

Dec. 8, 1953

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2,661,879

TRANSPORTING CARRIER FOR CARTONS AND THE LIKE

Filed Nov. 13, 1950

2 Sheets-Sheet 1

Fig. 1.

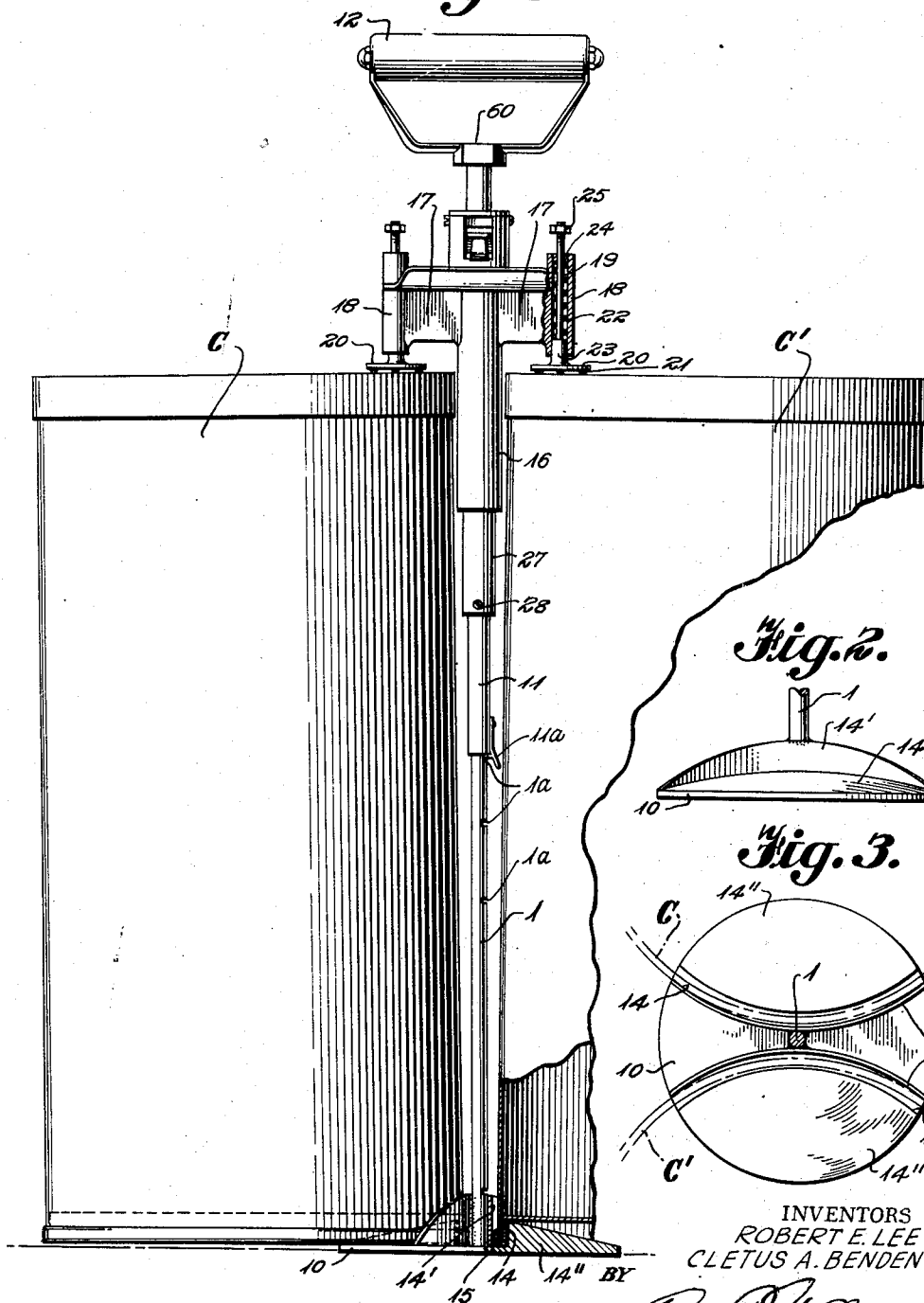


Fig. 2.

