

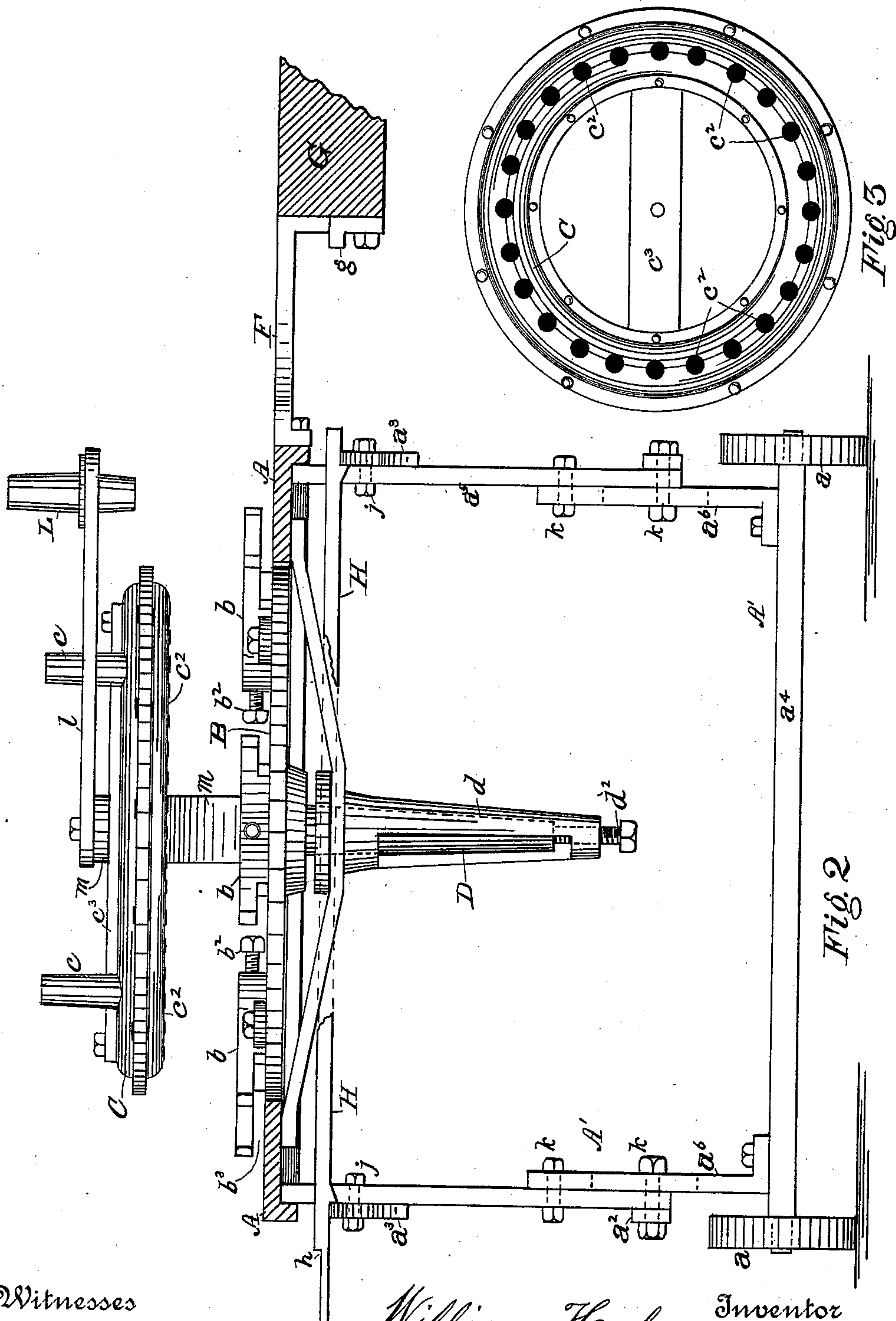
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4 Sheets—Sheet 2.

W. HALEY.
COOLING TABLE FOR GLASS MOLDS.

No. 602,399.

Patented Apr. 12, 1898.



