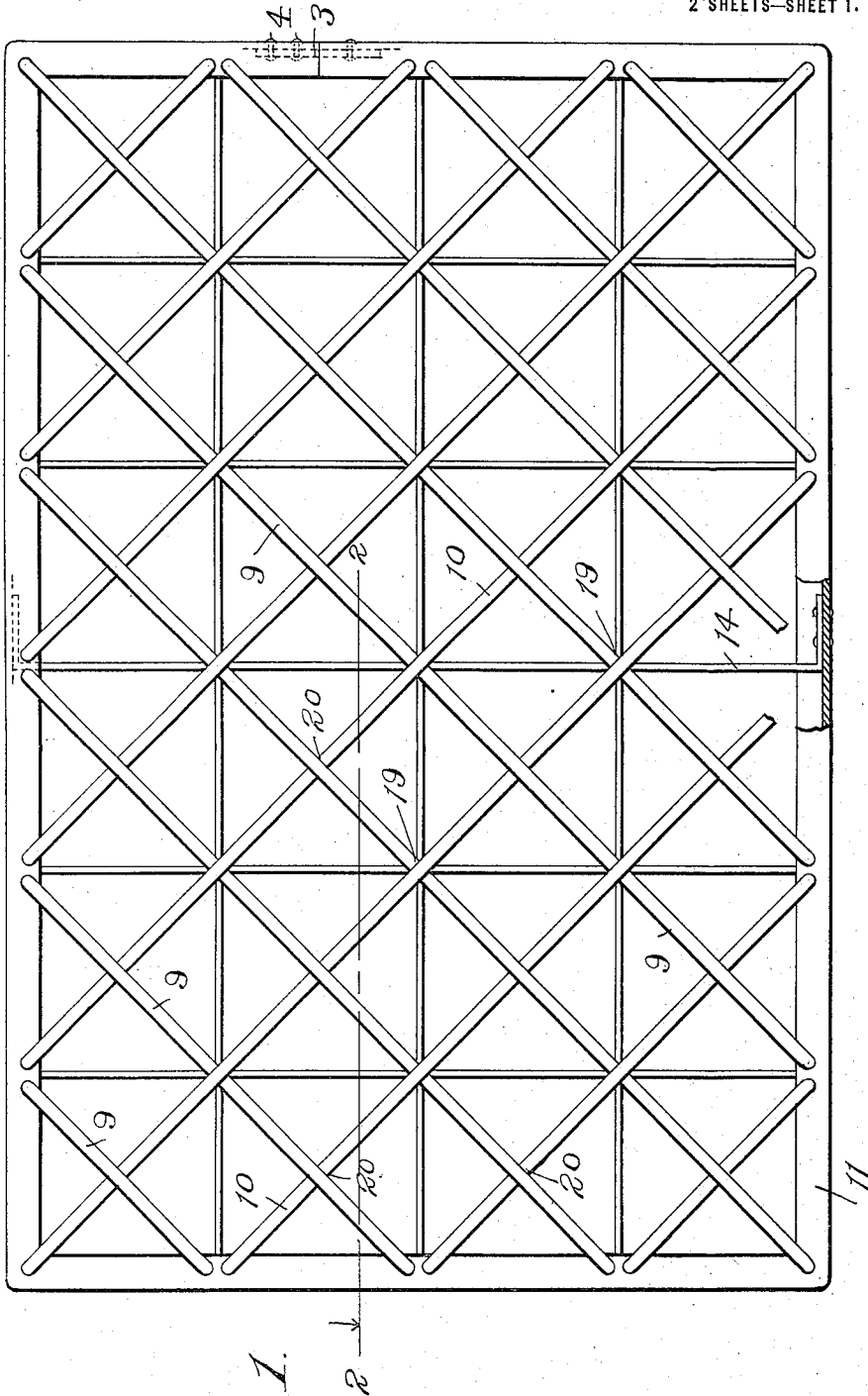


R. F. HAMILTON.
METAL CRATE OR BOX.
APPLICATION FILED NOV. 21, 1913.

1,146,327.

