

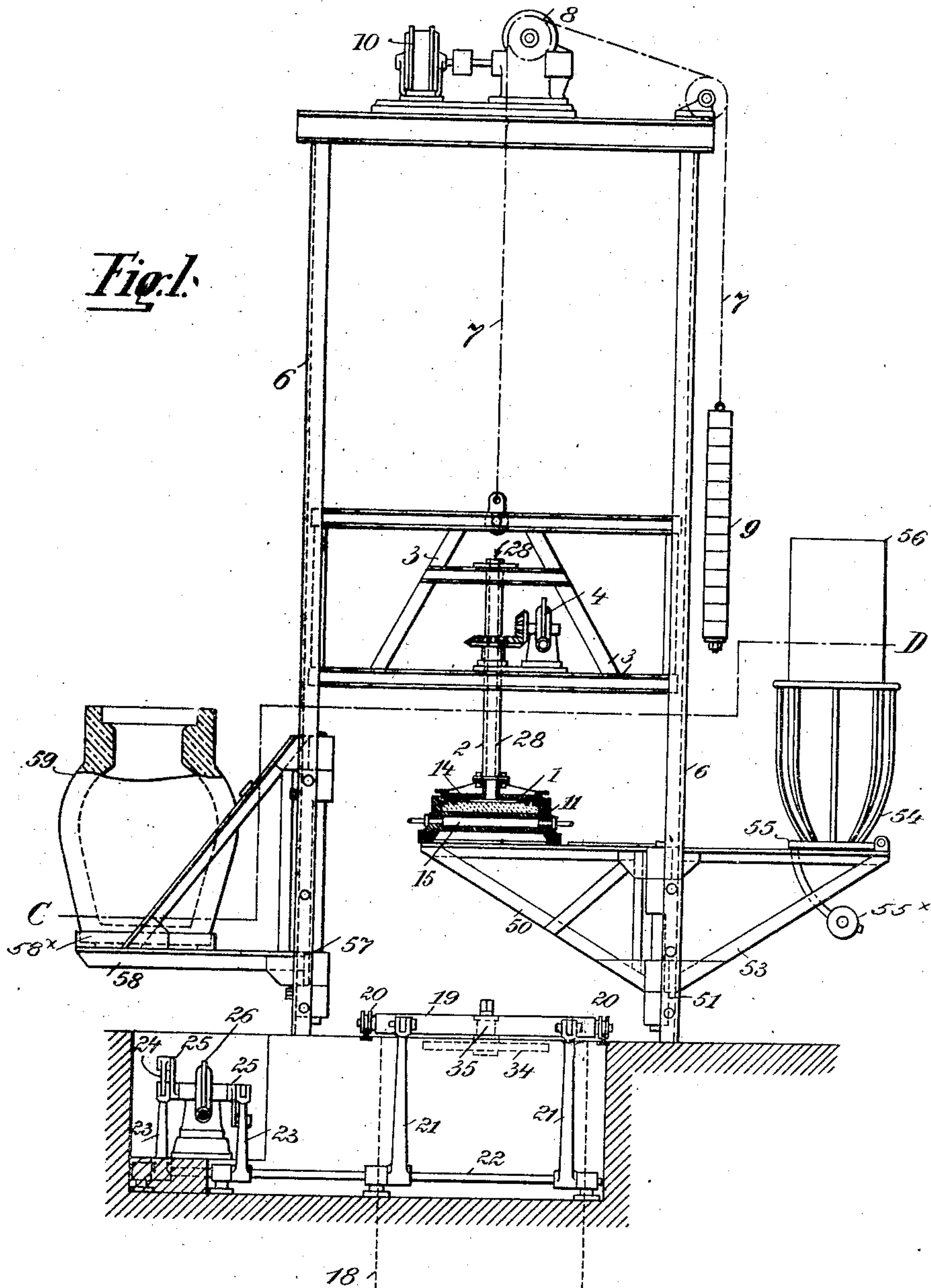
No. 832,561.

PATENTED OCT. 2, 1906.

