A. SHUMAN.

MACHINERY FOR ROLLING GLASS.

APPLICATION FILED FEB. 18, 1920.

1,382,608. Patented June 21, 1921.

2 SHEETS—SHEET 1.

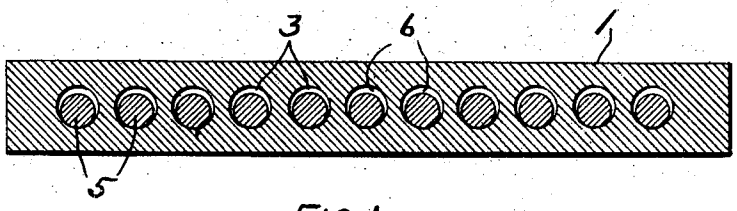


FIG. 1.

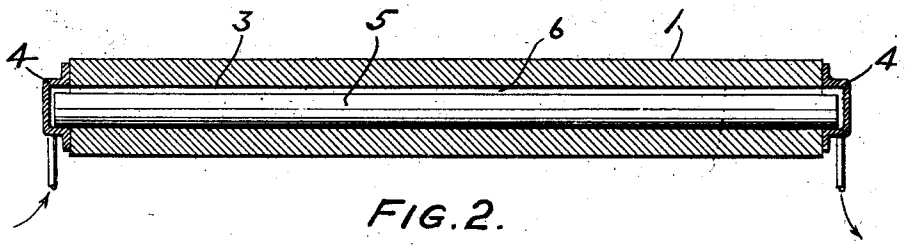


FIG. 2.

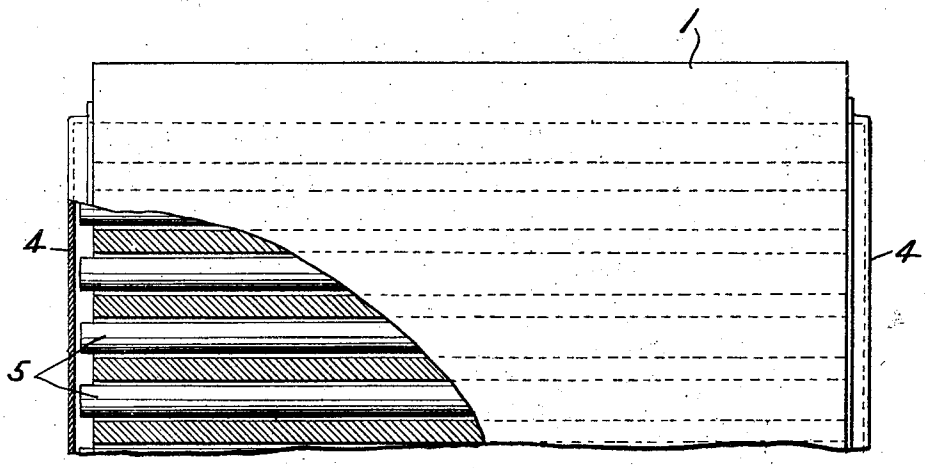


FIG. 3.

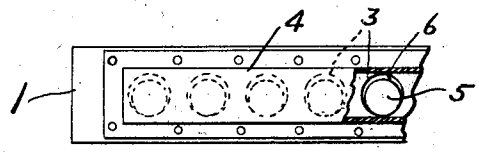


FIG. 4.

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2 SHEETS—SHEET 2.

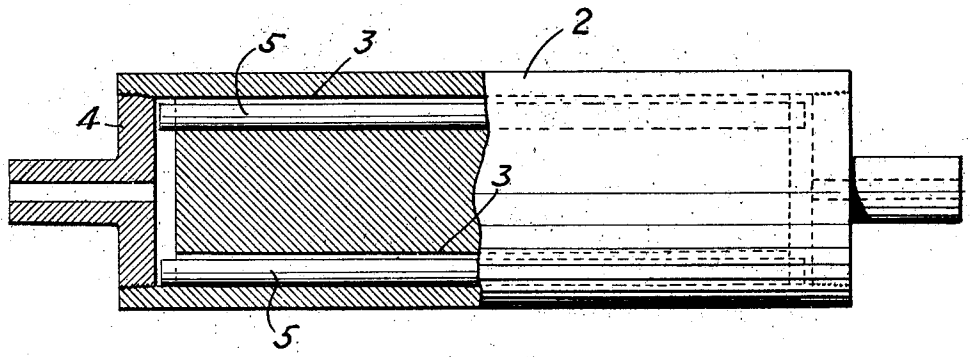


FIG. 5.

