Feb. 10, 1953 H. L. TRIESTRAM 2,628,120

LIFTING TONG

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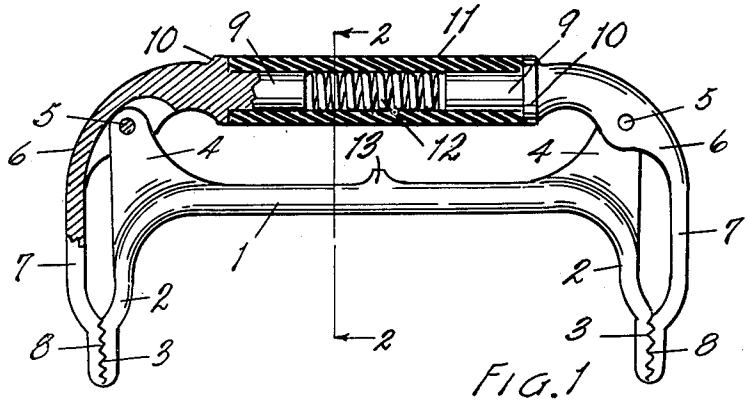


FIG. 1

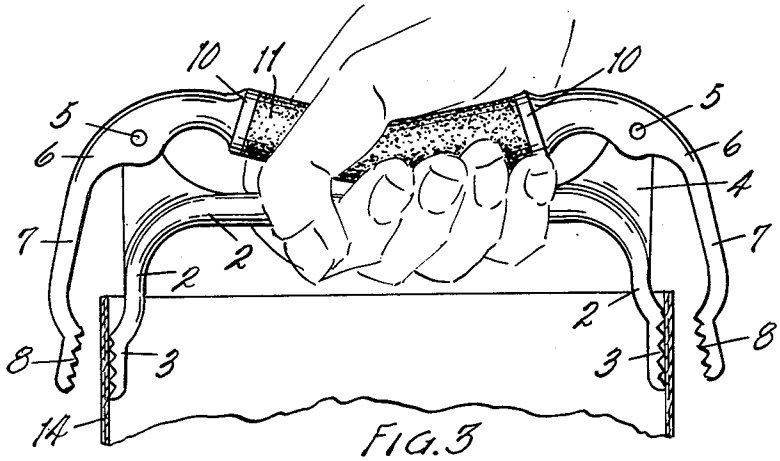


FIG. 3

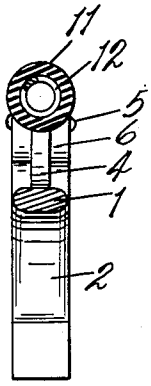


FIG. 2

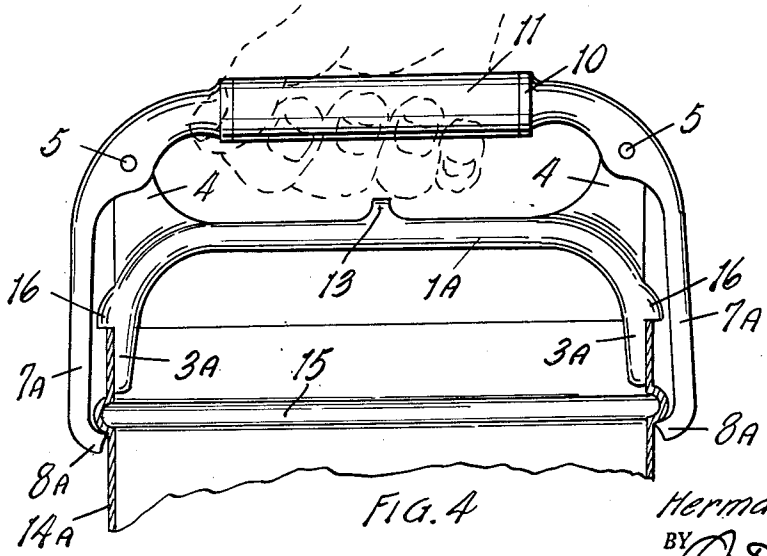


FIG. 4

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LIFTING TONG

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9 Claims. (Cl. 294—31)

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This invention relates to improvements in lifting tongs.

The principal objects of this invention are:

First, to provide a novel form of lifting tongs for gripping and lifting a container by engagement with opposite edges thereof, which tongs increase their gripping pressure as lifting force is applied thereto.

Second, to provide lifting tongs which are easily applied to a carton or container to be lifted by a gripping motion of a single hand to spread the jaws of the tongs.

Third, to provide lifting tongs which are extremely simple and economical to manufacture yet which are entirely effective to securely grip a container to be lifted.

Fourth, to provide lifting tongs of the self-closing type having a yieldable handle portion which is convenient and comfortable to grip.

