United States Patent [19]

Beretta

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[54] **CONTAINERS MADE IN METALLIC WIRES**

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[52] **U.S. Cl.** **220/6;** 220/19; 206/503

[51] **Int. Cl.²** **B65D 7/24**

[58] **Field of Search** 220/6, 23.83, 19, 206/503, 513

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[57] **ABSTRACT**

A collapsible metal wire container comprising a base on which side walls are articulated. Upper supports are provided on the upper external post of at least two opposed articulated side walls and lower supports are provided on the exterior of the base. Feet are provided on the base for resting on supports of an identical container. In use the articulated walls may be folded onto the box in which case the feet rest on the lower supports of the identical container or the articulated walls may be erect in which case the feet rest, or the upper supports of the identical container.

8 Claims, 11 Drawing Figures

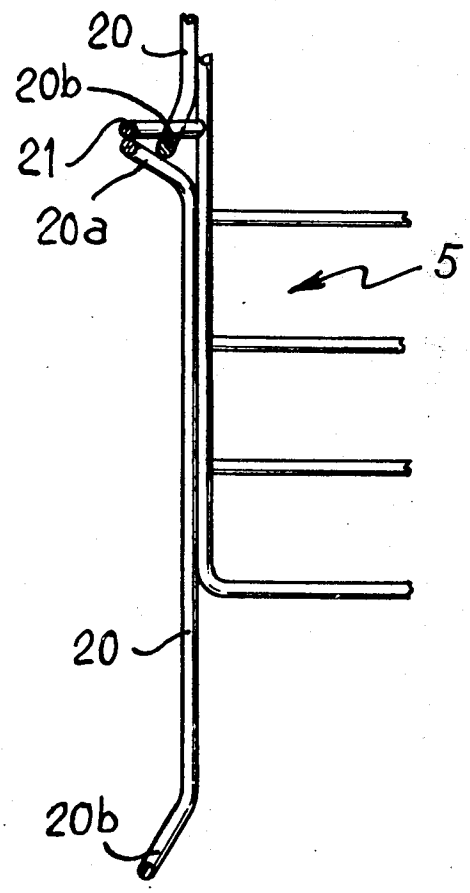


FIG. 1

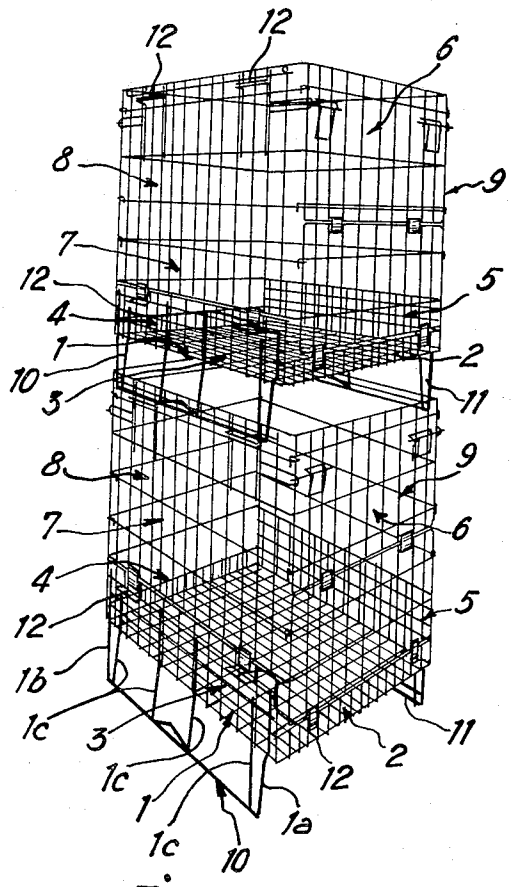


FIG. 2

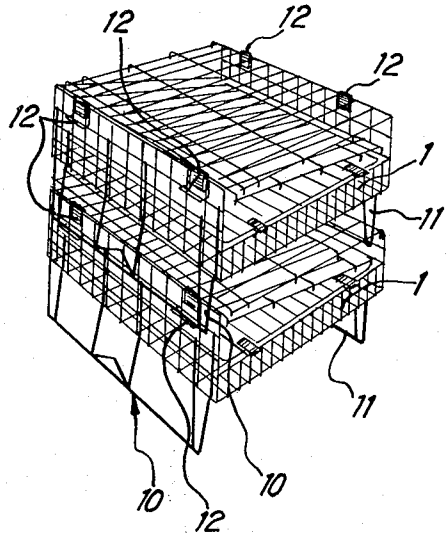


FIG. 3

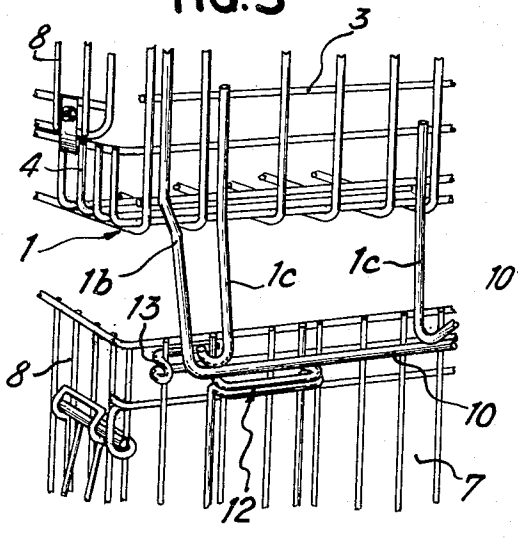


FIG. 4

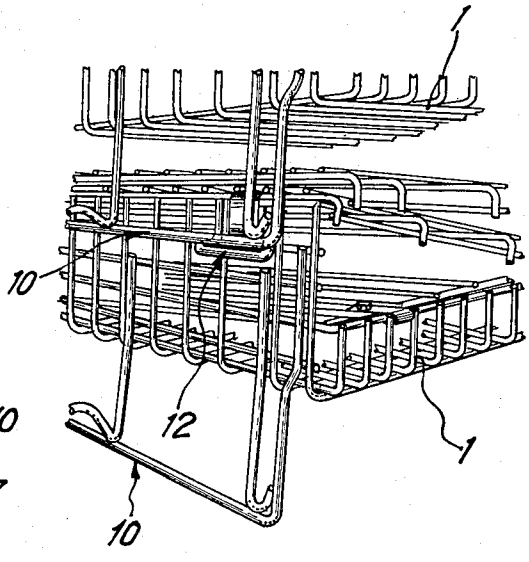


FIG.5

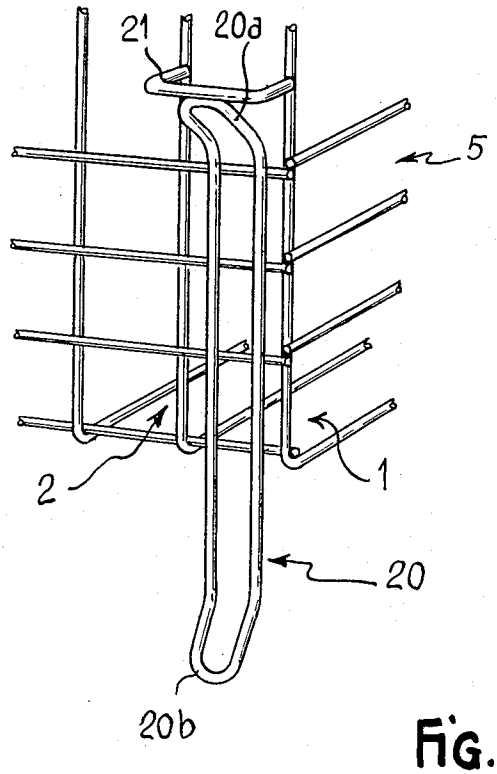


FIG.6

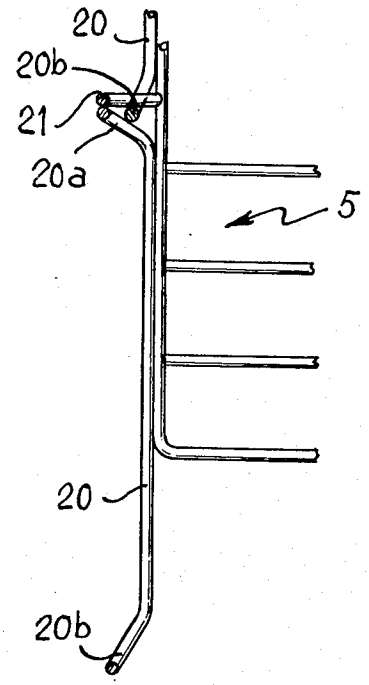


FIG.7

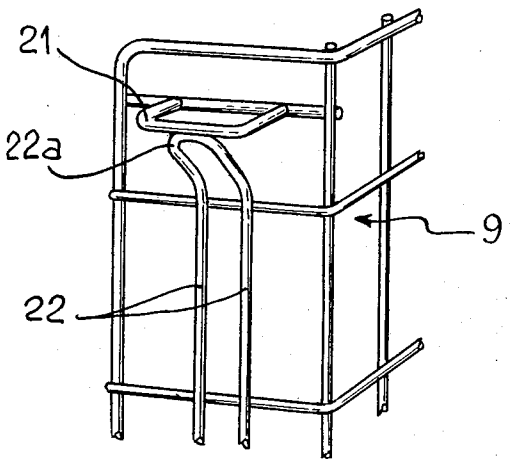


FIG. 8

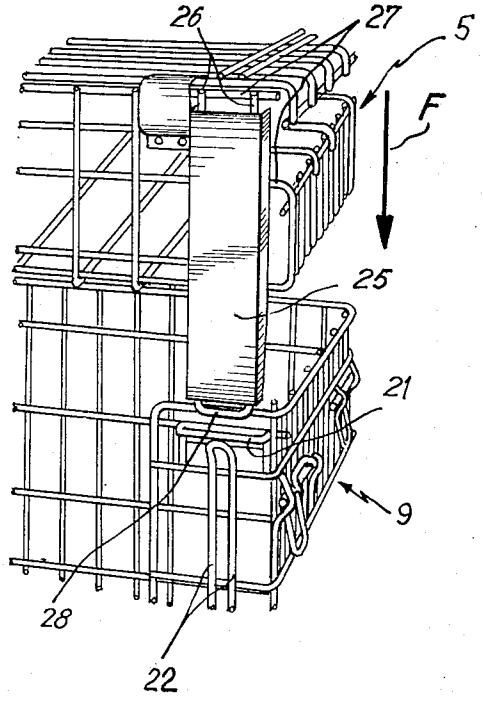


FIG. 9

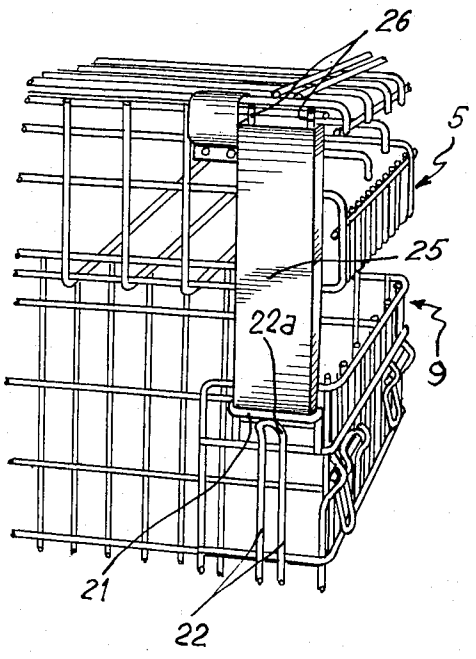


FIG. 10

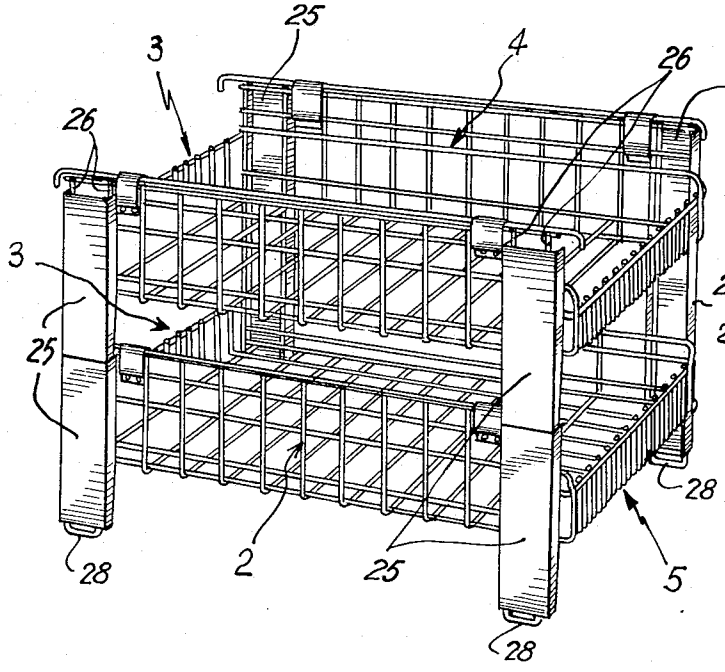
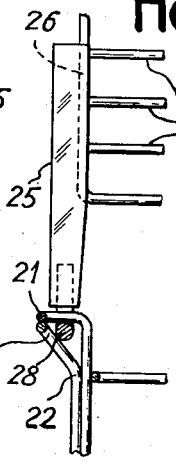


FIG. 11



CONTAINERS MADE IN METALLIC WIRES

This invention relates to a metal wire collapsible container for use in shops having a large floor space, the containers serving at the same time for the transport of goods and their presentation in the shop.

