

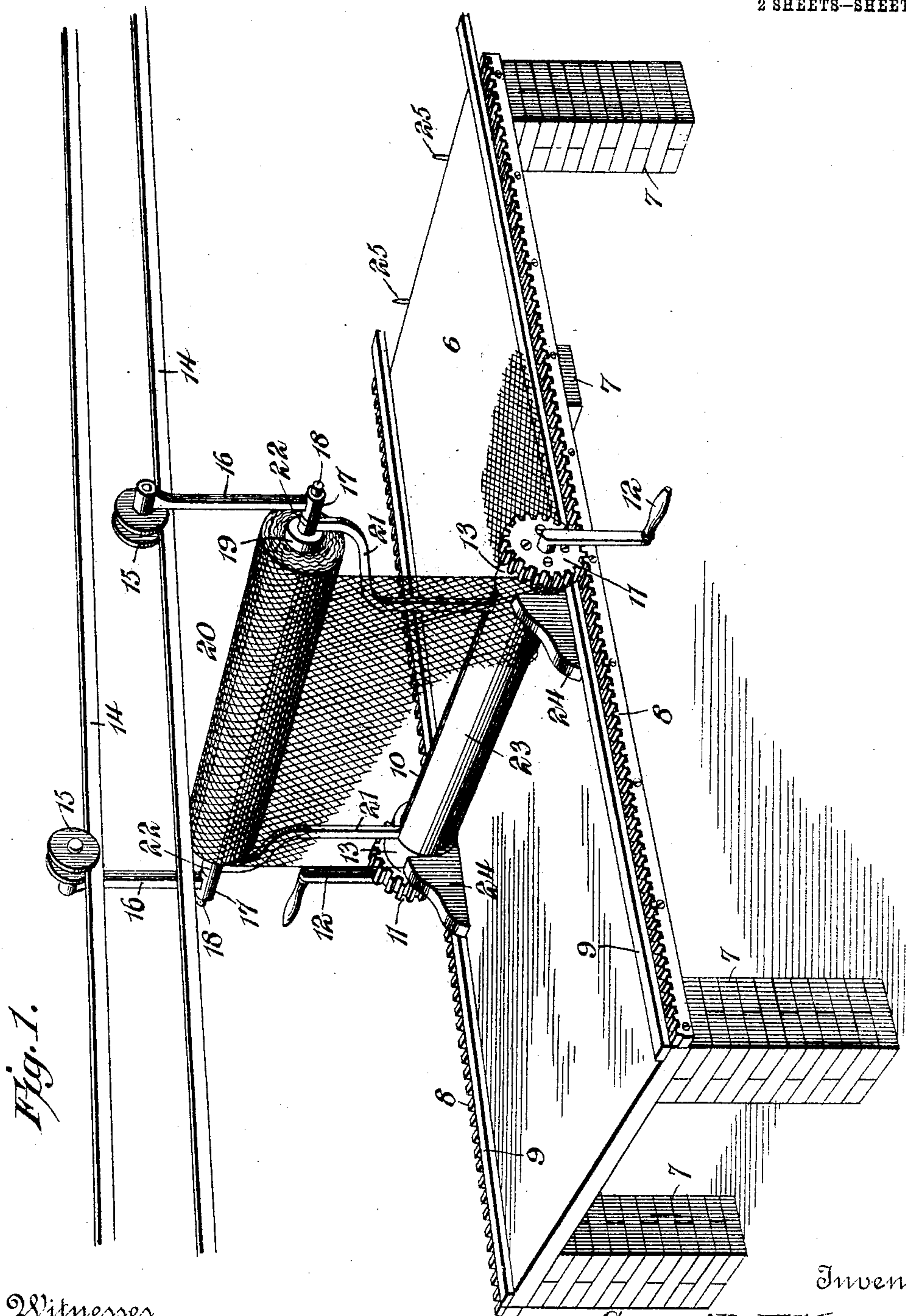
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PATENTED NOV. 28, 1905.

G. W. MORENUS.
APPARATUS FOR MAKING WIRE GLASS.

APPLICATION FILED JULY 19, 1905.