Witnesses

L. J. Randall.
M. B. Vorce.

William Haley

By his Attorney

M. B. Vorce

Inventor

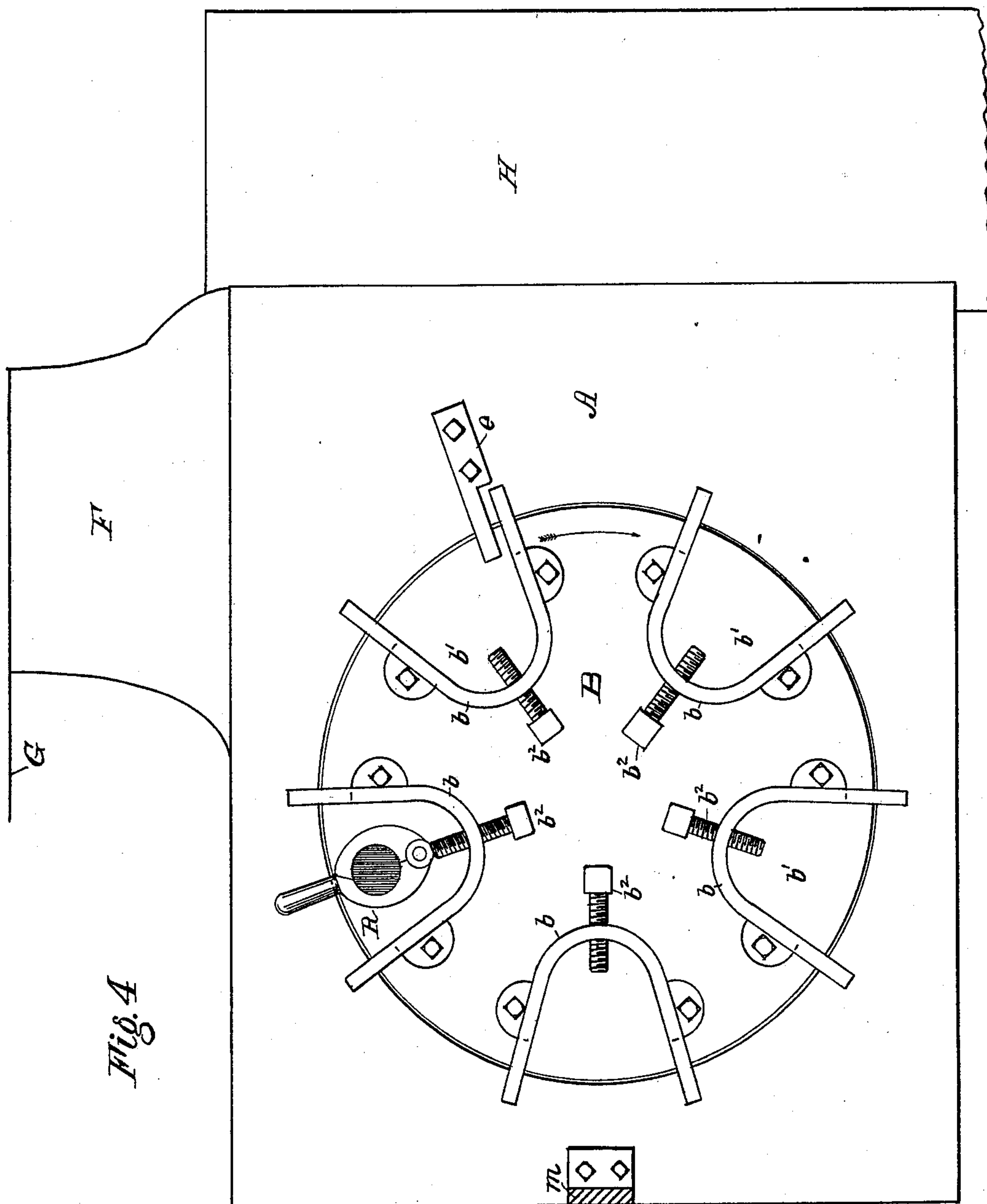
