E. B. GIBERT.

WIRED GLASS.

APPLICATION FILED JUNE 8, 1906.

912,950. Patented Feb. 16, 1909.

Fig. 1bis.

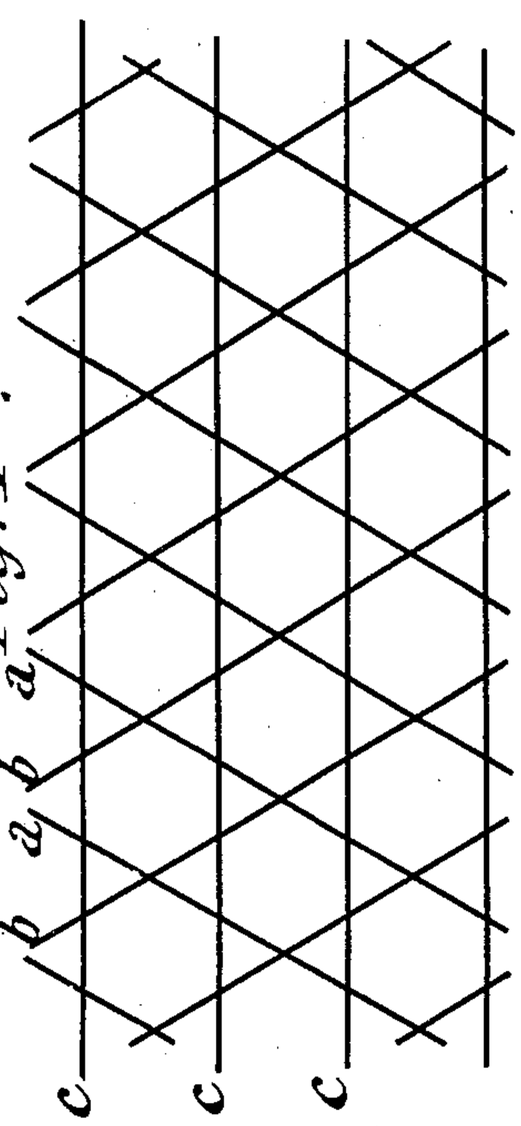


Fig. 4.

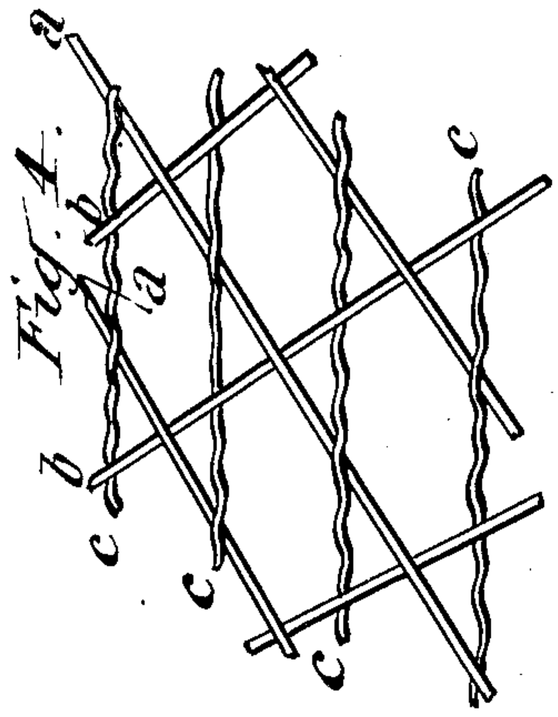


Fig. 6.

