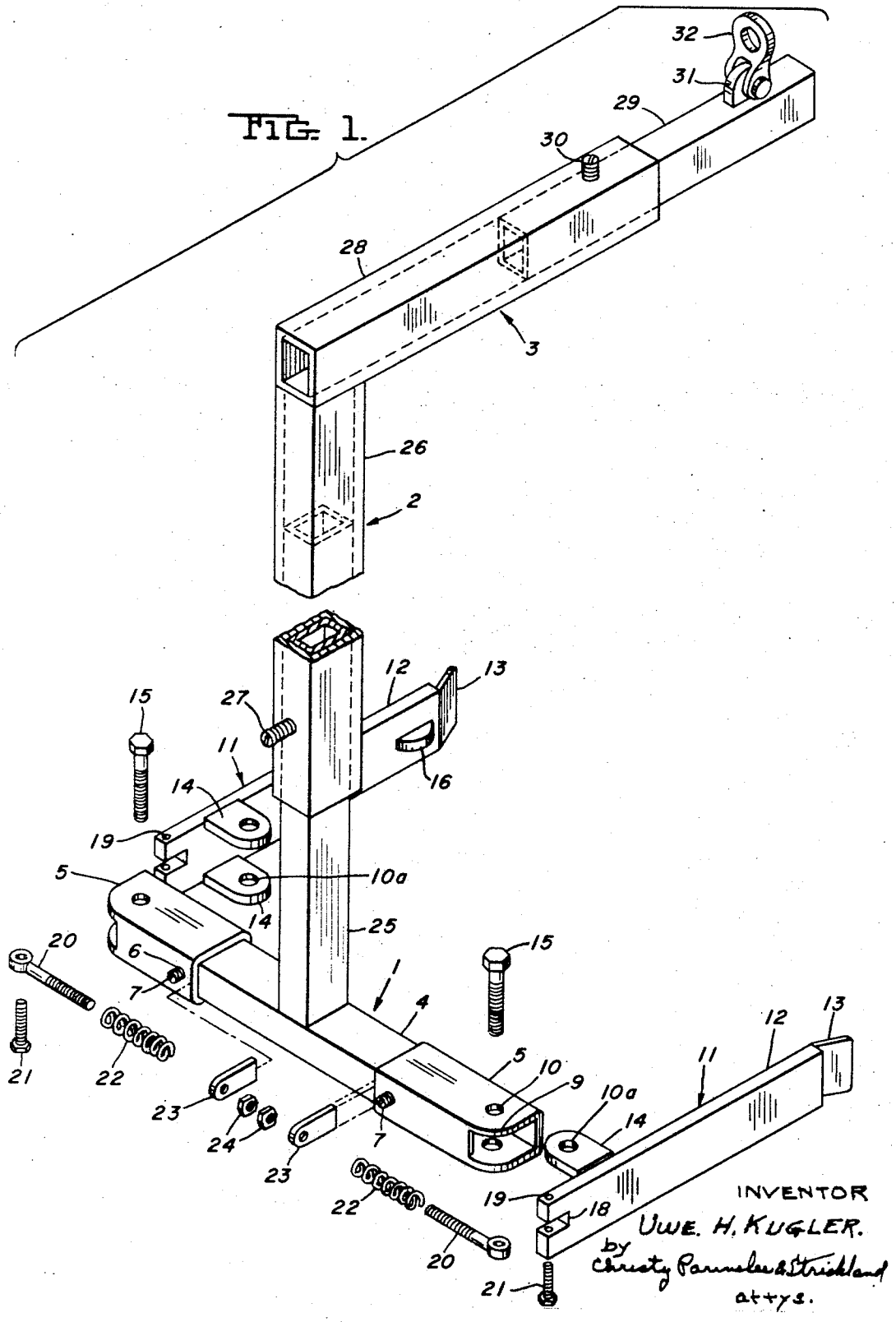
Feb. 11, 1969 U. H. KUGLER 3,427,066

LADING, CLAMPING AND TRANSPORTING DEVICE

Filed June 6, 1967 Sheet 1 of 2

FIG. 1.



