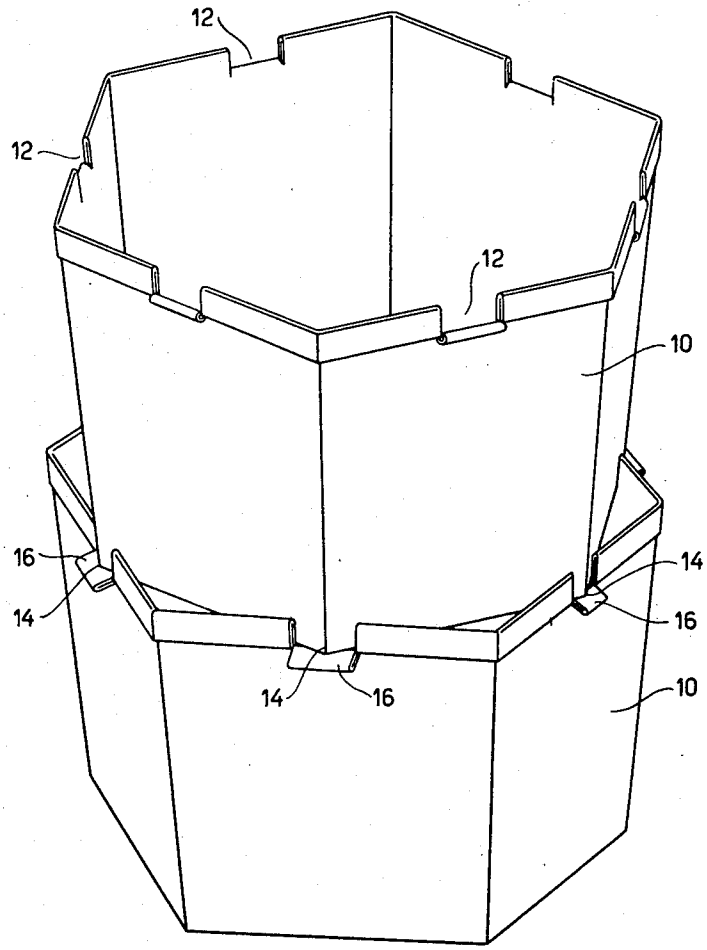
April 17, 1956 H. S. V. JÄRUND 2,742,181