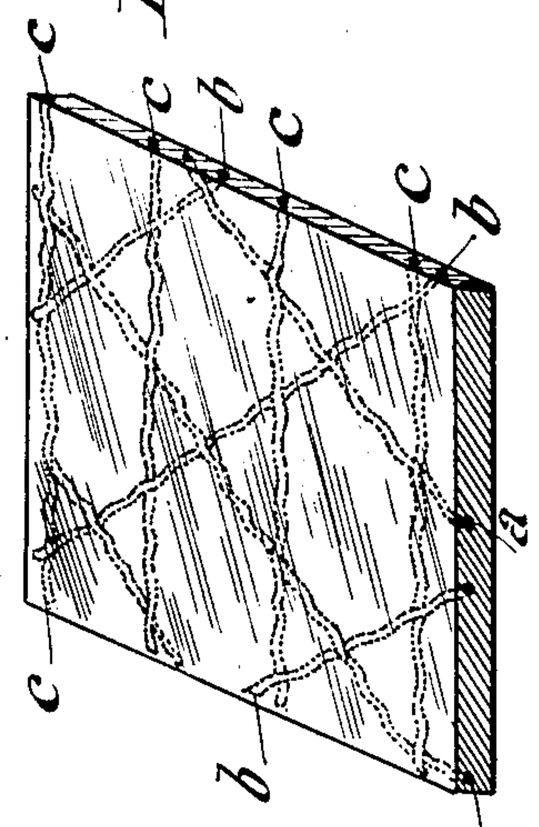


Fig. 3.

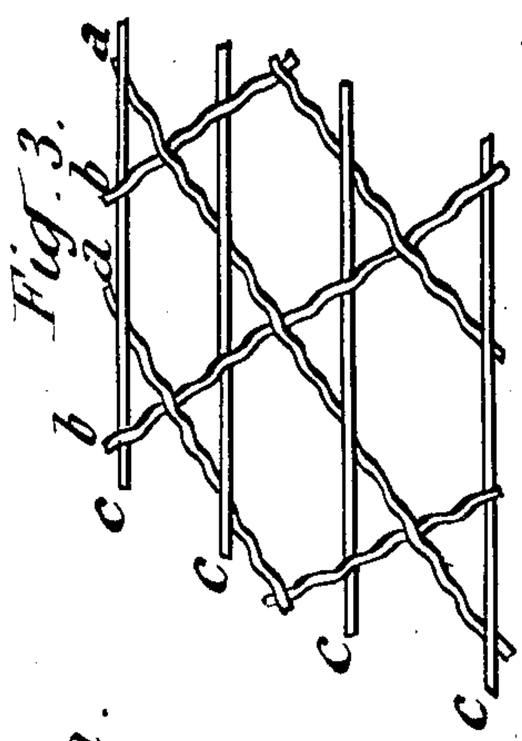


Fig. 1.

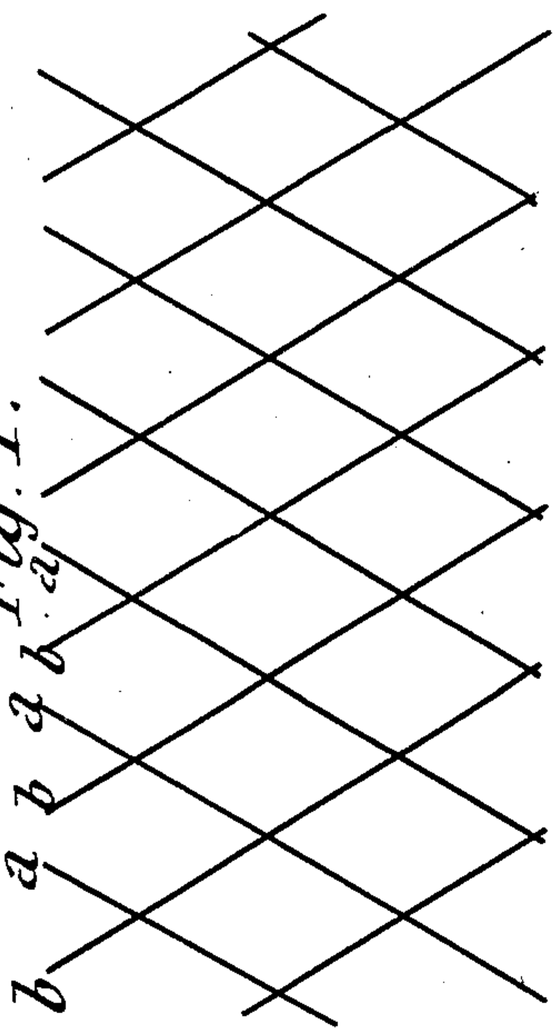


Fig. 2.

