April 4, 1939. A. L. HARRINGTON 2,152,801

PLATE GLASS SURFACING TABLE

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Fig. 1.

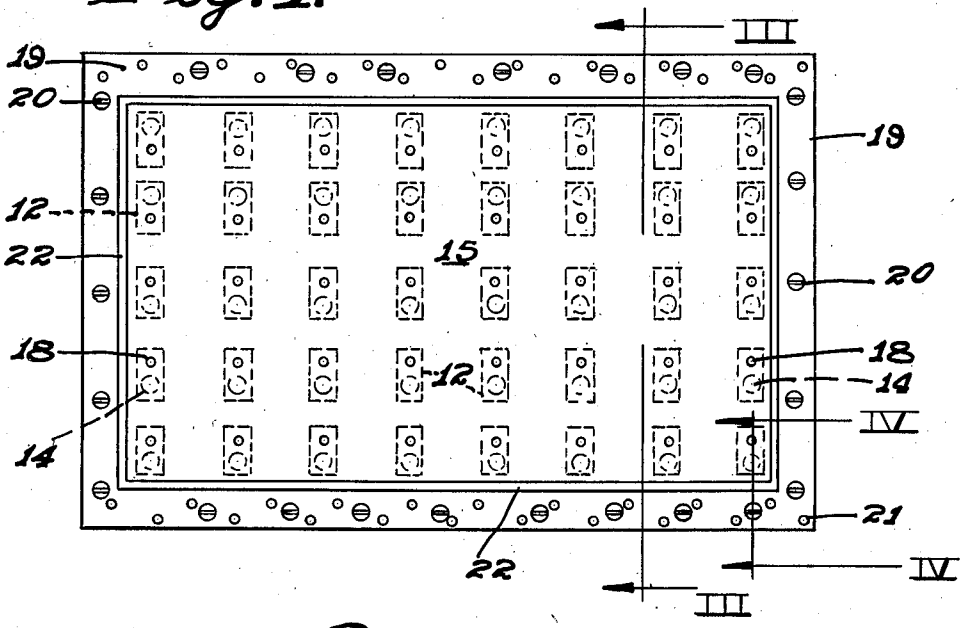
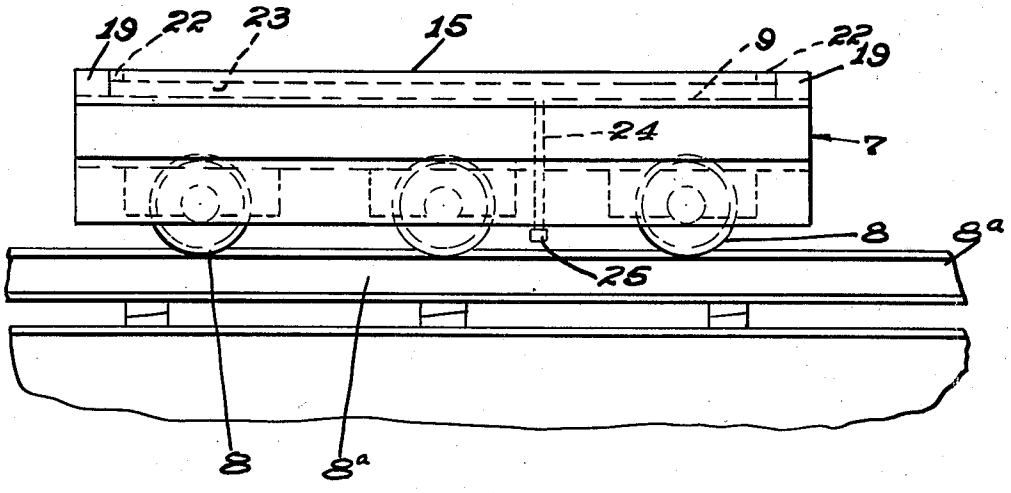


Fig. 2.



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Fig. 3.

