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FOLDABLE SUPPORT CASE

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FIG. 1

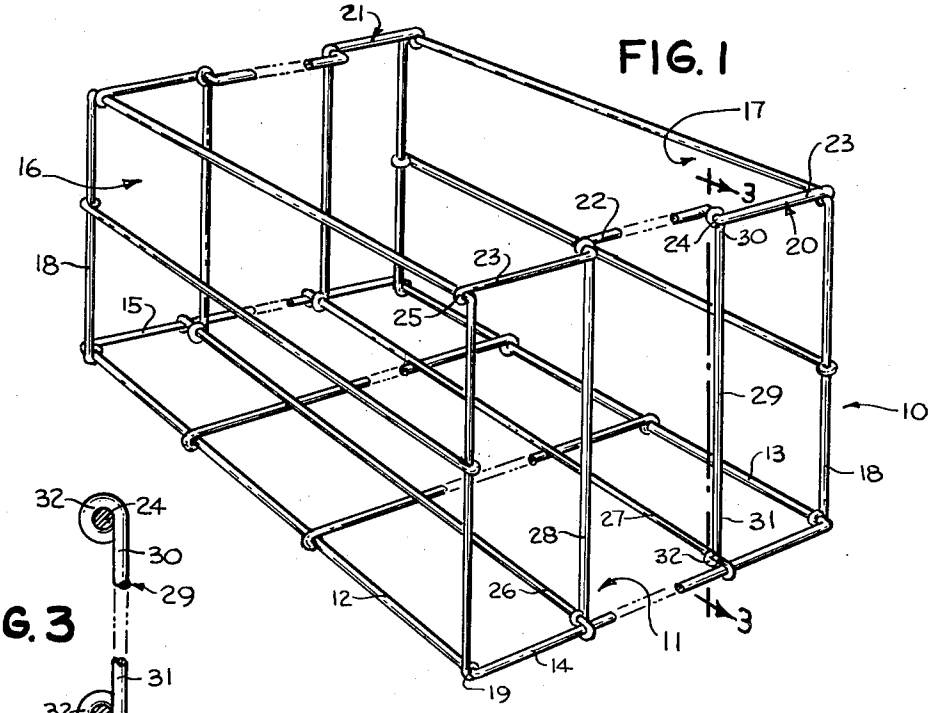
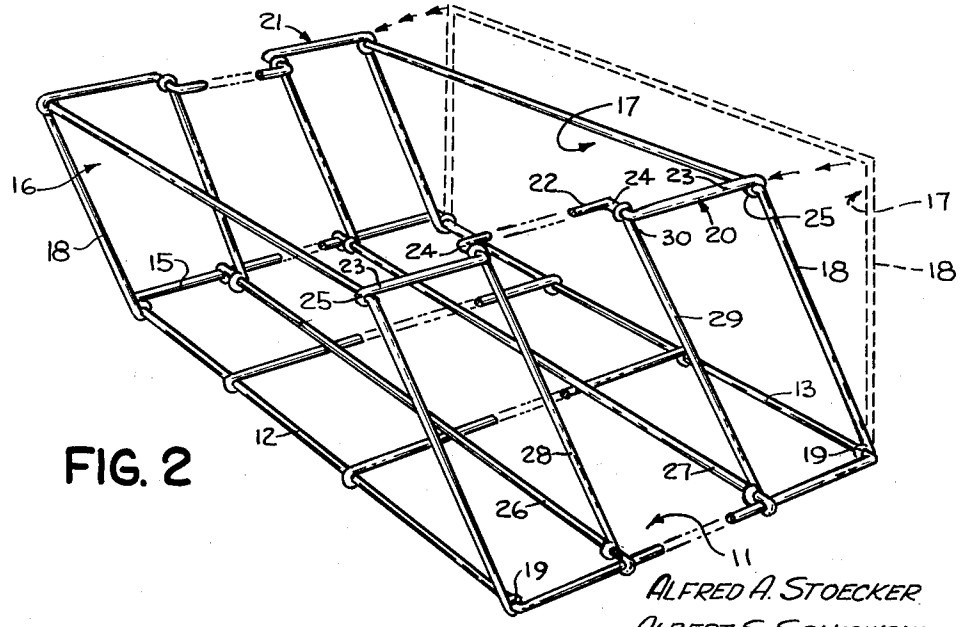


FIG. 3

FIG. 2



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FOLDABLE SUPPORT CASE

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2 Claims. (Cl. 220—6)

This invention relates to foldable support cases, and more particularly to a foldable support case that does not have divider partitions separating the case into compartments.

