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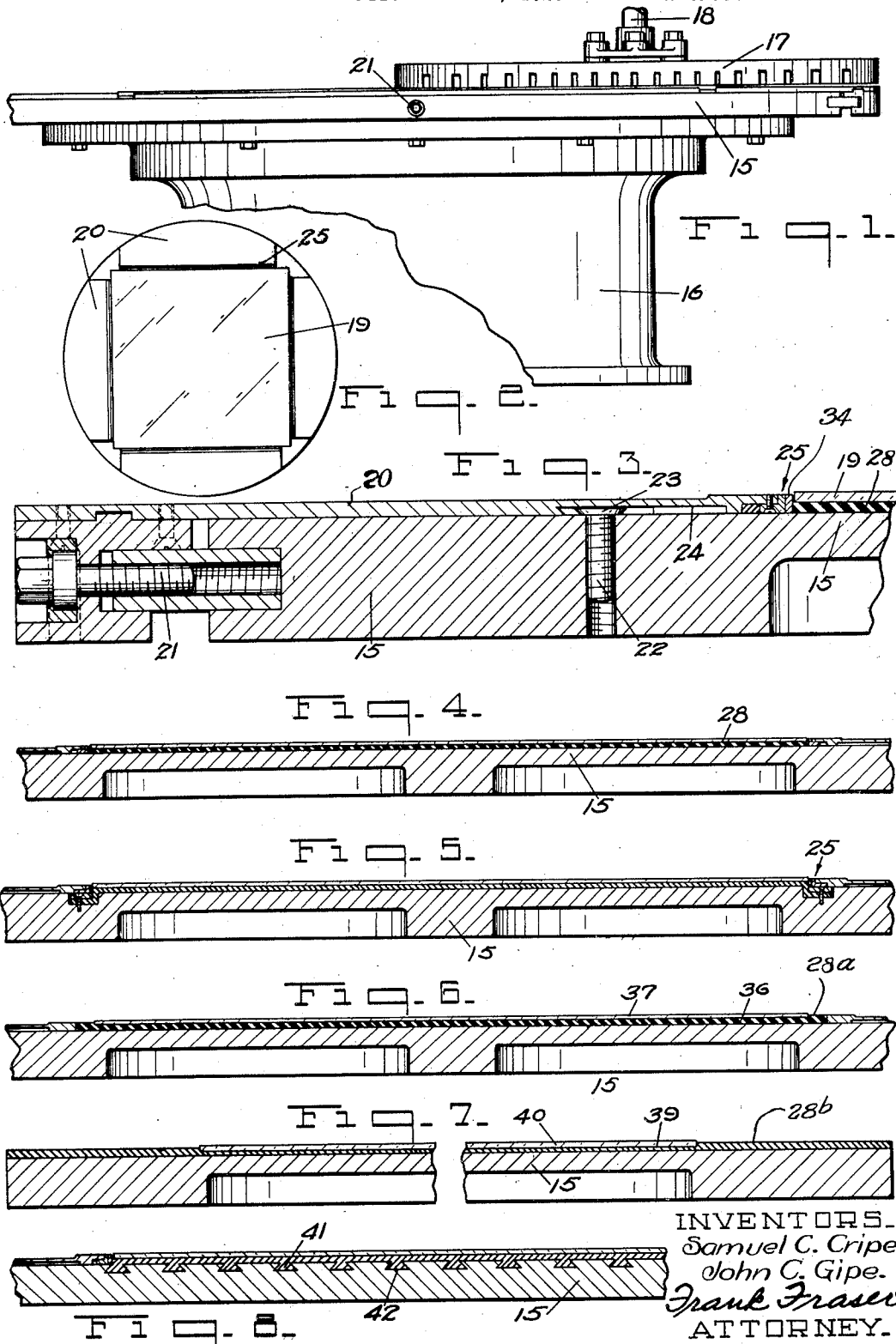
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S. C. CRIPE ET AL