Patented July 13, 1915.

2 SHEETS—SHEET 1.



Witnesses:
M. G. Crawford
G. I. Pumphrey.

Fig. 1.

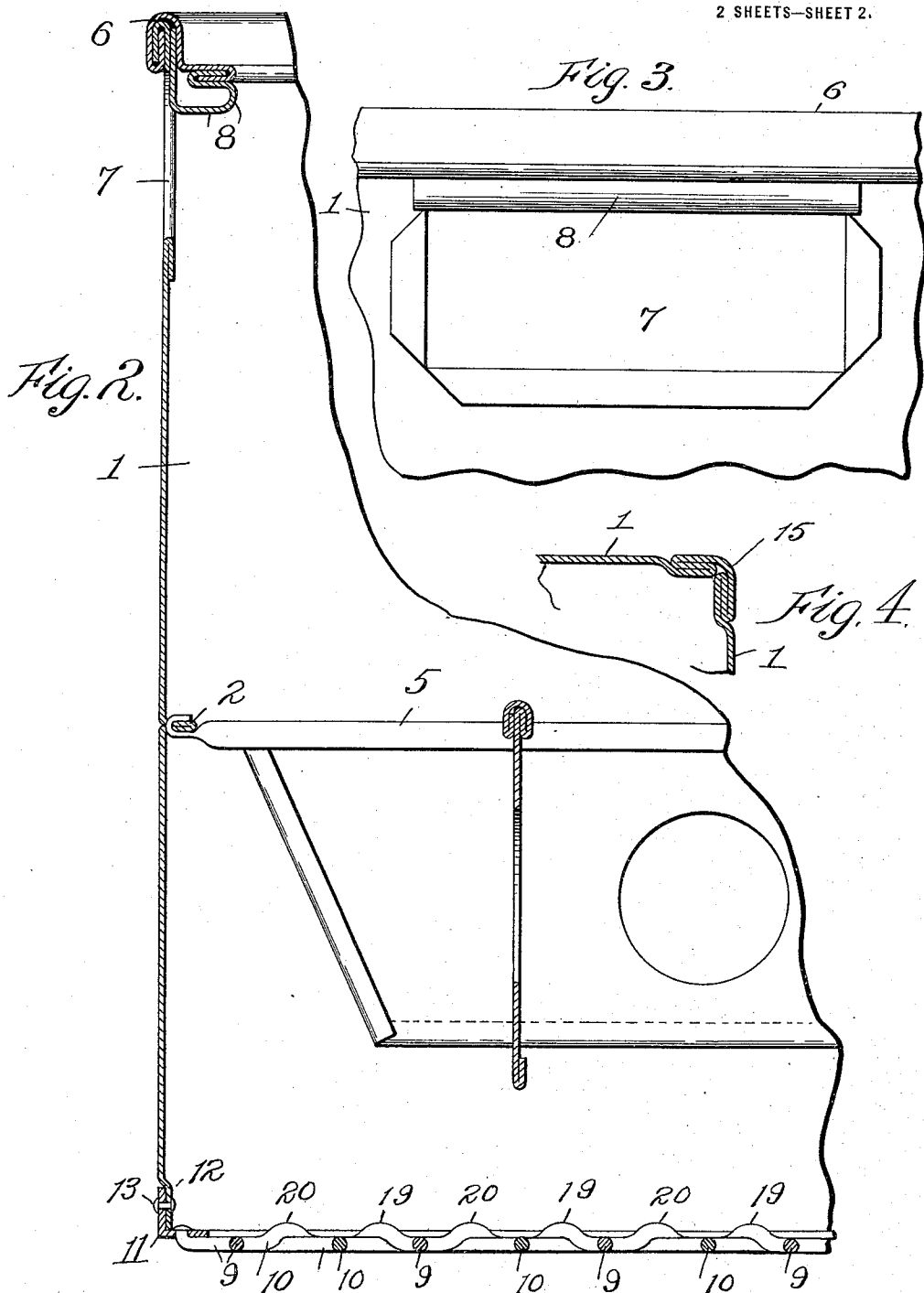
Inventor
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By his Attorney *A. R. Hamilton*

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UNITED STATES PATENT OFFICE.

