

(No Model.)

G. A. MARSH, Jr.
GLASS GRINDING OR POLISHING TABLE.

No. 477,305.

Patented June 21, 1892.

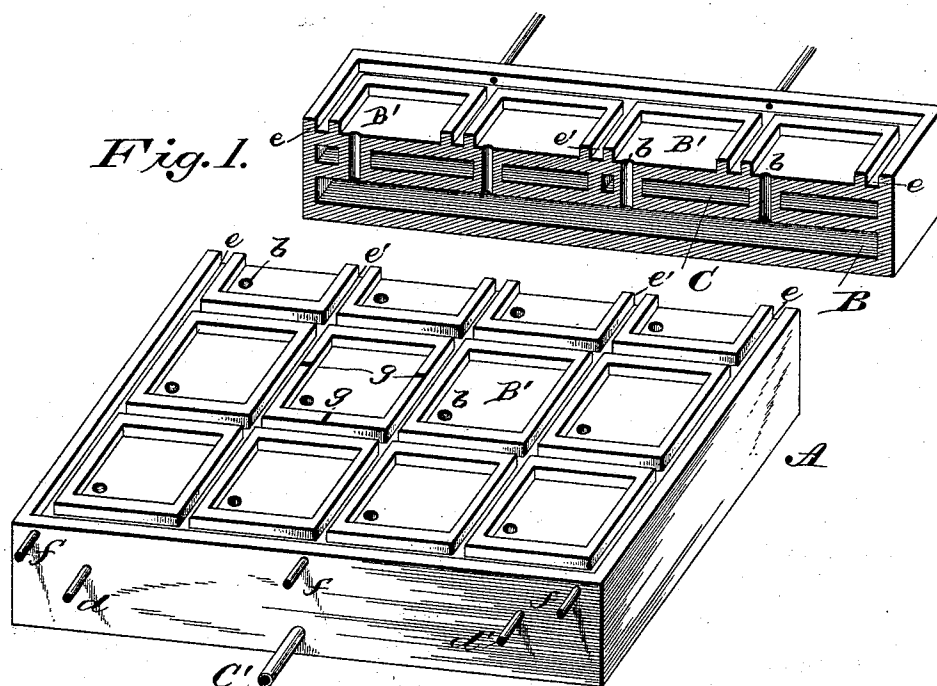
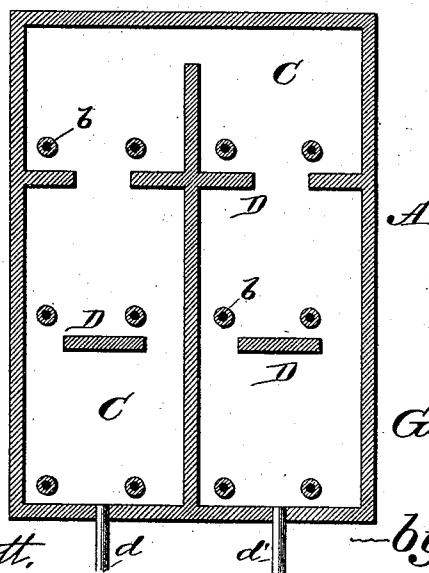


Fig. 2.



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Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE A. MARSH, JR., OF SANDUSKY, OHIO.

GLASS GRINDING OR POLISHING TABLE.

SPECIFICATION forming part of Letters Patent No. 477,305, dated June 21, 1892.

Application filed September 7, 1891. Serial No. 405,010. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. MARSH, Jr., a citizen of the United States of America, residing at Sandusky, in the county of Erie and State of Ohio, have invented certain new and useful Improvements in Glass Grinding or Polishing Tables; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in grinding or polishing tables such as are used in the manufacture of sheet or plate glass, the same being designed more especially as an improvement upon the applications made by me February 12, 1891, Serial No. 381,190, and September 30, 1891, Serial No. 407,346; and my present invention consists in providing beneath the vacuum or air cells connected with the vacuum-chamber a space in which water, liquid, or gas may be circulated for the purpose of absorbing the heat generated in the grinding or polishing process, and the invention further consists in the construction of the table, as will be hereinafter set forth. In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view showing a section of the table separated to show the internal construction thereof. Fig. 2 is a plan view taken through the water-chamber.

A designates a section of a grinding or polishing table, which is adapted to receive and retain the plates of glass thereon by atmospheric pressure or by causing a vacuum beneath the glass, and the upper surface of the table is constructed substantially as shown in my prior application—that is to say, it is provided with a series of vacuum-chambers and water-channels for supplying water to a packing placed on the raised walls of the water-channel or over the vacuum-cells.

The air-chamber B, which is connected with air-exhaust mechanism, is located near the bottom or base of the sections of the table and is connected by suitable apertures *b* with the vacuum-cells B'. Above the air-chamber B, I provide a water-chamber C, which has no

connection with the air-chamber or vacuum-cells or water-channels adjacent to the vacuum-cells, and this water-chamber C is provided with a suitable number of vertical braces D, arranged so as to form deflectors and secure a circulation of the water or cooling medium beneath the vacuum-cells. The water is admitted through a suitable inlet-pipe *d* and circulates in the chamber C and passes out through an outlet-pipe *d'*, or vice versa. The raised walls surrounding each vacuum-cell may be provided with recesses or depressions *e*, so that water which is admitted for moistening the packing may pass in suitable quantities into the vacuum-cells, thus keeping said cells cool.

