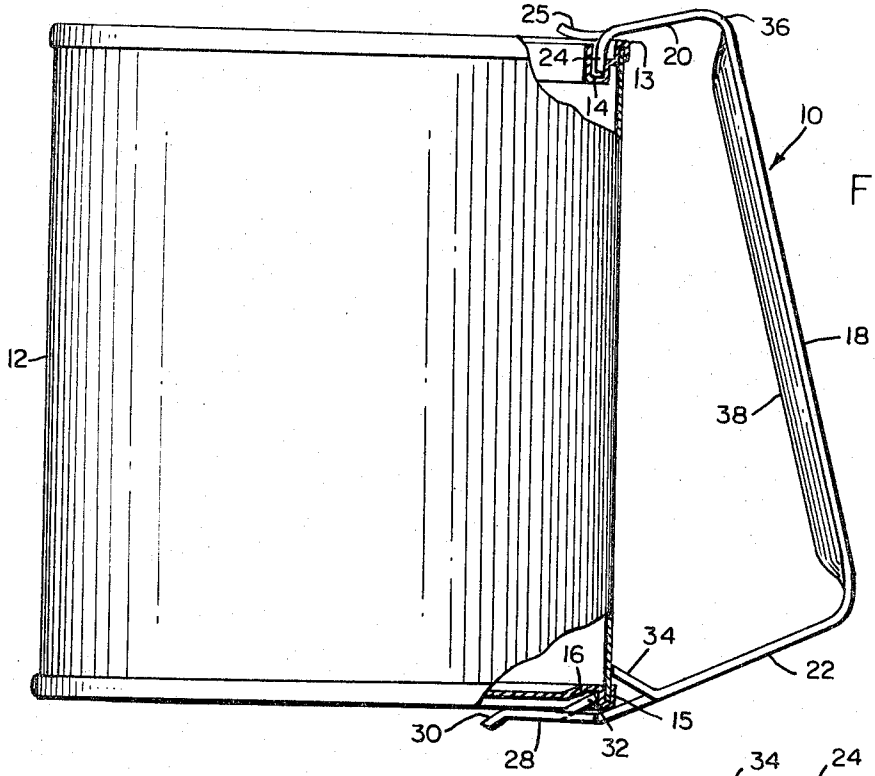


FIG. 1

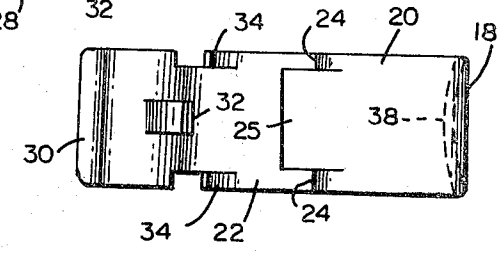


FIG. 3

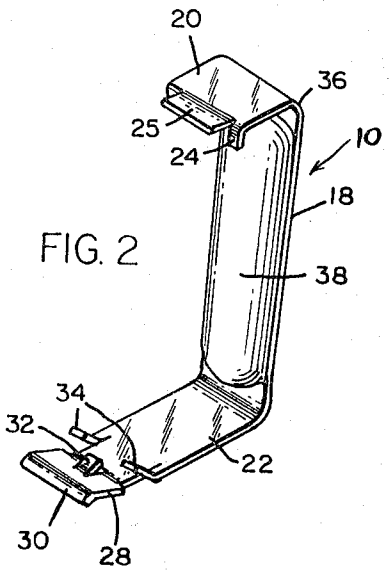


FIG. 2

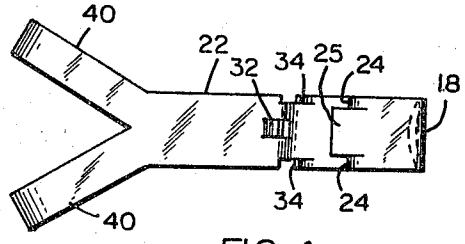


FIG. 4

INVENTOR
GEORGE MC FAUL

BY, Robert K. Churchill

ATTORNEY

United States Patent Office 3,317,232 Patented May 2, 1967

3,317,232

DETACHABLE HANDLE

George McFaul, 1095 High St., Dedham, Mass. 02026

Filed Apr. 30, 1965, Ser. No. 452,151
4 Claims. (Cl. 294—33)

This invention relates to a detachable handle for containers.