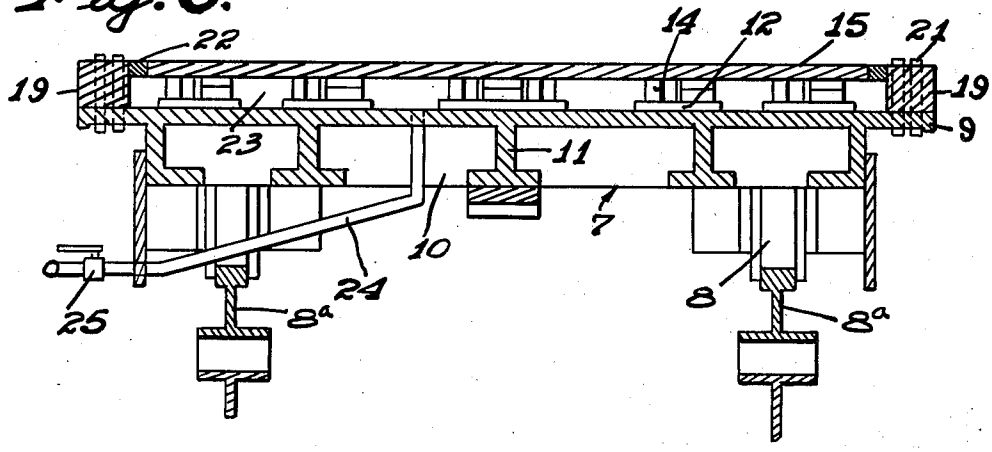
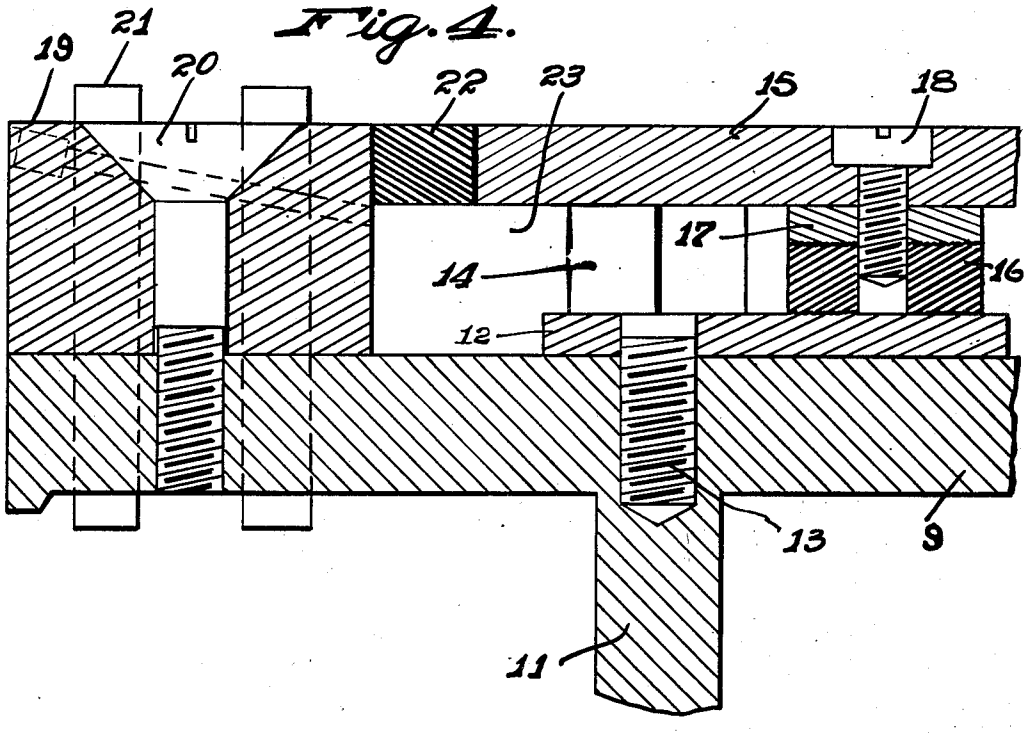


Fig. 4.



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Fig. 5.

