Sept. 25, 1934. F. W. PRESTON 1,974,750

METHOD OF MAKING WIRE MESH

Filed Feb. 2, 1931 2 Sheets-Sheet 1

Fig. 1

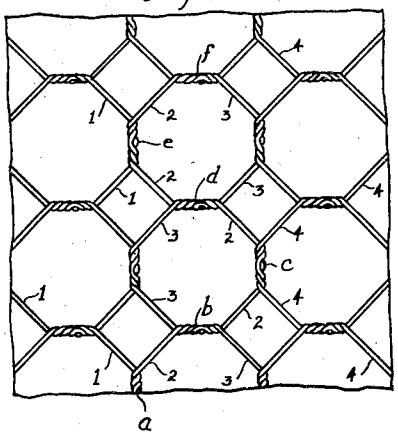


Fig. 2

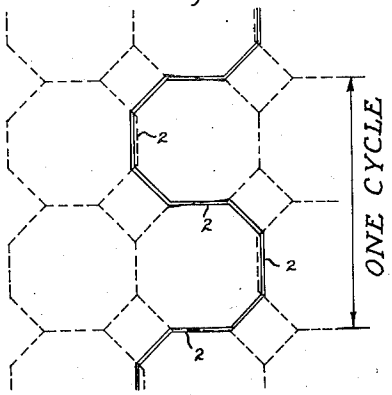


Fig. 3

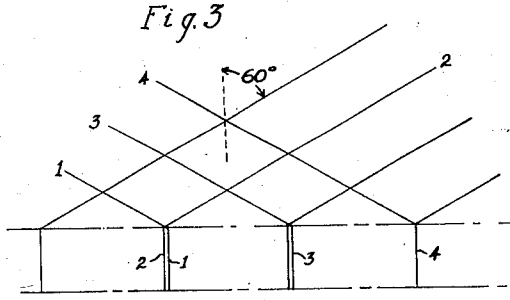


Fig. 4

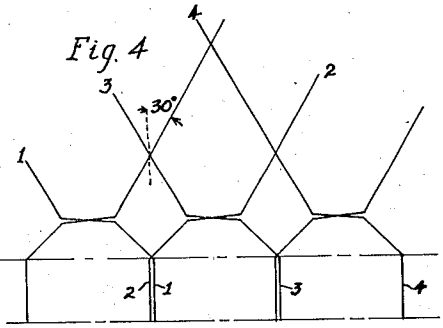


Fig. 5

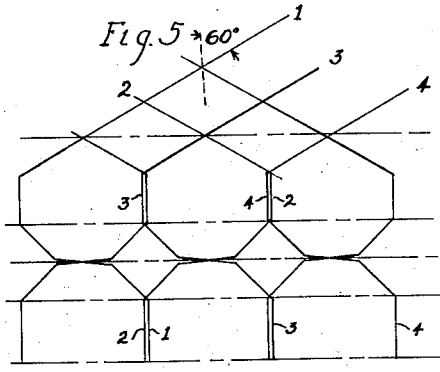
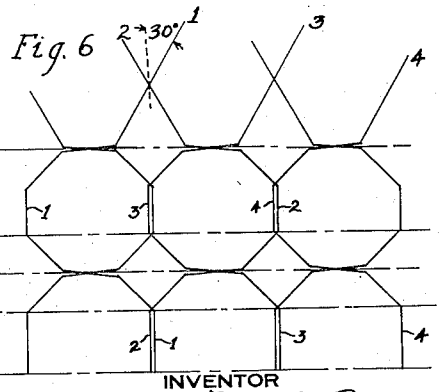


Fig. 6



INVENTOR
Frank W. Preston
BY William B. Jaspert
ATTORNEY

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Filed Feb. 2, 1931 2 Sheets-Sheet 2

