Aug. 10, 1965 D. A. JOHNSON 3,199,905

PACKAGE AND ARTICLE HANDLING DEVICE

Filed July 1, 1963 2 Sheets-Sheet 1

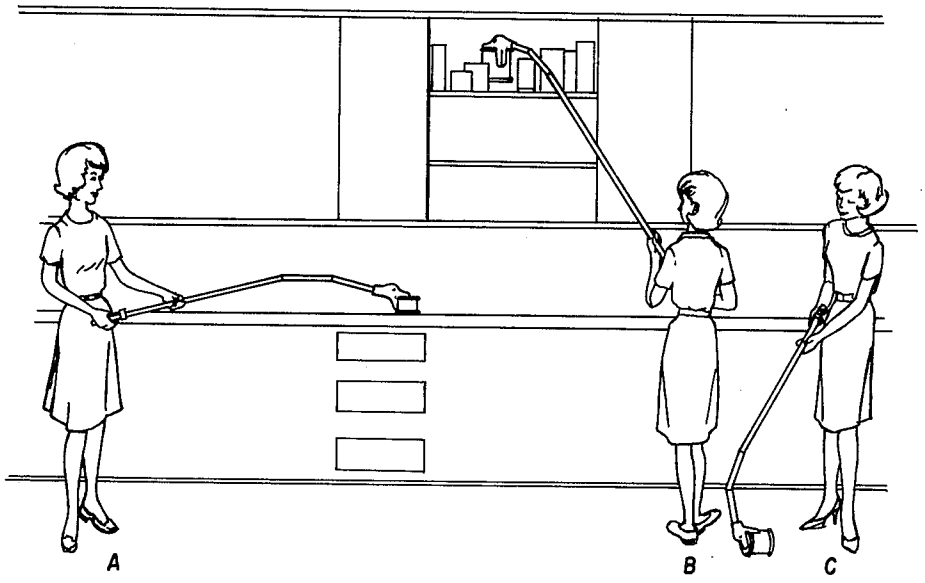


FIG. 1

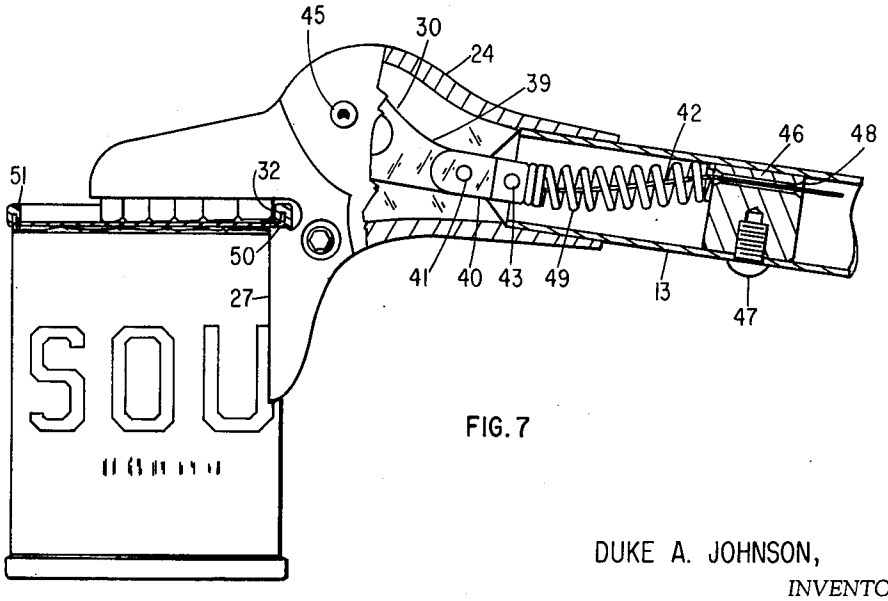


FIG. 7

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PACKAGE AND ARTICLE HANDLING DEVICE