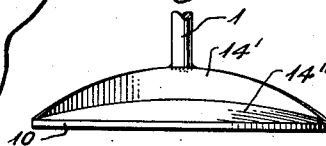
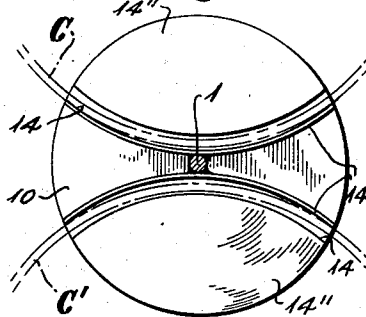


Fig. 3.



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Fig. 4.

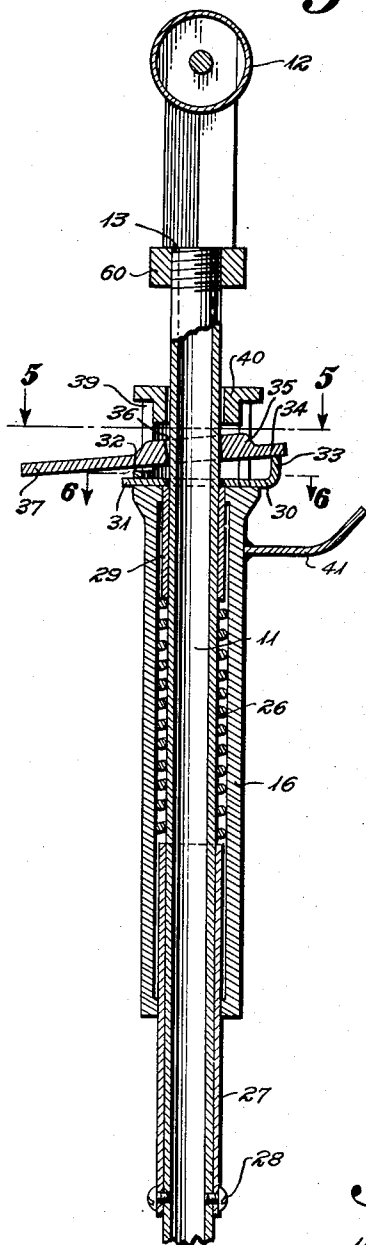


Fig. 5.

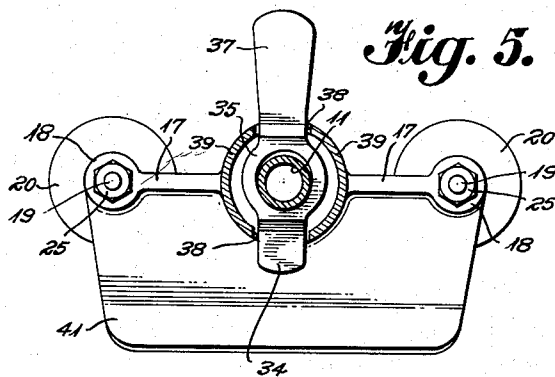


Fig. 7.

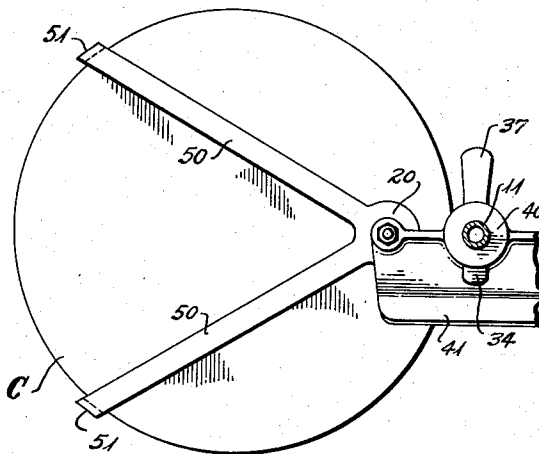


Fig. 8.

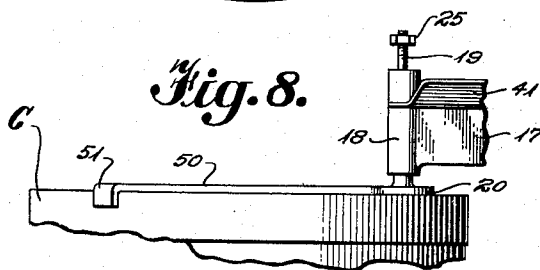
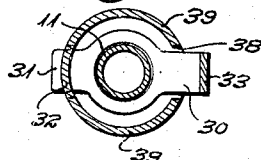


Fig. 6.