Other objects and advantages relating to details of my invention will be apparent from a consideration of the following description and claims.

The drawings, of which there is one sheet, illustrate two forms of my tongs with different types of jaws adapted for engaging different types of containers.

Fig. 1 is a side elevational view partially broken away in vertical cross section of a first form of my tongs.

Fig. 2 is a cross sectional view through the tongs shown in Fig. 1 and taken along the plane of line 2—2.

Fig. 3 is a side elevational view of the tongs shown in Fig. 1 in applying or disengaging position relative to a container, the container being shown in vertical section.

Fig. 4 is a side elevational view of a modified form of my tongs in gripping lifting position relative to a modified form of container, the container being shown in vertical section.

My tongs are particularly adapted for use in lifting and carrying relatively thin walled containers such as cans and cartons of bulk ice cream, but it will be readily appreciated that the tongs are easily adaptable for use with other containers and objects having spaced parallel walls capable of being engaged by the jaws of my tongs. The spacing and shape of the jaws can obviously be varied to suit different types of containers.

As is illustrated in Figs. 1 to 3, my tongs comprise a rigid body member 1 of generally U-shape. The depending arms 2 of the body have outwardly facing serrated jaws 3 formed on the lower ends thereof. The ends of the base of the body portion are provided with upstanding ears 4 which are pierced to receive the pivot pins 5 at their upper ends.

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Pivotally supported on the pins 5 are a pair of generally L-shaped jaw pieces or gripping elements 6. The gripping elements 6 have depending outer arms 7, the lower ends of which are shaped into the serrated movable jaws or teeth 8 coacting with the fixed jaws 3. The inner arms 9 of the gripping element extend in generally horizontal position in vertically spaced relationship above the base of the body 1 and are provided intermediate of their ends with the collars 10. The opposed inner ends of the inner arms 9 terminate in substantially spaced relationship as illustrated. A tubular sleeve of yieldable deformable material such as a section of rubber hose or tubing is engaged and extends between the inner ends of the inner arms as at 11. The ends of the sleeve are desirably in abutting relationship with the collars 10 and the length of the sleeve is such that it is placed under slight compression when the fixed and movable jaws 3 and 8 are in closed gripping position.

The space within the sleeve 11 and between the inner ends of the inner arms 9 is filled or held against radial collapse as by the coil spring 12. An upstanding ear 13 on the top of the base of the body 1 is arranged to engage the bottom of the sleeve and limit the downward motion of the sleeve and the inner ends of the arms 9 as will be explained.

Fig. 3 illustrates my tongs as they are being applied to or removed from a carton or container having spaced vertical walls 14. The tongs are gripped by the hand of the user to embrace the sleeve 11 and the base 1 of the body and a gripping action is applied to bend or deform the sleeve against the stop 13. This action obviously depresses the inner ends of the arms 9 and spreads the movable jaws or teeth 8 away from the fixed jaws 3 so that the fixed jaws can be inserted into or removed from the container.

When the jaws are in proper position relative to the container, the gripping action on the sleeve and base is released and the yieldable character of the sleeve 11 functions to straighten the sleeve and spread the inner arms 9 away from each other. This action swings the movable jaws or teeth 8 into gripping engagement with the outer surface of the container. The tongs can then be grasped by the sleeve 11 as a smooth, comfortable grip and to the exclusion of the base of the body 1. Lifting action on the grip 11 tends to pivot the inner ends of the inner arms 9 upwardly

and increase the gripping action between the jaws 3 and 8 as the weight of the container is picked up. Fig. 4 shows a modified form of the tongs in operative lifting position.

The tongs in Fig. 4 are the same in all material respects as the tongs shown in Figs. 1 to 3 except that the jaws have been adapted for engagement with the familiar type of cylindrical metal ice cream carton. Thus, the modified tongs have straight outwardly facing inner jaws 3A on the lower ends of the body 1A while the depending arms 7A extend below the inner jaws 3A and are provided with inturned hook jaws or teeth 8A to engage underneath the bead 15 around the top of the modified container 14A. Desirably, a limiting or locating shoulder 16 is formed outwardly from the top of the inner jaws 3A to quickly locate the tongs with respect to the rim of the carton.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. Lifting tongs comprising, a lower U-shaped body having downwardly extending and outwardly facing fixed jaws on its ends, upstanding ears on the ends of said body, L-shaped jaw pieces pivoted on said ears and having teeth on the ends of their depending arms coacting with said fixed jaws, the upper arms of said pieces extending along the top of said body in vertically spaced relationship with their ends in spaced relation, collars formed around said upper arms in spaced relationship from the inner ends thereof, a coil spring compressed between the inner ends of said upper arms and urging said teeth against said fixed jaws, and a sleeve of deformable rubber material positioned around the inner ends of said arms and said spring with its ends abutting said collars and forming a lifting grip for said tongs.