2 SHEETS—SHEET 1.



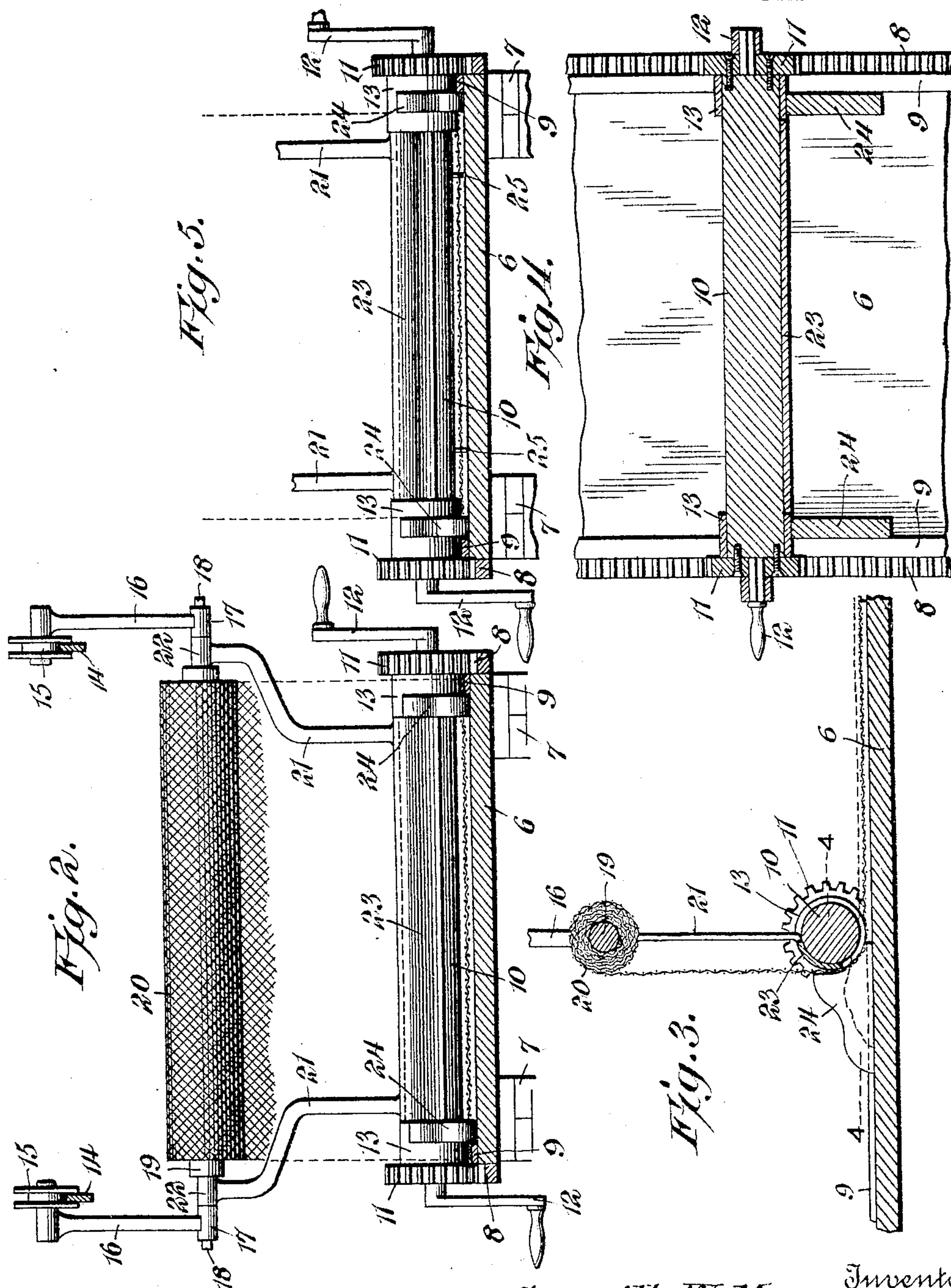
Witnesses
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Inventor,
Granville W. Morenus,
By *E. J. Siggers,*
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UNITED STATES PATENT OFFICE.

GRANVILLE W. MORENUS, OF KANE, PENNSYLVANIA.

APPARATUS FOR MAKING WIRE-GLASS.

No. 805,659.

Specification of Letters Patent.

Patented Nov. 28, 1905.

Application filed July 19, 1905. Serial No. 270,361.

To all whom it may concern:

Be it known that I, GRANVILLE W. MORENUS, a citizen of the United States, residing at Kane, in the county of McKean and State of Pennsylvania, have invented a new and useful Apparatus for Making Wire-Glass, of which the following is a specification.

This invention relates to means for manufacturing glass sheets with wire embedded therein.