According to the present invention there is provided a collapsible metal wire container comprising a base on which side walls are articulated, upper supports provided on the upper external part of at least two opposed articulated side walls, lower supports provided on the exterior of the base, and feet provided on the base for resting on the supports of an identical container, whereby when the articulated walls are folded onto the base, the feet rest on the lower supports of the identical container and when the side walls are erect the feet rest on the upper supports of the identical container.

In this way two identical containers can be stacked either when the walls are erect or when they are folded onto the base. In the first case the feet of the upper container rest on the solid supports of the walls while in the second case, the feet of the upper container rest on the supports integral with the base.

In one embodiment, the container only has two feet formed by a horizontal wire which extends substantially along the whole of the length of the container and which is provided with strengthening pieces. With this arrangement, each foot of the upper container rests on two supports of the lower container. Feet of this type have the advantage of allowing the container to be used with storage installations called "racks" as they can easily slide.

On the contrary they have the disadvantage that when they are stacked they can slide on the container below and means may be provided to prevent relative motion between the two containers.

In a second embodiment, the container has four independent feet instead of two, so that each can cooperate with a single support and project into it to prevent lateral movement. This arrangement has the advantage of freeing the four sides of the containers so as to allow an opening to be made in each of their sides to allow access to the interior of the containers when they are placed in the shop. In this way the customer can remove objects which they contain.

