

G. A. SHIELDS.
GLASS FLATTENING TABLE.
APPLICATION FILED DEC. 17, 1910.

1,008,676.

Patented Nov. 14, 1911.

2 SHEETS—SHEET 1.

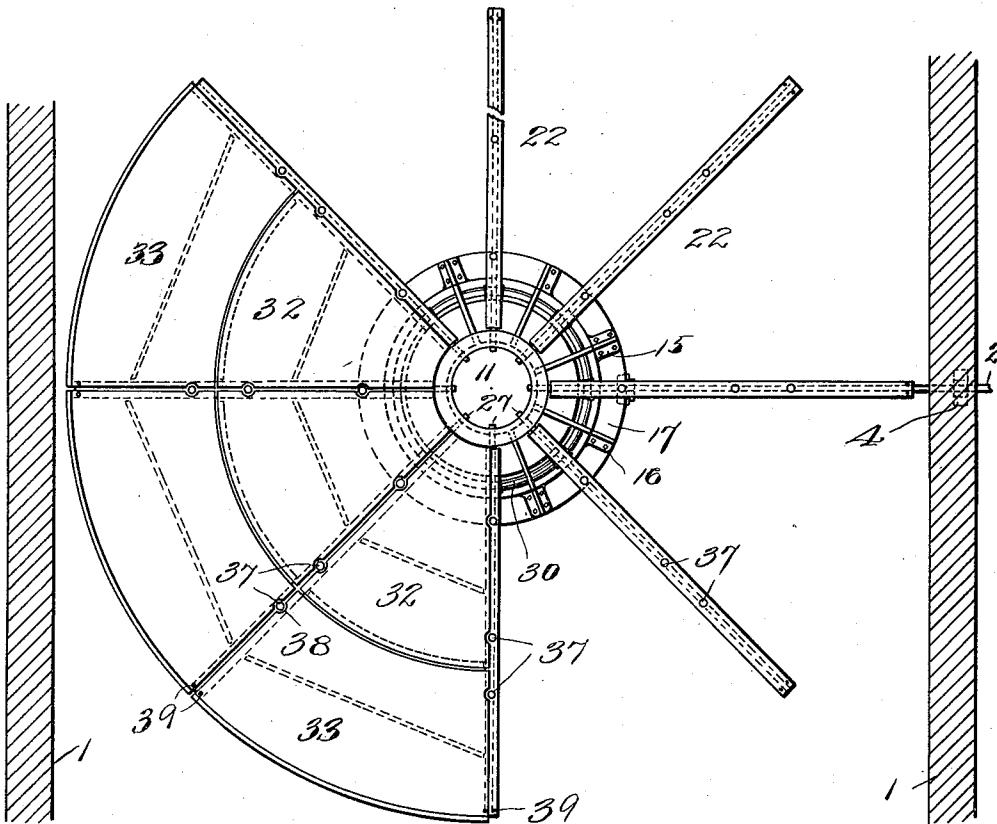


Fig. 1

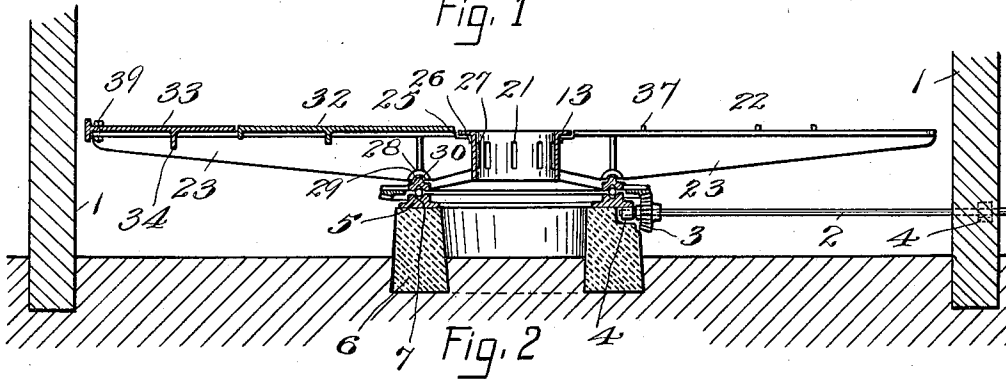


Fig. 2

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C. J. Croghan

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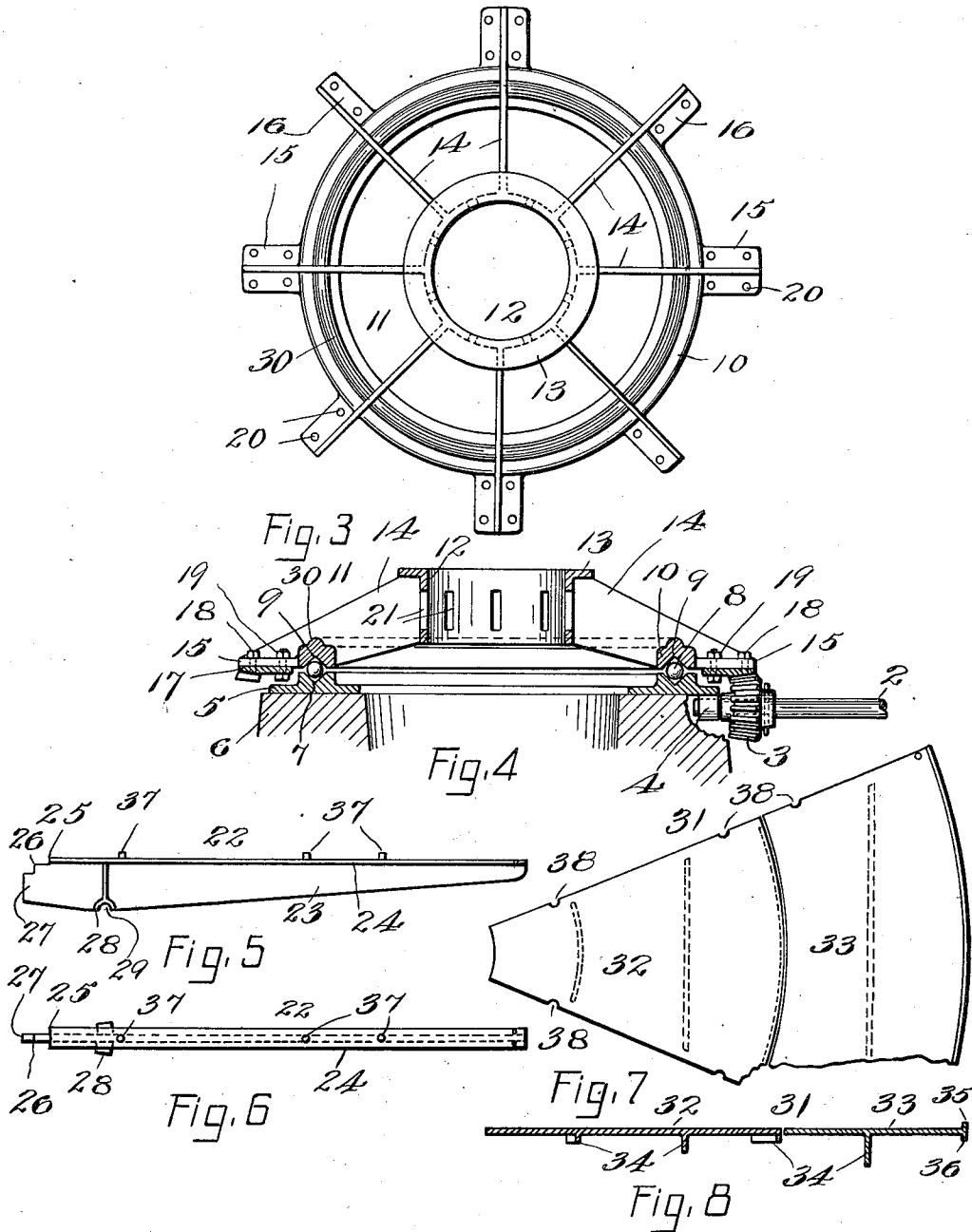
Thomas R. Harner
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UNITED STATES PATENT OFFICE.

GEORGE A. SHIELDS, OF COLUMBUS, OHIO.

GLASS-FLATTENING TABLE.

1,008,676.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed December 17, 1910. Serial No. 597,831.

To all whom it may concern:

Be it known that I, GEORGE A. SHIELDS, a citizen of the United States, residing at 372 North High street, Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Glass-Flattening Tables, of which the following is a specification.

The present invention relates to improvements in glass machines, and especially to the flattening tables used in the process of plate glass making.

The table, as will be readily understood by those familiar with the art of plate glass making, is used in the step of flattening the glass cylinders or rolls into sheets.

One of the essential purposes of the invention being the provision of a table of this character which may be easily assembled, and also readily dismantled if required for any reason, and new parts substituted should occasion arise.

Another advantageous feature of the invention is the provision of a novel construction, possessing a wide supporting base for the table, preventing tilting of the table, but insuring a perfect level at all times, and a structure in which there is small likelihood of binding of parts.

The improved table consists of certain novel features, and combinations and arrangement of parts as illustrated in the accompanying drawings, described in the following specification, and more clearly pointed out in the appended claims.

In the accompanying drawings I have illustrated one example of the physical embodiment of my invention constructed according to the best mode I have so far devised for the practical application of the principles of the invention, and one which has proven highly successful in actual use.

Figure 1 is a plan view of the wheel embodying the novel features of the present invention, parts of the wheel being removed for convenience of illustration, and partly inclosed by the oven wall. Fig. 2 is a vertical section of Fig. 1. Fig. 3 is an enlarged top plan view of a casting or the main ring of the rotatable member, part of which forms the hub of the wheel. Fig. 4 shows the rotatable member in place upon its bearing (said parts being in section) and the means for rotating the wheel. Fig. 5 is a side view of a radial arm forming one of the "spokes"

of the wheel. Fig. 6 is a top plan view of Fig. 5. Fig. 7 is a plan view of one of the segmental plates forming the platform of the table, and Fig. 8 is a vertical sectional view of Fig. 7.

