Aug. 21, 1934. A. W. MIKSCH 1,970,762

SAND BLASTING APPARATUS

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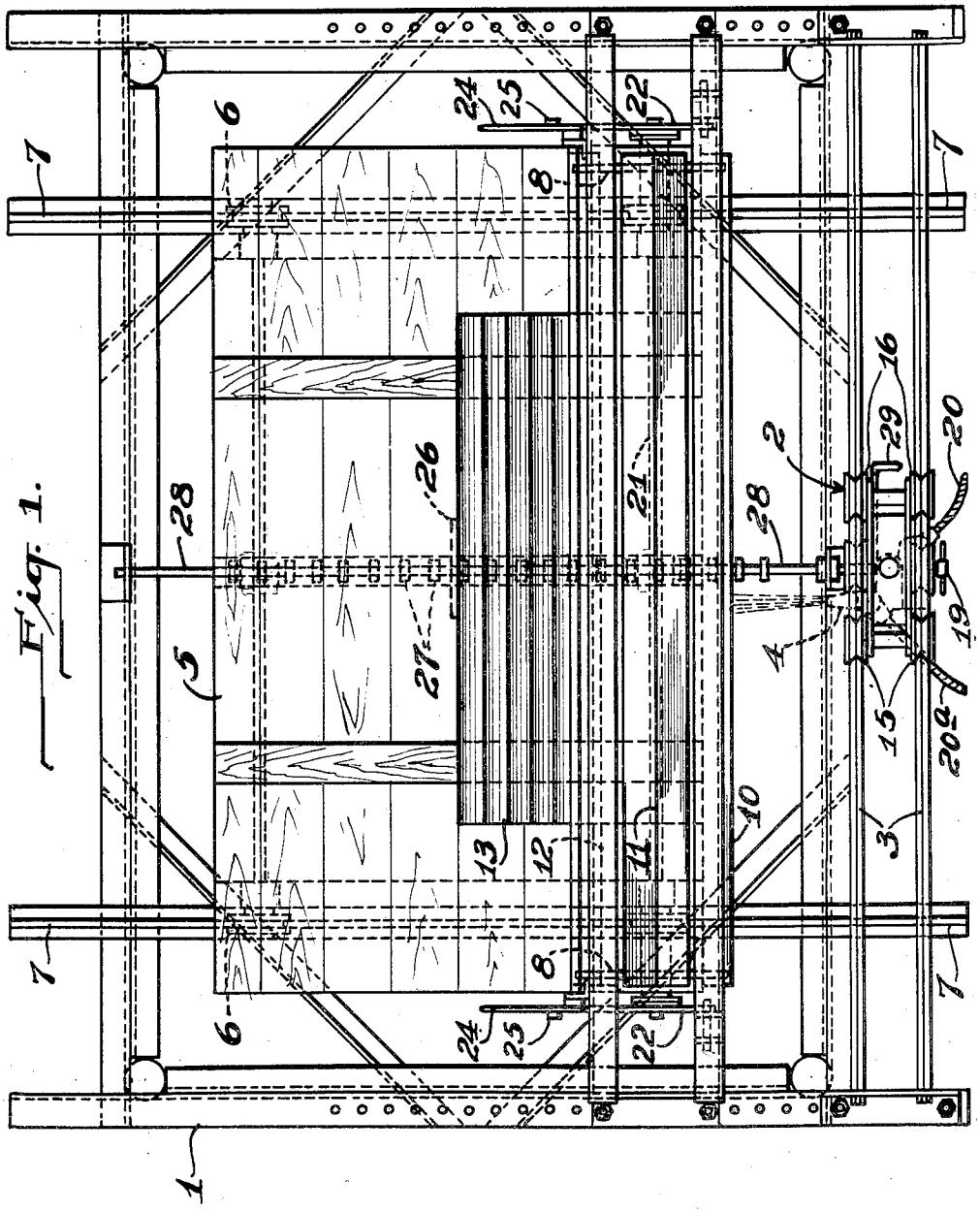


Fig. 1.