GRINDING AND POLISHING TABLE

Filed June 15, 1925

2 Sheets-Sheet 1



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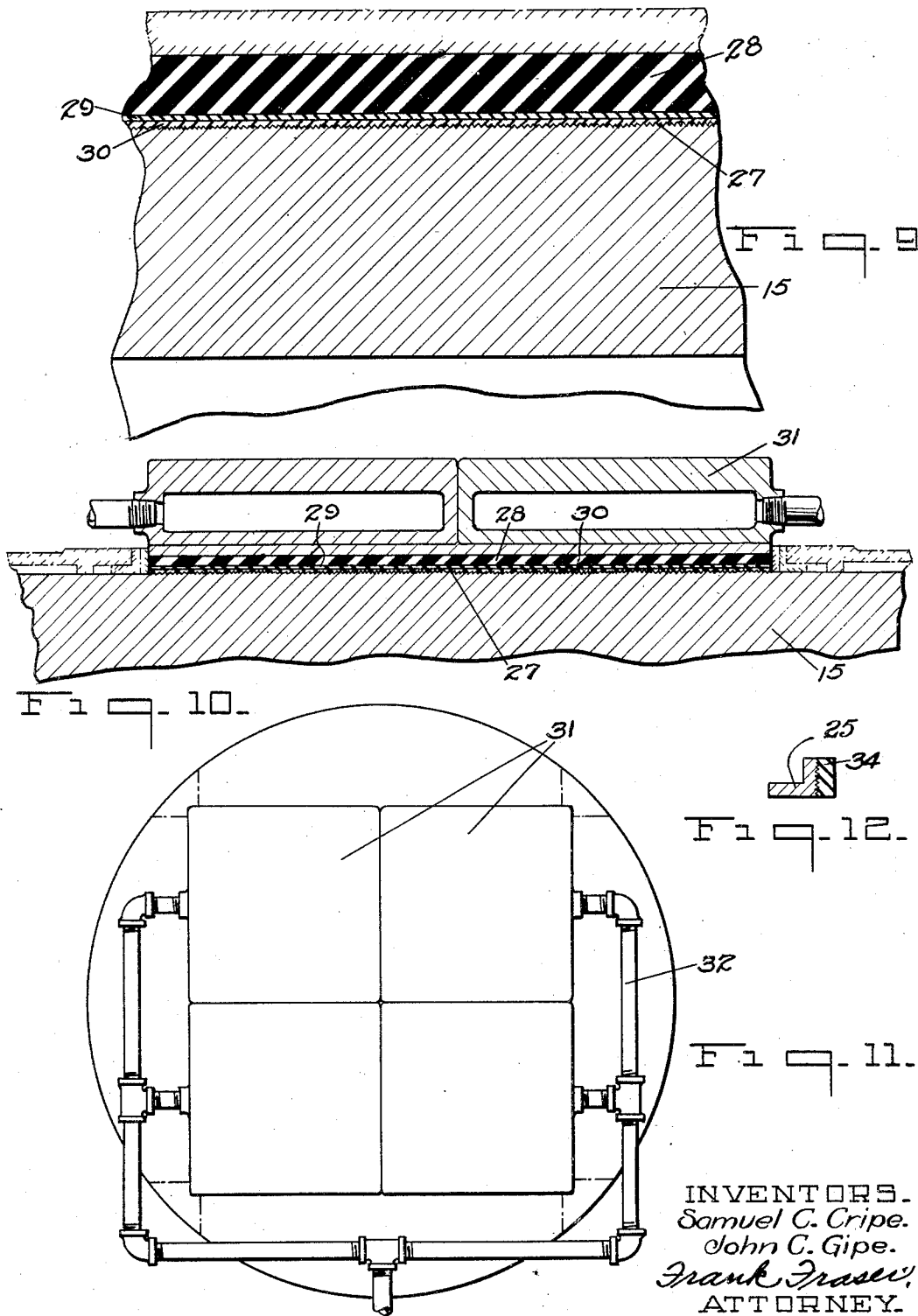
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE.

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GRINDING AND POLISHING TABLE.

Application filed June 15, 1925. Serial No. 37,079.

The present invention relates to a sheet glass surfacing table top, and has particular reference to a table top adapted to freely support the sheet of glass being surfaced within a recess.

An important object of the invention is to provide a table top of this nature having a recess therein, the said top having a resilient pad vulcanized to the table within the recess for supporting the sheet in a manner that its surface will not be marred during the surfacing operation.

Another object of the invention is to provide a pad and a method of applying the same to a sheet glass grinding and polishing machine table in a manner that the pad will be firmly united to the table top so that a sheet of glass can be supported thereon during the surfacing operations.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the drawings wherein like numerals are employed to designate like parts throughout the same.

Fig. 1 is an elevation of the grinding and polishing table,

Fig. 2 is a top plan view thereof,

Fig. 3 is a fragmentary enlarged transverse section through a portion thereof,

Fig. 4 is a section through one form of table.

Fig. 5 is a similar section of a slightly modified form,

Figs. 6, 7 and 8 show several modified tables,

Fig. 9 is an enlarged view showing how the rubber pad is applied to the table top,

Fig. 10 shows the pad being vulcanized to the table top,

Fig. 11 is a top plan view of the vulcanizing apparatus, and

Fig. 12 is a transverse section through another part of the table.

Ordinarily when producing polished plate glass the plate glass blank is supported in a body of plaster of Paris during the grinding and polishing operations. As is well known in the art, numerous difficulties are encountered when holding a sheet of glass in this manner during the surfacing operations, as well as the enormous expense connected with such procedure.

The present invention has particular reference to a type of surfacing machine table

wherein the sheet of glass being ground or polished is supported within a recess, whereby the sheet is freely resting upon a master surface so that it can be removed from the machine and turned over very quickly and easily. A pad is secured within the bottom of the recess, some form of cement being used to hold the same in place.