INVENTOR
UWE. H. KUGLER.
by Christy Parmelee & Strickland
attys.

Feb. 11, 1969 U. H. KUGLER 3,427,066

LADING, CLAMPING AND TRANSPORTING DEVICE

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FIG. 4.

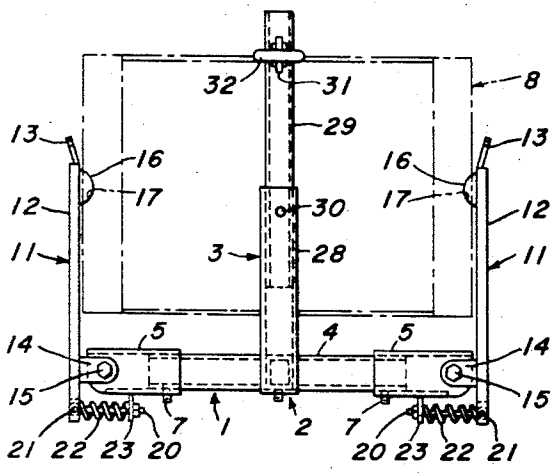


FIG. 5.

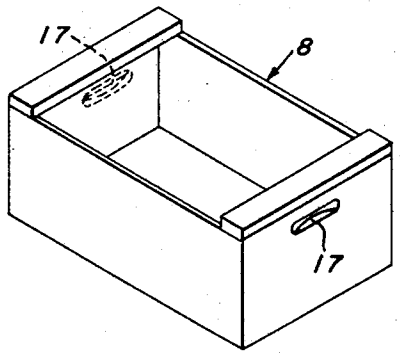


FIG. 2.

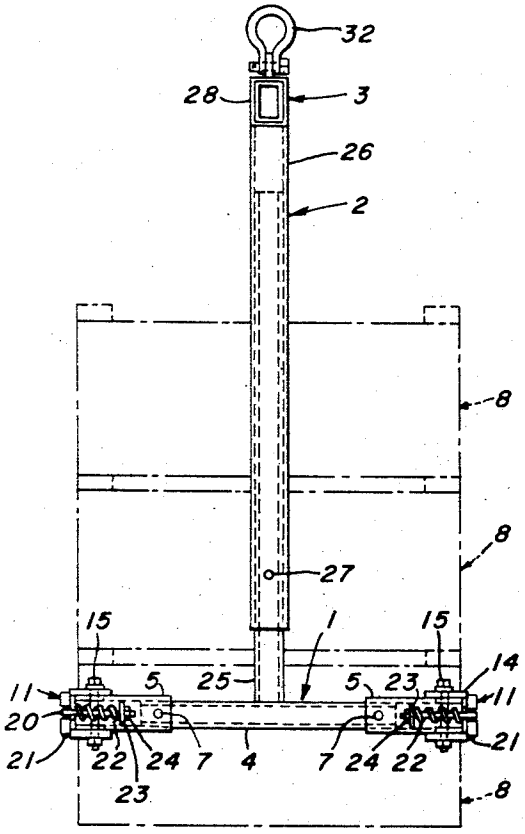
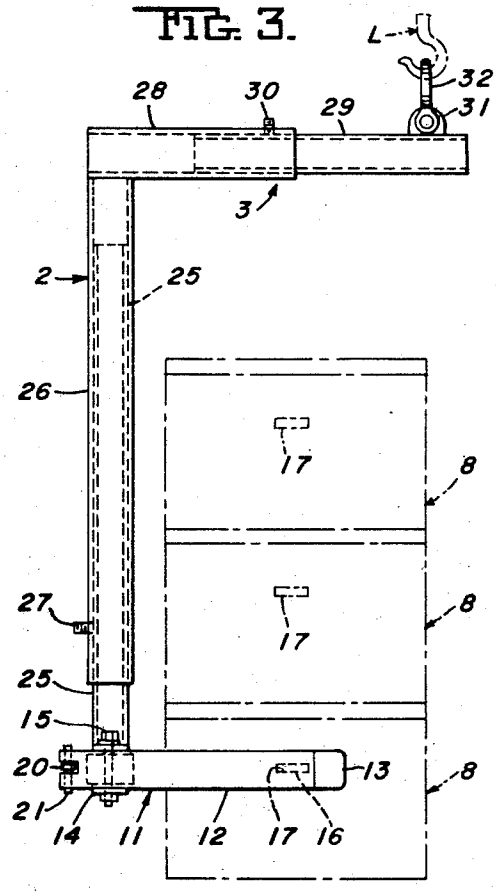