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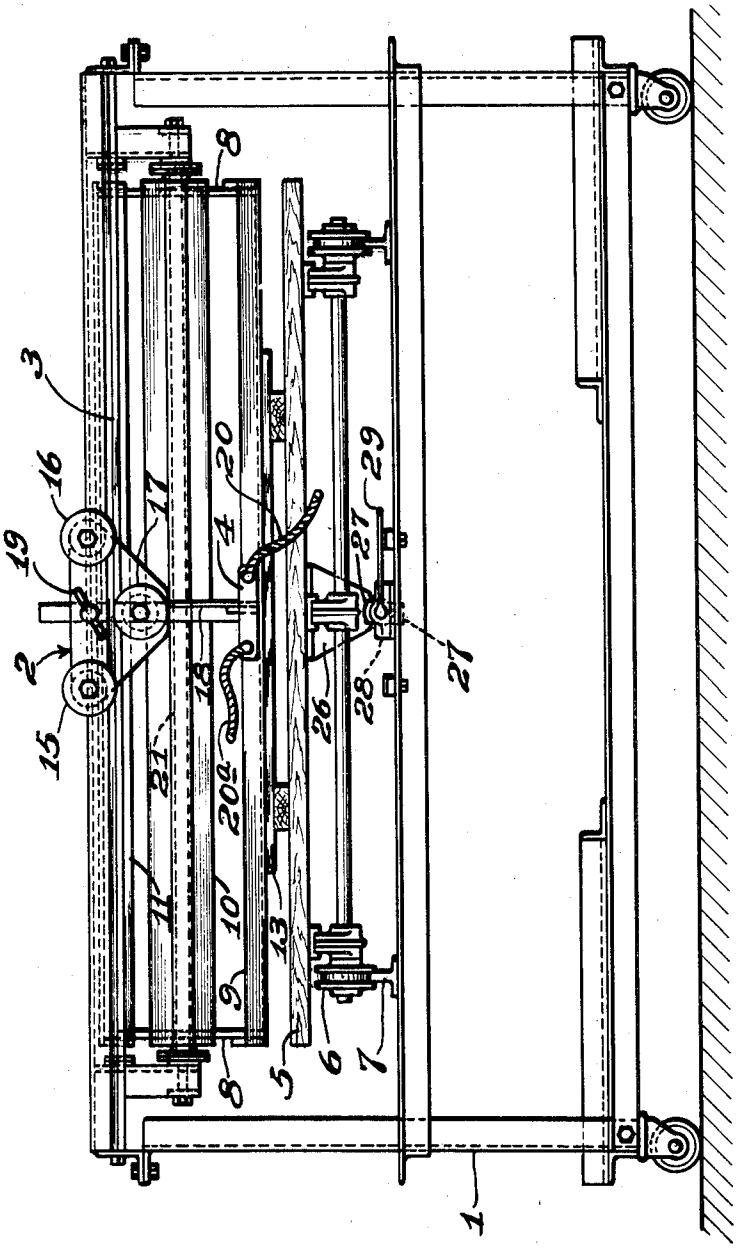
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Fig. 2.



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Fig. 3.

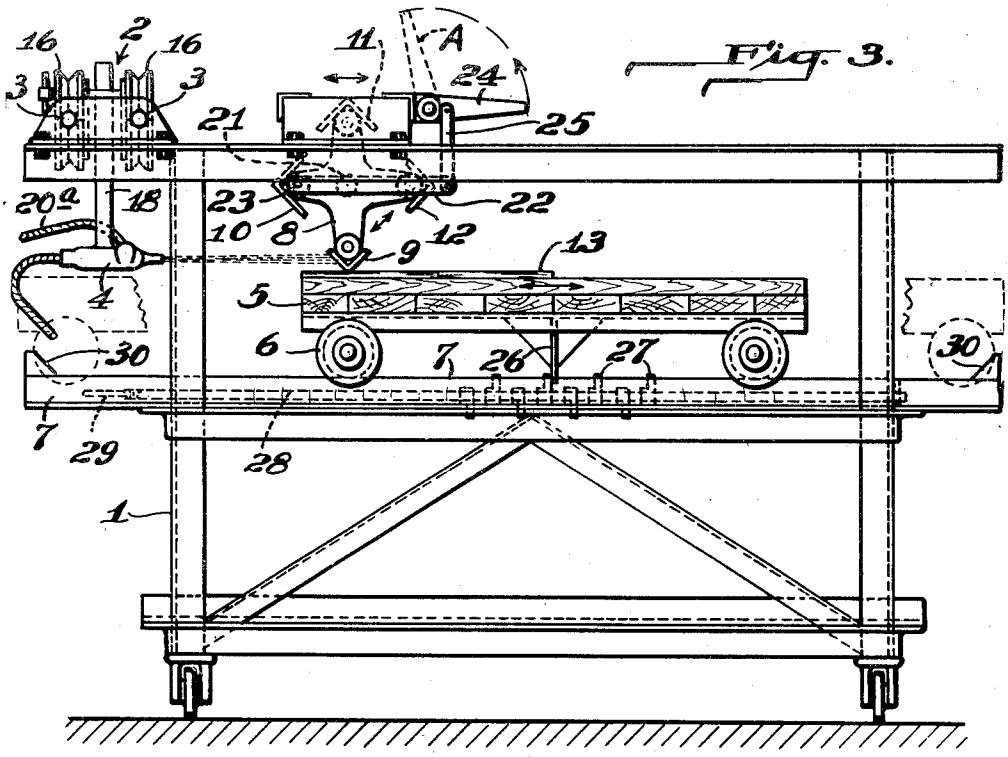


Fig. 5.