CONTAINERS THAT CAN BE TELESCOPICALLY INSERTED, INTO EACH OTHER AND AT THE SAME TIME BE STACKED UPON ONE ANOTHER

Filed Oct. 7, 1952 5 Sheets-Sheet 1

Fig. 1



Inventor

Harry Sigurd Valdemar Järund

Pierce, Scheffler & Parker

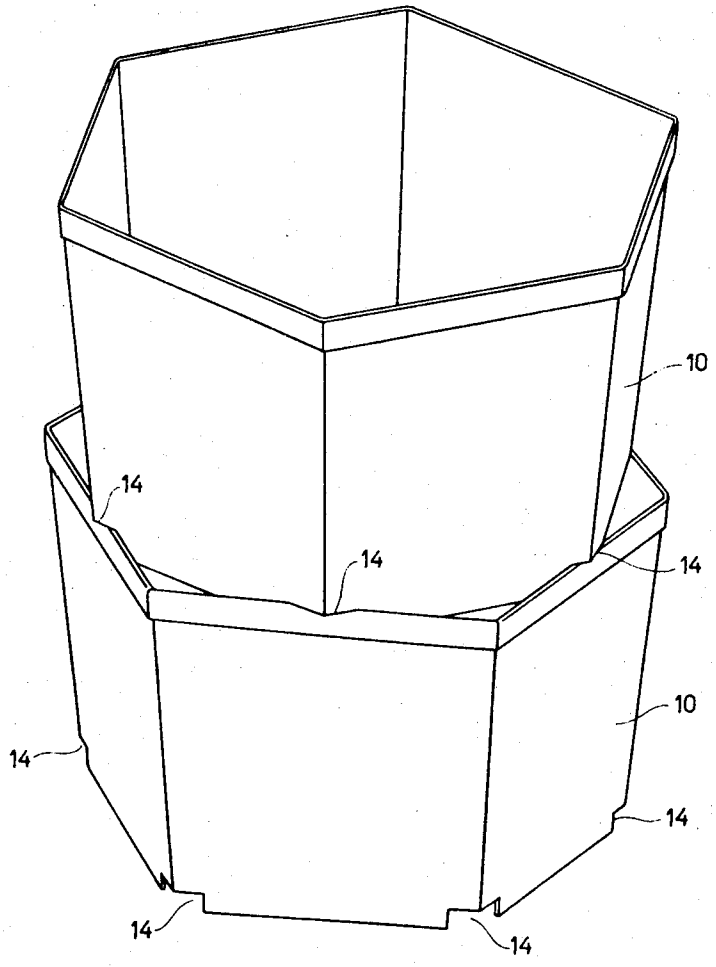
Attorneys

April 17, 1956 H. S. V. JÄRUND 2,742,181

CONTAINERS THAT CAN BE TELESCOPICALLY INSERTED, INTO EACH OTHER AND AT THE SAME TIME BE STACKED UPON ONE ANOTHER

Filed Oct. 7, 1952 5 Sheets-Sheet 2

Fig. 2



Inventor

Harry Sigurd Valdemar Järund

Pierce, Scheffler & Parker

Attorneys

April 17, 1956 H. S. V. JÄRUND 2,742,181

CONTAINERS THAT CAN BE TELESCOPICALLY INSERTED, INTO EACH OTHER AND AT THE SAME TIME BE STACKED UPON ONE ANOTHER

Filed Oct. 7, 1952 5 Sheets-Sheet 3

Fig. 3

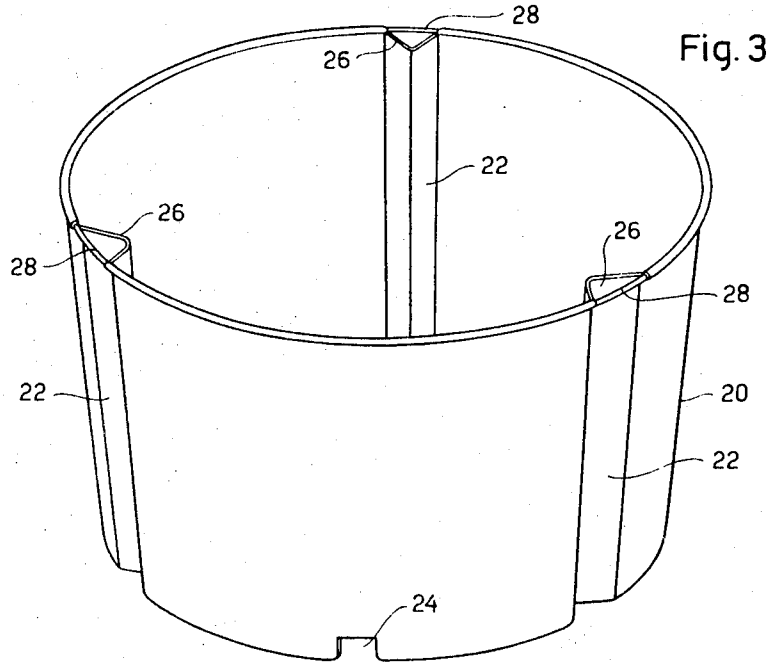
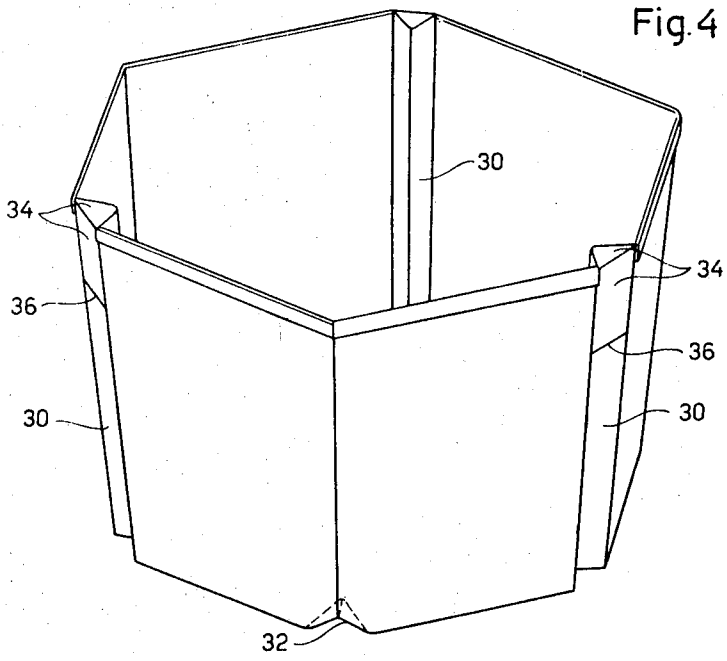