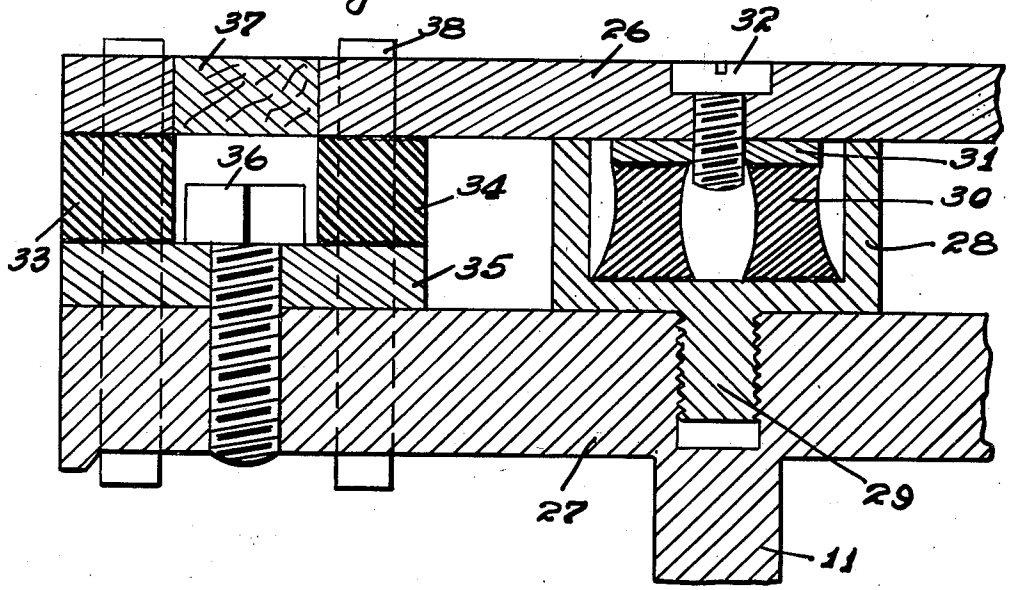
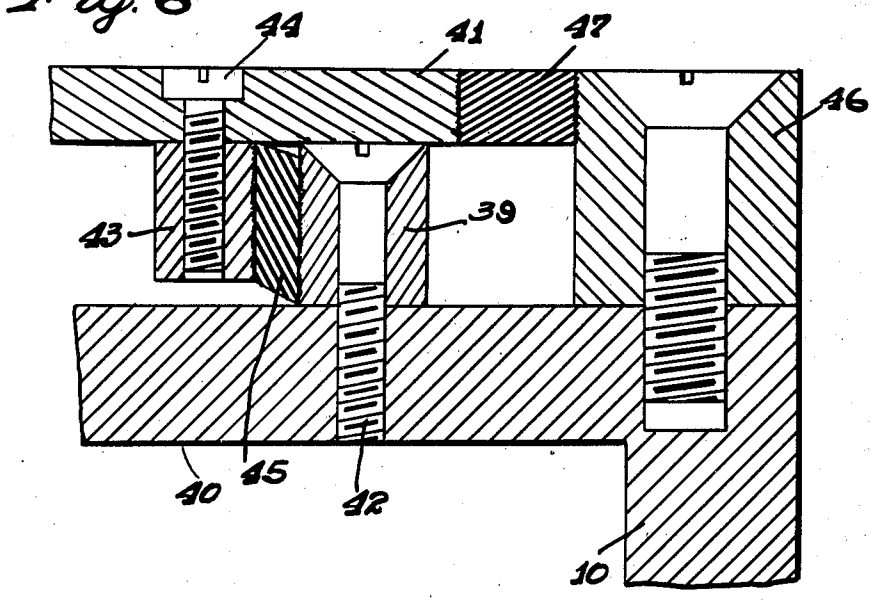


Fig. 6



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UNITED STATES PATENT OFFICE

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PLATE GLASS SURFACING TABLE

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Application March 29, 1938, Serial No. 198,675

7 Claims. (Cl. 51—240)

The invention relates to tables for use in surfacing plate glass, in which the tables are passed in a continuous train beneath a series of grinding and polishing runners. The heat developed in the polishing operation causes the tops of the tables to warp or bow slightly, so that they are no longer true and flat, and when returned to the grinding end of the cycle for reuse, this bowed or warped condition persists to a certain extent so that the glass sheets are not ground to uniform thickness, the sheets being ground thinner in the portions overlying the centers of the tables than those overlying the sides of the tables. The object of the present invention is to provide an improved table construction in which the warping of the table tops due to the heat developed in polishing is substantially eliminated.

