

B. F. HART, JR.
 TRAY FOR COOLING TOWERS.
 APPLICATION FILED JUNE 13, 1910.

1,040,318.

Patented Oct. 8, 1912.

Fig. 1.

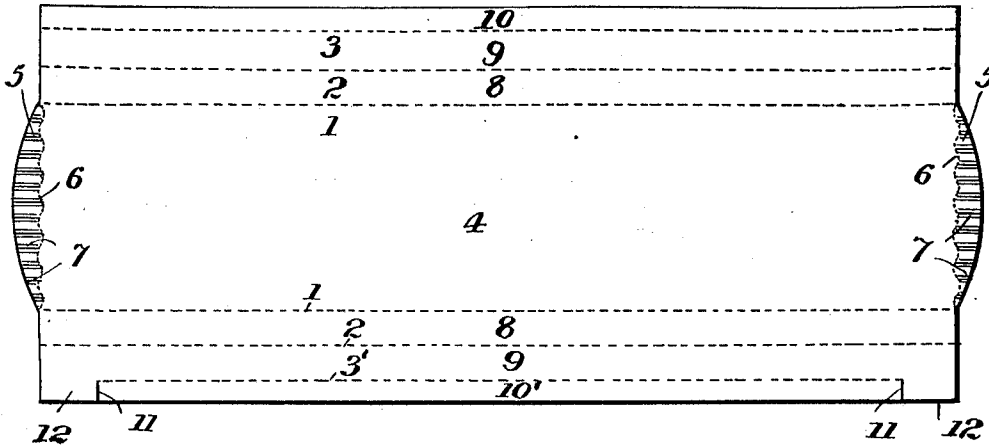


Fig. 2.

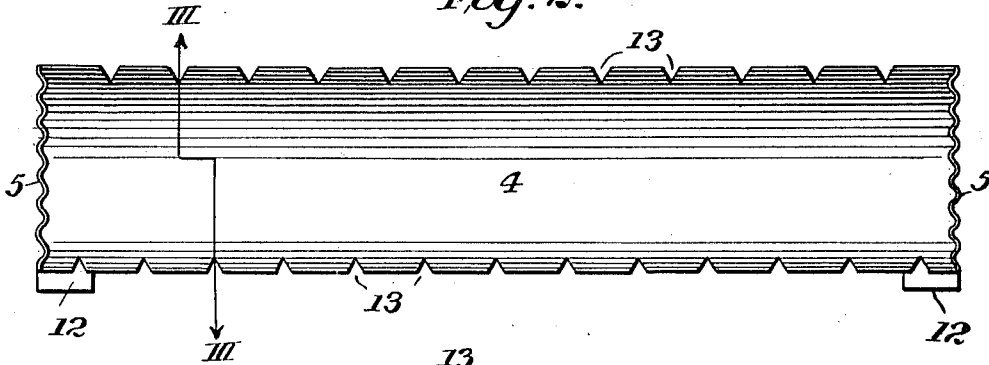


Fig. 3.

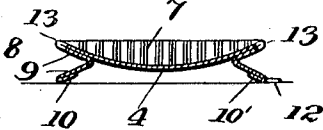
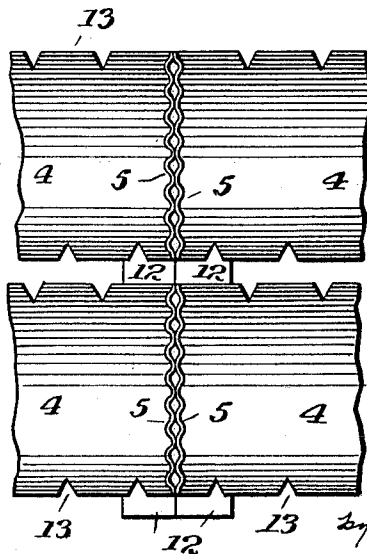


Fig. 4.



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BENJAMIN F. HART, JR., OF HOBOKEN, NEW JERSEY.

TRAY FOR COOLING-TOWERS.

1,040,318.

Specification of Letters Patent.

Patented Oct. 8, 1912.

Application filed June 13, 1910. Serial No. 566,565.

To all whom it may concern:

Be it known that I, BENJAMIN F. HART, JR., a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Trays for Cooling-Towers, of which the following is a specification.

My invention relates to the shallow trays used in connection with towers for cooling water or other liquid as shown and described in my Patent numbered 902,875, dated Nov. 3, 1908, and whose function is to evenly distribute and shower the water in a more or less finely divided state to the action of the atmosphere for aeration and evaporation.

