

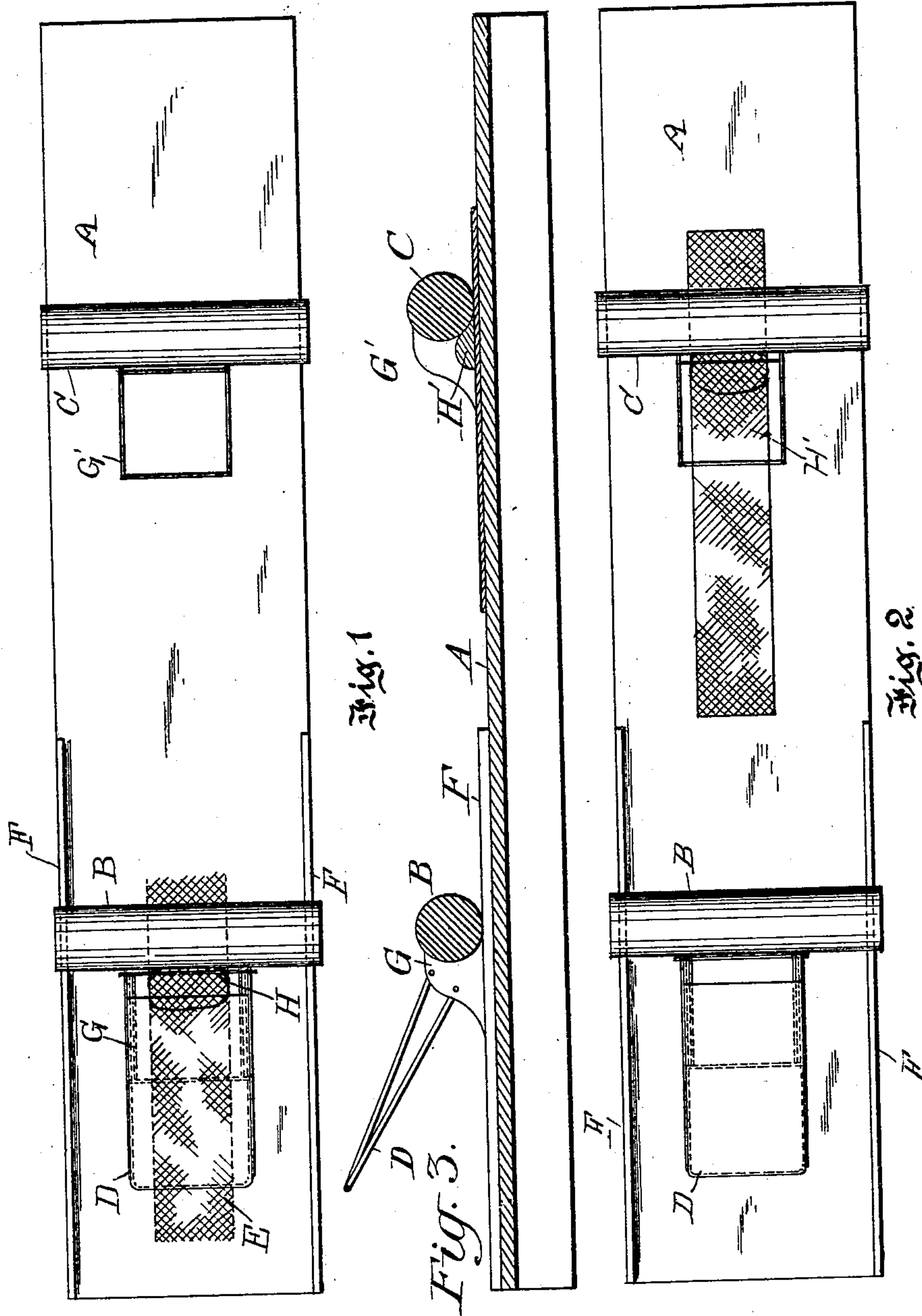
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Patented July 2, 1901.

J. A. SWEARER & C. E. TOYNBEE.
METHOD OF MAKING WIRE GLASS PLATES.

(Application filed Mar. 17, 1899.)

(No Model.)



Witnesses
Lindeau & B. Little
M. W. Gaskey.

Inventors
James A. Swearer and
Charles E. Toynbee,
by Wm L. Pierce,
their Attorney.

UNITED STATES PATENT OFFICE.

JAMES A. SWEARER AND CHARLES E. TOYNBEE, OF PARNASSUS,
PENNSYLVANIA.

METHOD OF MAKING WIRE-GLASS PLATES.