Further objects are to provide a table of the kind specified having a false top with a cooling space therebeneath (1) which is relatively free to expand and contract in all directions in its own plane when subject to temperature changes, so that the tendency to warp is reduced to a minimum, and (2) which is securely anchored against warping throughout its area. Certain embodiments of the invention are illustrated in the accompanying drawings, wherein:

Figure 1 is a plan view of the table. Fig. 2 is a side elevation. Fig. 3 is a transverse section on the line III—III of Fig. 1. Fig. 4 is an enlarged partial section on the line IV—IV of Fig. 1. And Figs. 5 and 6 are views similar to Fig. 4, but showing modifications.

Referring to the drawings, 7 is the body of the table which is provided with the wheels 8 engaging the rails 8a of the grinding and polishing system. The body of the table includes a top plate 9 stiffened on its under side by transverse and longitudinal ribs 10 and 11. Distributed over the upper surface of the plate 9 are a series of metal strips 12, each of which is clamped securely in position by a bolt 13 having a head 14. The upper faces of the heads 14 are machined to the same horizontal plane and constitute supporting means for a false top plate 15. Mounted on each of the strips 12 and vulcanized thereto is a rubber tension block 16. These tension blocks have strips 17 of metal vulcanized to their upper faces and countersunk screws 18 extend through the plates 15 and into the strips 17. Before these screws are tightened, the upper faces of the strips 17 lie spaced below the lower surface of the plate 15, so that when the screws 18 are tightened, the blocks 15 are placed under tension. This tightening of the screws 18 brings the plate 15 into engagement with the upper surfaces of the heads 14, so that such heads act as spacers between the plates 9 and 15. With the plate 15 held in this manner, it is clamped down against the bolt heads 14, but at the same time, has some freedom of horizontal movement in its own plane due to the use of the rubber tension blocks. As a result, the plate 15 has freedom of expansion and contraction under temperature changes induced by the polishing action of the runners upon the glass sheet carried by the plate 15, and the tendency of the plate 15 to warp is, therefore, much less than if this plate were held against movement in its own plane.

Mounted on the edges of the plate 9 are the four flange members 19, such flange members being clamped in position by the bolts 20. These flange members carry the pegs 21 which act as stops for the side edges of the glass plate carried by the table. The four edges of the plate 15 are spaced away from the inner sides of the flange members 19, as indicated in Fig. 4, and these spaces are closed by means of strips of rubber 22 which are vulcanized on one side to the side of the flange member 19 and on the other side to the edge of the plate 15. The space 23 between the plates 9 and 15 is thus securely sealed off from the outside and at the same time the plate 15 is free to expand laterally, as heretofore pointed out. The space 23 between the two plates is designed to receive a cooling fluid, such as water, so that the top plate 15 is maintained at a lower temperature than would otherwise be the case and the tendency of such plate to warp under temperature changes is, therefore, reduced. Water may be supplied to the space 23 through the pipe 24 (Fig. 3) having the fitting 25 at its end for connection with a supply pipe, the space being filled when the table reaches the entrance end of the polishing system. After the table has passed the polishing system, the water may be withdrawn from the space 23. It will be understood in this connection that any suitable means may be employed for supplying the space 23 with a cooling fluid.

Fig. 5 illustrates a modification, in which the top plate 26 is spaced from the bottom plate 27 by means of the members 29 which are cup shaped in cross section and have threaded stems 29 engaging the plate 27. In this case, the rubber tension blocks 30 are vulcanized at their lower sides to the members 28 and carry at their upper sides the strips 31 which are vulcanized to the upper faces of the tension blocks. As in the construction of Figs. 1 to 4, the strips 31 normally

lie with their upper faces spaced below the lower face of the plate **26**, so that when the screws **32** are tightened, the blocks are placed under tension. The plate is thus free to expand laterally in its own plane, the rubber tension blocks permitting such movement, but at the same time the plate **26** is held very securely against the spacing members **28**. The edges of the plate **26** are in this construction sealed by means of the rubber strips **33** and **34** which are vulcanized on their lower sides to the strips **35** and on their upper sides to the lower face of the plate **26**. The strips **35** are secured in position by means of the bolts **36**, the holes in the plate **26** through which the bolts are inserted being accessible through openings **37** which are subsequently filled with plugs. In this arrangement, the pegs **38** extend through the plates **26** and **27**. It will be apparent that the rubber strips **33** and **34** act as seals for the space between the plates **26** and **27** and at the same time permit the plate **26** to expand and contract freely.