Fig. 7

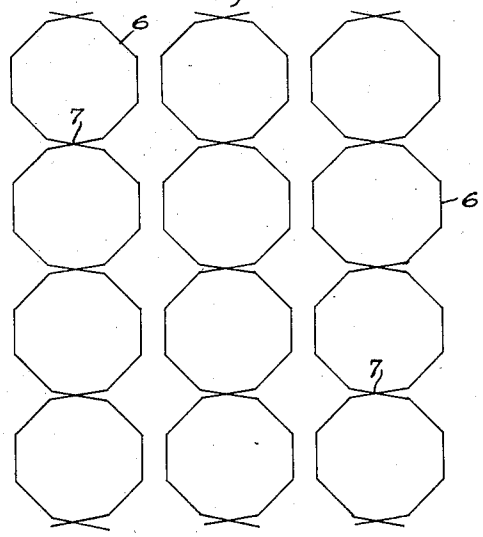


Fig. 8

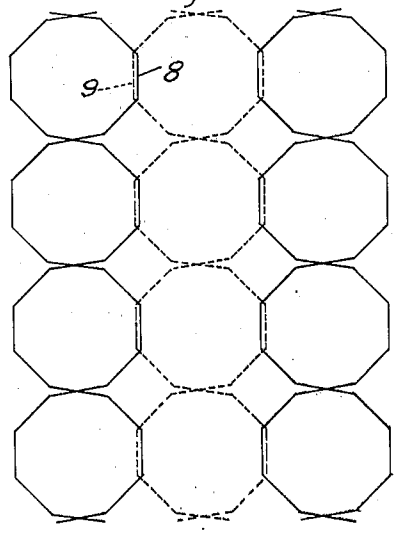
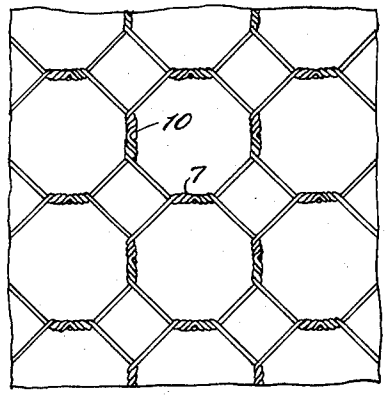


Fig. 9



INVENTOR
Frank W. Preston
BY William B. Jaspert
ATTORNEY

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1,974,750

METHOD OF MAKING WIRE MESH

Frank W. Preston, Butler, Pa.

Application February 2, 1931, Serial No. 512,864

5 Claims. (Cl. 140—3)

This invention relates to a method of making octagonal wire mesh particularly useful in the manufacture of wire glass, and it is among the objects thereof to provide a method of making wire mesh which shall be simple and effective in producing meshes of sufficient rigidity to render them useful for the purpose stated. The method herein described is particularly adapted to the fabrication of octagonal wire mesh by simple machinery, which, however, does not constitute part of the present invention.

In the wire weaving art, the method of weaving heretofore commonly practiced utilized sets of warp and woof wires whereas the present method employs only sets of warp and no woof wires, the warp wires being alike in every respect.

The present method has among its objects the making of wire mesh by crossing and twisting two similar sets of warp wires so that a given wire of one set is mated with three wires of the other set to produce an octagonal mesh.

The method embodying the present invention will become more apparent from a consideration of the accompanying drawings, in which like reference characters designate like parts; and in which Figure 1 is an elevational view of a wire mesh embodying the principles of this invention; Figure 2 a view diagrammatically illustrating the relationship of the different wires in the mesh disclosed in Figure 1; Figures 3 to 6 inclusive are views diagrammatically illustrating the manner of crossing and twisting the warp wires so that a given wire of one warp set is mated with three wires of the other warp set to produce an octagonal mesh as shown in Figure 1; Figure 7 is a view diagrammatically illustrating an alternative method of making the octagonal wire mesh from preformed strips of mesh; Figure 8 is a similar view showing the assembled strips before joining; and Figure 9 shows the finished twist as made by this alternative method.

With reference to Figures 3 to 6, any given wire such as the wire 2, will be shown to become mated with three wires 1, 3 and 4 by following the sequence of operations throughout the several views.

Taking the wire 2, for example, of Figure 3, it is mated with the wire 1 in the forming of the vertical twist diagrammatically shown by the parallel lines.

In Figure 4, the wire 2 already mated with the wire 1, as in Figure 3, is mated with the wire 3 in forming the horizontal twist illustrated by the cross lines.

