Aug. 18, 1936. J. J. SMITH 2,051,655

LIFTING DEVICE

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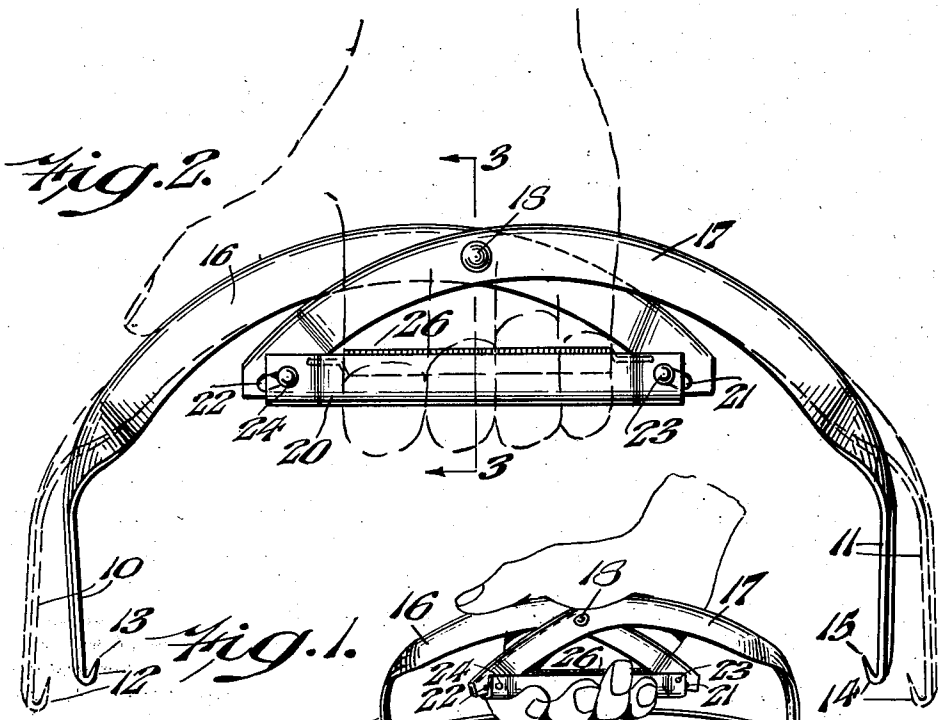
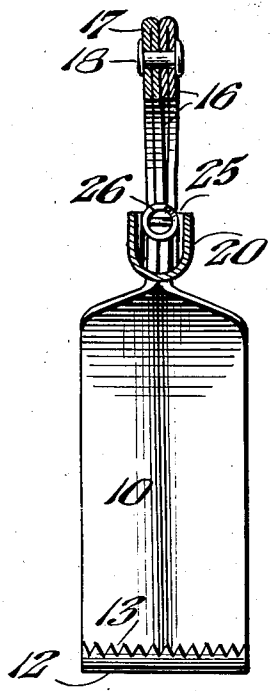


Fig. 2.

Fig. 1.

Fig. 3.



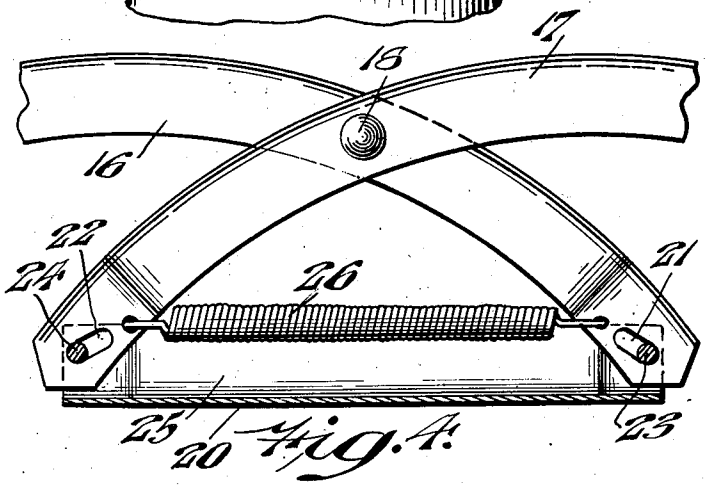


Fig. 4.

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2,051,655

LIFTING DEVICE

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Application May 14, 1935, Serial No. 21,344

6 Claims. (Cl. 294—28)

The present invention relates to lifting devices and more particularly to a manually manipulated device for engaging a can so that the latter can be lifted for transfer from one place to another or otherwise.

Some of the objects of the present invention are to provide an improved lifting device of general application, but which more specifically is intended for engaging and lifting cans or receptacles made of paper or other fragile material; to provide a lifting device so arranged and constructed that it is effectively held in operative position by a relatively light pressure of the hand of the user; to provide a lifting device which is self-opening to receive the article to be lifted; to provide a lifting device wherein a can or other receptacle is gripped from two opposite sides and held entirely from the outside thereof; to provide a novel lifting device which will lift paper or composition receptacles without tearing or breaking them; to provide a lifting device which coacts efficiently with both metal and paper receptacles whether such receptacles have a circumferential bead or not; to provide a lifting device which is adjustable within limits for various size receptacles; and to provide other improvements as will hereinafter appear.

In the accompanying drawing Fig. 1 represents a side elevation of a lifting device embodying one form of the present invention and shown as held in operative relation to an article to be lifted; Fig. 2 represents a side elevation of the same on a larger scale; Fig. 3 represents a section on line 3—3 of Fig. 2; and Fig. 4 represents an enlarged detail partly broken away of the grip bar and associated parts.

