Oct. 18, 1938. C. C. DAWSON 2,133,320

HOLDER FOR CANS AND THE LIKE

Filed March 23, 1936

FIG. 1.

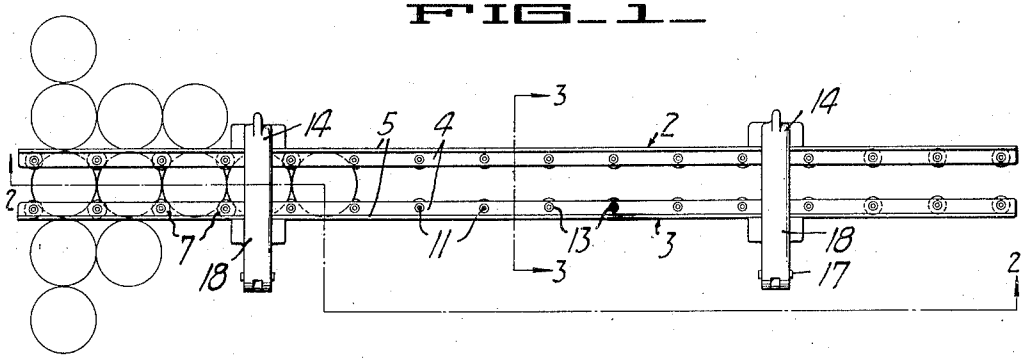


FIG. 2.

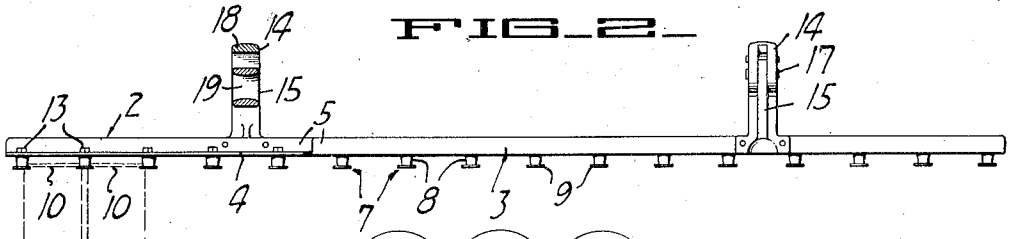


FIG. 6.

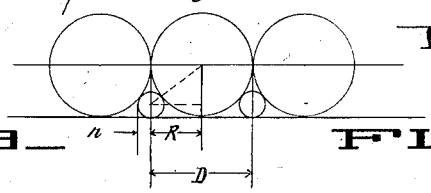


FIG. 3.

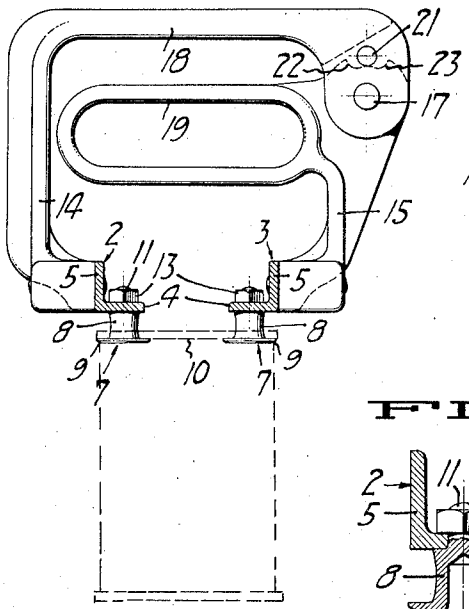


FIG. 4.

