(No Model.)

F. SHUMAN.

MACHINE FOR EMBEDDING WIRE IN GLASS.

No. 510,716. Patented Dec. 12, 1893.

FIG. 1.

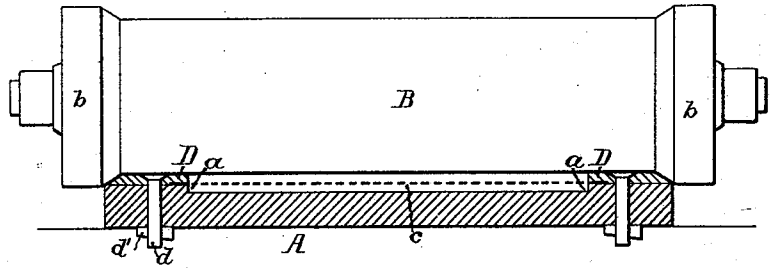

FIG. 2.

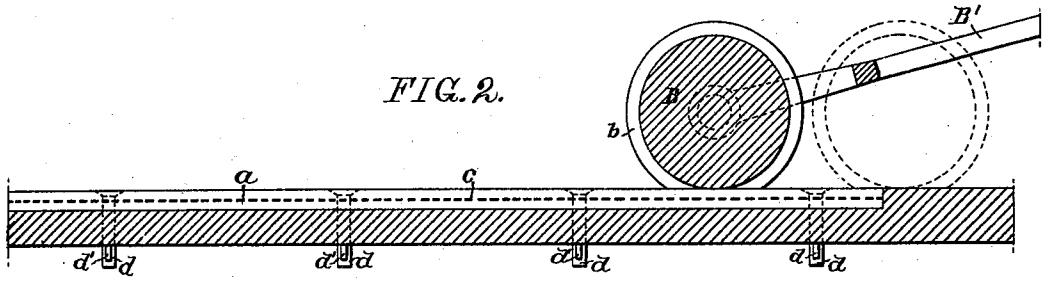

FIG. 3.

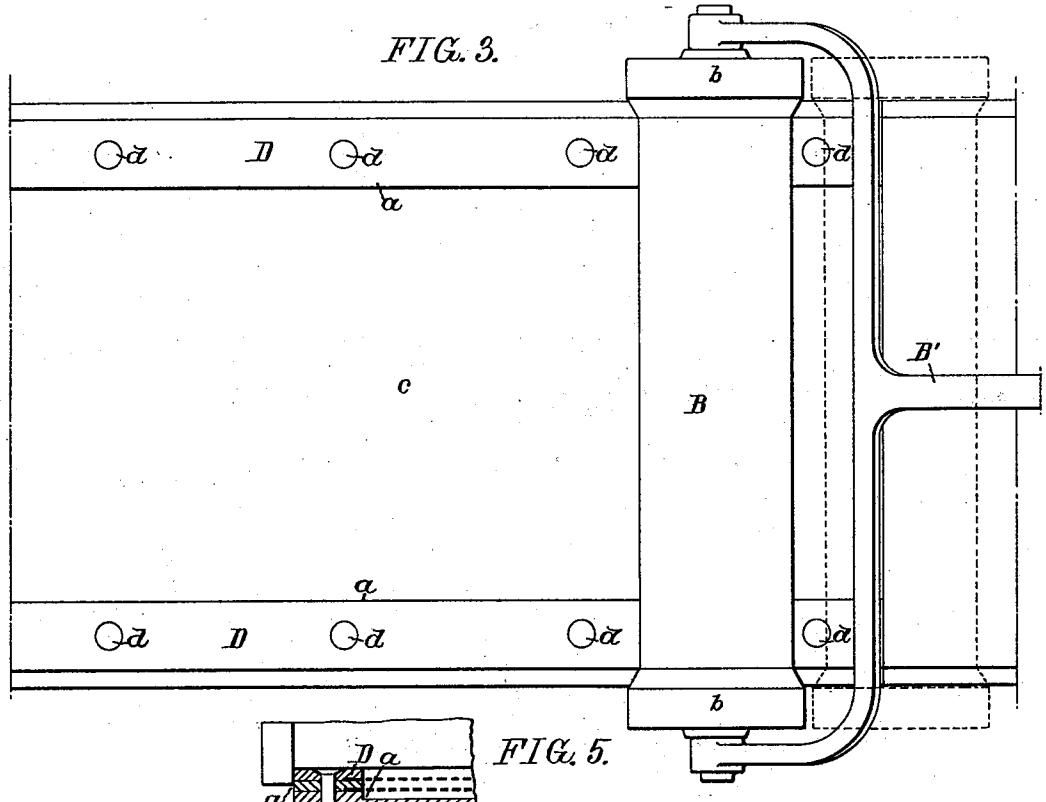

FIG. 5.