P. T. SIEVERT.  
MACHINE FOR FORMING GLASS ARTICLES.

APPLICATION FILED JAN. 9, 1906.

2 SHEETS—SHEET 1.



WITNESSES:  
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Marion Hall

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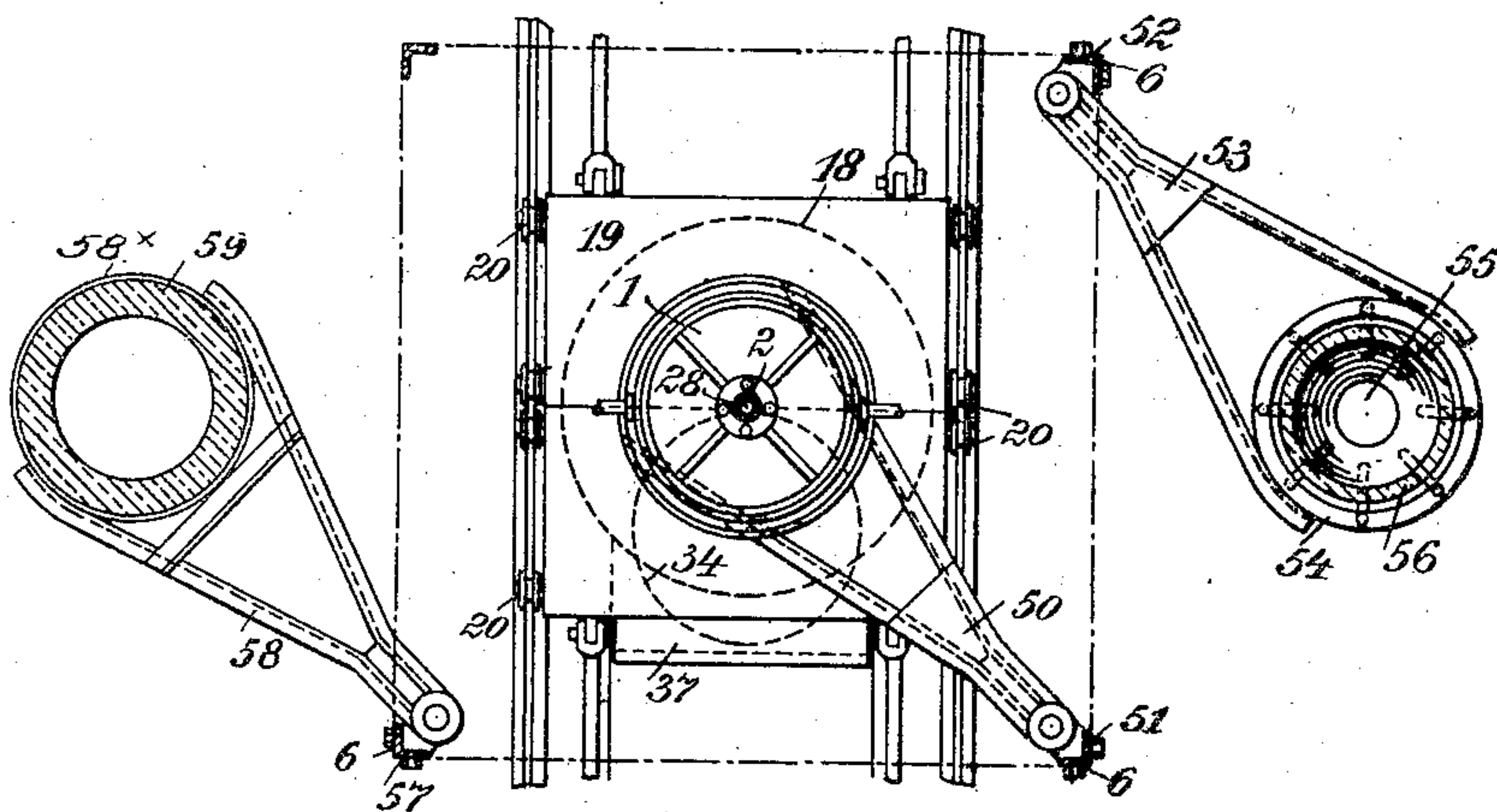
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*Fig. 2.*



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# UNITED STATES PATENT OFFICE.