Filed July 1, 1963 2 Sheets-Sheet 2

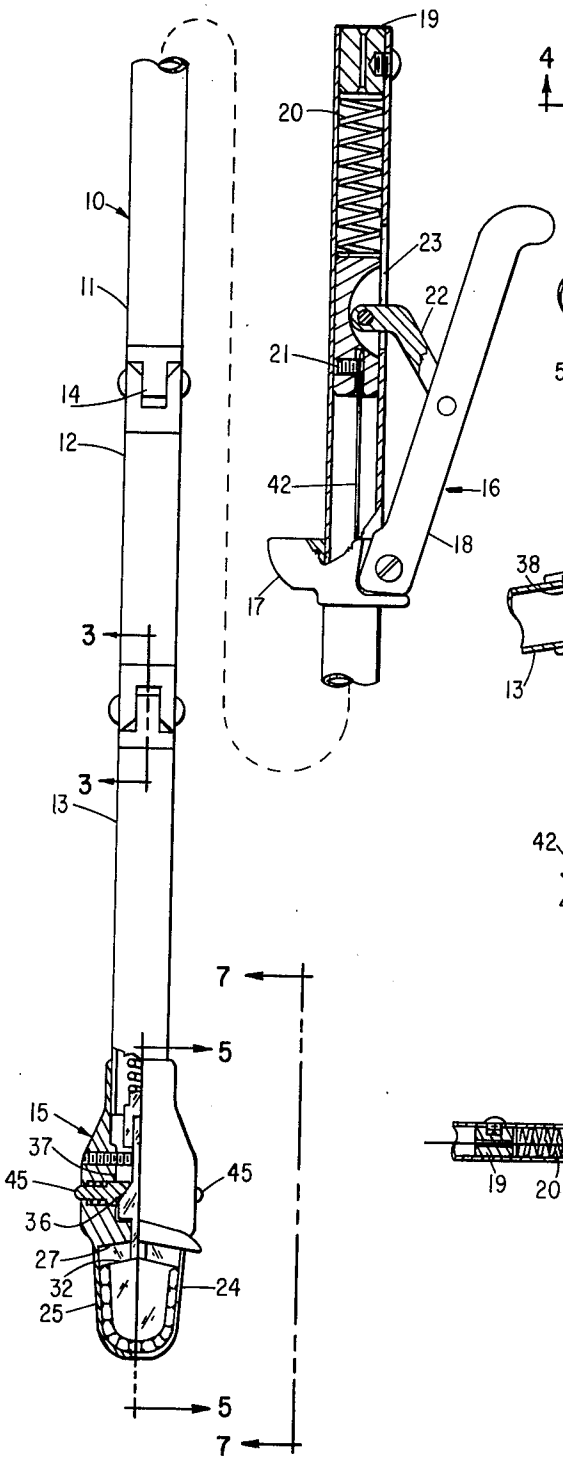


FIG. 2

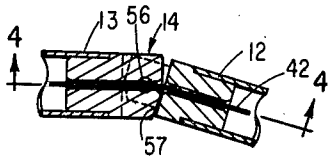


FIG. 3

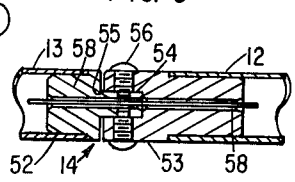


FIG. 4

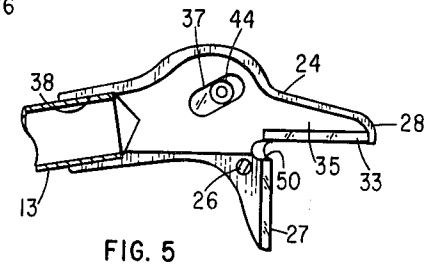


FIG. 5

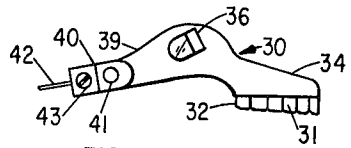


FIG. 6

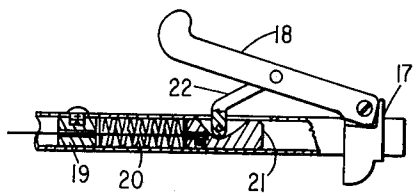


FIG. 8

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United States Patent Office 3,199,905 Patented Aug. 10, 1965

3,199,905

PACKAGE AND ARTICLE HANDLING DEVICE

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Filed July 1, 1963, Ser. No. 291,864
2 Claims. (Cl. 294—22)

This invention relates to an improved device adapted for handling packages and, more particularly, to a device for handling cans or the like.