In order to provide support for a paper carton or the like during operation to fill the same with ice cream or other fluent material, it is desirable to provide a wire frame or support case within which the carton can freely be inserted. A case for this purpose cannot have any divider partitions which separate the case into compartments since such divider partitions would engage the bottom of the paper carton upon its insertion into the case before it is deep enough in the case for the wire frame to properly support the sides of the paper carton. Support cases of the class described are usually made of wire constructed so as to fold into an almost flat condition when not in use. The sides of the case usually pivot about parallel axes on opposite sides of the bottom of the case with front and rear edge wires hingedly connecting the sides for causing them to remain parallel as the case is collapsed. Where the front and rear wires are relatively long, as for example, for use with a rectangular carton, it is desirable to reinforce the front and rear wires about midway of their length. To provide for the folding feature, one end of each reinforcing rod must be pivoted to either the front or rear wires as the case may be. The usual procedure is to provide a pinned connection, which is, of course satisfactory, but expensive to fabricate. It is therefore an object of this invention to provide a hinged connection that does not rely upon the use of an extra pin.

As a feature of this invention whereby the object thereof is achieved, the mid portion of the front and rear wires is made U-shaped with the legs thereof extending normal to the ends of the wires and parallel to the axes about which the wires are themselves pivotal to the sides. One end of each reinforcing rod is hinged to the bottom. The other end is bent into a circle about a leg on the mid-portion of the wire whereby a hinged connection is formed without the use of an extra pin, and without providing a rod connecting the front and rear wires intermediate their ends.

The more important features of this invention have thus been outlined rather broadly in order that the detailed description thereof that follows may be better understood, and in order that the contribution to the art may be better appreciated. There are, of course, additional features of the invention that will be described hereinafter and which will also form the subject of the claims appended hereto. Those skilled in the art will appreciate that the conception upon which this disclosure is based may readily be utilized as a basis for designing other structures for carrying out the several purposes of this invention. It is important, therefore, that the claims to be granted herein shall be of sufficient breadth to prevent the appropriation of this invention by those skilled in the art.

FIGURE 1 shows a foldable support case made in accordance with this invention. The case is shown in its upright or erected postion. The breaks in the wires are used to indicate that the plan view of the case is rectangular.

FIGURE 2 shows how the support case of FIGURE 1 can be pivoted out of its upright position.

FIGURE 3 is a section taken along the line 3—3 of FIGURE 1.

Referring now to FIGURE 1, foldable support case 10 is shown with bottom 11 formed of wire, with parallel sides 12, 13, and front and rear portions 14, 15 respectively. Side walls 16, 17 are also formed of wire, and are U-shaped. Legs 18 of the side walls are bent into circles 19 around parallel sides 12, 13 to form a hinged connection therewith. In this manner the side walls 16, 17 are pivotable on bottom 11 about spaced parallel axes.

Front edge rod 20 and rear edge rod 21 are similar so that a description of rod 20 will suffice. Rod 20 has mid-portion 22 and remote ends 23. Mid-portion 22 is U-shaped having legs 24 which are normal to ends 23 and parallel to sides 12, 13 of bottom 11. Ends 23 are bent into circles 25 around the top edges of sides 16, 17 at the front of said case. The remote ends of rear rod 21 are bent into circles around the top edges of sides 16, 17 at the rear of said case as best seen in FIGURE 1. With this construction sides 16, 17 remain parallel as they pivot on bottom 11 toward a folded position as illustrated in FIGURE 2.

Bottom 11 includes a pair of bottom rods 26, 27 which are rigidly connected to front and rear portions 14, 15 of the bottom directly beneath legs 24 when the case is in upright position. These bottom rods are parallel to sides 12, 13. To support the mid-portion 22 of rod 20, reinforcing rods 28, 29 are employed. Since they are identical, description of one rod is sufficient, it being understood that like reinforcing rods are used with rear rod 21 as seen in the drawing.

Rod 29 has opposite ends 30, 31. Each end is bent into parallel circles 32. Circle 32 at one end 30 or rod 29 surrounds leg 24 of rod 20 and circle 32 at the other end 31 of rod 29 surrounds rod 27 as best shown in FIGURE 3. This construction permits case 10 to be folded as shown in FIGURE 2. The use of the circled ends of the reinforcing rods in cooperation with the legs of the U-shaped portions of the top edge wires entirely eliminates the need for a pinned connection, thereby simplifying construction and maintenance.