PAUL THEODOR SIEVERT, OF DRESDEN, GERMANY.

## MACHINE FOR FORMING GLASS ARTICLES.

No. 832,561.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Original application filed January 7, 1905, Serial No. 240,003. Divided and this application filed January 9, 1906. Serial No. 295,246.

*To all whom it may concern:*

Be it known that I, PAUL THEODOR SIEVERT, a citizen of the German Empire, and a resident of Dresden, Germany, have invented certain new and useful Improvements in Machines for Forming Glass Articles, of which the following is a specification.

The invention relates to an apparatus for blowing or otherwise forming glass articles from a plastic glass mass suspended from a carrier.

It provides means for conveniently bringing the cast mass of the carrier, molding or forming it as desired and supporting and removing the finished or partly-finished article.

It further provides various combinations of parts, which will be set forth in the claims.

In the drawings, Figure 1 is a vertical elevation, partly in section, of a glass-forming machine embodying my invention. Fig. 2 is a section through the line C D, Fig. 1.

1 designates a carrier consisting of a frame which may have any desired form and which, as shown, is suspended from the shaft 2, rotatably supported on a frame 3. The rotation of the shaft is effected by means of a worm-gear 4, which is driven by any suitable motor. (Shown as an electric motor 5.) The frame 3 is capable of vertical motion in the main frame 6 of the machine and is suspended by a cable 7, which runs over a winch 8 and carries at its free end a suitable counterpoise 9. The winch 8 may be rotated by means of a motor 10, whereby the slide-frame 3 and the carrier-frame 1 are raised and lowered as desired.

11 designates a mold into which the molten metal is poured, which mold may be provided with a cooling-chamber 15, as shown. Immediately beneath the carrier 1 is a heating-chamber 18, provided with covers 19, carried on wheels 20, and in the form of the invention shown capable of being retracted in both directions by a system of levers 21 22 23 24 25, connected with the worm-gear 26, actuated by a motor 27. Pivotaly mounted on one of the uprights of the machine-frame 6 is a bracket 50, adapted to carry the mold 11 and by its rotation to swing the mold either into or out of the vertical path of the carrier 1. Pivoted to another of the uprights of the machine-frame 6 is a second bracket 53, to which is hinged a receptacle

for the glass article in process of formation or after it is completely formed, which receptacle consists of a framework or cage 54, secured on a plate 55. It is of course understood that this bracket 53, like the bracket 50, is adapted to be swung into and out of the path of the carrier 1. A third bracket 58 is rotatably mounted on one of the uprights of the machine-frame 6, so as to swing into and out of the path of the carrier 1 and is provided, as shown, with an annular flange 58<sup>x</sup>, adapted to receive the foot of a mold 59.

The operation of my device will be readily understood from an inspection of the drawings. The mold 11, either before or after it has been filled with the molten metal 14, is placed on the bracket 50, which is then swung into the path of the carrier 1. The carrier-frame is then caused to adhere to the periphery of the cast mass. In a previous application, Serial No. 240,003, filed January 7, 1905, of which case this is a division, I have claimed the process of supporting the glass mass in the mold until it was sufficiently cooled to prevent its dropping considerably out of a horizontal plane, when it was lifted therefrom by the raising of the carrier. It is of course unimportant whether this preliminary cooling is adopted in the present invention or not. Whenever desired, the carrier 1 is raised so as to remove the glass mass 14 from the mold 11. The bracket 50 may then be swung out of the path of the carrier and the glass mass be permitted to elongate by its own gravity, as desired. It may of course at any time be lowered into the heating-chamber 18 for further extension or treatment. Where a cylinder is being formed, as in the manufacture of plate-glass, the bracket 53 may at any time be turned into the path of the carrier 1, the latter being raised for this purpose and the cylinder 56 lowered into the framework 54 on the bracket 53. It will be seen that this supporting-frame, consisting of the cage 54 and plate 55, is hinged at its outer edge to the end of the bracket 53, so that it may be tilted for the convenient removal of the cylinder 56. The plate 54 may be provided with an arm carrying a counterweight 55<sup>x</sup> for securing its return to its horizontal position. Where it is desired to form the glass mass 14 in a mold—as, e. g., to form a vase—the bracket 58, carrying the mold 59, may be swung into the path of the carrier 1.