This invention relates further to the commonly experienced problem of people placing objects on shelves which are inconveniently high.

The prior art has provided certain appliances of this class, but these prior art appliances have not enabled a person to pick up a package or can on the floor level and the placing of the can at the back of a high shelf in a kitchen cabinet, for example. Further the prior art has not provided a device which will enable a person to grasp a can at a waist-high shelf and thence elevate the same and place it on the back of a high shelf or any intermediate position. Further these prior art devices have not provided for removing a can from the back of a high shelf and moving it downwardly to any desired intermediate position above the floor level.

It is therefore a principal object of the present invention to generally overcome the shortcomings of the various devices of the prior art by providing a device which greatly facilitates the handling of certain articles and cans.

Another object of this invention is the provision of an article or can handling device adapted to support the side of a can or article that is being picked up as well as grasping the same by its upper rim or upstanding annular bead usually provided about the upper ends of cans or articles, by reason of the rolled joint between the upper end of the can body and the top wall of the can.

A further object of this invention is the provision of a can or similar article handling device with improved versatility which enables a can to be manipulated from a position on the floor level to any point intermediate the floor level and an uppermost shelf in a kitchen, for example.

A still further object of the invention is the provision of a can or similar article handling device wherein such can or article may be removed from an uppermost shelf and deposited on a floor level or at points therebetween.

A still further object of the invention is the provision of a can or similar article handling device wherein such can or article may be deposited or removed from a position adjacent the back edge of a shelf.

Still another further object of the invention is the provision of a device for handling cans or similar articles with greatly enhanced safety by reason that the device may normally grasp the can or article such that the same can be released only by deliberate action upon the part of the operator.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will be obvious to those skilled in the art upon employment of the invention in practice.

Preferred embodiments of this invention have been chosen for purposes of illustration and description. The preferred embodiments illustrated are not intended as exhaustive or to limit the invention to the precise form disclosed. They are chosen and described in order to best display the principles of the invention and their applications in practical use to thereby enable others skilled in the art to utilize the invention in various embodiments and modifications as may be best adapted to the particular uses contemplated.

In the accompanying drawings:

FIG. 1A, FIG. 1B and FIG. 1C show various ways in which the device of the present invention may be employed.

FIG. 2 is a plan view, shown partially in section, of the device of the invention.

FIG. 3 is a sectional view taken along 3—3 of FIG. 2.

FIG. 4 is a sectional view taken along 4—4 of FIG. 3.

FIG. 5 is a partial sectional view taken along line 5—5 of FIG. 2.

FIG. 6 is a detail view of a movable jaw portion of the device of the invention.

FIG. 7 is a partially pictorial and partially sectional view of the article grasping end of the device of the invention shown deployed with respect to a can or similar article.

FIG. 8 is a partially sectional view of another embodiment of an actuating mechanism for the device of the invention.

Referring to the drawings and particularly to FIG. 2 thereof, the device of the invention is generally indicated by the reference numeral 10. The device comprises an elongated handle portion 11 which may be of tubular material, interconnected with tubular segments 12 and 13 by means of articulated joints 14. Attached to the segment 13 is a head portion 15. An actuating level assembly, shown generally at 16, is provided at the other end of the handle 11 and is interconnected with the head portion by means to be described hereinafter for actuating the head portion.

The actuating lever assembly 16 is comprised of a lever mounting bracket 17 disposed in clamped relation to the exterior portion of the handle 11. A lever 18 is pivotally connected at one end to the mounting bracket for angular movement with respect to the handle 11. A plug 19 is secured in the butt end of the handle 11 and forms a seat for a compression spring 20 disposed within the tubular handle. A block 21 is disposed in slidable engagement within said handle and in abutting relation to the spring 20. An actuating link 22 is provided in pin connected relation to the lever 18 and to the block 21 in a manner such that when the lever 18 is depressed with respect to the handle 11, the block 21 is moved toward the plug 19 to compress the spring 20. The actuating link extends through a slot 23 provided in the wall of the handle 11.

The head portion 15 comprises mating halves 24 and 25 which are secured together in clamped relation to the segment 13 by means of a bolt which, although not shown, extends through mating holes 26 in the mating halves 24 and 25.