FIG. 3.



INVENTOR
UWE H. KUGLER.
by Christy Parmele & Strickland
attys.

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LADING, CLAMPING AND TRANSPORTING DEVICE

Uwe H. Kugler, Waterloo, Iowa, assignor to The Greater Iowa Corporation, Des Moines, Iowa, a corporation of Iowa

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U.S. Cl. 294—67 7 Claims
Int. Cl. B66c 1/28, 1/62

ABSTRACT OF THE DISCLOSURE

An adjustable clamping device for balancing and lifting varying sizes of stacks of crates loaded with fruit or other types of lading.

Background of the invention

The invention pertains to an adjustable balance material handling device for collecting stacked loaded containers of miscellaneous materials including fruits.

Summary of the invention

The object of the invention is to provide a device which is adjustable for engaging and transferring various sized loaded containers and includes means for manually adjusting the lifting arm thereof to the center of gravity of changing loads.

Description of drawing

FIG. 1 of the drawing comprises an exploded view of the adjustable lifting device; FIG. 2 shows an end elevation of the device engaging a plurality of stacked loaded containers; FIG. 3 shows a side elevation of the device of FIG. 2; FIG. 4 shows a plan view of the device of FIG. 2 and FIG. 5 shows one form of a crate to be loaded and handled by the device.

Description of a presently preferred embodiment of the invention

Referring now in detail to the drawing, the clamp is comprised of an adjustable base indicated generally as **1**, an adjustable post member indicated generally as **2** and an adjustable lifting arm indicated generally as **3**. The base member central portion **1** may be of any suitable construction, preferably a hollow rectangular metal member **4** having hollow correspondingly shaped end members **5** slidably received over each end thereof. Each member **5** is provided with one or more threaded openings **6** in an outer face thereof for reception of threaded members **7** to clamp the end members **5** to member **4** in any desired spacing to accommodate varying widths of the crate member indicated generally as **8** in FIGS. 2 to 5. The outer ends of each member **5** are rounded as at **9** and have alinged openings **10**. Crate gripping arms, indicated generally at **11** are comprised of suitable preferably rectangular members **12** having at one end outwardly diverging portions **13** and adjacent the opposite end vertically spaced portions **14** for embracing the free ends of members **5**. The portions **14** and members **5** are pivotally connected by suitable pivot pins **15**. Each crate gripping arm portion **12** has on its inner face and adjacent arm portion **13** suitable means such as a projection or dog **16** for engaging suitable recessed hand holds **17** on opposite sides of crate **8**. For retention of dogs **16** in the crate hand holds **17** each gripper arm **12**, outwardly of its connection to the members **5**, is provided with a suitable recess **18** and aligned openings **19** for reception of a compression spring arm **20** attached thereto by pivot pin **21**. Encircling the free end of arm **20** is a suitable compression spring **22** and abutment arm **23** which are retained in place by a suitable nut **24**. Abutment arms **23** are suitably secured to the adjacent members **5** and place springs **22** in compression when crate gripping arms **11** are deflected outwardly during initial engagement with crate **8**. After the projections **16** on gripper arms **12** are engaged with crate recessed hand holds **17**, the springs **22** retain the engagement until manually released.