2. Lifting tongs comprising, a lower U-shaped body having downwardly extending and outwardly facing fixed jaws on its ends, L-shaped jaw pieces pivoted on the ends of said body and having teeth on the ends of their depending arms coacting with said fixed jaws, the upper arms of said pieces extending along the top of said body in vertically spaced relationship with their ends in spaced relation, a coil spring compressed between the inner ends of said upper arms and urging said teeth against said fixed jaws, and a sleeve of deformable material positioned around the inner ends of said arms and said spring and forming a lifting grip for said tongs.

3. Lifting tongs comprising, a U-shaped body having depending ends with outwardly facing jaws on the ends thereof, a generally L-shaped gripping member pivoted on each end of the base of said body, said gripping members having outer arms depending along the outer sides of the depending ends of said body with inwardly facing jaws coacting with the jaws on said body, said gripping members having inner arms extending toward each other in vertically spaced relationship with the base of said body and thereabove, a deformable springable sleeve element extending between said inner arms and secured thereto to urge said jaws into gripping position, a coil spring filler positioned within said sleeve element between said inner arms, and a raised stop on the top of the base of said body limiting downward pivotal movement of said inner arms.

4. Lifting tongs comprising, a U-shaped body having depending ends with outwardly facing jaws on the ends thereof, a generally L-shaped gripping member pivoted on each end of the base of said body, said gripping members having outer arms depending along the outer sides of the depending ends of said body with inwardly facing jaws coacting with the jaws on said body, said gripping members having inner arms extending toward each other in vertically spaced relationship with the base of said body and thereabove, a deformable springable element extending between said inner arms to urge said jaws into gripping position, and a raised stop on the top of the base of said body limiting downward pivotal movement of said inner arms.

5. Lifting tongs comprising, a lower U-shaped body having downwardly extending outwardly facing fixed jaws on its ends, upstanding ears on the ends of said body, L-shaped jaw pieces pivoted on said ears and having teeth on the ends of their depending arms coacting with said fixed jaws, the upper arms of said pieces extending along the top of said body in vertically spaced relationship with their ends in spaced relation, collars formed around said upper arms in spaced relationship from the inner ends thereof, a coil spring positioned between the inner ends of said upper arms, and a sleeve of deformable rubber material positioned around the inner ends of said arms and said spring with its ends abutting said collars and forming a lifting grip for said tongs, said jaws and said teeth being horizontally serrated.

6. Lifting tongs comprising, a lower U-shaped body having downwardly extending and outwardly facing fixed jaws on its ends, upstanding ears on the ends of said body, L-shaped jaw pieces pivoted on said ears and having teeth on the ends of their depending arms coacting with said fixed jaws, the upper arms of said pieces extending along the top of said body in vertically spaced relationship with their ends in spaced relation, a coil spring positioned between the inner ends of said upper arms, and a sleeve of deformable rubber material secured to the inner ends of said arms and positioned around said spring and forming a lifting grip for said tongs, said jaws and said teeth being horizontally serrated.

7. Lifting tongs comprising, a lower U-shaped body having downwardly extending and outwardly facing fixed jaws on its ends, locating shoulders at the tops of said jaws, L-shaped jaw pieces pivoted on the ends of said body and having inturned hook teeth on the ends of their depending arms positioned below and coacting with said fixed jaws, the upper arms of said pieces extending along the top of said body in vertically spaced relationship with their ends in spaced relation, a tubular grip of deformable material secured between the inner ends of said upper arms and forming a lifting grip for said tongs, and a filler spring positioned within said tubular grip and between said upper arms.

8. Lifting tongs comprising, a lower U-shaped body having downwardly extending and outwardly facing fixed jaws on its ends, locating shoulders at the tops of said jaws, L-shaped jaw pieces pivoted on the ends of said body and having inturned hook teeth on the ends of their depending arms position below and coacting with said fixed jaws, the upper arms of said pieces extending along the top of said body in vertically spaced relationship with their ends in spaced relation, a grip of deformable material secured between the inner ends of said upper arms and forming a

lifting grip for said tongs, and a filler positioned within said tubular grip and between said upper arms.

9. Lifting tongs comprising, a U-shaped body having depending ends with outwardly facing jaws on the ends thereof, a generally L-shaped gripping member pivoted on each end of the base of said body, said gripping members having outer arms depending along the outer sides of the depending ends of said body with inwardly facing jaws coacting with the jaws on said body, said gripping members having inner arms extending toward each other in vertically spaced relationship with the base of said body and thereabove,

and a deformable springable grip element extending between said inner arms and secured thereto to urge said jaws into gripping position.

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