SPECIFICATION forming part of Letters Patent No. 677,609, dated July 2, 1901.

Application filed March 17, 1899. Serial No. 709,405. (No specimens.)

To all whom it may concern:

Be it known that we, JAMES A. SWEARER and CHARLES E. TOYNBEE, citizens of the United States of America, and residents of Parnassus, county of Westmoreland, and State of Pennsylvania, have invented certain new and useful Improvements in Methods of Making Wire-Glass Plates, of which the following is a specification.

10 In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of a form of apparatus for carrying out our improved method, showing the position of the parts and of the partially-formed lower half of the plate. Fig. 2 is a plan view showing the apparatus during the operation of rolling the top half of the plate. Fig. 3 is a longitudinal vertical section through the medial line of Fig. 2.

20 Our invention, generally stated, relates to a method of making wire-glass plates wherein the formation of the lower half of the plate is entirely completed before the formation of the other or top half of the plate is commenced.

Another feature of the process is that the under half of the plate when formed in the manner just described becomes sufficiently chilled and hardened that it may be used to support the weight necessary for the formation of the upper half of the plate, rendering it unnecessary to employ tracks to support the roller during the second rolling; nor does the first roller necessarily require to be recessed as in the ordinary practice.

30 In the several figures, A is the ordinary casting-table; B, the leading roll; C, the following roll; D, an inclined chute, down which the wire network E is fed; G G', the guides which determine the width of the sheet, and F F' the tracks upon which the leading roll moves.

45 We have deemed it unnecessary to illustrate the means for propelling the rolls, which may be by hand-wheels or other devices.

In the practice of our invention we take a suitable quantity of glass and pour the same upon the casting-table A in advance of the leading roll B, substantially as seen at H. The wire E is then permitted to slide down the inclined chute D as the leading roll B is

advanced upon the tracks, the said roll having been adjusted at a height above the bed of the table substantially equal to half the thickness of plate desired, assuming that the wire-glass is desired to be located in the middle of the plate. As the leading roll continues to advance a sheet of glass will appear at the rear thereof of substantially half the thickness of the product desired and having the wire network cemented to its upper face.

The process thus far described is old, excepting that it has never been practiced without some means for locating the wire in the interior of the glass sheet—that is, under the surface thereof. It has always heretofore been considered necessary to pour the second casting as speedily as possible upon the end of the lower half of the plate as soon as it cleared itself from the leading roll, or at least as soon as there was pouring-space. Theory and practice have been that otherwise the lower half of the plate of glass would become so chilled that the upper half of the plate would not weld to the same. The effort has always been to make the operation as continuous and rapid as possible and to have the rolling of the upper half going on under the second roller while the greater portion of the lower half was still being formed under the leading roll. We have discovered that even in sheets of great length such rapid and continuous work is not necessary and that the lower half of the plate may be completely formed and escape entirely from the leading roll before any work is done at all toward the formation of the upper half of the plate. Nevertheless, the two halves will be found to be welded together perfectly. Therefore the formation of the upper half of the plate in our method is not begun until after the first roller has completed its work and the entire lower half of the plate has been completely formed. Then, as shown in Fig. 2, a second casting H' of glass is dumped upon the table in sufficient quantity to form the upper half of the plate, and the second roll being advanced forms this upper half and at the same time welds it to the lower half and to the wire network which had previously been cemented to the top thereof. By this method of delay-

ing the formation of the second half of the plate until the formation of the first half and the incorporation thereto of the wire network has been completed the glass of the first half becomes stiff enough to sustain the weight of the following roll C without the aid of any tracks, although of course tracks may be used, if desired; but they are unnecessary. When no tracks are used with the second roll, the first roll does not require to be recessed, as it can run on light tracks, which may be made of a height equal to substantially half the thickness of glass plate desired.

Various modifications may be made in the apparatus employed, and we do not limit ourselves to the specific instrumentalities shown; but

We claim—

1. The method of making wire-glass plates, which consists in rolling the lower half of the plate simultaneously with the cementing to

the top thereof of the wire network, and after the formation of said lower half has been entirely completed rolling the top half of the plate upon said completed lower half.

2. The method of making wire-glass plates, which consists in rolling the lower half of the plate simultaneously with the cementing to the top thereof of the wire network, and, after the lower half has been entirely completed rolling the molten glass to form the top half of the plate upon said completed lower half which supports in its stiffened condition the pressure of the second rolling.

Signed by us at Parnassus this 14th day of March, A. D. 1899.

JAMES A. SWEARER.
CHARLES E. TOYNBEE.

Witnesses:

F. J. GLASS,
W. C. WATKINS.