Referring to the drawing one form of the present invention consists of two oppositely disposed jaw members 10 and 11 so mounted and arranged as to straddle the upper part of a can or other article to be lifted, as shown in Fig. 1. Preferably each of these jaws is formed from a flat strip of metal permanently flexed along its median line in order that the jaw member will approximate the curved contour of a can body and thus have the most effective gripping action. The gripping end of the jaw member 10 is reversely bent to about a forty-five degree angle to provide a ledge 12 to seat under the neck bead of a can for lifting purposes. The contact edge of this ledge 12 is preferably of saw-tooth shape to form a plurality of teeth 13 so disposed as to bite into the juxtaposed face of a can, this being a particularly advantageous construction where the can is made of paper. The gripping end of the jaw member 11 is likewise formed with a ledge 14 and teeth 15 for the same purpose.

The jaw member 10 has an extension 16 formed by compressing the strip of material along the median line to bring the side portions into face to face relation to thereby form a rigid operating arm inherently capable of resisting tendency to flex. The jaw member 11 is similarly formed with a like extension 17 of like construction. Each extension or operating arm 16 and 17 is curved on a relatively long radius so that when assembled as here shown and interconnected by a pivot pin 18, the free ends terminate in a common plane intersecting the jaws about the middle thereof. The arrangement is such that a finger grip bar 20 connecting the two ends of the extension arms 16 and 17 gives a comfortable open grip when the arms rest in the palm of the user's hand.

In order to allow the desired articulated action the arms 16 and 17 are provided respectively with slots 21 and 22 for the reception of bearing pins 23 and 24 which are fixed to the ends of the bar 20. In this connection it should be noted that the bar 20 is U-shape in cross section to provide at one side a rounded gripping edge, and at the other side a slot 25. A coil spring 26 is stretched between the ends of the arms 16 and 17 and acts to maintain the jaws 10 and 11 spaced apart or in open position. As here shown the spring 26 parallels the bar 20 and can ride into the slot 25 when the jaws are forced to gripping position by a closing of the hand of the user.

In operation the lifting device is held in the palm of the hand with the fingers grasping the underside or rounded edge of the bar 20. Until the hand is closed the spring 26 maintains the jaws in full open position as shown in dotted lines Fig. 2 so that the device can receive the end of the can or receptacle to be lifted. When properly positioned on the can, the operator squeezes the bar 20 towards the pivot 18 and thereby causes the jaw ledges 12 and 14 or teeth 13 and 15 to grip the sides of the article. As shown in Fig. 1 the jaws are gripping a can just below the neck bead and as long as pressure is exerted by the hand the jaws will be held in effective lifting position. Where the article to be lifted is a paper container having no bead or like projection near its mouth, the teeth 13 and 15 can be caused to bite into the sides of the container with an effective lifting grip. Furthermore the action is such that the paper walls are not materially damaged by the action of the lifting device.

While only a single form is shown in which

this invention may be embodied, it is to be understood that the invention is not limited to any specific construction, but might be applied to various forms without departing from the spirit of the invention or the scope of the appended claims.

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

1. A lifting device comprising a pair of jaw members, each of said members having an extension arm, a pivot forming a fulcrum for said arms, said extension arms terminating on the same side of said pivot as said jaw members, a spring stretched between said arms to normally maintain said jaw members spaced apart in receptacle receiving position, and manually actuated means coacting with said arms to overcome said spring action to move said jaw members to grip said receptacle.

2. A lifting device comprising a pair of jaw members arranged in substantially opposed parallel relation, each of said members having a curved arm projecting at substantially right angles to its jaw member, a pivot forming a fulcrum for said arms and positioned at equal and remote distances respectively from the end of said arms, said arms terminating on the same side of said pivot as said jaw members, a spring stretched between the ends of said arms to sold said jaw members in open or receptacle receiving position, a bar also between the ends of said arms, and lost motion connections between said bar and each of said arms, whereby manual drawing of said bar towards said arms causes said jaw members to close to gripping position.

3. A lifting device comprising a pair of jaw members, each terminating in a gripping ledge at one end, and having its major length formed as a laterally disposed arm, a pivot connecting said arms, extension ends on the respective arms terminating on the same side of said pivot as said jaw members, a spring stretched between said arms at the side of said pivot to cause said gripping ledges to be normally drawn apart, and means including a manually actuated gripping bar for drawing said ledges towards each other in opposition to said spring.

4. A lifting device comprising a pair of jaw members, each terminating in a gripping ledge at one end having a plurality of teeth, and having its major length formed as a laterally disposed arm, a pivot connecting said arms, the ends of said arms terminating on the same side of said pivot as said jaw members, a spring stretched between said arms at the side of said pivot to cause said gripping ledges to be normally drawn apart, and means including a manually actuated gripping bar for drawing said ledges towards each other in opposition to said spring.

5. A lifting device comprising a pair of jaw members, each of said members having an extension arm projecting laterally therefrom and downwardly curved to bring its free end opposite the jaw member of the other arm, said members crossing one another at a point equidistant from the aforesaid arm ends, a pivot at said point for interconnecting said arms, said arm ends being on the same side of said pivot as said jaw members, a hand grip bar connecting the free ends of said arms, and a spring between said arms normally holding said jaw members in receiving position.

6. A lifting device comprising a pivot, two crossed arms carried by said pivot, the ends of the respective arms being all on the same side of said pivot, a jaw member on the outer end of each of said arms, said jaw members being located in opposed relation, a hand grip member connecting the inner ends of said arms, and a spring stretched between said arms for normally maintaining said jaw members in open position.

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