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METHOD OF MAKING FLORAL DESIGN FRAMES

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My invention relates to the construction of wire frames of the class commonly used by florists as the foundation for cut-flower designs, such as the annular wreaths which are the most frequently used form. It is an object of my invention to provide frames of this character, and a method of making the same, whereby to secure the greatest strength and rigidity of the frames proportional to the amount of wire used in the formation thereof, and at the same time to facilitate the construction of the frames as to limit the labor cost thereof to a minimum.

In the accompanying drawings Fig. 1 is a perspective view of a wreath-frame constructed in accordance with my invention. Fig. 2 is a plan view of the forming-plate used for the initial shaping of the tie-wire and for holding the same and the base contour-wires during the welding thereof, the wires being in place upon the plate and ready for the welding operation. Fig. 3 is a detail transverse section on the line 3—3 of Fig. 2, Fig. 4 is a detail transverse section on the line 4—4 of Fig. 2, Fig. 5 is a transverse section of a forming-die for shaping the tie-wire after the same and the base contour-wires have been welded, and Fig. 6 is a partial plan view of the frame as shaped by the die and prior to its completion by the welding on of the upper contour-wires.

In the construction of frames for floral designs, the characteristic outline or contour of the design is formed by a plurality of wires which are spaced apart transversely in a quadrangular arrangement, said contour-wires being connected with each other by transversely extending tie-wires, the latter extending across three sides of the quadrangular space, while the fourth side is open. The frame is thus channel-shaped in transverse section, and when covered with foil it forms a trough-like container for a filling of moss or the like, into which the stems of the flowers may be inserted. In the usual construction of these frames there is employed a plurality of separate U-shaped tie-wires, which extend perpendicularly of the contour-wires and which must be handled separately and secured to the contour-wires while the latter are held in position by some other means.

In the construction of floral design frames according to my invention, I employ contour-wires in substantially the usual arrangement, but connect the same by tie-members which are formed by a continuous wire, the several transverse connecting parts having a zig-zag or serrated arrangement, and extending diagonally of the contour-wires in successively opposite directions, whereby the frame has a truss-like formation, giving it great rigidity.

The structure of my frames, and the method of making the same, may be easily understood by reference to a specific example thereof, such as the wreath-frame shown in the drawings. In said frame all of the tie-members 7 are formed from a single continuous piece of wire which is first given a star-shaped formation in a flat plane, whereby its successive parts cross and re-cross the annular contour diagonally, the inner and outer points 7' projecting equidistantly beyond the desired contour of the completed frame. The base contour-members 8 and 9 are then laid upon the shaped tie-member and secured thereto by suitable means, preferably by electric-welding at each juncture. The laterally projecting V-shaped points 7' are then bent upward from the base-plane in which they are originally formed, the inner and outer points preferably being slightly divergent from the base upward. The upper contour-members 10 and 11 are then secured to the upturned points of the tie-members, preferably by electric-welding the same at each point.