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2,661,879

TRANSPORTING CARRIER FOR CARTONS
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Application November 13, 1950, Serial No. 195,432

5 Claims. (Cl. 224-45)

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This invention relates to carriers whereby containers may be gripped, lifted and transported from place to place, and more particularly relates to carriers for containers or cans and the like that are manually transported.

One type of can or container to which the carrier of this invention is applicable and for which it was particularly devised, is the conventional form of ice cream container employed in wholesale or bulk deliveries, for instance five-gallons, to soda fountains, restaurants and the like for retail dispensing, and is usually of metal, cardboard or fibre-board in cylindrical form and has a removable flat top and a closed flat bottom having a downwardly extending edge flange. These containers, when filled with ice cream, are quite heavy and it is quite awkward for a person to handle and carry them using only his free hands and arms, and they are cold, which is very discomforting to the handler. Further, it is impossible for a person to carry in his arms more than one or two of such filled ice cream cans at a time and there is always considerable likelihood that the person carrying the cans cannot prevent one or both of the cans from slipping from his grasp en route and falling, which results in damage to the container, and waste of or contamination to the contents, and the trouble and inconvenience and loss of time incident to retrieving the dropped can or cans.

A principal object of this invention is to provide a carrier device for ice cream cans and other like containers whereby a person may easily engage the carrier with one or more cans and may easily and conveniently transport the cans from place to place without any danger of the can or cans becoming released inadvertently from the carrier and falling therefrom and from which carrier the person can easily release the can or cans whenever he desires to do so.

Another object of this invention is to provide an ice cream carrier which is light in weight and sturdy and simple in construction and convenient to handle and to operate.

Another object of this invention is to provide an ice cream can carrier of the type described which is adaptable to cans or containers of different heights.

A further object of this invention is to provide in a carrier of the type described, wherein at least two such containers may be carried and gripped thereby and wherein there is a simple and sturdy gripping device adjustable to and

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from positive gripping engagement with the containers, the gripping means of said gripping device being self-adjustable to variations, within limits, in the heights of said containers and said gripping device being instantaneously released from the cans or containers by the operation of a trigger or finger lever.

Other objects of this invention will be in part obvious and in part pointed out hereinafter.

In accordance with this invention the carrier includes a platform or base adapted to support one or more cans or other containers placed thereon, a lifting standard, preferably adjustable as to height, secured to and extending upwardly from the platform and a gripping device which is slidably mounted on the standard and is normally sufficiently elevated on the standard to permit the top or tops of a can or other container placed on the platform to be positioned beneath the gripping element or elements of the gripping device. The gripping device is equipped with a one-way clamping mechanism so associated with the lifting standard that when the gripping device is manually slid downwardly on the standard into gripping relation with the top of the can or cans the gripping device becomes automatically clamped to and held fixed on the standard in can gripping position. A trigger finger or lever is associated with the clamping device whereby the clamping device may be released from the standard, whereupon the resilient means automatically will slide the clamping device upwardly on the standard and out of engagement with the can or cans and the cans are freed for easy and convenient lifting off of the platform element of the carrier. The standard is equipped with a handle whereby the carrier when either loaded or unloaded may conveniently be carried about.

It is expressly to be understood that the invention relates to a carrier suitable for use with a single container and also to a carrier suitable for use with a plurality of containers simultaneously and is not limited to use only with ice cream cans but may be used with containers of different shapes and heights and with containers used for other purposes so long as the containers may be supported from beneath by the platform element of the carrier and engaged at their tops by the gripping device of the carrier.

The invention accordingly consists in the features of construction, combinations of elements and arrangements of parts which will be more fully described hereinafter and the scope of the

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application of which will be set forth in the claims that follow.