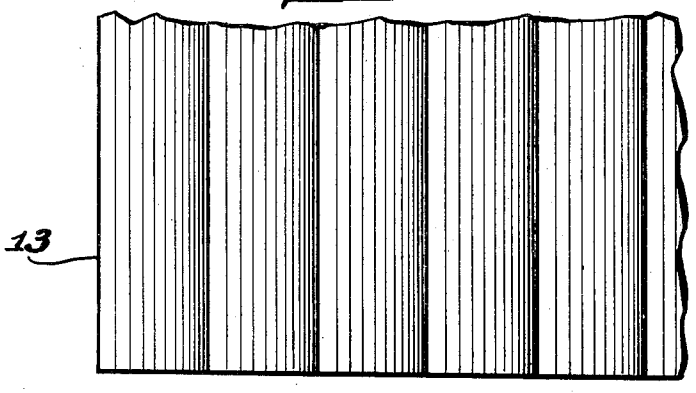
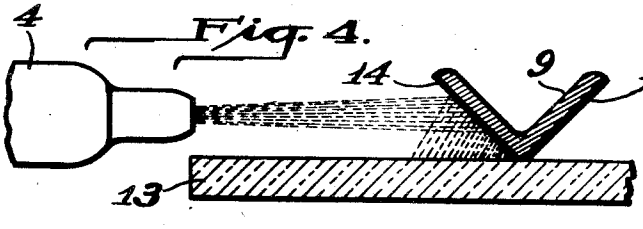


Fig. 4.



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UNITED STATES PATENT OFFICE

1,970,762

SAND BLASTING APPARATUS

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Application January 6, 1934, Serial No. 705,524

7 Claims. (Cl. 51—8)

The invention relates to sand blasting apparatus, and has for its principal objects the provision of an improved apparatus for producing a fluted appearance on the polished surfaces of sheets of glass, marble, and the like, being particularly applicable to the decoration of black carrara glass. Further objects of the invention are the provision of an apparatus of simple construction, easily operable to produce work of a uniform character with low labor costs and readily adjustable to vary the width of the band produced. One embodiment of the invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a plan view of the apparatus. Fig. 2 is a front elevation. Fig. 3 is a side elevation. Fig. 4 is an enlarged detail sectional view. Fig. 5 is a plan view showing a piece of glass whose surface has been treated by the apparatus to give the appearance of fluting.

Referring to the drawings, 1 is the framework of the apparatus made up of commercial sections; 2 is a carrier or trolley mounted on the rails 3 and carrying the sand blast nozzle 4; 5 is a support being in the form of a table mounted upon the wheels 6 engaging the rails 7; and 8 is a spider mounted above the table 5 and provided with arms carrying the angles 9, 10, 11 and 12 which are used as deflecting plates.

In using the apparatus, the angle 9 is positioned, as indicated in Figs. 3 and 4, with its apex contacting with the glass sheet or plate 13 which is to be decorated by giving it the fluted appearance indicated in Fig. 5. The sand blast nozzle directs a mixture of sand and air against one side of the angle 9, which acts as a deflecting plate so that the particles of sand which strike the plate are directed downwardly against the glass plate. The sand blasting effect is greatest at the apex of the angle 9 and decreases gradually from such point, as indicated in Fig. 5. The operator starts at one end of the plate and after the sand blast has started moves the trolley or carrier 3 longitudinally of the table 5, thus producing the appearance of a flute on the surface of the glass which extends from one end thereof to the other. The operator then moves the table 5 a distance to the right (Fig. 3) equal to the width of another flute and repeats the operation, thus bringing the trolley gack to starting position. This operation is continued until the entire area of the glass sheet is decorated or fluted. In order to protect the surface of the angle 9 from the action of the sand, it is preferably provided with a layer 14 of rubber composition, although this is not essential as the deflecting device will last for a long period even though not protected and the cost of replacement is small.