The principal object is to provide an exceedingly simple structure of a novel nature whereby a high grade of glass of the above character may be rapidly manufactured, said glass having the wire properly embedded therein, and, furthermore, being substantially without the defects caused by the confined bubbles of gas and the like generated by the contact of the molten glass with the wire.

The preferred embodiment of the invention is illustrated in the accompanying drawings, but an inspection of the claims hereto appended will clearly indicate that such invention is not limited to the particular structure set forth.

In said drawings, Figure 1 is a perspective view of the apparatus with a portion of the wire-netting broken away to more clearly illustrate said apparatus. Fig. 2 is a cross-sectional view through the same. Fig. 3 is a longitudinal sectional view. Fig. 4 is a horizontal sectional view on the line 4 4 of Fig. 3. Fig. 5 is a vertical cross-sectional view showing the structure when employed with narrower wire-netting.

Similar reference-numerals designate corresponding parts in all the figures of the drawings.

In the embodiment illustrated a casting-table 6 of suitable proportions is employed that may be supported in any suitable manner—as, for instance, upon piers 7. This casting-table has secured to its opposite longitudinal edges racks 8, and mounted on the margins of the table 6 inside the racks are tracks or “trangs” 9. Operating over the table is a roller 10, carrying at its ends cog-wheels 11, operating on the racks 8, said roller being furthermore provided at its ends with handle-cranks 12. Annular bands or tread-flanges 13 are carried by the roller 10 and are located just inside the cog-wheels, said flanges or bands running upon the tracks 9 and projecting inside the same, as clearly shown in Figs. 2 and 4.

Suitably mounted over the casting-table are

spaced tracks 14, on which operate trolleys 15, and suspended from said trolleys are hanger-links 16, provided at their lower ends with journal-boxes 17. In the journal-boxes 17 are rotatably mounted the gudgeons 18 of a spool 19, carrying a roll of wire-netting 20 to be embedded in the glass. The gudgeons 18, furthermore, carry other hanger-links 21, having at their upper ends eyes 22, that receive said gudgeons, the lower ends of said links 21 being secured to a wire-guide 23, this guide fitting between the flanges or bands 13 and being preferably flush therewith. The guide conforms to and extends partially around the roller 10, as clearly shown in Fig. 3, terminating short of the under side of the same. The usual “guns” 24 are employed, which operate between the tracks or trangs 9, and preferably bear at their rear ends against the inwardly-extending portions of the bands or flanges 13. Buttons or upstanding projections 25 may be located at the rear end of the table for the purpose of securing one end of the wire-netting.

In operation the roller with the associated wire carrier, guide, and gun is located at the rear end of the table, the wire-netting from the roll 20 being passed beneath the roll and preferably with the selvage or side margins engaged between the tracks 9 and flanges 13, as shown in Fig. 2. A gather or batch of glass is then placed upon the table in advance of the roller, and said roller is then operated, by means of the handle-cranks, toward the front end of the table. This operation causes the lump or gather of glass to be moved forwardly, and at the same time a smooth sheet will be formed by the roller, the glass rising through the netting to the said roller. During this operation it will be noted that the wire between the flanges is maintained in spaced relation to the roller by the flanges and the clamping action of said flanges and tracks on the margins of the wire. Moreover, this clamping action takes place just at the point where the glass is being forced through the wire. The result is that certain wire is embedded centrally within the sheet, and, moreover, this rising action permits the free escape of the gaseous products caused by the contact of the molten glass and wire. The guide 23, furthermore, serves to prevent the sagging of the sheet of wire-netting at the center just prior to its introduction into the glass. The thickness of the glass is therefore defined by the thickness of the tracks

and flanges, which tracks and flanges, moreover, effectually locate the position of the wire-netting in the finished sheet. Said finished sheet will of course have an exposed
 5 selvage of wire, which may be either trimmed off in the usual manner or can be employed in connection with means for fastening the glass in place.

While the clamping action of the flanges
 10 and tracks upon the wire-netting is an important feature of this invention, insuring the proper location of said netting when introduced into the glass, still under certain conditions and with the use of the guide 23
 15 the netting may be passed about the inwardly-extending portions of the flanges 13, as illustrated in Fig. 5, without being so clamped, in which case the pins or projections 25 are preferably employed in order to secure the
 20 rear end of the netting against movement during the preliminary formation of the sheet. In this arrangement the guns 24 bear directly against the flanges just outside the edges of the netting.