The object of the present invention, therefore, is to provide a construction of tray similar in form to that shown and described in my co-pending application Ser. No. 420,384, filed March 11, 1908, which will carry out the above stated operations in an efficient manner and at the same time materially reduce the cost of manufacture, installation, and needed repairs to a minimum.

Other objects and advantages of my improved construction are such that the tray can be built up from a single sheet of metal which has been previously cut and scored on certain lines, so that the sheet can be bent and folded up to form a complete tray without the use of solder or any other cementing means and operations, which will appear from the following description of a preferred form, taken in connection with the accompanying drawings, and the same will finally be more particularly pointed out in the appended claims.

Like reference characters designate corresponding parts in each of the several views of the drawings, in which—

Figure 1 is a sheet of metal cut and scored for forming the tray; Fig. 2 shows a plan view of the completed tray after the sheet shown in Fig. 1 has been properly bent up; Fig. 3 is a section on line III—III of Fig. 2; and Fig. 4, shows a plan view of the ends of four trays showing how they are arranged on the decks of the cooling towers.

Referring to Fig. 1, in which is shown a sheet of any metal or any other suitable material scored or bent on the lines 1, 1, 2, 2, 3 and 3', the central longitudinal rectangle being dished and forming the trough section 4, as shown in Figs. 2 and 3. Integrally attached to the ends of the central rectangular

section 4 are end wall sections 5, 5, which are bent upwardly on the lines 6, 6, and for the purpose of allowing them to assume this position they are corrugated on the lines 60 7, 7, as indicated.

After the trough section has been formed as above explained, the body or rectangle of metal 8, on each side of 4, is bent under on the lines 1, 1, Fig. 1, and in contact with underside of the trough section 4. Sections 9, 9, are bent outwardly on the lines 2, 2, forming with the sections 8, 8, the legs or supports for the trough and at the same time reinforcing and stiffening the trough section, and tray as a whole. On one side of the section 4, the section 10 is entirely bent back upon its section 9, thus reinforcing and stiffening its supporting edge, while on the other side, the section 10' is provided with cuts or slits 11, 11, forming end tongues 12, 12, and only the section 10' is bent back on line 3', upon its corresponding section 9, as shown in Figs. 2 and 3.

After the blank shown in Fig. 1, is dished and bent up as above described, the overflow V-shaped notches 13, 13, are stamped or suitably cut in any manner in the outer edges, so that they are not directly opposite to each other, and will permit the water to easily flow out and impinge on the section 9 of the adjacent tray.

By reference to Fig. 4, it will be readily seen that the tongues, 12, 12, form spacing lugs, so that when the trays are inserted on the frame work of the different decks of the cooling tower they can be quickly and uniformly placed in position and firmly held there without being disarranged and thus insure openings or passages between the trays, so that the cooling air currents may be brought in contact with the interior parts of the tower, and thus increase the efficiency. It will also be seen that by corrugating the end walls 5, 5, the strength of the tray is materially increased.

From the foregoing description of my invention, it will be seen that I am enabled to quickly, cheaply and uniformly build up a strong tray for cooling towers from a single blank of material without the use of any skilled labor, solder or rivets.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is as follows:

1. A tray for cooling towers comprising

a trough section with closed ends and a supporting leg substantially under each edge of the trough section formed from a single blank of sheet metal.

5 2. A tray for cooling towers comprising a trough section with closed ends and a supporting leg substantially under each edge of the trough section, and spacing lugs formed from a single blank of sheet metal.

10 3. A tray for cooling towers comprising a trough with closed ends provided with combined reinforcing and supporting legs formed from a single blank of sheet metal.

15 4. A tray for cooling towers comprising a trough with closed ends provided with combined reinforcing and supporting legs, and spacing lugs, formed from a single blank of sheet metal.

5. A blank for forming a tray arcuate in

cross-section and having combined reinforcing and supporting legs, comprising a central rectangular section forming the trough of the tray, a section on each end of the central section of a length corresponding to the maximum depth of the pan and of the same width as the central section and forming the end walls of the trough, and a section on each side of the central section adapted to be bent and folded at an angle with respect to the central section for forming the reinforcing and supporting legs. 20 25 30

In testimony whereof, I affix my signature in presence of two witnesses.

BENJAMIN F. HART, JR.

Witnesses:

FRANCES B. ROTHSTEIN,
WILHELMINA GAEDE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."