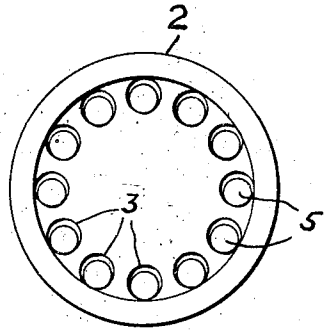


FIG. 6.

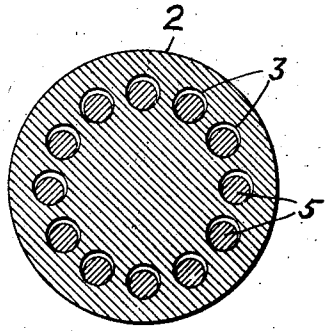


FIG. 7.



FIG. 8.

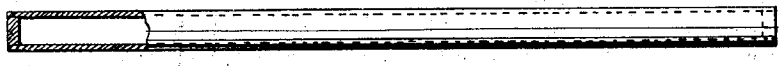


FIG. 9.

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ARNO SHUMAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO PENNSYLVANIA WIRE GLASS COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

MACHINERY FOR ROLLING GLASS.

1,382,608. Specification of Letters Patent. **Patented June 21, 1921.**

Application filed February 18, 1920. Serial No. 359,721.

To all whom it may concern:

Be it known that I, ARNO SHUMAN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machinery for Rolling Glass, of which the following is a specification.

The elements of glass rolling machinery to which the invention relates are the water-cooled roller and the water cooled table, and the principal objects of the present invention are, first, to decrease the supply of water required and increase the heat exchange effected, and second, to apply the water where it will be most effective in carrying away heat to keep the temperatures at different parts of the roller or table sufficiently alike to avoid warping and the consequent defects in the rolled sheets.

The invention will be claimed at the end hereof but will be first described in connection with the embodiments of it chosen for illustration in the accompanying drawings forming part hereof and in which—

Figure 1, is a transverse sectional view of a water cooled table embodying features of the invention.

Fig. 2, is a longitudinal sectional view of the same.

Fig. 3, is a top or plan view of the table with parts broken away.

Fig. 4, is an end view of the table with parts broken away.

Fig. 5, is a view, partly in section, of a roller embodying features of the invention.

Figs. 6 and 7, are an end view of a roller with parts removed and a cross section of the same, and

Figs. 8 and 9, are views, with parts broken away, of solid and hollow rods.

In the drawings the element for rolling glass is shown as a table 1, Figs. 1–4, and as a roller 2, in Figs. 5–7. In each case the element is provided through its body with water channels 3, and there are inlet and outlet water connections or headers 4, shown as common to all the channels 3. In the channels 3, are loosely arranged rods 5, of less cross-section than the channels and these rods may be solid as shown in Fig. 8, or hollow and stopped at the ends as shown in Fig. 9.

In the case of the table and of the roller the channels 3, are shown as circular in cross-section and the rods are shown as of similar but smaller cross-section. That is the natural and most easily manufactured form of cross-section but it might in some cases be departed from. The differences in the size of the cross-section is important because this difference in size provides water spaces 6, and these water spaces are shown as crescent shaped.

Either working face of the table may be turned uppermost and used to roll glass on, and the respective faces are usually provided with different designs. No matter which face is turned uppermost the portion of the water space 6, of largest cross-sectional area is adjacent to the top where it is found to produce the best result with the least water, and this occurs automatically because the rods, by gravity, will occupy the lowest position in the channels. In the case of the roller many of the advantages are the same although the rods will constantly shift their position in the channels as the roller revolves. The generally crescent shape in cross-section of the water passages insures the application of the water in thin streams of large area and so a limited supply of water can be most effectively applied for cooling purposes.

In referring to glass as the substance to be rolled by the described machinery, I desire to include the use of the machinery for other equivalent purposes.

I claim:

1. A table for rolling glass provided through its body with water channels circular in cross-section and having inlet and outlet water connections, and rods of less circular cross-section than the channels arranged for rolling therein, to provide crescent shaped water spaces near the top surface of the table whichever of its working surfaces is uppermost.

2. A table for rolling glass provided through its body with water channels and having inlet and outlet water connections, and the rods of less cross-section than the channels arranged for rolling therein to provide water spaces near the top surface of the table whichever of its working surfaces are uppermost.

ARNO SHUMAN.