Fig. 4



Inventor

Harry Sigurd Valdemar Järund

Pierce, Scheffler & Parker

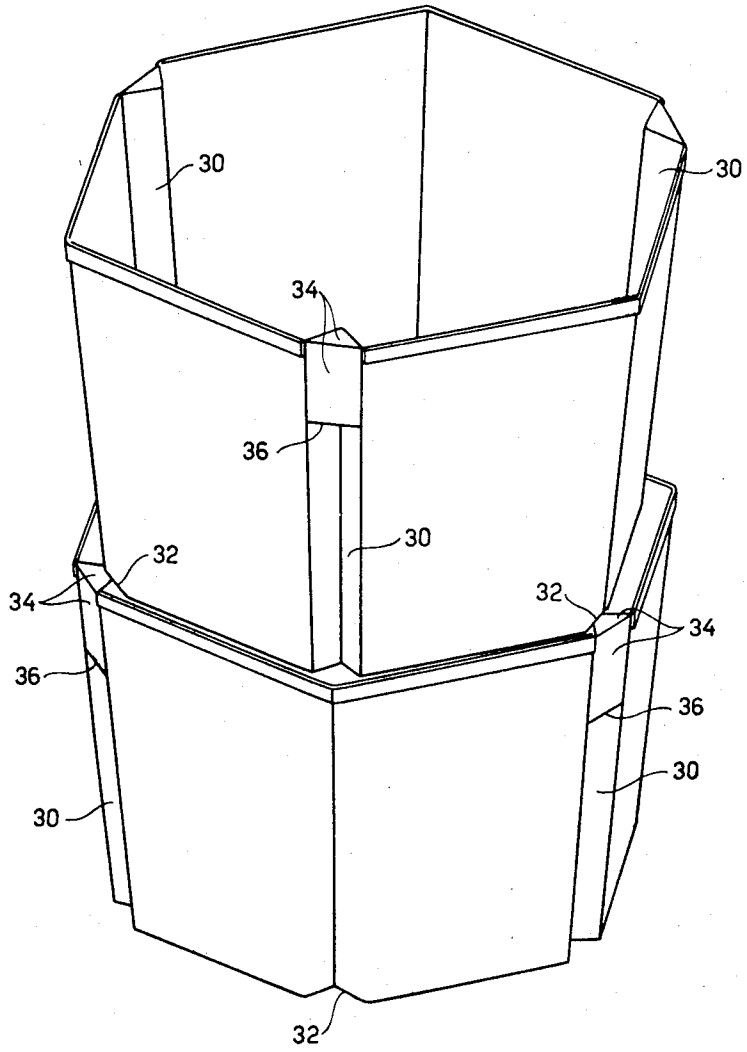
Attorneys

April 17, 1956 H. S. V. JÄRUND 2,742,181

CONTAINERS THAT CAN BE TELESCOPICALLY INSERTED, INTO EACH OTHER AND AT THE SAME TIME BE STACKED UPON ONE ANOTHER

Filed Oct. 7, 1952 5 Sheets-Sheet 4

Fig. 5



Inventor

Harry Sigurd Valdemar Järund

Pierce, Scheffler & Parker

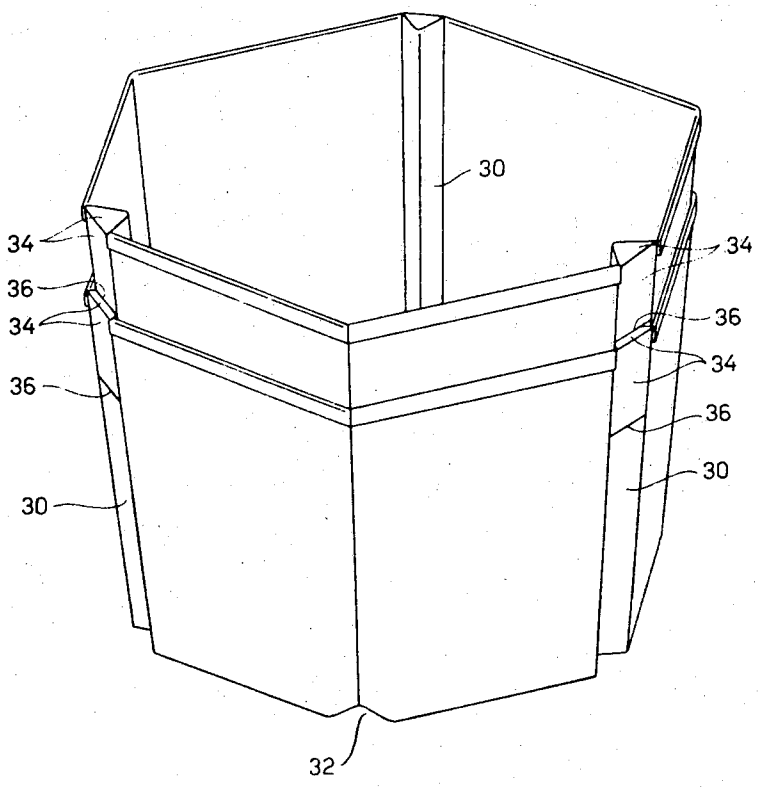
Attorneys

April 17, 1956 H. S. V. JÄRUND 2,742,181

CONTAINERS THAT CAN BE TELESCOPICALLY INSERTED, INTO EACH OTHER AND AT THE SAME TIME BE STACKED UPON ONE ANOTHER

Filed Oct. 7, 1952 5 Sheets-Sheet 5

Fig. 6



Inventor

Harry Sigurd Valdemar Järund

Pierce, Scheffler & Parker

Attorneys

United States Patent Office 2,742,181 Patented Apr. 17, 1956

2,742,181

CONTAINERS THAT CAN BE TELESCOPICALLY INSERTED INTO EACH OTHER AND AT THE SAME TIME BE STACKED UPON ONE ANOTHER

Harry Sigurd Valdemar Järund, Lund, Sweden, assignor, by mesne assignments, to Hermorion Ltd., Toronto, Ontario, Canada

Application October 7, 1952, Serial No. 313,388

Claims priority, application Sweden October 11, 1951

2 Claims. (Cl. 220—97)

This invention relates to such containers which, on the one hand, can be stacked upon each other in such fashion that when they are filled with material the weight of the containers on top and their content will not rest upon the material contained in the containers underneath and, on the other hand, when empty can be inserted one into the other so as to take up less space, e. g. in return shipment or storage.

The container according to this invention is chiefly characterized by its side surfaces slanting upwards and outwards and by having such regularly profiled side walls as, when the profile lines of two containers are parallel, will permit one container to be inserted into the other, while in another position the bottom profile of one container will intersect the top edge profile of another in at least three spots symmetrically distributed along its circumference, so that the containers can be stacked upon one another.