In polishing glass it is found necessary to heat it by friction to a certain extent, and the glass being a good non-conductor the heat generated by friction in buffing or polishing is to a great extent held by the glass and the process of polishing delayed, as any excess of friction beyond a certain point will over-heat the glass and break it.

With my improved table, which dispenses entirely with the use of plaster, the glass is held upon the table by a vacuum and virtually becomes a part of the table, and the iron or metal of which the table is made, being a good conductor of heat, radiates that generated by friction upon the glass, and thus admits of a much more severe and harder rubbing than is practiced where a bed of plaster or other non-conductor is placed between the glass and table, so that when the table is kept cool by the circulation of water, cold air, or gas it is possible to keep the temperature of the glass under the control of the operator, so that any amount of friction can be applied without overheating or liability of fracturing the glass.

The air-chamber C is connected by means of a pipe C' with a suitable air-exhaust apparatus and pipes *f*, connecting with the channels or depressions *e*, so that water or other suitable liquid can be fed to said channels to moisten the packing which is placed above the raised walls adjacent to the marginal channels *e* and the central channels *e'*, thereby providing means to keep said packing moist, so that a vacuum in the cells or chambers B' may be better maintained. In practice a certain

amount of water will be drawn into the cells which collects and is withdrawn, therefore, through the apertures *b*, which connect with the vacuum-chamber B. Under certain conditions it may be desired to feed water into these chambers to absorb the heat generated in the polishing of the glass, and when such conditions arise the table may have slight depressions or grooves *g* in the upwardly-projecting walls, forming the vacuum-cells, said grooves leading from the water-channels *e'* to the cells or chambers B'.

It is very essential that the liquid be kept away from the surface of the glass, for during the polishing process the surface of the glass to be polished should be kept comparatively dry, otherwise the buffers which are only dampened, and the rouge or grinding material used with the buffers is only slightly moistened, would slip and have no effect upon the glass.

Having shown in an application filed by me September 30, 1891, which bears Serial No. 407,346, the subject-matter of clauses two, seven, and eight of the claims of this specification, I make no claim to such subject matter in said application; but

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a table for grinding or polishing glass, having on its surface a series of cells connected with a vacuum-chamber, a chamber beneath the upper surface of the table and having no connection therewith, said chamber being adapted to receive a cooling medium, for the purpose set forth.

2. In a grinding or polishing table for plate-glass, the combination of a table having the surface made up of vacuum-cells, each cell being connected directly with an air-chamber beneath the vacuum-cells, and a chamber for the circulation of a cooling medium between the air-chamber and vacuum-cells, substantially as set forth.

3. In a grinding or polishing table for plate-glass, the combination of a table having a series of independent cells and water-channels formed on its upper portion, an air-chamber connected with each of the vacuum-cells, and a chamber adapted to receive a cooling medium, located between the upper face of the table and the vacuum-chamber, and inlet and outlet pipes communicating with the cooling-chamber and liquid-supply, substantially as set forth.

4. In a glass-holding table having a surface consisting of a multiplicity of vacuum-cells, water-channels surrounding the same, the walls of the water-channels having recesses or depressions forming communication be-

tween the vacuum-cells and water-channels, and an air-exhaust pipe connecting the vacuum-cells to a chamber, substantially as set forth.

5. In a glass grinding or polishing-table constructed substantially as shown and provided with a chamber adapted to receive a cooling medium, located within the table, said chamber having vertical supports forming deflectors, so as to cause a circulation of the cooling medium within the chamber, substantially as set forth.

6. In a grinding or polishing table for plate-glass, constructed substantially as shown and provided centrally with a chamber for the reception of a cooling medium, an air-chamber located beneath the same, hollow stays *b*, connecting the air-exhaust chamber with the vacuum-cells, and stays or supports B within the cooling-chamber, forming deflectors which insure a circulation of the cooling medium within the central chamber, substantially as set forth.

7. In a glass grinding or polishing table having a top with a multiplicity of independent cells, each connected with an air-exhaust mechanism, so as to retain the glass thereon, by a vacuum or atmospheric pressure, a compartment formed in the table and adapted to receive a cooling medium, for the purpose set forth.

8. In a table for holding plate-glass for the purpose set forth, a top having a raised circumferential wall and a multiplicity of air chambers or cells each having marginal walls, an air-chamber communicating with the top, and a cooling-chamber interposed between the air-chamber and the top of the table, substantially as shown.

9. In a glass-holding table for the purpose set forth, a top having a raised circumferential wall, raised supports disposed over the top of the table, so as to provide water-channels, the cells or vacuum-chambers so formed being connected to a chamber by hollow supports or stays, and an interposed chamber for the reception of a circulating cooling medium, located between the air and vacuum cells, said cooling medium being adapted to absorb the heat generated by the exhaustion of the air from the vacuum-cells and that generated by friction in polishing or grinding the glass, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE A. MARSH, JR.

Witnesses:

E. L. SADLER,
M. V. VIAUX.