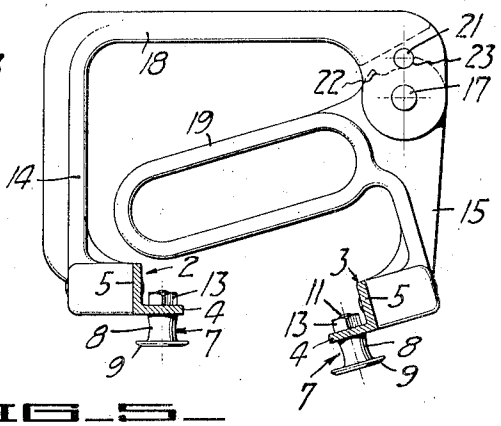
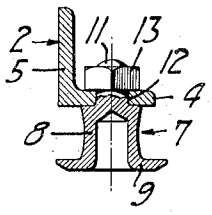


FIG. 5.



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HOLDER FOR CANS AND THE LIKE

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Application March 23, 1936, Serial No. 70,252

3 Claims. (Cl. 294—87)

The invention relates to a hand device by which an operator may readily grasp and lift, or otherwise handle, a whole row of cans or the like, such as when stacking the cans or inserting them into or withdrawing them from packing containers.

An object of the invention is to provide a device of the character described which may be used with equal facility for picking up a row of cans, whether such row is in the middle or at an edge of a multiplicity of parallel contiguous rows of cans.

Another object of the invention is to provide a device of the character described which may readily enter the interstices between contacting cans even when the cans are lined up against a side wall of a packing container, or the like.

A further object of the invention is to provide a lifting device of the nature described which will insure gripping each can in a firm and positive manner.

A still further object of the invention is to provide a device for lifting a complete row of cans, in which the latter will be so supported therein as to bring the center of gravity of each of the cans in direct vertical alignment with the central portion of the handles for supporting the device.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawing:

Figure 1 is a plan view of the device with several cans therein.

Figure 2 is a side view of the device;

Figures 3 and 4 are enlarged transverse sectional views showing the device in operative and in inoperative positions respectively.

Figure 5 is a further enlarged sectional view of one of the can engaging elements.

Figure 6 is a diagrammatic showing of the relative size and spacing of the can engaging projections.

The lifting device in the present embodiment of the invention comprises, a pair of parallel members 2 and 3 preferably in the form of angle-iron bars disposed in opposed relation and with one leg 4 of each extending inwardly toward the corresponding leg of the other. The inwardly extending legs lie in substantially horizontal position and at the lower end of the other legs 5, when the device is held in what is ordinarily the normal position of the device.

As above explained, the device is utilized generally for holding or lifting a plurality of cans in a row, that is, with the cans positioned side by side and with the rims thereof in substantially contactual relation. The members 2 and 3 are pivoted together for movement to and from each other and each of the members have provided thereon means for engaging the sides and rims of the cams when thus disposed, and the arrangement, form, and positioning of such means, to permit the device to be used for picking up or depositing a row of cans practically regardless of its position among other rows or against other objects, forms an important part of the present invention.

As will be clear from the drawing, the can engaging means comprises, a series of knobs or projections 7 which extend downwardly from and under the lags 4 of the members and such projections are each of a form and in a position to engage the sides of a can. Furthermore, the projections are spaced, as will be clear from Figure 1, so that each can will be engaged at two points at each side of the row and thus a four point engagement will be afforded each can when the latter is operatively held in the device.

Each projection, as here shown, comprises, a central shank 8 having a disc or laterally enlarged portion 9 at the lower extremity and a reduced threaded portion 11 at the upper end which extends through an aperture 12 in the leg 4 and is engaged by a nut 13 in the upper side of the leg. The disc 9 is arranged to engage the side wall of the can and the under-side 10 of the upper rim of the can, and it is important in the present embodiment that each of the discs on both members may be of such size, form and positioning that they may enter the interstices of adjoining cans in adjacent rows. By reason of this size, form and positioning of the discs on each member, the device may be lowered into engagement with a row of cans interposed between adjacent rows, and withdrawn from therebetween as easily as when the device is used to withdraw a row of cans where either one or both sides are free and exposed. As may be readily understood, this feature of being able to extract a row of cans from between other rows or between one row and a wall, is of utmost importance in connection with filling or removing cans

from a container in which the rows of cans may be stacked.