In Figure 5 the wire 2 is mated with the wire 1, at the lower vertical twist, the wire 3 at the horizontal twist, and the wire 4 at the upper vertical twist; and in Figure 6 the wire 2 is mated with the wire 1 at the lower vertical twist, the wire 3 at the lower horizontal twist, the wire 4 at the upper vertical twist, and again with the wire 3 at the upper horizontal twist.

It will be noted that by the method just described, two similar sets of warp wires are crossed at four different angles and that appropriate pairs of wires are twisted at each angular position. The angularity of the wire varies as is evident from the several figures of the drawings, for example, the wire 2 in Figure 3 is shown at a 60° angle to the right of the vertical. In this position, the horizontal twist is made with wire 3. In Figure 4 the obliquity of the wire 2 is reduced by 30° and the wire 2 is now 30° right of the vertical. In this position the vertical twist mating the wire 2 with wire 4 is formed. The warps are then rotated through an angular displacement of 90° and wire 2 finishes in a position 60° left of the vertical in Figure 5, and is again mated with wire 3 in a horizontal twist. It is then raised 30° to be 30° left of the vertical and is mated with wire 1 in a vertical twist. The cycle is then repeated, going back to Figure 3 of the drawings. Reference to sets of warp wires as herein made includes all of the wires at the same angle of obliquity as one set, as for example, wires 1, 3 and 4 of Figure 3 and the remaining wires of this figure are another set. The wires of each set are always at the same angle as is evident in Figures 3 to 6 of the drawings.

The method of crossing and twisting these wires may be more readily understood and followed through by viewing the wire 2 in Figure 2 of the drawings, wherein it is shown in full lines and represents one cycle of the operation between the upper and the lower horizontal twists, one cycle representing the letter S.

Following through the crossing and twisting of the wire in connection with Figure 1, it will be noted that the wire 2 is mated with the wire 1 at the vertical twist *a*, with the wire 3 at *b*, with the wire 4 at *c*, the wire 3 again at *d*, with the wire 1 again at *e*, and with the wire 3 at *f*. Thus the wire 2 is seen to be mated with the three wires 1, 3, and 4 at the indicated junctures. By this method wire of octagon mesh can be produced, which is of a very rigid quality, to prevent distortion which is especially useful in the fabrication of wire glass, and because of its

resistance to distortion it permits of glazing the wire glass in two directions as the size of the octagons and squares are uniform when viewed along either vertical or longitudinal lines.

In the structure disclosed in Figure 7, the mesh can be preformed in single strips 6 of octagons or potential octagons with the horizontal twists 7 alone completed. As shown by the solid lines 8 in Figure 8, such strips can be brought together either directly by making their edges approach to complete the vertical twists, or alternatively by superimposing a second set of single strips as shown by the broken lines 9 and twisting the vertical twists of a solid and broken line mesh together as indicated at 10 in Figure 9 of the drawings.

Although this alternative method may be useful and practical, the preferred form of the invention is disclosed in Figures 1 to 6 inclusive of the drawings, as it lends itself more readily to fabrication by machine methods.

It is evident from the foregoing description of the invention that wire mesh formed in accordance therewith consists of symmetrical octagon meshes and symmetrical square meshes which are reasonably rigid and less adapted to be distorted than standard forms of wire meshes now commonly employed in the making of glass.

Although two methods of making octagonal wire mesh have been herein illustrated and described, it will be obvious to those skilled in the art that wire mesh of the character herein described may be produced by other methods.

I claim:

1. The method of making an octagonal wire mesh which comprises crossing two similar warps of wires at four different angles, and mating appropriate pairs of wires at each angular position.

2. The method of making an octagonal wire mesh which comprises crossing two similar warps of wires at four different angles and twisting appropriate pairs of wires at each angular position.

3. The method of making wire mesh which comprises crossing two similar warps of wires at four different angles and twisting appropriate pairs of wires at each angular position to produce an octagonal mesh with vertical and horizontal twists.

4. The method of making wire mesh which comprises crossing two similar warps of wires at different angles and mating a given wire of one warp with three wires of the other warp to produce an octagonal mesh.

5. The method of making wire mesh which comprises crossing two similar warps of wires at different angles and subjecting any particular wire to a cycle of four twists by twisting such wire twice with another particular wire and once with each of a second and third wire respectively.

FRANK W. PRESTON.