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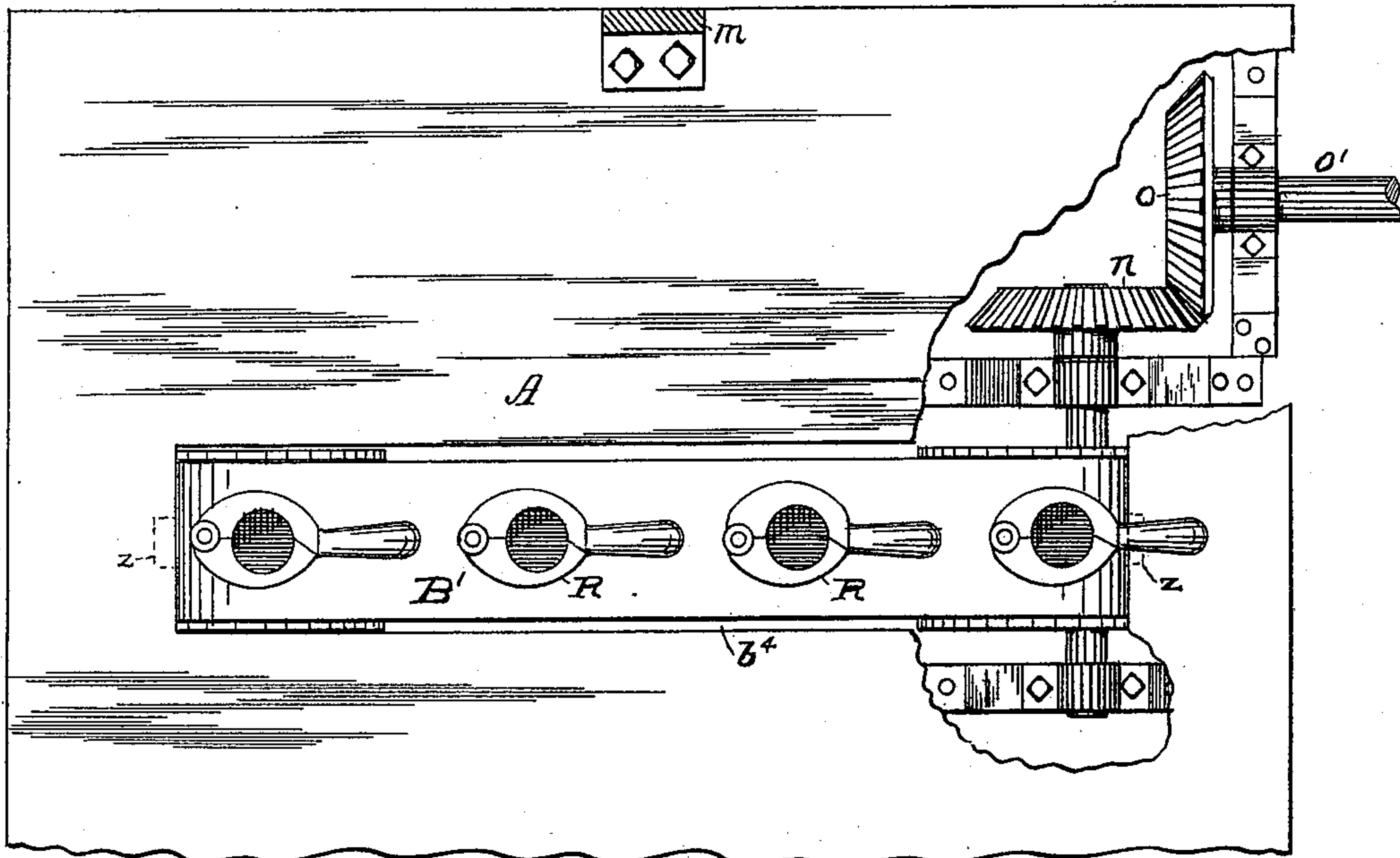