Attached intermediate the ends of base members **4** is vertical member **25**, preferably a hollow rectangular tube which is telescoped into a correspondingly shaped upper portion **26**. The members **25** and **26** are maintained in fixed adjusted relation by one or more suitable screw threaded members **27**. Rigidly attached to the upper end of member **26** is the adjustable lifting arm **3** comprising the hollow outer metal rectangular portion **28** and an inner similarly shaped portion **29** telescopically received therein. Said members **28** and **29** being maintained in adjusted arrangement by one or more suitable threaded members **30**. Adjacent the outer end of member **29** is a rigidly secured member **31** to which is pivotally attached a link **32** for engagement by any suitable form of lifting mechanism L for transferring the clamp and its load to any desired location.

The fruit crate **8** as shown in FIG. 5 is a conventional form of crate, usually of wood, commonly employed by fruit growers to receive fruit as hand-picked from the trees. As the crates are filled they are carried to an end of a row of trees and stacked in groups of from 2 to 6 crates. Thereafter a suitable material handling device equipped with the clamp of the invention is driven to the situs of the stack and the said clamp is suitably positioned relative to the bottom crate of a stack for lifting and posiioning the crates on said device. A workman need only position arms **12** of the clamp relative to the bottom crate of a stack of crates and, after engaging the portions **13** of the clamp arms **12** with the crate, push the clamp towards the stack of crates to engage portions **16** of the clamp arms **12** with the bottom crate hand holds **17**. During this pushing movement of the clamp, the arms **11** are spread and move over the ends of the crate. During this spreading movement the springs **22** attached to the arms **11** are placed in compression and as the clamp arm portions **16** are aligned with the crate hand holds **17** the springs **22** move the portions **16** of arms **11** into engagement with said hand holds **17**. To release the clamp from a stack crates, the arms **12** are disengaged by pulling outward on the portions **13** thereof.

The crate **8** of FIG. 5 while of conventional form, may vary in height, width and length as well as the number in a stack to be lifted by the clamping device of the invention. Hence the clamp of the invention is adjustable to accommodate these variations.

I claim:

1. A lading, clamping and transporting device comprising

(a) a rigid longitudinally extending base member having at opposite ends thereof a pivotally mounted rigid forwardly extending spring-loaded lading embracing member,

(b) a rigid vertically extending member fixed to said base member intermediate the ends thereof,

(c) a rigid top member fixed to and extending forwardly from said vertically extending member, and

(d) means on the forward end of said top member for engagement by a suitable lifting and transporting device.

2. The device as defined in claim **1**, wherein each of said pivotally mounted lading embracing members are provided with a forwardly extending outwardly diverging portion for initially engaging the lading to be re-

ceived between said pivotally mounted lading embracing members.

3. The device as defined in claim 1, wherein said base and vertical members are comprised of at least two telescoping portions for adjusting to various sizes of lading to be handled thereby.

4. The device as defined in claim 1, wherein said rigid top member is adjustable in length to balance varying sizes of lading being handled thereby.

5. The device as defined in claim 1, wherein each said base member pivotally mounted lading embracing members have intermediate the ends thereof means for engaging suitably shaped means on the lading for suspending the lading solely by engagement of said means.

6. A material clamping and transporting device, comprising

(a) a rigid base member having at each end thereof a pivotally mounted rigid lading embracing member extending forwardly therefrom,

(b) a rigid vertically extending member fixed to said base member intermediate the ends thereof,

(c) a rigid top member secured to and extending forwardly from said vertically extending member,

(d) means on the forward end of said top member for engagement by a suitable lifting and transporting device, and

(e) each said pivotally mounted lading embracing member having a forward diverging portion and provided with a rearwardly disposed spring means resisting lateral displacement of the lading embracing members.

7. The device as defined in claim 6, wherein said rigid base and vertical members are comprised of at least two telescoping members for adjusting to different sizes of lading handled thereby.

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EVON C. BLUNK, *Primary Examiner.*

R. D. GUIOD, *Assistant Examiner.*

U.S. Cl. X.R.

294—106