25 From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that
 30 various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

35 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In apparatus of the character described, the combination with a casting-table having
 40 tracks, of a roller operating over the table, and annular tread-flanges carried by the roller and operating on the tracks, said flanges constituting guides around which the wire passes.

2. In apparatus of the character described,
 45 the combination with a casting-table having tracks, of a roller operating over the table, annular tread-flanges carried by the roller and operating on the tracks, said flanges constituting guides around which the wire passes, and
 50 means for feeding wire-netting to the roller and to the flanges.

3. In apparatus of the character described, the combination with a casting-table having
 55 tracks, of a roller operating over the table, and annular tread-flanges carried by the roller and tracks, said flanges projecting inside the tracks, said projecting portions constituting guides about which the wire passes, and said guides maintaining the wire that is between
 60 them in spaced relation to the table and the roller.

4. In apparatus of the character described, the combination with a casting-table having
 65 tracks, of a roller operating over the table, annular tread-flanges carried by the roller and

operating on the tracks, said flanges constituting guides around which the wire passes, and means for feeding wire-netting to the roller and to the flanges with the margins of said netting between the tracks and flanges. 70

5. In apparatus of the character described, the combination with a casting-table, of a roller operating thereover and having a portion thereof between the side margins of the table spaced from said table, and means for
 75 feeding and directing wire-netting downwardly between the roller and table with the entire portion of said netting between the side margins of the table spaced from both the table and the roller. 80

6. In apparatus of the character described, the combination with a casting-table, of a roller movable thereover and having its main portion spaced therefrom, means rotatable
 85 with the roller to position the wire in spaced relation thereto, and a guide for the wire cooperating with the spacing means, said guide being disposed in advance of the roller and maintained against rotation therewith.

7. In apparatus of the character described,
 90 the combination with a casting-table, of a roller movable thereover and having its main portion spaced therefrom, spaced annular flanges carried by and rotatable with the roller to maintain said roller in spaced relation to
 95 the table and to position the wire in spaced relation to the roller, and a guide for the wire located between the flanges and held against rotation with the roller.

8. In apparatus of the character described,
 100 the combination with a casting-table, of tracks thereon, a roller movable over the table, spaced annular flanges carried by the roller, operating on the tracks and extending beyond the inner sides thereof, said flanges constituting
 105 means for spacing the wire-netting from the roller, and a guide interposed between the flanges and held against rotation therewith.

9. In apparatus of the character described, the combination with a casting-table, of tracks
 110 mounted thereon, a roller movable over the table, spaced annular flanges carried by the roller and operating on the tracks, a wire-guide interposed between the flanges, and means for securing the guide in spaced rela-
 115 tion to the table, said guide bearing against the portion of the roller between the flanges.

10. In apparatus of the character described, the combination with a casting-table, of a track
 120 located over the table, means movably mounted on the track for movably suspending a spool of wire over the table, a roller operating over the table, and means for directing the wire from such suspended spool between and
 125 in spaced relation to the table and the roller.

11. In apparatus of the character described, the combination with a casting-table, of a track
 130 located above the table, means movably mounted on the track for movably suspending a spool of wire over the table, a roller operating over

the table, and means for directing the wire from such suspended spool between and in spaced relation to the table and the roller, said means including a guide hung from the 5 spool-suspending means and located in advance of the roller.

12. In apparatus of the character described, the combination with a casting-table having racks at the sides thereof, of tracks mounted 10 on the table, a roller movable over the table, cog-wheels carried by the roller and operating on the racks, flanges carried by the ends of the roller and operating on the tracks, said flanges projecting beyond the inner sides 15 of the tracks, a movable spool-carrier suspended over the casting-table, and a guide suspended from said spool-carrier and located between the flanges and against the advance portion of the roller.

20 13. In apparatus of the character described, the combination with a casting-table, of means

for rolling a sheet of glass thereupon, means for feeding netting beneath the sheet-rolling means, and means movable with the rolling means for simultaneously clamping the net- 25 ting at the line of the rolling action.

14. In apparatus of the character described, the combination with a casting-table, of a roller operating on the table for forming a sheet of glass thereupon, means for directing 30 the netting beneath the roller, and coacting devices carried by the roller and table for simultaneously clamping the netting at the line of the rolling action.

In testimony that I claim the foregoing as 35 my own I have hereto affixed my signature in the presence of two witnesses.

GRANVILLE W. MORENUS.

Witnesses:

J. E. MULLIN,
L. A. LARSON.