In order that a clearer understanding of this invention may be had attention is hereby directed to the accompanying drawings forming a part of this application and illustrating certain possible embodiments of this invention and in which:

Figure 1 is a fragmentary side view, partly in section, of a carrier embodying this invention and showing two cans engaged therewith;

Figure 2 is a side view of the platform element of the carrier;

Figure 3 is a top view of the carrier element of the carrier;

Figure 4 is a sectional view including the upper portion of the lifting standard with the gripping device and lifting handle mounted thereon;

Figure 5 is a sectional view through the lifting standard and gripping device and is taken on the line 5-5 of Figure 4;

Figure 6 is a view similar to Figure 5 and is taken on the line 6-6 of Figure 4;

Figure 7 is a detail showing a modification of a gripping element of the gripping device in engagement with a cam and with certain associated parts shown in fragment, and

Figure 8 is a side view of the same.

Similar reference characters refer to similar parts throughout the several views of the drawings.

For purposes of illustration there is shown in the drawings a carrier adapted to carry two ice cream cans C and C' simultaneously. This carrier includes a platform or base plate 10 to which is secured at its center the lower end of a lifting standard which is telescopically adjustable in height and extends upwardly therefrom higher than the cans C and C'. This lifting standard includes a lower rod 1 which is secured to and extends upwardly from the base plate 10. On the upper end of rod 1 is slidably telescoped a tube 11 having a spring latch finger 11a at its lower end biased toward and adapted to be received in any one of a number of notches 1a provided in the rod 1 to receive the latch finger 11a and hold the tube 11 against sliding upwardly or downwardly on the rod 1. Thus the overall height of the lifting standard may be adjusted to accommodate cans or other containers of different heights. To the upper end of the tube 11 is secured a suitable carrying handle 12, as by being threaded thereon, as at 13, or otherwise secured thereto.

Portions of the base plate 10, on opposite sides of the lifting rod 1, form laterally projecting container supporting ledges 14'' upon which at least a portion of the bottom surface of a container or other article may rest; and the upper surface of each supporting ledge portion 14'' is formed with an arcuate groove 14 shaped and positioned to receive therein a portion of the bottom flange 15 of an ice cream can, such as C and C', so that when these flanges of the cans are seated in these grooves the cans are supported on the platform 10 and are prevented from sliding off of the platform. Each of these grooves 14 is defined at its rear by an arcuate flange 14' extending upwardly from the platform 10 and at its front by the ledge portion 14'' being thickened.

An ice cream can gripping device is slidably carried on the tube 11 of the lifting standard, and includes a sleeve 16 slidably surrounding the tube 11 and having at its upper portion a pair

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of arms 17 diametrically extending therefrom and terminating in the cylinders 18 extending substantially parallel with the axis of the tube 16 so as to overlie the supporting ledge portions 14''. Each of these cylinders supports and guides a spring pressed plunger 19 having on its lower end, exterior of the cylinders 18, an article gripping element 20 in the form of a disc 23 having its undersurface roughened to provide anti-slip teeth 21. The lower ends of the plungers 19, carrying the gripping members 20, are normally urged downwardly by compression springs 22 disposed within the confines of the cylinders 18 and between the hub 23 of the gripping element 20 and a plug 24 which is fitted into the top of the cylinder 18. The plug 24 has a central aperture through which the upper end of the plunger 19 extends and whereby the plunger is centered and guided in the cylinder; and a stop-nut 25 may be threaded on the upper end of plunger 19 to limit its downward movement.

The gripping device (i. e., parts 16, 17, 18 and 20) is urged to slide upwardly on the tube 11 of the lifting standard by means of a compression spring 26 within the sleeve 16 and encircling the tube 11 and having its lower end bearing against a stop abutment 27 fixed to the tube 11, as by screws 28, and its upper end against an abutment sleeve 29 slidably encircling the tube 11 and bearing upwardly against a plate 30 of a latching mechanism. Thus, it will be seen that when one or two containers, container C and/or container C', are positioned on the ledge 14'' the gripping device will overlie an opposite portion of the containers and may be pressed downward, against the tension of the spring 26, to bring the gripping elements 20 in contact with the upper surface of the containers to bind the containers between the ledge 14'' and the overlying gripping member 20. The gripping device will be held in its depressed position by the latching mechanism now to be described.