Fig. 5

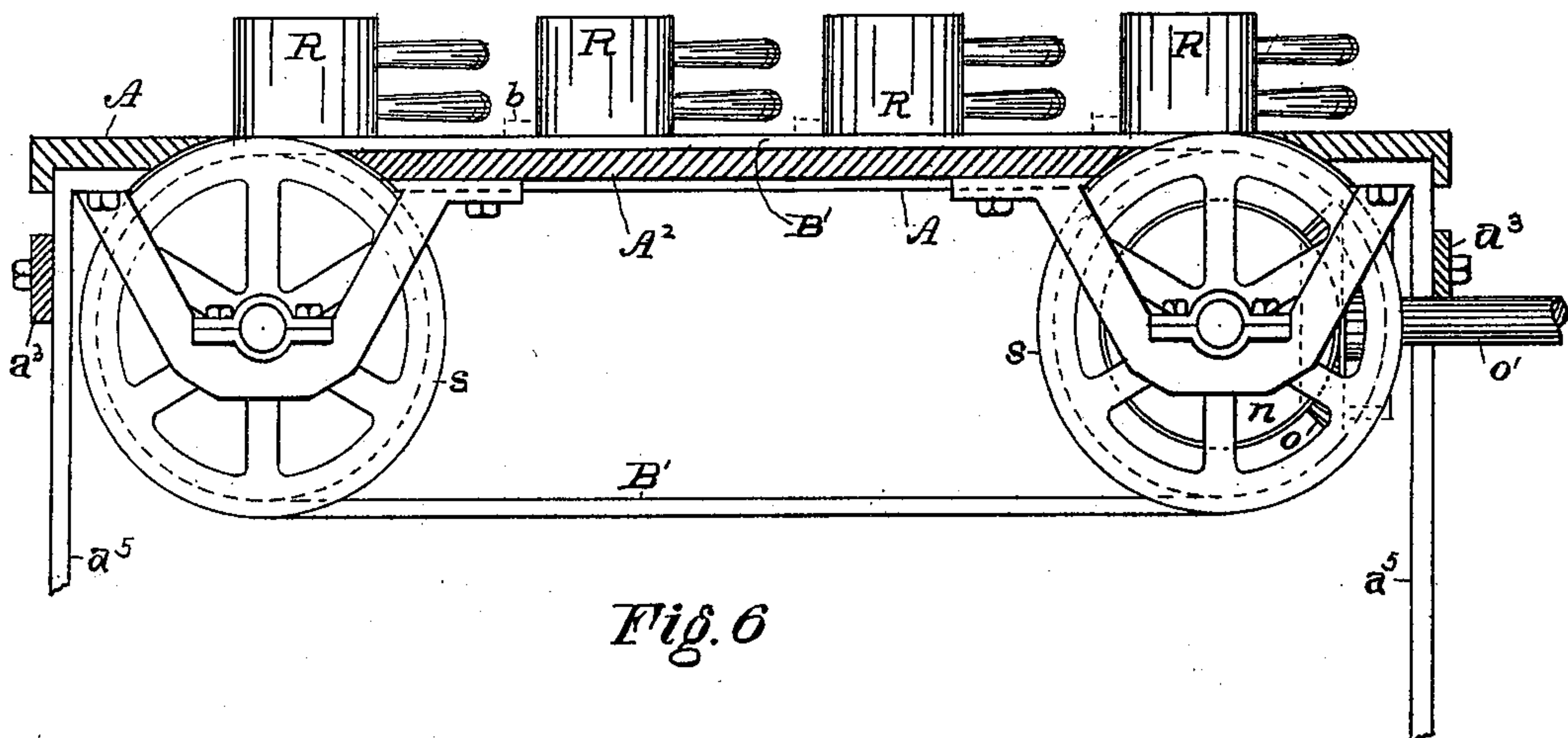


Fig. 6

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UNITED STATES PATENT OFFICE.

WILLIAM HALEY, OF BEAVER FALLS, PENNSYLVANIA, ASSIGNOR TO THE
NATIONAL MOLD AND CASTING COMPANY, OF SAME PLACE.

COOLING-TABLE FOR GLASS-MOLDS.

SPECIFICATION forming part of Letters Patent No. 602,399, dated April 12, 1898.

Application filed July 16, 1897. Serial No. 644,756. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HALEY, a citizen of the United States, residing at Beaver Falls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Cooling-Tables for Glass-Molds; 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.

My invention relates to improvements in cooling-tables for use in conjunction with glass-presses; and it consists in the novel features of construction, combination, and arrangement hereinafter described, and specifically pointed out in the claims.

The object of the invention is to increase the facility and speed of operation of the glass-press and of the manipulations necessary and incident to its operation, as will be hereinafter fully explained.

Figure 1 represents in side elevation a cooling-table constructed according to my invention. Fig. 2 represents the same in end elevation, partly broken away. Fig. 3 is a bottom view of the blast device C. Fig. 4 is a top plan view of the table with the blast device broken away. Fig. 5 is a plan view of a table exhibiting a modification of the structure adapted to carry the molds in a direct line, and Fig. 6 is a sectional view of the structure shown in Fig. 5.

My cooling-table comprises, essentially, a movable surface on which the molds are carried while cooling, the same being preferably provided with ledges or stops to guide the placing of the molds and to insure their being placed accurately beneath the blast, means for moving the mold-carrying surface, so as to bring the molds successively into the proper relation with the press to enable them to be easily and quickly transferred to the press, and means for delivering a blast of air or other cooling medium upon the molds while on the table, and there is preferably combined with the foregoing essential elements means for receiving the molds after pressing and for receiving the pressed article, and the whole is preferably, but not necessarily,

mounted on a truck for facility of transportation.

In the drawings, A represents the fixed bed or top of the table; A', its supporting-frame; a , the truck-wheels; a^2 a^3 , side bars for strengthening the frame; a^4 , the bottom bars, forming axles for the wheels. In an opening in the fixed top A is arranged the movable mold-carrying table or surface B, preferably having on its surface ledges or stops b b to facilitate the proper placing of the molds R.