With reference to Figure 6 it will be seen that where a row of cylindrical cans is lined up against the wall of a container or the like, the largest size of the projections that may be used, the radius of which is indicated by the letter *r*, is equal to ⅛ of the distance between the projections longitudinally on the parallel members 4. In Figure 4 the radius of the cans is indicated by the letter R so that the spacing between the cans is equal to the diameter of the cans or as indicated as D. D then is the spacing between the projections. From this relation it may be shown that the largest radius of the circle of the projections cannot be over ⅛ of the spacing between the projections in order to enable such projections to enter between the space defined by the peripheries of two adjoining cans and the side of a wall. Stated in another way, the diameter of the projection circle cannot be larger than ¼ of the spacing between the projections.

For connecting the members together for the pivotal movement previously referred to, there are attached to the members **2** and **3**, arms **14** and **15**. These arms, as viewed from Figure 3, extend upwardly from the members, and in the case of arm **14** the latter extends as well transversely over to the arm **15** where it is connected to such arm by a pivot pin **17**. Each arm is designed to provide a handle, and for this purpose, the arm **14** is formed with a hand gripping portion **18**, while the arm **15** is provided with a handle portion **19** which underlies the portion **18** and extends reversely thereof. By referring to said Figure 3, it will be seen that the handle portions **18** and **19** are so arranged, that when the projections are operatively disposed about the cans, said portions will be positioned exactly centrally over the cans, and in this manner the operator can carry the cans in vertical position without any strain. Desirably two sets of handles are utilized so that both hands of the operator may be employed and the capacity of the device augmented by increasing the length of the members and the number of can engaging projections.

It will be understood, of course, that in order to draw the members together so that the projections of both members will engage the cans, the handle portions **18** and **19** are gripped and drawn one to the other, and conversely in order to release the cans when the latter are operatively held between the projections, the handle portion **19** is allowed to swing downwardly so that the members will move further apart. In this connection it is important to note that the pivotal point of the arms is so located that when the cans are operatively disposed in the device, such point will lie transversely or horizontally outwardly of the members and the space therebetween and thus upon release of the handle portion **19**, the associated member **3** will move downwardly and outwardly as well from under the rim of the can and thereby facilitate the disengaging operation of the projections from the can. Furthermore, in view of said relationship of the pivot, release of the member **3** will automatically occur upon release of the handle portion **19** whether the device is loaded or not. This is so because the member **3** and the projections thereon are the heaviest parts carried by the arm **15** and such parts, as above explained, will lie horizontally inwardly of the pivot when the members are disposed in can-holding relation.

Preferably the movement of the members relative to each other is limited, and as a means of accomplishing same, a stop **21** is provided on the arm **14** and is engageable with shoulders **22** and **23** on the arm **15**.

I claim:

1. In a device for lifting a row of cans in substantially contactual side by side relation, a pair of parallel bars having on each of them a plurality of can-engaging portions in opposed relation to the portions on the other member, handles fixed to the members and extending reversely and alongside of each other transversely over the space between the members, said handles being pivotally connected together whereby on swinging same apart one of said members will be moved away from the other, and said pivotal connection being so located relative to the members as to lie transversely outwardly of the space between the members when the cans are operatively held between said portions.

2. In a device for lifting a row of cans, a pair of can supporting parallel bars arranged to be normally held in horizontal and opposed spaced relation, handles extending from said bars and having substantially horizontally extending portions one over the other and both over said bars, said handles being pivoted together at a point without the space directly over said bars when in normal can-holding position, the underlying of said handle portions and the associated bar being of such weight and in such position with respect to the remaining portion of the associated handle that the bar will automatically move to can releasing position when said handle is released while in normal can-holding position.

3. In a device for lifting a plurality of cylindrical cans arranged in substantially contactual side by side relation in a row, parallel members secured for movement to and from the opposite sides of said row of cans, and spaced can engaging projections positioned along each of said members for engagement with the sides of said cans for gripping the same between said members, said projections being circular in cross section and of a diameter not exceeding approximately ¼ of the distance between said projections along said members.

CLIFFORD C. DAWSON.