In Fig. 1 is shown a diagrammatic view of this type of machine wherein the table 15 carried by the standard 16 is rotatably mounted upon a suitable shaft. Arranged above the table 15 is a grinding or polishing head 17 whose drive shaft 18 is offset from the vertical axis of the table 15. In Fig. 2 a sheet of glass 19 is arranged within the recess formed by the movable plates 20 and which are adjusted by means of the threaded shaft 21 working in the table 15 as shown in Fig. 3. Guide studs 22 are provided and their heads 23 are received within the grooves 24 formed on the under-surface of the plates 20. Arranged between the edges of the sheet 19 and the edges of the plates 20 are strips designated in their entirety by the numeral 25.

It is desirable to place some sort of a pad between the underside of the sheet 19 and the upper surface of the table 15.

When grinding the blank of glass 19, usually some form of hard abrasive held in suspension in water is used to roughly surface the sheet. The water used is ordinarily cool so that no heat is generated between the friction of the grinding head and the sheet of glass being surfaced. In polishing the same sheet of glass, usually rouge in hot water is applied between the glass and the polishing head so that considerable heat is generated. The temperature of the sheet during the polishing operation is usually somewhere in the neighborhood of 150° F., although this temperature may vary one way or the other.

It is necessary that both surfaces of the plate of glass being ground be almost entirely parallel to each other or else the sheet is not entirely satisfactory for use as plate glass due to the fact that vision therethrough will be distorted. In view of this it is essential that the upper surface of the table 15 be flat and smooth. It will also be seen that it will be necessary to provide a pad or cushion 28 which will be substantially the same thickness throughout its entire

width and which is capable of adjusting itself so that the flat surface or master surface of the table 15 will be transferred to the sheet being surfaced. As the sheet is free to move within the recess formed by the plates 20, and as especially in the polishing process considerable heat is generated, it is necessary to prevent movement of the cushion 28.

In accordance with the present invention a pad of rubber is provided and means are used to cause the pad to adhere to the metallic surface of the table 15. As is clearly shown in Figs. 9, 10 and 11, the rubber pad is preferably vulcanized to the table top. In joining the pad to the metallic table top any well known cementing compound adapted for this purpose may be used. This cementing compound broadly speaking, will permit rubber to be joined to metal.

In Fig. 9 the numeral 15 designates the table top, the upper surface 27 of which is preferably sand blasted so that a uniformly rough surface will be provided. The rubber pad 28 is provided with a coating 29 of the cementing compound hereinafter termed a rubber composition. The rubber composition is vulcanized to the rubber pad 28 and is produced commercially in sheet form. The table top 15 is then treated with this rubber composition by applying several coats thereof until a layer 30 has been produced. Very close adhesion is obtained when the sand blasted surface 27 is formed, although a very good joint can be formed without the sand blasted surface. If the layers 29 and 30 are soft they may be pressed together, but in the event that they have set up so that adhesion between the two cannot be had satisfactorily, a solvent such as benzol can be used to soften the composition layers to the extent that they will stick together. Pressure is then applied to the rubber pad 28 and permitted to stand several hours until the rubber pad has been joined to the table top 15. This process is known as the cold or thermo-plastic process.

The most desirable way of joining the pad and top is to vulcanize the same. In this process the same procedure is followed, except that steam plates 31 are placed upon the upper surface of the pad and permitted to rest thereon until the composition surfaces 29 and 30 have become thoroughly vulcanized. As the recesses used in the grinding and polishing of plate glass are comparatively large, in Fig. 11 the steam plate is shown as being divided into four sections having connections with the steam conduits 32 whereby steam may be introduced within the plates to heat the rubber as has been pointed out. The plates may be formed rela-

tively much thicker than is necessary to contain the steam to afford sufficient weight to firmly press and hold the rubber against the table 15. After the pad has thus been joined to the table, the heat and water used will not affect the pad so that the sheet will rest on a flat surface at all times.

To prevent the edges of the sheet from chipping against the plates 20, strips 25 are clamped between the plate and the top 15. In following out the present invention the strips 25 as shown in Fig. 12 have vulcanized thereto strips of rubber 34, the process being the same as when applying the pads to the table tops.

In Fig. 5 the ends of the pad are brought down and clamped under the strips 25, thus further insuring against accidental displacement of the pads during the operation of the machine. In Fig. 6 the pad 28^a is positioned within the recess formed by the plates 20 and in turn has a recess 36 in itself adapted to support the sheet 37. When using this type of pad the strips can be dispensed with. In Fig. 7 the entire table top is covered with a pad 28^b having a recess 39 therein adapted to hold the sheet 40. Of course the pad 28^b can be reinforced by suitable fabric contained within itself such as a wire mesh or cords.

In Fig. 8 the pad is shown as being provided with the dove-tail ribs 41 fitting within complementary grooves 42. The pad may be molded or formed in any other suitable manner and slid into place. It can also be vulcanized along its edges if desired.

It is to be understood that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Claims:

1. As an article of manufacture, a pad for sheet glass surfacing apparatus formed with a sheet glass receiving recess in the upper surface thereof and adapted to be associated with the top of a work table.

2. In sheet glass surfacing apparatus, a glass supporting table top provided with a recess upon its upper surface, and a pad arranged within said table recess and being formed with a sheet receiving recess in its upper surface.

Signed at Toledo, in the county of Lucas, and State of Ohio, this 13th day of June, 1925.

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