C represents an air-blast comprising a tubular chamber conforming in shape to the surface on which the molds are carried and provided with nipples c c , by which it may be connected in any suitable manner, as by a hose, to a source of air-pressure, such as a blower or other air-forcing device. (Not shown.) On its under side the air-blast C is provided with numerous openings c^2 , through which a continuous blast of air is emitted upon all the molds on the table or surface B and by which they are most perfectly and efficiently cooled to the precise degree required.

The preferred means for moving the molds successively to the point whence they are transferred to the press is by rotating the table B, although it is obvious that the molds could equally well be moved in a direct line, as by the mechanism shown in Figs. 5 and 6. To effect the rotation of the table B, it is supported on a strong center pin D, which is sleeved in a bearing d , supported by the rigid top A or by the table-frame, and the pin D is adjustably supported at the bottom by a screw-center d^2 , threaded through the bearing-sleeve d , by which means the revolving top B may be adjusted to the exact level of the fixed top A. When the rotating form is employed, the ledges b are preferably so formed as to constitute recesses b' , (best seen in Fig. 4,) which each receive a mold, and adjusting-screws b^2 are threaded through the ledges b and serve to regulate the position of the mold, so that when placed against the screw b^2 the mold shall be always directly beneath the air-blast C whatever be the size of the mold. The ledges b on the rotating table B are undercut at their outer portion, as seen at b^3 in Fig. 1, and a stop e is secured to the fixed top

A of the table in such position that it projects in the path traversed by the undercut portion of the ledges *b*. When the recesses *b'* are empty, the table B rotates freely, but if a
 5 mold is in any of the recesses it abuts against the stop *e* when it reaches that point, and the further rotation of the table is prevented until the mold is removed.

When the direct-moving surface is employed, it is preferably arranged as an endless belt or sprocket-band *B'*, (see Figs. 5 and 6,) which travels in a depression or opening *b⁴* of the table A and is actuated by the drums or sprockets *ss*, which are driven by the gears
 15 *no* from any suitable source of power—for instance, from the shaft of the glass-press with which the table is used, in which case the shaft *o'* could be merely an extension of one of the shafts of the press. The band or
 20 apron *B'* is supported by the bed *A²*, which may be integral with or separate from the bed A and is so adjusted that the top of table A and band *B'* are in the same plane, so that the molds *RR* may be readily slid from one
 25 to the other. On the band or apron *B'* the ledges *b* may be dispensed with or, if used, may be short bars or blocks, as indicated in dotted lines, and the table A may be notched, as indicated at *z* in Fig. 5, to allow them to
 30 pass, the stop *e* being of course dispensed with. Obviously the gears *no* could be omitted and the band *B'* moved by hand, as table B is designed to be.

At one side of the table is attached a projecting leaf *F*, flush with the top A of the table, and which when the table is in use rests upon a ledge *g* on the press-bed *G*, so as to bring the top of the press-bed, the leaf
 35 *F*, the top A, and the top of the table B in the same place, so that no obstruction is offered to the sliding of the mold from the table B to the press-bed. A removable shelf *H* is adjustably supported at the end of the bed
 40 A, preferably at a slightly lower level, upon which the molded article is emptied from the mold, and this shelf has at one end a rabbet *h* deep enough to receive the plate or shovel on which the molded articles are transferred to the finishing-table or annealing-oven, as
 45 the case may be. To enable the shelf *H* to be adjusted for height, the bars *a³*, which support it, may be slotted, as seen at *i* in Fig. 1, and secured to the frame *A'* by bolts, as *jj*, passing through the slots. In a similar
 55 manner the frame *A'* may be made adjustable for height by constructing the uprights *a⁵* in two parts, as shown in Fig. 2, one part, as *a⁶*, being slotted and secured to the other part by bolts, as *k*.

60 An air-blast nozzle *L* is supported by a bar *l*, pivoted on the frame *m*, which supports the air-blast *C* and is connected by a hose to an air-supply under pressure in the same manner as are the nipples *c c*, and can be
 65 swung over the point on table A where the

mold is placed when taken from the press, so as to emit a blast upon the mold before it is opened and emptied.