Fig. 6 illustrates another modification in which the sleeves **39** act as spacers between the plates **40** and **41**, such sleeves being clamped to the plate **40** by means of the bolts **42**. The lower side of the plate **41** carries the sleeves **43** secured in position by the bolts **44**. In this case, the tension blocks are the rubber members **45**, which are vulcanized to the sides of the sleeves **39** and **43**, the arrangement being such that when the bolts **44** are tightened, and the plate **41** is pulled down against the ends of the spacers **39**, the blocks **45** are placed under tension. As in the first form of construction, the seal between the flanges **46** and the edge of the plate **41** are rubber strips **47** vulcanized to the inner sides of the flanges **46** and to the edge of the plate **41**.

What I claim is:

1. A plate glass surfacing table comprising a metal body portion with a flat rectangular upper face, a false top for the table comprising a metal plate above said face, positive spacing members distributed over said face and bearing against the lower surface of said plate for supporting it in parallel with said face, rubber tension blocks between said face and plate having one of their sides anchored with respect to said face, and means carried by the plate for applying tension to the blocks so that the plate is pulled yieldingly against the spacing members.

2. A plate glass surfacing table comprising a metal body portion with a flat rectangular upper face, a false top for the table comprising a metal plate above said face, positive spacing members distributed over said face and bearing against the lower surface of said plate for supporting it in parallel with said face, a rubber tension block adjacent each spacer having one of its sides anchored with respect to said face, and means carried by the plate at each block for applying tension thereto so that the plate is pulled yieldingly against the adjacent spacing members.

3. A plate glass surfacing table comprising a metal body portion with a flat rectangular upper face, a false top for the table comprising a metal plate above said face, positive spacing members distributed over said face and bearing against the lower surface of said plate for supporting it in parallel with said face, rubber tension blocks between said face and plate having one of their sides anchored with respect to said face, means carried by the plate for applying tension to the blocks so that the plate is pulled yieldingly against the spacing members, and rubber sealing strips for the space between said face and said plate, said strips being vulcanized on one side to the edges of said plate and on the other side to the metal body portion.

4. A plate glass surfacing table comprising a metal body portion with a flat rectangular upper face, a false top for the table comprising a metal plate above said face, positive spacing members distributed over said face and bearing against the lower surface of said plate for supporting it in parallel with said face, rubber tension blocks between said face and plate with one of their sides anchored with respect to said face, means carried by the plate for applying tension to the blocks so that the plate is pulled yieldingly against the spacing members, flanges projecting upward from said face at its four edges and secured thereto, said flanges having their upper faces flush with the upper face of the false top and having their inner sides spaced away from the edges of the false top, and rubber strips filling the spaces between the sides of this flange and the edges of the false top and vulcanized thereto.

5. A plate glass surfacing table comprising a metal body portion with a flat rectangular upper face, a false top for the table comprising a metal plate above said face, supporting members distributed over said face anchored thereto and carrying positive spacing members engaging the lower surface of the plate, rubber tension blocks on the supporting members having their lower sides vulcanized thereto, metal strips vulcanized to the upper sides of the rubber blocks, and screw means carried by the plate and engaging the strips for applying tension to the blocks so that the plate is pulled yieldingly against the spacing members.

6. A plate glass surfacing table comprising a metal body portion with a flat rectangular upper face, a false top for the table comprising a metal plate above said face, supporting members distributed over said face, headed bolts extending through the members into said body portion with their heads engaging the lower surface of the plate and acting as spacers, rubber tension blocks on the supporting members having their lower sides vulcanized thereto, metal strips vulcanized to the upper sides of the rubber blocks, and screw means carried by the plate and engaging the strips for applying tension to the blocks so that the plate is pulled yieldingly against the spacing members.

7. A plate glass surfacing table comprising a metal body portion with a flat rectangular upper face, a false top for the table comprising a metal plate above said face, supporting members distributed over said face having threaded stems anchoring them to said body portion and provided with flanges engaging the lower face of the plate and acting as spacers, rubber tension blocks on the supporting members having their lower sides vulcanized thereto, metal strips vulcanized to the upper sides of the rubber blocks, and screw means carried by the plate and engaging the strips for applying tension to the blocks so that the plate is pulled yieldingly against the spacing members.

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