The invention will now be described in more detail, by way of example only, with reference to the accompanying drawings, in which:

FIG. 1 shows two containers stacked one upon the other with the walls erect;

FIG. 2 shows the same two containers with the walls folded on the base;

FIG. 3 is a more detailed view of a part of FIG. 1;

FIG. 4 is a more detailed view of a part of FIG. 2;

FIG. 5 is a partial perspective view of a second form of container which shows a foot and a support integral with the base;

FIG. 6 is a partial view of the second form of container;

FIG. 7 is a partial perspective view showing the upper part of an erected wall;

FIG. 8 is a diagrammatic view showing two containers being stacked, the walls being erect:

FIG. 9 is a partial diagrammatic view of these two containers stacked;

FIG. 10 is a perspective view of these two containers stacked when the walls are folded onto the base, the walls being omitted for the sake of clarity; and

FIG. 11 is a partial view in section showing the stacking of the two containers.

Referring to FIGS. 1 to 4, a container comprises a base 1 provided with side walls 2, 3, 4 and 5 on which are articulated side walls of the container 6, 7, 8 and 9.

The base 1 is provided with two lateral feet 10 and 11, formed by a horizontal wire bent to provide supports 1*a* and 1*b*, and additional wires 1*c* also forming vertical support. Supports are provided on the base side walls 3 and 5 and also on the side walls 7 and 9 of the container. These supports are each formed by a metal wire bent into the form of a "U" 12 and of which the ends are soldered to the corresponding wall while the two arms of the "U" are themselves bent in the horizontal plane. In order to prevent the upper container from sliding horizontally on the lower container, another wire 13 is soldered to the wall and is bent in the vertical plane adjacent the support 12.

In FIGS. 1 to 3, the upper container is shown resting on the support situated on the upper external part of the walls of the lower container, which corresponds to the stacking of two full containers or at least two containers in use, for the transport and display of goods.

When the containers are empty and must be removed, the walls 6, 7, 8 and 9 are folded onto the base 1 into the space bounded by the base walls 2, 3, 4 and 5 so as to occupy the least room and in this case the upper folded container rests on the lower container, also folded by the supports soldered to the base walls as is shown in FIGS. 2 and 4.

Referring now to FIGS. 5 to 7 a second form of container is shown in which the base comprises a foot 20 at each of its four corners formed by a wire loop bent at its upper and lower parts so as to form respectively a substantially horizontal stop 20*a* and an end 20*b*. This wire is soldered to the base walls and furthermore, by its upper part 20*a* to a wire 21 bent into the form of a "U" for which the opening is wider than the end 20*b*.

Referring to FIG. 6 the foot 20 of the upper container enters the wire 21 and rests on the part 20*a* of the foot 20 of the lower container.

With this arrangement, each foot 20 of the upper container penetrates the interior of wires 21 of the supports of the lower container and rests on the substantially horizontal supports 20*a* of this same container so that it is impossible for the upper container to slide in relation to the lower container.

Referring to FIG. 7 the walls articulated on the base also comprise a support for the stacking of an upper container, this support being formed as described above but, here the wire 22 of which the bent portion 22*a* forms the stop, does not form a foot. On the contrary it is short and has a length sufficient to be soldered on a sufficiently large number of horizontal wires forming the walls so as to ensure the rigidity of the assembly. Here also a wire 22 is bent in a "U" shape and soldered to the wall 9.

Thus when the container walls are in the erect position, it is also possible to stack several containers because each foot of the upper container enters the interior of the corresponding wire 21 and rests on the part 22*a* of the wire 22.

With these arrangements, as in the embodiment shown in FIGS. 1 to 4, the containers can be stacked either with the walls in the erect position or in the col-

lapsed position. The fact that four independent feet are used as described above allows doors to be provided in one of the articulated walls, that is to say on any one of the sides of the container and if necessary on several sides at the same time.

In this way a container can be arranged in a shop so that the customer can reach its contents through several sides.

Such a container can be placed for example at the end of a central counter.

Furthermore the container can always be manoeuvred by a fork lift truck by any of its four sides and it is no longer necessary to orientate the container so that its door is on the side accessible to the customer if the container has four doors as is possible with the described arrangement.