According to a simple embodiment the containers in horizontal cross-section have the shape of a regular polygon with at least six sides, the slant of the sides being such in proportion to the height of the containers that the diagonal between two opposite corners in the bottom of each container is so much bigger than the distance between two opposite sides in the top surface of the container, that one container safely can rest upon the other if the two containers are placed so in relation to each other that the bottom corners of the top container come between the corners on the top surface of the container underneath. In order to stabilize the stacks of containers resting upon each other one can either provide the top edges with notches between the corners or make notches on either side of the corners of the bottom edge at least in those spots where the bottom edge will have to rest against the top edge of a container underneath.

According to another realization the containers can be provided with at least three grooves running from bottom to top edge and evenly distributed along the circumference of the horizontal cross section of the container. Between the grooves the walls of the container can be rounded or plain. The grooves must be of such depth that a circle drawn over the "points" of the grooves on the top surface of the container will be smaller than the outer circumference of the bottom. Even in this case it is advisable to provide the bottom edge with notches fitting into the top edge of the grooves in order to avoid sliding when stacking and thus make the stacks more solid. When turning the containers so that the grooves of one container are axially aligned with those of another container, the containers can be inserted into each other telescope fashion.

In the following the invention will be described more in detail with reference to the drawings attached, upon which a few different forms of execution are shown as examples.

Fig. 1 shows two hexagonal containers with slanting side surfaces and notches in the top edges to guarantee against sliding aside, stacked upon one another.

Fig. 2 shows that modification of the arrangement according to Fig. 1, where the notches have been made in the bottom edges of the containers so that the bottom edges between the corners form downward projections.

Figs. 3 and 4 show two different containers with grooves running from bottom to top edge, Fig. 3 being a container with a principally circular horizontal cross section and Fig. 4 a container with a horizontal cross section in the shape of a regular hexagon with grooves on every other of the vertical edges.