In operation, a paper carton or the like whose plan section would be slightly smaller than the bottom 11 of case 10 can easily be inserted into the erect case, the sides of the carton serving to maintain the case in erect position during transport on a conveyor to a filling station. Because this use of the case prevents the use of top rods (similar to bottom rods 26, 27) to connect front and rear rods 20, 21, a pinned connection or the like has heretofore been necessary when reinforcing rods are used. Those skilled in the art will appreciate that the lack of top rods in this invention does not preclude the use of an extremely simple pivot or hinge connection that is less complex than a pinned connection. After completion of the filling operation, removal of the carton can be effected, and case 10 can then be folded as shown in FIGURE 2.

What is claimed is:

1. A foldable support case for holding a load comprising: a rigid bottom adapted to support the bottom of said load, said bottom including spaced parallel bottom front and rear edge rods of wire that are rigidly connected to spaced parallel bottom side edge wire rods to define a rigid generally rectangular plane, said bottom further including at least two support rods of wire parallel to said bottom side edge wire rods and rigidly connected to said bottom front and rear rods for securely supporting the bottom of said load, a pair of side walls each of which is formed from a wire rod bent into an inverted U-shape that has vertical parallel legs connected by a substantially horizontal portion, the free ends of the legs of one side being hingedly connected to one side edge rod of said bottom and the free ends of the legs of the other side

being hingedly connected to the other side edge rod of said bottom so that the horizontal portions of said sides are parallel to the side edge rods of said bottom and are pivotal respectively thereabout, a pair of top front and rear edge rods of wire each having a mid-portion and remote ends, one remote end of said top front rod being hingedly connected to the horizontal portion of one side and the other remote end of said top front rod being hingedly connected to the horizontal portion of the other side so that said top front rod is parallel to said bottom front edge rod, one remote end of said top rear rod being hingedly connected to the horizontal portion of said one side and the other remote end of said top rear rod being hingedly connected to the horizontal portion of said other side so that said top rear edge rod is parallel to said bottom rear edge rod, said top front and rear edge rods maintaining said sides substantially parallel when the latter pivot about said bottom side edge rods, each mid-portion of said top front and rear front edge rods being U-shaped with the legs thereof extending normal to the remote ends of the last mentioned rods and parallel to said support rods, the legs of said mid-portions being directly over said support rods when said sides are substantially normal to the plane of said bottom, and a reinforcing rod extending from each leg of said mid-portions of said top and rear front edge rods to the support rod thereunder and hingedly connecting the last mentioned leg to the last mentioned support rod.

2. A foldable support case for holding a load comprising: a rigid bottom adapted to support the bottom of said load, said bottom including spaced parallel bottom front and rear edge rods of wire that are rigidly connected to spaced parallel bottom side edge rods of wire to define a rigid generally rectangular planar frame, said bottom further including a plurality of support rods of wire at least two of which are parallel to said bottom side edge rods and rigidly connected to said bottom front and rear edge rods for securely supporting the bottom of said load, a pair of side walls each of which is formed from a wire

rod bent into an inverted U-shape that has parallel legs connected by a substantially straight horizontal portion, the free ends of the legs of one side being hingedly connected to one side edge rod of said bottom and the free ends of the legs of the other side being hingedly connected to the other side edge rod of said bottom so that the horizontal portions of said sides are parallel to the side edge rods of said bottom and are respectively pivotal thereabout, a pair of top front and rear edge rods of wire each having a mid-portion and remote ends, one remote end of said top front edge rod and said top rear edge rod being hingedly connected to the horizontal portion of one side wall and the other remote end of said top front edge rod and said top rear edge rod being hingedly connected to the horizontal portion of the other side wall so that the top front and rear edge rods are parallel to the bottom front and rear edge rods and maintain said sides substantially parallel when they pivot about said bottom side edge rods, each mid-portion of said top front and rear edge rods being U-shaped with the legs thereof extending normal to the remote ends of the last mentioned rods and parallel to said two support rods, the legs of said mid-portions being directly over said support rods when said sides are substantially normal to the plane of said bottom, and a reinforcing rod having remote ends bent into circles and extending from each leg of said mid-portions to the support rod thereunder, the circle at one end of each reinforcing rod respectively surrounding a leg of said mid-portions and the circle at the other end of each reinforcing rod respectively surrounding the support rod thereunder.

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