In Figs. 1 and 2 I have illustrated the walls of the oven (designated by the numeral 1) to show the relation of the table thereto.

As customary in many instances I apply power, for rotating the table, exterior of the oven, as for instance by means of shaft 2 and pinion 3, the former being suitably supported in bearings 4, 4. The table as a whole is supported, through the medium of the circular base plate or ring 5, on the open pedestal or hollow base 6, which is of suitable and convenient refractory masonry or other construction. The base plate 5 is provided on its upper face with a circular groove 7 forming a race for the bearing balls 8, and a complementary groove 9, forming the opposing ball race of the bearing, is provided on the underside of the annulus 10 of the rotatable member, designated as a whole by 11. This rotatable member 11 comprises a central hub section or cylindrical portion 12, formed with an upper annular exteriorly extending flange 13. The hub member is located preferably in a horizontal plane somewhat higher than the annulus 10, and is connected to said annulus by a series of radial integral webs 14. These webs 14 extend beyond the outer periphery of the annulus, and are formed with brackets or foot plates 15, 16, two types being illustrated. The brackets form the attachment means for the gear ring or annular rack bar 17, and said bar is secured to the brackets by means of the bolts 18, and nuts 19, the bolts being passed through the holes 20 in the brackets.

As very clearly illustrated in Fig. 4 the hub member 12 is formed with a suitable number of sockets 21, which are formed of vertical slots extending radially through the wall of the hub. The sockets are adapted to receive the inner ends of the radially extending arms or "spokes" 22. By reference to Figs. 5 and 6 it will be seen that these spokes are T-shape in cross section, being formed with a vertical web 23, and a horizontal flange 24. At its inner end the flange 24 is cut off forming a shoulder 25, and the web at its upper face is cut out to form

a second shoulder 26, thus providing a reduced end or projection 27, of a size to neatly fit within the socket 21 of the hub section.

5 In assembling the elements, the lug 27 of the spoke 22 is inserted within the socket 21, with the shoulders 25 and 26 bearing against the flange 13 and the upper wall of the slot 21 respectively. At a convenient
10 distance from the inner end of each of the spokes, an integral transverse boss 28 is cast and fashioned with a concave grooved face or recess 29. Each of the spokes is provided with one of these grooved or concaved
15 bosses, and they are adapted to fit over and rest upon the annular rib or projection 30 formed at the top of the annulus or ring 10 of the rotatable member 11. The rib 30 thus provides a support for the spokes or
20 arms of the flattened wheel.

The platform of the table is preferably formed of a suitable number of segments 31 (Figs. 7 and 8) and in each instance the segment is composed of the sections 32 and
25 33 having on their undersurfaces the stiffening or strengthening ribs 34. In addition the sections 33 are each formed with upper and lower circumferential flanges 35, 36, forming a continuous circular flange in each
30 case. These plate segments are placed upon the spokes, the edges of each plate resting upon two spokes, and they extend from the flange 12 of the hub to the outer ends of the spokes. Bosses 37 are cast upon the T-bars
35 of the spokes, and complementary semi-circular recesses 38 are provided in the edges of the plate sections to fit around these bosses in order to hold the plate sections of the table in position. The plates are se-
40 cured, at the perimeter of the table, by bolts 39 to the spokes, but it will be observed that, except for this point of attachment, the parts are loosely placed, to provide for expansion and contraction of the materials
45 in the oven. The customary flattening stones are supported upon the table, but these have been omitted as being unessential for a proper showing of the invention.

From the above description, taken in con-
50 nection with the drawings, it is evident that I have provided a machine of the character

set forth and which fulfils the conditions mentioned as the purposes of the invention.

Having thus fully described my invention, what I claim as new and desire to secure by 55 Letters Patent is:—

1. A flattening table comprising an integral rotatable member formed with a bearing ring, a hub section, and radial webs connecting said members; spokes, and 60 sockets in said hub for the reception of the ends of the spokes, an annular projection on said ring, a complementary contact recess in each spoke, and a platform supported upon the spokes. 65

2. A flattening table comprising an integral rotatable member formed with a bearing ring, a hub section, radial webs, sockets in the hub, and spokes, an annular projection on said ring and a complementary contact recess in each spoke, an annular rack 70 bar secured to said bearing ring, a driving shaft, and a pinion thereon engaging the rack bar.

3. In a machine as described, the combi- 75 nation with a base plate of a rotatable member and ball bearings therebetween, an integral ring on the rotatable member, a hub section and radial webs connecting said hub and ring, an annular support projecting 80 from said ring, spokes secured in sockets in the hub and resting upon said support, and complementary contact recesses in each spoke.

4. The combination with a base plate of 85 a rotatable member and ball bearings therebetween, an integral ring on the rotatable member, a hub section and radial webs connecting said hub and ring, an annular projection on the ring, spokes secured in sockets 90 on the hub and resting upon said projection, complementary contact recesses in each spoke; and an annular rack bar secured to rotatable member, a driving shaft, and a pinion on the shaft engaging said rack bar. 95

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

GEORGE A. SHIELDS.

Witnesses:

IDA A. EVANS,
C. M. SHIGLEY.