The invention has for an object to provide a novel and improved detachable handle for containers characterized by structure enabling the handle to be resiliently snapped into engagement with the ends of the container in a manner such as to provide a firm and rigid attachment thereto not subject to rocking or wobbling and which may be quickly and easily detached from the container.

The invention has for a further object to provide a novel and improved detachable handle of the character specified characterized by structure such as to provide a balanced unit when the handle attached to the container is grasped by the user.

With these general objects in view and such others as may hereinafter appear, the invention consists in the detachable handle as hereinafter described and particularly defined in the claims at the end of this specification.

In the drawings illustrating the preferred embodiment of the invention:

FIG. 1 is a side elevation partly in cross section of the present detachable handle attached to a metal container;

FIG. 2 is a perspective view of the handle;

FIG. 3 is a plan view of the handle; and

FIG. 4 is a plan view of a modified form of the present handle.

In general, the present invention contemplates a detachable handle for containers and particularly cylindrical metal containers having crimped end portions forming extended rims and providing annular grooves adjacent the edges thereof such as the structure provided at the ends of a conventional one-quart paint can. The present detachable handle is arranged to be easily and quickly snapped into assembled relation with the ends of the can, one end of the handle being engaged over the rim and into the annular groove at the top of the can, and the other end of the handle being arranged to embrace the rim at the bottom of the can in a manner such as to provide a firm and rigid attachment not subject to being displaced during use.

The illustrated handle comprises a one-piece sheet metal strip bent and stamped to provide upper and lower can engaging portions, the sheet metal being of substantial rigidity but having sufficiently flexibility or elasticity to permit the handle to be resiliently snapped into position to clamp the can between the ends of the handle. The present handle is also constructed so that the body of the handle extends at an angle relative to the central axis of the can whereby to provide a substantially balanced assembly which enables the unit to be held comfortably in the hand in a natural position when in use.

Referring now to the drawings and particularly to FIG. 1, **10** represents the present detachable handle shown as attached to a metal container **12**, such as a cylindrical metal paint can having crimped or inwardly folded edges at the top and bottom ends thereof providing extended rims **13** and **15**, respectively, at each end of the can. The can is also provided with an annular grooved portion **14** adjacent the top or upper edge of the can and an annular grooved portion **16** adjacent the lower or bottom edge of the can.

The handle **10** is generally U-shaped having a body portion **18** and upper and lower legs **20**, **22**, respectively, and in practice may comprise a one-inch wide flat strip of about 16-gauge sheet metal with the legs **20**, **22** bent substantially

at right angles to the body portion **18** as shown. The upper leg **20** is provided with two spaced depending ears or prongs **24** stamped out of the edges of the free end of the leg and bent downwardly, as illustrated, leaving an intermediate forwardly extended portion **25** which may be bent upwardly at a slight angle as shown. The depending ears **24** are of a length such as to extend over the rim **13** and into the grooved portion **14** at the upper end of the can as shown in FIG. 1.

The lower leg **22** of the handle **10** is longer than the upper leg **20** for a purpose to be described and is arranged to be snapped into engagement with the extended rim **15** of the crimped end portion defining one wall of the annular grooved portion **16** at the bottom of the can. As herein shown, a portion adjacent the free end of the lower leg **22** is bent upwardly at a small angle as indicated at **28**, and the extreme end of the leg is bent downwardly at a small angle as indicated at **30** providing a lip to facilitate sliding engagement of the free end of the leg with the bottom of the can. The angular portion **28** is provided with a medially disposed upset portion comprising a retaining lug **32** which is stamped out of the metal and bent upwardly as shown for engagement with the inner wall of the rim **15**, and the straight portion of the leg **22** is provided with spaced upwardly bent stop lugs **34** stamped from the edges of the leg **22** and bent upwardly at about 45° to engage the outer wall of the can. The relationship between the end of the retaining lug **32** and the ends of the stop lugs **34** is such that the can is firmly held therebetween in a manner such as to prevent displacement of the can relative to the handle. It will be understood that the sheet metal material provides a substantially rigid handle but has sufficient resilience so that when the lower leg **22** is pushed into engagement with the bottom rim **15** the leg will flex downwardly until it rides over the retaining leg **32** whereupon the leg will flex upwardly into clamping engagement with the bottom of the can. It will be understood that the distance between the legs is proportioned relative to the height of the can to permit a snap action engagement when assembled with the can.