The latching mechanism is mounted in an upper extension 39 of the sleeve 16 which has two opposite side wall portions cut away, as at 38, to house and accommodate friction latch plates 30 and 35. The latch plate 30 rests upon the bottom of the passage 38 and has one end 31 received in a slot formed by an overlying bridge portion 32 integral with the sleeve 16. This end 31 of the plate 30 is termed a "heel portion" as the plate fulcrums on this end of the plate in the operation of the latch; the plate 30 having an aperture therein through which the tube 11 extends. Opposite the heel portion 31 of the plate 30, is an upwardly extending lip 33 upon which rests a heel portion 34 of a tiltable friction clamping plate 35 overlying the plate 30. The plate 35 has a central aperture 36 through which the tube 11 extends and the plate 35 is provided with a finger piece 37 on its end portion opposite its heel portion 34 and extending laterally beyond the extension 39. The aperture in the plate 35 is larger than the aperture in the plate 30 and permits a greater tilting movement of the plate 35 to move the edges of the aperture 36 into clamping engagement with the surface of the tube 11, when pressure is placed upon the plate 30 by the spring 26 through its abutment tube 29. To hold the plates 30 and 35 in position, a flanged plug 40, apertured to have the tube 11 slidably pass therethrough, closes the top of extension 39 of the sleeve 16 and may be held in place by any suitable means, such as by screws, threads or the like (not shown). It

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will be noted that this latching device is in the nature of a transom latch, sometimes called a friction plate catch, biased into clamping engagement with tube 11 by the lip 33 of plate 30 and the spring 26. It will also be noted that to release the gripping device from the articles being carried it is only necessary to lift the finger piece 37 of latch plate 35, which tilts the latter out of clamping engagement with the tube 11; whereupon the spring 26 will return the gripping device to its uppermost position out of gripping engagement with the articles being carried.

A suitable finger piece 41 is rigidly attached to the gripping device sleeve 16 and whereby the gripping device may easily and conveniently be moved manually down on the tube 11 of the lifting standard against the tension of the spring 26 and into gripping engagement with the can or cans that are on the carrier.

As a modification, two diverging strap arms 50 having down turned ends 51 may be formed integrally with or fastened to each of the gripping elements 20 to extend horizontally therefrom, the arms 50 being of such length that when the gripping device is slid down the lifting standard into gripping engagement with a can disposed on the platform 10 the ends 51 of the arms 50 overlap the outside of the top of the can so that the top of the can cannot move outwardly of the carrier until the gripping device is raised on the standard a sufficient distance to raise the ends 51 of the arms 50 above the top of the can. Thus, the arms 50 serve as means auxiliary to the gripping elements 20 to hold the cans on the carrier against inadvertent and accidental displacement therefrom even in the event that the gripping engagement of the gripping element 20 has not been brought into firm enough engagement with a can to prevent the can from slipping thereunder.

When the cans have been released from the carrier the gripping device has been moved automatically by the action of spring 26 into its uppermost position on the standard and consequently the carrier, when unloaded, normally will be in condition to be loaded with cans. To load the carrier the bottom flanges of the cans are seated in the grooves 14 of the platform 10 so that the cans will stand close to the lifting standard, and the height of the standard adjusted to the proper height for the cans. The operator then, by pushing down on the finger piece 41 of the gripping device pushes the gripping device down on the lifting standard against the tension of the spring 26 until the gripping elements 20 have been pushed into tight gripping engagement with the tops of the cans. The operator then removes his hand from the finger piece 41 and the gripping device will remain in tight gripping engagement with the can, being automatically held against upward movement on the lifting standard by the transom latch which includes the plates 30 and 35. The attempt by spring 26 to force the gripping device to move upwardly on the lifting standard wedges the edge of the plate 35 where the tube 11 of the standard passes therethrough so tightly against the tube 11 as to prevent upward movement of the plate 35 on the tube 11 and consequently prevents movement of the gripping device upwardly on the tube 11. The user may then conveniently lift and carry the cans from place to place by means of the handle 12 which has been provided for the purpose. Incidentally, the nut part 60 of the handle and whereby it is secured

to the top of the tube 11 may serve as a stop abutment for the gripping device when moved upwardly on the tube 11 by the spring 26. When it is desired to unload the carrier the operator need merely place his finger underneath the finger portion 37 of the locking plate 35 and tilt the plate 35 toward horizontal position. By this movement of locking plate 35 the plate becomes disengaged from the tube 11 and the spring 26 forces the gripping device upwardly on the tube 11 and out of gripping engagement with the cans. The cans are then free to be lifted off of the carrier. The platform 10 is preferably made large enough so that the carrier will stand upright by itself when unloaded.