RICHARD F. HAMILTON, OF NEW YORK, N. Y.

METAL CRATE OR BOX.

1,146,327.

Specification of Letters Patent.

Patented July 13, 1915.

Application filed November 21, 1913. Serial No. 802,331.

To all whom it may concern:

Be it known that I, RICHARD F. HAMILTON, a citizen of the United States of America, residing at New York city, borough of Manhattan, county and State of New York, have invented certain new and useful Improvements in Metal Crates or Boxes, of which the following is a specification.

My invention relates to metal boxes or crates and is specifically designed for the production of a box or crate made wholly of metal which is adapted to carry a series of bottles or the like objects, and which shall be light, strong, self-cleansing, and easily handled by automatic conveyer apparatus.

The best form of construction embodying my invention at present known to me, is illustrated in the accompanying two sheets of drawings, in which—

Figure 1, is a bottom view of the box with parts broken away, Fig. 2, is a longitudinal, vertical section on the line 2, 2, of Fig. 1, looking in the direction of the arrow, Fig. 3, is an enlarged detail view of a portion of one end of the box, showing my improved form of handle, and Fig. 4, is a detail cross section showing the preferred form of box corner.

Throughout the drawings like reference characters indicate like parts.

The main shell of the box is preferably formed of a single sheet of metal 1, which is folded inwardly to form the flange or lip 2, which runs around the box, interiorly thereof, and also bent at right angles to form four corners, the abutting ends of the sheet being fastened together by any convenient means, such as the plate 3, and rivets 4, indicated in dotted lines in Fig. 1. Within the rectangular box so formed, is suspended the rack 5, of the same construction and having the same means of attachment to the fold 2, of the shell 1, as are described in the pending application of myself and David Lipsich, Serial No. 784,011, filed Aug. 9, 1913.

The upper edges of the sides and ends of the box have a stiffening top frame formed preferably of one strip of metal 6, bent and folded as shown in Fig. 2. Handles are provided by cutting away the space 7, in each end of the box and folding over the cut edges of the sheet 1, and these handles so formed are rendered more convenient to the user by adding at each opening the bent handle strip 8, shown in cross section of

Fig. 2, and in side elevation in Fig. 3. This strip is so bent that its edge portions will interlock with the folded portions of the top frame 6, and interleave therewith and with shell 1, and be held in position thereby.

A most important feature of my invention is the box bottom formed of the heavy, specially bent wires 9, and 10. These wires as shown are stretched preferably diagonally across the bottom of the box and spaced apart so that they will be in line with the diagonals of the squares formed by the rack 5. These wires have their ends fastened in one flange of an angle-iron 11, or right-angled strip of heavy sheet metal, which is preferably formed in one piece and bent similarly to the main shell 1, to form a rectangle. This bottom angle-iron frame is fastened to the lower edge of the shell 1, preferably by off-setting inward said lower edge as shown at 12, a distance equal to the thickness of the angle iron 11, and then fastening the vertical flange of said angle iron to said off-set portion by rivets 13, or other convenient means. In the horizontal flange of angle iron 11, are punched a series of holes at uniform distances from the edge of the flange, through which holes the ends of the wires 9, and 10, are inserted and fastened by upsetting the ends, as shown, or by any other convenient means.