FIG. 4.

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MACHINE FOR EMBEDDING WIRE IN GLASS.

SPECIFICATION forming part of Letters Patent No. 510,716, dated December 12, 1893.

Application filed September 22, 1893. Serial No. 486,175. (No model.)

To all whom it may concern:

Be it known that I, FRANK SHUMAN, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Machines for Embedding Wire in Glass, of which the following is a specification.

The object of my invention is to construct a machine for embedding wire or wire gauze in glass, as fully described hereinafter reference being had to the accompanying drawings, in which—

Figure 1, is a transverse sectional view of a machine for embedding wire in glass, showing the wire in position. Fig. 2, is a longitudinal sectional view. Fig. 3, is a plan view. Fig. 4, is a view of a sheet of wire embedded in the glass; and Fig. 5, is a view of a modification.

A is the bed of the machine.

B is a roller having flanges *b b* adapted, in the present instance, to fit over the plates D, D forming rails. This roller is provided with a yoked handle B′ in the present instance by which it is moved over the bed. The roller may, however, be mounted on a carriage or propelled by power.

The bed has a cavity *c* bounded by walls *a* and mounted upon these walls are the clamping plates D between which and the bed is secured the wire or wire netting to be embedded within the glass; the clamping plates are secured in the present instance to the bed by bolts *d* having eyes through which wedges *d′* are forced, thus holding the wire in a stretched position over the cavity *c* in the bed; the inner edges of the plates D are preferably in line with the walls *a* so that the edges of the glass when finished will be even. When it is wished to form an under cut sheet of glass the plates D may be set back off or beyond the line of the walls *a*.

Two rolls may be used, as shown by dotted lines in Fig. 2, but ordinarily one roll will answer the purpose.

The operation of the machine is as follows:—The wire to be embedded is clamped between the bed and the plates D over the cavity *c*, the height of the walls *a* and the thickness of the plates D determining the thickness of the glass. If the wire is to be embedded in the center of the glass then the plates are the same height as the walls, but if the wire is to be placed in one side of the glass then either the walls or the plates are reduced. The side walls may be made detachable so that they may be removed and walls differing in thickness may be placed in position so as to roll glass of different thickness. After the wire has been placed in position and clamped the molten glass is poured onto the wire through which it passes into the cavity *c*, sufficient glass being poured onto the bed to make a sheet of the required width and length. The roller then is moved forward as indicated in Fig. 2, forcing before it a certain proportion of the mass of glass and pressing the glass through the meshes of the wire work, so that the wire is completely embedded within the glass and the glass has an even surface above and below the wire.

The bed is preferably heated, by a furnace situated directly under it or by other means common in heating plates of this character.

To remove the wire embedded glass from the machine the keys *d′* are withdrawn, the plates D removed, and the sheet of glass taken from the machine and transferred to the annealing furnace.

My invention although intended for embedding wire of any description is intended mainly to embed heavy wire or wire netting within the glass.

It will be understood that when two or more sheets of wire webbing are to be embedded in the glass I may build up the bed as shown in Fig. 5, placing a filling piece a^2 between the bed and the plate D and a sheet of wire webbing between the filling piece and the bed and another sheet between the filling piece and the plate D.

I claim as my invention—

1. The combination in a machine for embedding wire in glass, of the bed, walls in said bed, clamp plates on each side of the bed, a cavity between the clamp plates over which the wire is placed, with a presser adapted to press the glass, substantially as described.

2. The combination of the bed, its side walls, clamp plates mounted on said side walls, between which and the walls the wire is clamped, a roller adapted to pass over the bed and press the glass, said roller resting upon the clamp plates, substantially as described.

3. The combination of the bed, side walls, clamp plates mounted on said walls for clamping the wire, a flanged roller mounted on the clamp plates and adapted to press the glass, with detachable fastenings for the plates, substantially as described.

4. The combination of the bed, the detachable side walls, the clamp plates thereon for the wire and a roller, substantially as set forth.

5. The combination of the bed, the side walls, the clamp plates, filling pieces between the plates and the walls for separating two or more webs of wire, substantially as described.

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

FRANK SHUMAN.

Witnesses:
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JOSEPH H. KLEIN.