The trolley or carrier 2 upon which the sand blast gun or nozzle 4 is supported comprises a pair of side plates, each of which carries three wheels 15, 16 and 17 that engage the pipes 3 which act as a track. The gun or nozzle 4 is supported by a stem 18 which extends through a collar carried on the trolley and is clamped in position by means of the thumb screw 19. This permits of a vertical adjustment of the nozzle and causes a variation in the character of the fluting depending upon the level at which the nozzle operates. The nozzle is provided with the usual flexible connections 20 and 20a by means of which sand and air are supplied thereto.

The spider 8 is employed in order to permit the use of angles 9, 10, 11 and 12 of varying size. When flutes of the least width are desired, the smallest angle 9 is used, as shown. The angle 12 is used for flutes of the next largest size, and the angle 10 for flutes of the largest size. The spider is mounted upon a shaft 21 carried by a pair of arms 22, 22 pivoted at 23. These arms may be raised from either end of the machine by means of the handles 24 connected to the arms by means of the links 25. When either of the handles is moved to the dotted line position marked A, the angle 9 which touches the glass during the sand blasting operation is lifted, such vertical movement of the deflecting angle coming into play when the table 5 is shifted to bring the deflecting angle at a new position with respect to the glass plate.

Means are provided for shifting the table 5 step by step along its track 7, as heretofore described, in the form of an indexing arm 26 which projects downwardly from the bottom of the table and is adapted to engage the index fingers 27 secured to the shaft 28. These index fingers are spaced the width of the flutes to be produced upon the glass, and each finger is 180 degrees from the next finger. The shaft 28 is provided with a crank 29 for turning it and thus determining which of the fingers shall be in position to engage the index arm 26. After each flute is made, the table is shifted to the right over the next finger on the shaft which is at this time in inoperative position. The crank 29 is then operated to bring the finger to operative position, and the table pulled to the left so that the index arm engages such finger. The table is in this manner indexed progressively until the fluting operation is completed, as heretofore described. Stops 30, 30 (Fig. 3) at the ends of the rails 7

limit the movement of the table in both directions.

What I claim is:

1. Apparatus for producing a fluted appearance on the surface of a polished sheet of material comprising a support for said sheet, a deflecting plate mounted above said support inclined at an acute angle to the surface of the support with its lower edge in close proximity thereto, and a sand blast nozzle directed against the inclined surface of said plate.

2. Apparatus for producing a fluted appearance on the surface of a polished sheet of material comprising a support for said sheet, a deflecting plate mounted above said support inclined at an acute angle to the surface of the support with its lower edge in close proximity thereto, a sand blast nozzle directed against the inclined surface of said plate, and a carrier for the nozzle mounted for movement longitudinally of said plate.

3. Apparatus for producing a fluted appearance on the surface of a polished sheet of material comprising a support for said sheet, a deflecting plate mounted above said support inclined at an acute angle to the surface of the support with its lower edge in close proximity thereto, and a sand blast nozzle directed against the inclined surface of said plate, said support for the sheet being mounted for movement transversely of said plate.

4. Apparatus for producing a fluted appearance on the surface of a polished sheet of material comprising a support for said sheet, a deflecting plate mounted above said support inclined at an acute angle to the surface of the support with its lower edge in close proximity thereto, a sand blast nozzle directed against the inclined surface of said plate, and a carrier for the nozzle mounted for movement longitudinally of said plate, said support for the sheet being mounted for movement transversely of the plate.

5. Apparatus for producing a fluted appearance on the surface of a polished sheet of material comprising a support for said sheet, mounted for horizontal movement in one direction, indexing means governing such movement, a deflecting plate mounted above said support transverse to the line of movement thereof with its lower edge in close proximity to the support, a sand blast nozzle directed horizontally against the inclined surface of said plate, and a carrier for the nozzle mounted for movement longitudinally of the plate.

6. Apparatus for producing a fluted appearance on the surface of a polished sheet of material comprising a support for said sheet, mounted for horizontal movement in one direction, indexing means governing such movement, a deflecting plate mounted above said support transverse to the line of movement thereof with its lower edge in close proximity to the support, means for raising and lowering the plate, a sand blast nozzle directed horizontally against the inclined surface of said plate, and a carrier for the nozzle mounted for movement longitudinally of the plate.

7. Apparatus for producing a fluted appearance on the surface of a polished sheet of material comprising a support for said sheet, a carrier mounted for rotation above said support and provided with a plurality of spaced deflecting plates of different widths positioned so that any one of said plates may be moved with its lower edge in close proximity to the support and with its surface at an acute angle to the surface thereof, and a sand blast nozzle mounted for movement longitudinally of said plates and directed against the inclined surface of the plate which is in proximity to the support.

ARTHUR W. MIKSCH.