Referring to FIG. 5, mating half 24 is shown in detail to comprise a downwardly extending V-block portion 27 and a forwardly extending beak portion 28. The mating half 24 is hollowed out to receive a jaw portion 30 shown in FIG. 6. The jaw portion 30 includes a toothed portion 31 defining a shoulder 32. The jaw portion 30 is adapted to be received within the hollowed out portion of the mating half 24 in such a way that the toothed portion is received within a recessed portion 33 therewithin and such that the top portion 34 of the jaw member 30 is slidably received within a slot 35 as provided in the mating half to guide movements of said jaw member with respect to said half. The jaw portion 30 is provided at either side thereof with laterally extending bosses 36. The outer ends of the bosses are tapered as best seen in FIG. 2 such that these bosses function as cam members as will be described hereinafter. The bosses 36 are slidably received within angled slots 37 provided in each mating half of the head portion 15. The slots 37 are disposed at an angle subtending about 60 degrees with respect to the V-block portion 27 of the mating half. The mating

halves are in addition provided with rearwardly extending channels 38 which, when the halves 24 and 25 are joined, form a passageway designed to receive the upper end of the segment 13 in clamped relation. The jaw portion 30 is provided with a rearwardly extending tang portion 39 which generally extends within passageway formed by the channels 38. A clevis member 40 is pivotally connected to the tang portion 39 by means of a pin 41 and is fastened to a piano wire 42 at its other end by means of a set screw 43. The piano wire functions to move the jaw portion 30 within the portion 15 responsive to force exerted on the piano wire 42. In making these movements the jaw member 30 is constrained to move in a direction defined by the attitude of the slots 37 whereby the shoulder 32, as well as the lower surface of the toothed portion 31, is constrained to move toward the V-block at an angle about 30 degrees. This angular movement is important in stabilizing the device with reference to an article to be grasped and in grasping the same. Each half member 24 and 25 is provided with an opening 44 within the area thereof defined by the slot 37 through which extend pin members 45 adapted to extend therethrough. The pin members are biased with respect to said openings so that they are normally in a retracted position with respect to said openings. The ends of the pin members 45 which extend within head portion 15 are provided with surfaces to match the taper or wedge shape provided on the bosses 36, as previously described. When the jaw member 30 is moved with respect to the head portion 15, responsive to force applied by the piano wire 42, the bosses 36 in moving in the slot 37 will engage the inner ends of the pin members 45 and cause the pin members to be extended outwardly of said head portion by overcoming the previously mentioned inward bias. The movement of the pin members 45 responsive to movement of the jaw portion 30 provides a visual indication of the position of said jaw portion with respect to said V-block and thus provides an operator intelligence with respect to the operation of the device.

As is best shown in FIG. 7, the segment 13 has a block or spring seat 46 fixedly mounted therein by means of a screw 47. The block or spring seat is provided with a longitudinally extending passageway 48 through which the piano wire 42 extends in communicating with the other end of the device. A spring 49 is provided about the piano wire and in abutting relation to the clevis member 40 and the block or spring seat 46. The position of the block 48 with respect to the head portion 15 is such that the clevis member 40 and jaw member 30 are biased away from V-block portion 27.

The V-block portion 27 terminates at an upper surface 50 which coacts with shoulder 32 in grasping the upstanding bead or rim 51 of a container or can to be manipulated by the device.

Segments 12, 13 and handle 11 may be interconnected by articulated joints 14. The joint 14 is shown in FIGS. 3 and 4 in the context of joining segments 12 and 13 for purposes of illustration. The joint 14 is comprised of a male portion 52 and a female portion 53 which are respectively received within segments 12 and 13 by means of a press fit, for example. The male portion 52 has a tonguelike extension 54 which is received within a slot 55 provided in the female portion 53 and which is pivotally secured therein by means of screws 56. As is best shown in FIG. 3, the male portion 52 is provided with surfaces 57 which limit the angular movement of the articulated joint and the segment or handle member with respect to one another. The male and female portions of the articulated joint 14 are each provided with longitudinally extending passageways 58 which desirably accommodate the piano wire 42 in extending through the articulated joint 14 in its communication along the length of the device. As has been brought out, one end of the wire 42 is attached to the tang portion 39 of the jaw member 30 and extends longitudinally through the device, and at its other end is attached to the block 21 by means of a set screw or other suitable means. Thus when the lever 18 is depressed toward the handle 11, the block 21 is forced toward the plug 19 overcoming the bias of the spring 20, and at the same time placing the wire 42 under tension which is communicated along the device to the jaw portion 30 to overcome the bias of the spring 49 and to move the jaw portion 30 toward the V-block portion 27. When this occurs, and provided the head portion has been suitably placed with respect to the bead 51 of the can or other container, the shoulder 32 moves towards the surface 50 to grasp the bead, and at the same time the surface 31 stabilizes and locates the can with respect to the V-block 27.