Referring now to FIGS. **8** to **11** an alternative arrangement is shown in which each foot is formed by a panel **25** which has a "U" section and which straddles two parallel wires **26**, the panel **25** being soldered to the wires **26** which are bent through 90° to form a part of a base wall. The wires **26** are also joined to perpendicular wires **27**.

Another wire **28** bent into the form of a hairpin is soldered to the interior of the panel **25** to form a base which forms a hooking and guiding member when two containers are stacked together.

The articulated walls of each container are arranged to face the feet, the "U" shaped wire **21** and the stop **22***a*.

In FIG. **8**, the upper container is about to be placed on a lower container as represented by the arrow F. Each of the four feet of the upper container (only one is shown in the drawing) will rest on the corresponding support of the lower container as has just been described.

In FIGS. **9** to **11**, the wire **28** of the upper container rests on the stop **22***a* of the lower container.

Referring to FIG. **10**, the containers are stacked with the articulated walls folded onto the bases of the container. The articulated walls are not shown for the sake of clarity but the panels **25** of the stacked containers can be seen to be in register.

In this case the wires **28** of the upper container penetrate the interior of the bent panel **25** which plays, the same role as the wire **21**, while the roll of the stop **22***a* is played by the upper edge of the panel **25** of the lower container. In the case of the FIGS. **8**, **9** and **11**, the support of the containers is provided by the wires **28** of the upper container and the stops **22***a* of the lower container.

In FIG. **10**, the support is provided by the panel **25** and the interlocking by the co-operation of the wires **28** and the panels **25**.

Owing to this variation, the panel allows a better identification of the articles, especially in order to attract the attention of the customer to the contents of the article and thus to distinguish between the goods.

I claim:

1. A collapsible metal wire container comprising a hollow base including a bottom and fixed edge wall secured to said bottom and extending perpendicular thereto, side walls mounted on said edge walls of the base, at least two of said side walls being opposed to one another and articulated to said edge walls, upper supports on the upper external part of said at least two opposed articulated side walls, lower supports on the exterior of the fixed edge walls, and feet mounted on the base and shaped relative to said upper and lower supports for selectively resting on the supports on an identical container, such that, when containers are stacked and the side walls are folded onto the base, the feet rest on the lower supports of the identical container and, when the side walls are erect, the feet rest on the upper supports of the identical container, said supports each being constituted by a metal wire bent in the form of a "U" and secured to the associated wall, the two arms of the "U" furthermore being bent in the horizontal plane, and an additional wire secured to the associated wall and being bent in the vertical plane adjacent the first mentioned metal wire so as to prevent horizontal sliding of the foot of an identical container resting on the support.

2. A container as claimed in claim **1** comprising a door in at least one of said side walls.

3. A container as claimed in claim **1**, wherein the container comprises two feet which are formed by a horizontal wire fixed to the edge walls, each foot being capable of co-operating with two supports when the containers are stacked.

4. A container as claimed in claim **1**, wherein the container comprises four feet each formed by at least one metal wire situated in the projection of the supports provided on the exterior of the base and which overlap the base, each foot being able to co-operate with a single support when the containers are stacked.

5. A container as claimed in claim **4**, wherein each support forms a recess for receiving a foot of a stacked container.

6. A container as claimed in claim **5**, wherein each support comprises a U-shaped part whose arms are bent towards the container and fixed to it, and a horizontal stop, the distance between the arms of the "U" being greater than the width of each foot so that the latter can penetrate the U-shaped part and abut the stop.

7. A container as claimed in claim **6**, wherein each foot is provided by a panel.

8. A container as claimed in claim **6**, wherein the panel is bent into a U-section and straddles at least one metal wire forming the container and also another bent wire extending below the lower edge of the panel and forming the base of the foot which is to enter the interior of the U-section panel or into a similar support of an identical container when the containers are stacked.

* * * * *