A peculiar feature of the wire mesh bottom employed in my invention is that the wires of both sets, 9, and 10, mainly lie in the same plane and that wherever they cross, the upper wire alone is bent, as clearly shown in Fig. 2. That is to say, all the wires 9, are bent upwardly and pass over and around the wires 10, at their points of meeting 19, 19, under the corners of the compartments of rack 5, while all of the wires 10, 10, are bent upwardly to pass over and around the wires 9, at their points of meeting 20, 20, under the centers of the compartments in rack 5. In other words, each wire is absolutely straight for a distance equal to twice the width of the mesh, and has an upwardly projecting bend of semi-circular shape connecting the adjacent ends of every two straight sections, said bend being of sufficient radius to receive the whole cross section of the crossing wire. The result is that the under surfaces of the straight portions of both the wires 9, and 10, all lie in exactly the same plane, forming a smooth bottom with no projections to rub and wear

against the floor, or interfere with the sliding of said box along the floor. Such a smooth bottom also presents no projections which might catch on the rollers or other moving parts of the automatic carriers often used in breweries and which frequently travel curved, spiral, or irregular paths, and over which it is desirable that the boxes ride smoothly in every position.

10 Preferably the cross brace 14, is placed across the middle of the box near the bottom to further stiffen the sides. The main shell 1, is also preferably folded at the corners for greater stiffness as indicated at 15, in Fig. 4.

The advantages of my invention comprise its light weight and perfect self-cleansing properties as well as those above indicated. All dirt thrown into the box or falling from its contents will pass out through the wide open mesh of the wire bottom. At the same time the strong, stiff wires of the bottom brace the shell 1, against deformation in any direction.

25 The arrangement of the bends in the wires is such as to place all the projections on the upper side and so locate them that they will none of them prevent an ordinary bottle from standing upright and firmly on the wires. The projections 19, at the corners of the rack compartments will not touch the bottles at all, and those at 20, in the centers of the compartments will fit under the concave spaces usually provided in the bottoms of bottles. The heavy wires with their straight under surfaces and upturned ends form so many sled runners on which the box will ride smoothly when pulled about on the floor or pavement, and the portion of the bottom of each box so formed and projecting below the level of the angle-iron 11, nests into the open top of the next box, to hold the boxes in line when stacked one on another.

45 Various changes in details of construction could be made without carrying the resulting structure outside the scope of my invention so long as the principles of construction and operation here described are retained.

50 Having described my invention, I claim:

1. A metal box for holding bottles and the like which comprises in combination a shell open at top and bottom, and a series of heavy wires stretched across the bottom and crossing one another, the portions of said wires between the crossing points lying all in the same plane, and the upper wire at each crossing alone being bent.

2. A skeleton bottom for boxes and the

like composed of stiff, heavy wires interwoven, each wire having a series of straight sections, each equal in length to approximately twice the width of the mesh of the woven structure, and the straight sections of each wire being connected together by upwardly curved portions thereof.

3. A skeleton bottom for boxes and the like composed of stiff, heavy wires interwoven, each wire having a series of straight sections, each equal in length to approximately twice the width of the mesh of the woven structure, and the straight sections of each wire being connected together by upwardly curved portions thereof, the extent of curvature being sufficient to receive the entire cross section of the crossing wire and leave its under surface in the common plane of the under surfaces of the straight sections.

4. A skeleton bottom for boxes and the like comprising a rectangular frame, perforated at suitable points, combined with an interwoven series of wires, the ends of said wires being bent upward to pass through the perforations in the frame, whereby the under surface of said box bottom presents a series of runners having upward curvature at each end for facilitating the sliding of the box along any surface on which it may rest.

5. A skeleton bottom for boxes and the like comprising a rectangular frame formed of angle-iron, the horizontal flange of which is perforated at regularly spaced intervals and all of said perforations being equally spaced from the edges of the angle-iron flange, combined with an interwoven series of wires, the ends of said wires being bent upward to pass through the perforations in the frame, whereby the under surface of said box bottom presents a series of runners having upward curvature at each end for facilitating the sliding of the box along any surface on which it may rest.

6. A metal box having in combination a rectangular shell, an angle-iron bottom frame, and a bottom of interwoven wires, the horizontal flange of the angle-iron being perforated along lines inside of the box shell, and the ends of the wires passing upward through said perforations, whereby the bottom of each box will nest in the top of any similar box on which it is placed.

RICHARD F. HAMILTON.

Witnesses:

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W. W. SILANCE.