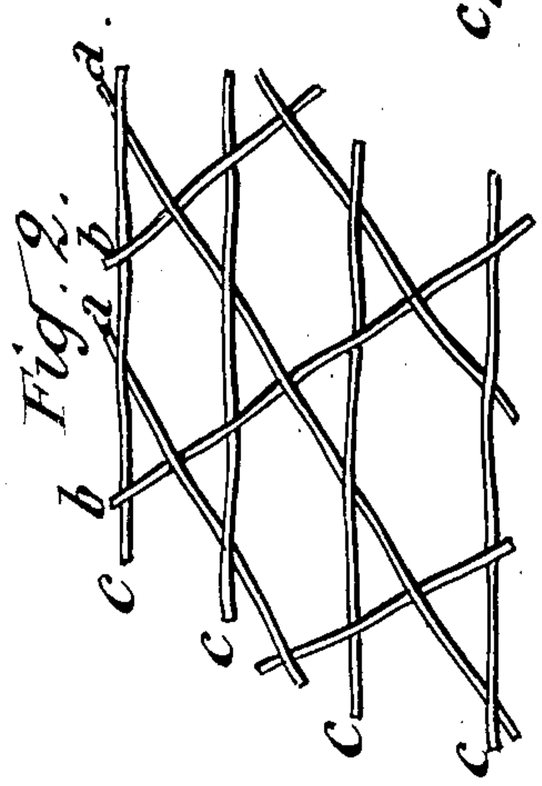
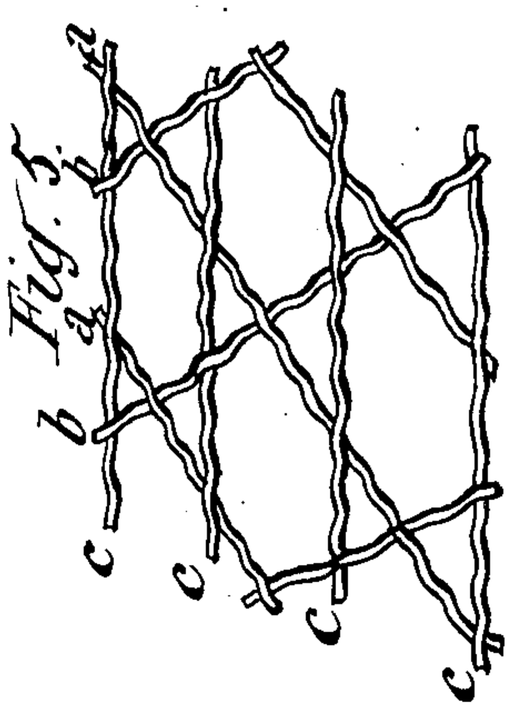


Fig. 5.



WITNESSES

L. H. Grote

W. E. Kerr

INVENTOR

Edmond Bernard Gibert

by Howson and Howson

Attorneys.

UNITED STATES PATENT OFFICE.

EDMOND BERNARD GIBERT, OF PARIS, FRANCE.

WIRED GLASS.

No. 912,950. Specification of Letters Patent. Patented Feb. 16, 1909.

Application filed June 8, 1906. Serial No. 320,818.

To all whom it may concern:

Be it known that I, EDMOND BERNARD GIBERT, a citizen of the French Republic, and residing at 168 Boulevard de Charonne, Paris, Seine, France, have invented certain new and useful Improvements in Wired Glass, of which the following is a full, clear, and exact description, and for which I have applied for Letters Patent in France, dated March 19, 1906.

This invention relates to wired glass and particularly to an improved netting adapted to be embedded in the glass.

The object of my invention is to produce a strong network of wires, plain or undulated, interlaced without torsion so as to form a mesh which will distribute its support evenly throughout the glass, be sufficiently thin even at the points where the wires cross that no material variation in the thickness of the glass at these points will occur, and at the same time be sufficiently rigid, without an outer supporting frame or tie wires, to withstand the deforming pressure to which it is subjected during the process of embedding the same in the glass.

In the accompanying drawings Figure 1 is a plan of a network of plain cross wires which form the base of the mesh embodying my invention; Fig. 1bis is a plan of the same with cross ties interlaced according to my invention to form a rigid mesh. Fig. 2 is a perspective of the same; Fig. 3 is a similar view undulated wires being substituted for the plain wires shown in Fig. 1; Fig. 4 is a similar view with undulated wires substituted for the cross ties shown in Fig. 1bis; Fig. 5 is a similar view showing all the wires undulated; and Fig. 6 shows the latter embedded in glass.