The operation is as follows: Assuming that the cooling-table has been adjusted to the
 70 press and secured in position, the air-blast connections made, and the recesses on table B supplied with molds, the pressman takes the mold which rests in the recess next to the stop *e*, slides it on the press-bed and into
 75 position under the plunger. The gatherer fills the mold with molten glass, the plunger descends and forms the article, and as the plunger rises the pressman slides the mold on the table A in reach of an assistant and
 80 takes from the table B another mold which has meantime come to the stop *e* and proceeds as before. The assistant takes the mold delivered to him, opens and empties it, and places it upon table B in the vacant
 85 recess and at the same time rotates the table so as to bring a mold against the stop *e*, and thus the work proceeds indefinitely. By always rotating the table B in the same direction (indicated by the arrow in Fig. 3) the
 90 idle molds are subjected to the cooling-blast during the time required to mold as many articles as there are molds upon the table B. I have shown the table B provided with five
 95 of the recesses *d'*, but any number may be used, and it is obvious that the table can be used with a less number of molds than recesses, if desired. The operation is precisely the same with belt *B'* as with the rotating
 100 table B, the assistant moving the belt one space each time he places a mold upon it.

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

1. A cooling-table for glass-molds comprising, in combination, a table supporting a movable surface adapted to receive a number of
 105 molds, means for moving the same to bring the molds successively in proximity to the press, and a blast-chamber arranged above said mold-carrying surface and having outlets adapted to continuously deliver a cooling-
 110 blast which impinges upon the molds on said surface, substantially as described.

2. A cooling-table for glass-molds, comprising in combination, a table having a fixed top
 115 or shelf, a movable top adapted to receive a number of molds, means for moving the same to bring the molds successively to the desired position adjacent to the press, and a blast-chamber supported above said mold-carrying
 120 surface and having outlets adapted to continuously deliver a cooling-blast which simultaneously impinges upon all the molds on said surface, substantially as described.

3. In a cooling-table for glass-molds the combination of a frame, a rotatable top adapted to receive a number of molds, ledges on said top to regulate the position of the molds thereon, and an air-blast chamber supported above
 125 said top and having outlets coinciding with
 130

the location of the molds, through which outlets a cooling-blast is continuously emitted, substantially as and for the purpose described.

4. In a cooling-table for glass-molds the combination of a frame, a fixed top, a rotatable top having ledges forming recesses in which the molds are placed, a stop on said fixed top projecting in the path of said molds, and an air-blast chamber supported above said top and having outlets coinciding with the position of the recesses on said rotatable top, substantially as described.

5. In a cooling-table for glass-molds the combination of a frame, a fixed top, a rotatable top having thereon ledges to guide the placing of the molds, an air-blast chamber supported above said table and having outlets corresponding with the position of the molds, and a shelf upon which to discharge the molded article before placing the mold on the rotatable top, substantially as described.

6. In a cooling-table for glass-molds the combination of a frame, a fixed top, a rotatable top having thereon ledges to guide the placing of the molds, an air-blast chamber supported above said table and having outlets corresponding with the position of the molds, and a leaf secured to the table and adapted to connect the same with a glass-press, substantially as described.

7. In a cooling-table for glass-molds the combination of a frame, a fixed top, a rotatable top having thereon ledges to guide the placing of the molds, an air-blast chamber supported above said table and having outlets corresponding with the position of the molds, and a nozzle adapted to deliver an air-blast upon the fixed top, substantially as described.

8. In a cooling-table for glass-molds the com-

bination of a frame, a fixed top, a rotatable top having thereon ledges to guide the placing of the molds, an air-blast chamber supported above said table and having outlets corresponding with the position of the molds, and a swinging arm carrying a nozzle adapted to deliver an air-blast upon various parts of the fixed top, substantially as described.

9. In a cooling-table the combination of the rotatable cooling-surface, an air-blast chamber supported above the same and emitting air thereon, ledges for guiding the placing of the molds, and adjusting-screws threaded through said ledges, substantially as described.

10. In a cooling-table the combination of a frame, a fixed top, a rotatable top adjustably supported therein, and an air-blast chamber supported above and emitting air upon said rotatable top, substantially as described.

11. In a cooling-table the combination of a frame adjustable for height, a fixed top, a rotatable top supported therein, and an air-blast chamber supported above and emitting air upon said rotatable top, substantially as described.

12. In a cooling-table the combination of a frame supported on trucks, a fixed top therein, a rotatable top supported in the fixed top, and an air-blast chamber supported above and emitting air upon said rotatable top, substantially as described.

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

WILLIAM HALEY.

Witnesses:

W. E. MORROW,
LORIN PRENTISS.