Fig. 5 shows two containers according to Fig. 4, stacked one upon the other and

Fig. 6 finally shows two containers according to Fig. 4, one inserted into the other.

In the realization shown in Fig. 1, reference numeral **10** represents a hexagonal container, with notches **12** carried out in the top edge between corners, the bottom corners **14** of another container fitting into these notches when stacking several containers upon each other. The flaps formed by the notches **10** can even be formed as handles for carrying **16**, as is seen on the lower container on Fig. 1.

The realization shown on Fig. 2 as already mentioned mainly differs from the previous realization inasmuch as the notches **12** according to Fig. 1 have been replaced by dents in the bottom corners **14**. It is of course even possible to shape the corners as feet protruding downwards from the bottom edge, which when stacked find support against the outer side of the top edge of the container underneath, exactly between two corners of its top edge.

Fig. 3 shows a slightly conical container with circular horizontal cross-section, its side wall **20** provided with three symmetrically arranged and inwardly extending wedge-shaped grooves **22** going from bottom to top edge. Midway between grooves **22** notches **24** have been made on the bottom edge, into which the upper edge corners **26** of the notches have to be fitted when stacking several containers upon one another. It will be wise to make the notches **24** wedge-shaped at least at the top end so that the edge corners **26** of the wall portions forming the grooves **22** can be fitted into them more easily when stacking. To make the construction more solid the top edge can be fastened over a ring of wire **28** or suchlike.

By fixing the conicity of the container on Fig. 3 so in proportion to its height that a circle drawn through the points of the edge angles **26** certainly will be smaller than the bottom circumference, which again is smaller than the circumference of the top edge of the container, it will be possible to stack several containers upon one another by alternatively turning the containers so that the notches **24** upon the container on top enclose an edge angle **26** each on the container underneath. At the same time it will be possible to insert several containers into each other telescope fashion if they are set so that the notches **22** coincide.

Fig. 4 shows the practical adaptation of the principle illustrated on Fig. 3 on a hexagonal container. The grooves **30** running from bottom to top edge are here provided at every other of the vertical edges of the container, while the others have notches or dented corners **32** at the bottom corners, intended to enclose the top ends of the grooves **30** when stacking several containers upon each other. The top surface of the grooved vertical edges **22** and a top part of their vertical openings may be fortified by covering them with welded plates **34**, the top of which will make the top edge of the notches **32** fit in better when stacking according to Fig. 5 while the bottom edges **36** can form a handle when moving the containers and serve as a buffer when inserting the containers into each other according to Fig. 6, thus limiting

the insertion so as to make it easier to take the containers apart again.

The containers described above and shown on the drawings can to an advantage be used as transport containers for tetrahedronal shaped packages as described in my prior patent application Ser. No. 280,502 filed April 4, 1952. In this case the realizations shown in Figs. 4–6 are particularly suitable as the grooves on the edges keep the tetrahedrons in place and support the tetrahedrons in the bottom layer when the next layer is placed upon them, and the form of the containers makes it possible to make almost complete use of e. g. a loading platform when ranging containers or stacks of containers upon it.

What is claimed is:

1. Containers of identical construction which can be inserted into each other as well as stacked upon one another, characterized by their sides slanting from the bottom upwards and outwards and the side walls having a regular profile with three uniformly spaced and inwardly extending wedge-shaped indentations, whereby one container can be inserted into the other, said container being symmetrical with respect to intersecting planes passed medially through the said indentations, the upper ends of side walls at said indentations projecting inwardly to define a circle of less diameter than the smallest circle

by which the bottom of a container may be circumscribed, and means limiting the extent to which said containers are telescoped into each other upon longitudinal alinement of said indentations of the containers; said limiting means comprising plates secured across the outer sides of the top portions of said indentations.

2. Containers according to patent claim 1, characterized by their profiles having the form of regular polygons with at least six sides, the slant of the walls having such relationship to the height that the longest diagonal of the bottom profile will be much bigger than the distance between two opposite edges in the top limit surface of the container, and said indentations are provided at alternate side edges of the polygonal shaped containers.

References Cited in the file of this patent

UNITED STATES PATENTS

1,238,092	Blass	Aug. 28, 1917
1,469,644	Kobbe	Oct. 2, 1923
1,469,645	Kobbe	Oct. 2, 1923
2,655,283	Moldt	Oct. 13, 1953

OTHER REFERENCES

Materials and Methods, vol. 32, issue 4, page 32; published October 1950.