The network shown in Fig. 1 and consisting merely of two sets of parallel crossed wires *a* and *b*, has been used by me for wired glass, but without satisfactory results, since the network must be sustained by an outer frame work and nevertheless is easily deformed by the pressure to which it is subjected during the process of embedding the same in glass. I have found that by inserting cross ties *c*, preferably parallel to each other and interlaced with the wires *a* and *b*, a strong and rigid mesh is formed which avoids the difficulties just mentioned. To prevent "knots" at the points of intersection of the wires which would thus render the glass materially thinner and more fragile at these points, I interlace the wires *c* at a distance from the intersection of *a* and *b* and thus keep the mesh of a uniform two-wire thickness at every point where the wires *a*, *b*, and *c* cross each other. Besides keeping the mesh of a uniform two-wire thickness, this arrangement distributes the support of the mesh evenly through the glass instead of concentrating it at "knots" and leaving the intervening spaces of glass unsupported. The advantage of this will be readily recognized.

While the formation of the mesh with plain wires as shown in Fig. 2 provides a highly serviceable reinforcing network for the purpose specified, it is improved by employing undulated wires as shown in the Figs. 3 to 6. They may be substituted for either the wires *a* and *b* (Fig. 3) or for the cross ties *c* (Fig. 4) or for both (Fig. 5). In the last case the maximum strength is secured since the undulations of the wires interlock, as it were, and the distortion of the network by a strain upon the wires in any direction is prevented by the inclined surfaces of the undulations which oppose the movement of the wires over each other. Furthermore the speed with which the mesh can be manufactured is accelerated by the use of undulated wires, since the wires are not only guided by the undulations to their proper positions in the mesh, but retain the same through the "interlocking" of the wires even before the same are made taut, to a much greater degree than plain wires. Practically no time is lost in adjustment, and it has been actually demonstrated in practice that a workman can weave almost twice as much of the mesh utilizing undulated wires, as he can utilizing plain wires.

The mesh formed according to my invention is thus sufficiently rigid to withstand deformation during the process of embedding the same in the glass which it is designed to reinforce; is very strong, while at the same time preserving only a two wire thickness and that without being flattened by hammering or rolling; is absolutely free from clips or short tie wires at the points of intersection of the wires. It presents thus a mesh very well adapted for use in the manufacture of wired glass.

I claim as my invention:

1. A wire netting comprising two sets of

crossed wires, the wires of each set being equi-distantly separated and parallel to one another, and a third set of parallel cross wires interlaced therewith at points remote from the intersection of the crossed wires, in combination with a sheet of glass in which the netting formed by said wires is embedded.

2. A wire netting comprising two sets of crossed metallic wires, the wires of each set being parallel and equi-distant from one another, and a third set of equi-distantly separated parallel cross wires interlaced with said first sets at points bisecting their intersection, in combination with a sheet of glass in which the netting formed by said wires is embedded.

3. A wire netting comprising two sets of crossed wires, the wires of each set being parallel and equi-distantly separated, and a third set of equi-distantly separated parallel wires loosely interlaced therewith to form a mesh of practically equilateral hexagonal and triangular figures, in combination with glass in which said netting is embedded.

4. Wired glass comprising two sets of crossed wires, the wires of each set being equi-distantly separated and parallel to one another, and a third set of parallel waved crossed wires, loosely interlaced therewith at points bisecting the intersection of said crossed wires, and glass in which the netting formed by said wires is embedded.

5. Wired glass comprising two sets of crossed wires and a third set of cross tie wires interlaced therewith at points remote from the points of intersection of said first mentioned sets to form a mesh of only two wire thickness at all points of intersection and to evenly distribute the supporting strength of said mesh, in combination with glass in which said mesh is embedded, substantially as described.

6. Wired glass comprising two sets of crossed wires and a third set of cross tie wires interlaced therewith at points remote from the points of intersection of said first mentioned sets to form a mesh of only two wire thickness at all points of intersection and to evenly distribute the supporting strength of said mesh, some of said wires being undulated as and for the purpose specified, in combination with glass in which said mesh is embedded, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

EDMOND BERNARD GIBERT.

Witnesses:

BENJAMIN BLOCHE,

AUGUSTUS E. INGRAM.