It is apparent from the above that a carrier may be made in accordance with this invention having simple, sturdy and durable construction comprising relatively few parts and is most easy and convenient to operate and to use. Also as stated hereinbefore our invention is not limited to a carrier suited for use only with two cans or other containers, but the carrier may be fashioned to accommodate a single can or container or to accommodate more than two cans or containers.

As many changes may be made in the above construction and as many different embodiments are possible without departing from the scope of this invention, it is to be understood that all matter contained in the above description and illustrated in the accompanying drawings be interpreted as illustrated and not in a limiting sense.

That which is claimed as new is:

1. In a carrier of the character described, the combination with the platform adapted to have the bottom of a container rest thereupon, a standard secured to extend upwardly from the platform and having a handle at its upper end whereby the carrier may be transported in suspended position, a container gripping device slidably mounted on the standard and adapted to be manually moved toward the platform into contact with the top of a container resting on the platform, of a compression spring surrounding the standard and positioned to bias said gripping device to slide toward the handle on the standard, releasable locking means carried by the gripping device and formed and positioned to freely slide on the standard when said gripping device is moved toward the platform against the pressure of said spring, and normally biased by said spring to grip the standard and hold the gripping device against movement toward said handle when manually exerted depressing pressure is released from said gripping device, and a finger-piece associated with said locking means to release its gripping contact with the standard and allowing said spring to move said gripping device toward the handle on said standard.

2. In an article carrier of the type described, the combination with a rod-like standard having a handle at its upper end by which said carrier may be carried in suspended position and having a laterally outward projecting ledge means at its low end upon which at least a portion of the bottom of an article may be supported; of an article gripping device including a sleeve slidably mounted upon the upper portion of said standard below said handle, a pair of superposed tiltably related plates transversely disposed and mounted in a recess in said sleeve and having apertures therein through which said standard slidably

extends, a compression spring within said sleeve and surrounding said standard, the lower end of said spring engaging a fixed abutment on said standard and its upper end bearing against the lowermost of said plates, gripping elements projecting laterally from said sleeve and adapted to overlie said ledge means and to be manually depressed against the action of said spring into gripping contact with the top of one or more articles supported on said ledge means and, when the depressing pressure is relieved, the tension of said spring causes said plates to tilt bringing the edges of their apertures in binding contact with said standard and holding the gripping device in its adjusted gripping position, and a finger-engageable tripping member operatively connected with said plates for reversely tilting said plates from their binding position, whereby said spring returns said gripping device to its normal non-depressed position.

3. In an article carrier of the type described, in combination with a rod-like standard having a handle fast to its upper end by which the carrier may be transported in suspended position and having a laterally outward projecting ledge means at its other end upon which at least a portion of the bottom of one or more articles may be supported; of an article gripping head slidably mounted on the upper portion of said standard below said handle for a limited reciprocating movement, between said handle and said article to be supported, and having resiliently yieldable gripping elements mounted thereon and adapted to overlie said ledge means and to be brought into gripping contact with the top of one or more articles supported on said ledge means, resilient means normally biasing said gripping head to a position toward the handle on the standard, and a latching mechanism comprising a pair of superposed plates loosely disposed in a recessed portion of said gripping head and each having an opening therein through which said standard extends, one of said plates being tiltably mounted on said gripping head and receiving the thrust from said

biasing means, when under tension, and the other plate being tiltably mounted on said first plate to bring the edges of the openings in said plates into frictional binding contact with the standard to hold said head in its article gripping position when manual pressure is relieved from said head, and a finger grip projecting from one of said plates by which it may be actuated to release the binding grip of both of said plates from said standard and allow the biasing means to remove said head out of article gripping position.

4. An article carrier as set forth in claim 3 wherein the gripping device comprises a sleeve surrounding said standard and having oppositely extending lateral arms and each arm having one of said resiliently yieldable article gripping elements mounted thereon and extending in a downwardly direction therefrom; and wherein said resilient biasing means is a compression spring within said sleeve and surrounding said standard, the lower end of said spring engaging a fixed abutment on said standard and its upper end bearing against one of said friction plates.

5. An article carrier as set forth in claim 1 wherein the standard is adjustably extensible and retractable to adapt the carrier to articles of different sizes.

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