Where frames of the same form and dimensions are to be produced in quantity, the construction thereof is greatly facilitated by the use of forming devices such as shown in Figs. 2 to 5, inclusive. Referring to Fig. 2, there is provided a forming-plate consisting of an inner ring 12 and outer ring 13, which are connected by uniformly spaced radial arms 14, integral with the rings. On the inner ring 12, near the ends of the arms 14, are slightly raised circular lugs 15, and upon the outer ring 13 at points intermediate the ends of the arms 14 are similar lugs 16. On each of the lugs 15 and 16 are two upwardly extending pins 17 and 18, the pins 17 being those about which the tie-wire 7 is bent to form the inner and outer points of the star-like pattern, and the pins 18 being employed to prevent bulging of the wire during the bending thereof about the respectively adjacent pins 17. Upon each of the arms 14 are two resilient clips or holders, each of which is formed by a pair of inverted U-shaped pieces 19 of resilient mate-
rial such as piano-wire, each of said pieces lying in a vertical plane extending longitudi-
nally of the arm 14, the adjacent legs of the U-members being slightly spaced apart
and terminating near the upper edge of the arm, the other legs extending through the
arm to the lower side thereof and having portions 20 at the lower ends thereof turned
to extend along the lower side of the arm,
to which said portions are secured by screws
21 as shown in Fig. 3. The said resilient
members 19 are adapted to receive between
them the base contour-wires 8 and 9, and to
frictionally retain the same in the desired
relation to the formed tie-wire 7. From
Fig. 2 it will be seen that the crossings or
junctures of the members 7, 8 and 9 are all
positioned over the open spaces intermediate
the arms 14 of the forming-plate, so as to
be readily accessible for contact with the
electrodes of a spot-welding machine, by
which the members may be secured together
while held in the desired relation to each
other. After the welding operation is com-
pleted the flat frame-structure is removed
from the forming-plate, and the laterally
projecting points 7' are turned upwardly.
In Fig. 5 is shown a forming-die compris-
ing a lower annular member 22 which is
trough-shaped in transverse section, and an
upper annular member 23 adapted to enter
the trough of the lower member and to force
into the same the flat frame-structure, so that
the laterally projecting points of the tie-
member will be turned upwardly and fit be-
tween the sloping sides of the die-members.
The die-members may, of course, be mount-
ed in a suitable press, and provided with
guides or gages for centering the wire struc-
ture therein. Preferably the V-shaped later-
ally projecting portions of the tie-member
are not turned up far enough to lie in planes
perpendicular to the base portions, but are
left slightly divergent, as represented in
Figs. 1 and 6, so that a plurality of the com-
pleted frame may be nested together and
thus occupy a minimum space.

In the completion of the frames, after the
members 7, 8 and 9 have been secured to-
gether and the points of the tie-member
turned up as described, each of the members
10 and 11 may be readily shaped to the de-
sired contour of the design as the successive
parts of the member are secured to the
points 7'. For example, in commencing the
operation one end of the wire may be se-
cured to one of the points in such a relation
that it will extend past or near the next
point of the series. A very slight bending
or shaping of the wire will then result in
bringing it into contact with the second
point so that it may be secured thereto, and
the operation thus continued in a similar
manner throughout the series. In frames
for wreaths and other closed figures, the last
operation upon the upper contour-members
is the attaching of the end of the wire to
the same point to which the first end was
secured, thus completing the ring or other
closed contour.

It will be seen that the use of a contin-
uous wire to form all of the tie-members of
a frame will greatly facilitate the construc-
tion thereof by avoiding the separate han-
dling of the large number of U-shaped tie-
wire commonly used in frames of this kind;
that the initial formation of the continuous
tie-wire in a single plane may be easily ef-
fected; that the turning up of the lateral
portions after the welding of the base con-
tour-wires insures the retention of the de-
sired base-contour of the frame; and that
the diagonal arrangement of the tie-mem-
bers in alternating directions provides a
frame of great strength and rigidity, pro-
portional to the weight and amount of wire
used therein.

Now, having described my invention, what
I claim and desire to secure by Letters
Patent is:

1. The method of making frames of the
class described, consisting in disposing a tie-
member in the base-plane of the design con-
tour, disposing base contour-wires upon said
tie-member and securing the same thereeto
at the points where said contour-wires cross
the tie-member, then turning up from the
base-plane portions of the tie-member, and
finally securing upper contour-wires to the
upturned portions of the tie-member.

2. The method of making frames of the
class described, consisting in disposing tie-
members to intersect diagonally the design
contour in the base-plane thereof, disposing
base contour-wires upon said tie-members
and securing the same thereto at the several
points where said contour-wires cross the
tie-members, then turning up from the base-
plane the portions of the tie-members which
project laterally of the base contour-wires,
and finally securing upper contour-wires to
the upturned portions of the tie-members.

3. The method of making frames of the
class described, consisting in shaping a con-
tinuous tie-wire to successively intersect
diagonally the design contour in the plane
of the base thereof, disposing base contour-
wires upon said shaped tie-wire and secur-
ing the same thereto at the points where
said contour-wires cross the tie-wire, then
turning up from the plane of the base the
portions of the tie-wire which project later-
ally of the base contour-wires, and finally
securing upper contour-wires to the up-
turned portions of the tie-wire.

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