It will be appreciated that the previously described device is a normally open device such that the grasping force must be supplied by the pressure that the operator exerts on the actuating lever assembly 16. However, if desired for purposes of safety or otherwise, the components of the actuating lever assembly 16 may be rearranged in the manner shown in FIG. 8, to provide a normally closed type of device wherein the operator need only exert himself to open the jaw member with respect to the V-block 27 by depressing the lever 18 at such times. In the arrangement of FIG. 8 the mounting bracket 17 is generally located toward the butt end of the handle 11 and the lever 18 extends along the handle 11 toward the head portion 15. The plug 19 and compression spring 20 have been relocated as shown in the figure such that, upon the depression of the lever 18, the bias of the spring 20 is overcome whereby the bias of the spring 49 is effective to open the jaw portion 30 with respect to the V-block 27 and surface 50 thereof. In this arrangement the bias of the spring 20 is in a direction such that the bias of the spring 49 is normally overcome thereby and such that the jaw portion 30 is in a normal position in grasping engagement with respect to the V-block and surface 50.

The device of the invention is variously shown in FIGURES 1A, 1B and 1C as it may be operated by a housewife in connection with the manipulation of canned goods in her kitchen. For example, in FIG. 1A, the device is shown as it would be disposed in grasping an article located at working table height. In FIG. 1B the device is shown in the attitude of placing or removing a can or container from the rear portion of a high shelf. In FIG. 1C the device of the invention is shown as it may be deployed in placing or removing a can or container from a floor level. It will be appreciated that the device of the invention may be usefully employed in placing or removing a suitable object or article at any intermediate level as between the various positions illustrated in FIGS. 1A, 1B and 1C. It will be further appreciated that this flexibility of the device of the invention accrues from the limited articulation provided by the joints 14 interconnecting the various segments to one another and to the handle 11 and providing the no-stoop no-squat erect attitude of the operator as illustrated in the various FIGURES 1A, 1B and 1C.

Thus, it has been seen that the device of the invention, in meeting the objectives set forth, provides a significant improvement in the art of handling articles, containers and the like. Further it has been seen that these objectives are accomplished in a manner to greatly facilitate the handling of such articles or containers and that such improvements stem in part from the limited articulation provided in the handle portion of the device.

As various changes may be made in the form and construction herein described without departing from the spirit and scope of the invention, and without sacrificing any of the advantages thereof, it is to be understood that all matter herein is to be interpreted as illustrative and not in any limiting sense.

What is claimed is:

1. An article handling device comprising an elongated handle, at least one handle segment including a pivoted

joint joined at its bottom end to the upper end of said handle for limited angular movement with respect to the handle, a hollow head section attached to the upper end of said handle segment, the head section having a V-block portion extending substantially normal to said handle segment, and a second portion of the head extending substantially normal to said V-block portion, the said second portion having a recess in the bottom portion thereof, a movable jaw mounted in said recess, a manual actuating handle means pivoted to the lower end of said handle, a wire connecting the handle means to the said movable jaw whereby movement of the actuating handle is adapted to move the jaw at an angle, toward said V-block, resilient means urging the said jaw away from said V-block, the said head section having a pair of slidable pins extending transversely thereof, a cam on said jaw interiorly of said head section and being

adapted upon movement of said jaw toward said V-block to extend said pins transversely of said head section.

2. The device of claim **1** wherein said handle is tubular in form and said wire extends through said handle, pivot joint and segment.

References Cited by the Examiner

UNITED STATES PATENTS

1,453,301	5/23	Winkler	294—22
2,602,634	7/52	Read	294—19 X

FOREIGN PATENTS

739,209	1955	Great Britain.

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