and the glass mass 14, properly heated, may be placed thereabove. Compressed air being then introduced through the opening 28 in the shaft 2 of the carrier, the glass mass 5 may be distended to fill the mold 59. After this operation and after the neck of the vase has been separated from the glass attached to the carrier 1 the bracket 58 may be swung outward to the position shown in the drawings for the removal of the mold and vase 10 therefrom.

I have illustrated the device or machine in connection with two of its well-known uses; but it is of course understood that it may be 15 used for a great variety of purposes besides those so pointed out. It is also clear that parts of the machine may be used without other parts—as, *e. g.*, great advantage will be gained by the mere use of the mold-carrying 20 bracket even without either or both of the other brackets 50, 53, and 58. It will be seen that the different brackets 50, 53, and 58 are mounted independently of each other and are movable independently and alternately 25 into the path of the carrier 14, to which the periphery of the mass of glass adheres.

In the parent application, Serial No. 240,003, to which reference has already been 30 made, I have claimed a process which includes reheating the glass while supported from the body of a carrier, a process which includes extending the walls of the glass mass so supported either by gravity or pressure, a process which includes the rotation of 35 the glass mass while so supported from the carrier and while being so extended, and a machine for producing these several results. It is obvious that I do not herein claim any- 40 thing claimed in that application.

What I claim is—

1. In a machine for forming glass articles, a frame, a vertically-movable carrier in said frame, a mold-carrying bracket suitably 45 mounted for rotation into and out of the path of said carrier, and a second bracket also mounted for rotation into and out of the path of said carrier independently of the movement of said first-named bracket.
- 50 2. In a machine for forming glass articles, a frame, a vertically-movable carrier in said frame, a mold-carrying bracket suitably mounted for rotation in a horizontal plane into and out of the path of said carrier, and a 55 second bracket also mounted for rotation in a horizontal plane into and out of the path of said carrier independently of the movement of said first-named bracket.

3. In a machine for forming glass articles, a frame, a vertically-movable carrier in said 60 frame, and a plurality of brackets mounted on said frame for independent rotation into and out of the path of said carrier.

4. In a machine for forming glass articles, a frame, a vertically-movable carrier in said 65 frame, and a plurality of brackets mounted on said frame for independent rotation in a horizontal plane into and out of the path of said carrier.

5. In a machine for forming glass articles, a frame, a vertically-movable carrier in said 70 frame, a bracket mounted on said frame for carrying a casting-mold and rotatable into and out of the path of said carrier, a second bracket independently mounted on said 75 frame and rotatable into and out of the path of said carrier, and means on said second bracket for engaging the foot of a mold.

6. In a machine for forming glass articles, a frame, a vertically-movable carrier in said 80 frame, a bracket mounted on said frame for carrying a casting-mold and rotatable into and out of the path of said carrier, a second bracket mounted on said frame for independent rotation into and out of the path 85 of said carrier, and means on said second bracket for receiving the glass article after treatment.

7. In a machine for forming glass articles, a frame, a vertically-movable carrier in said 90 frame, a bracket mounted on said frame for carrying a casting-mold and rotatable into and out of the path of said carrier, a second bracket independently mounted on said 95 frame and rotatable into and out of the path of said carrier, and means comprising a bottom plate and a framework on said plate pivotally mounted on said bracket for receiving the glass article after treatment.

8. In a machine for forming glass articles, a 100 frame, a heating-chamber located beneath said frame, a vertically-movable carrier in said frame, a bracket mounted on said frame and rotatable into and out of the path of 105 said carrier, and a second bracket rotatably mounted on said frame for movement into and out of the path of said carrier independently of said first-named bracket.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses. 110

PAUL THEODOR SIEVERT.

Witnesses:

PAUL E. SCHILLING,  
PAUL AERAS.