From the description thus far it will be seen that in operation the depending ears **24** of the upper leg **20** are first fitted into the annular grooved portion **14**, and the lower leg **22** is then engaged with the lower rim **15** and pushed inwardly until the retaining lug **32** snaps into position in the grooved portion **16** and engages the inner wall of the rim **15**. It will be seen that the retaining lug **32** is bent upwardly at a small incline to provide in effect a cam surface which will ride over the rim **15** during application of the handle to the can and then permit upward flexing of the leg as described. It will be understood that the ends of the stop lugs **34** engage the side wall of the can at about the same time that the retaining lug **32** clears the bottom of the rim to engage the inner wall thereof so that the rim **15** is embraced between the lug **32** and lugs **34**. In order to detach the handle the tip of the finger or thumb may be inserted under the lip **30** to flex the leg downwardly until the retaining lug **32** is released from the rim **15** whereupon the leg may be pulled away from the bottom of the can and the depending ears **24** lifted out of the grooved portion **14** in the top of the can.

As illustrated in FIG. 1, it will be noted that by making the lower leg **22** longer than the upper leg **20** disposes the body portion **18** of the handle at an outwardly and downwardly inclined angle with respect to the vertical wall or central axis of the can **12**. In practice, it was found that this angle contributed to ease of handling and balancing of the can in a vertical position when the body portion is grasped with the fingers and the thumb placed at the inter-

section of the base portion with the upper leg. It will be noted that the legs are bent at about a one-half inch radius, the upper radius forming a thumb rest as indicated at **36**.

The body portion **18** of the handle is provided with an indented or inwardly curved portion, concave in cross section as indicated at **38**, to provide a comfortable gripping portion for the hand and also to afford rigidity to the handle. In practice, advertising material or the maker's name may be printed within the indented portion.

Referring now to FIG. 4, in a modified form of the present detachable handle, the lower leg **22** may be extended and bifurcated as illustrated to provide two angularly spread or forked legs **40** which may extend across the bottom of the can to provide a greater support area.

From the above description it will be seen that the present detachable handle comprises a one-piece metal member bent and stamped to engage the ends of a container having extended rim portions in a manner such as to be capable of being resiliently snapped into position to provide a rigid attachment and which may be quickly and easily detached from the container. In practice, the sheet metal handle **10** may be galvanized, tinned or otherwise treated. It will be apparent that the present detachable handle may be used and reused for other similar cans having crimped or rimmed end portions and is not limited to use with paint cans.

While the preferred embodiment of the invention has been herein illustrated and described, it will be understood that the invention may be embodied in other forms within the scope of the following claims.

Having thus described the invention, what is claimed is:

1. A detachable handle for a container of the type having an extended rim at its top and bottom edges, said handle comprising a U-shaped metal member having a body portion and upper and lower leg portions, said upper leg having depending prongs arranged to be inserted over the top rim of the container, said lower leg having an upwardly and rearwardly inclined retaining lug for engagement with the inner wall of the bottom rim, and a pair of upwardly and forwardly inclined stop lugs engageable with the outer wall of the container, said lower leg having a flat extended portion and a downwardly turned lip portion, the flat portion arranged to be flexed into assembled relation with said bottom rim after the prongs are inserted over the upper rim, said retaining lug cooperating with said stop lugs to firmly grip the bottom edge of the container.

2. A detachable handle as defined in claim **1** wherein the lower leg is longer than the upper leg to dispose the body portion of the handle at a downwardly and outwardly inclined angle with relation to the vertical axis of the container.

3. A detachable handle as defined in claim **1** in which the handle comprises a one-piece metal strip bent into U-shape and stamped to provide the prongs on said upper leg and to provide the retaining lug and stop lugs on said lower leg.

4. A detachable handle as defined in claim **1** wherein the body portion of the handle is concave in cross section.

References Cited by the Examiner

UNITED STATES PATENTS

1,209,676	12/1916	Cooper	294—33 X
2,128,466	8/1938	Machotka	294—33
2,262,273	11/1941	Ferrara	294—33 X
2,424,094	7/1947	Herr	294—33
2,639,502	5/1953	Wormelle	294—33
2,665,936	1/1954	Moore	294—33
2,806,732	9/1957	Montanaro	294—33

HUGO O. SCHULZ, *Primary Examiner.*