J. J. MULDOON.

GLASS MOLD.

APPLICATION FILED FEB. 18, 1910.

985,439. Patented Feb. 28, 1911.

FIG. 1.

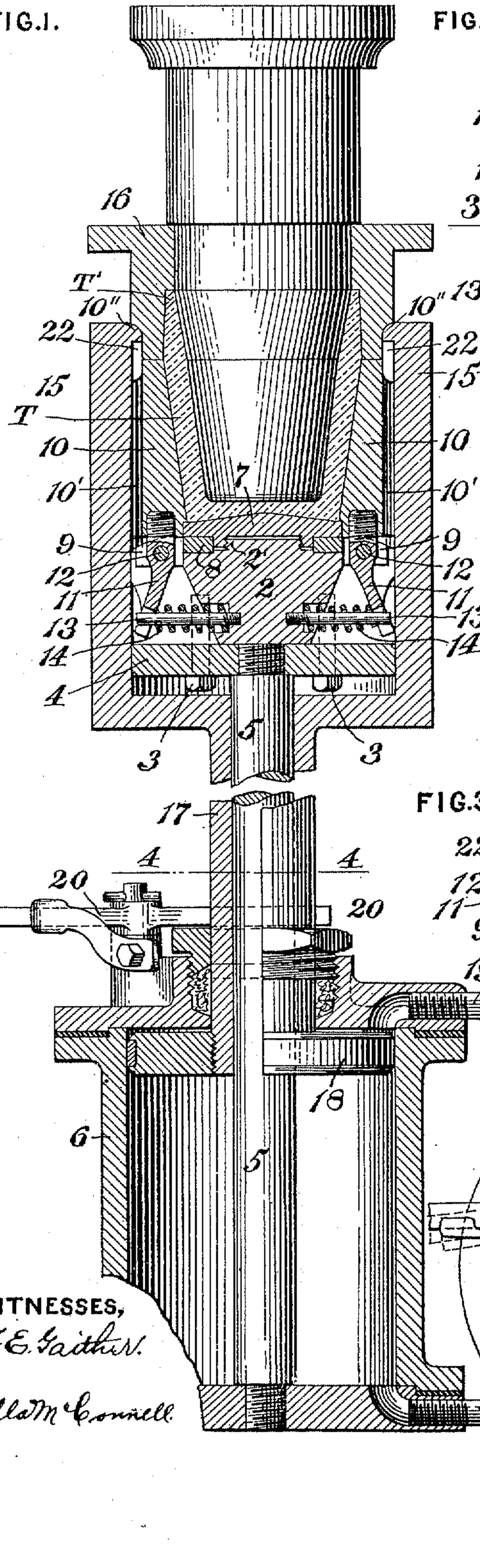

FIG. 2.

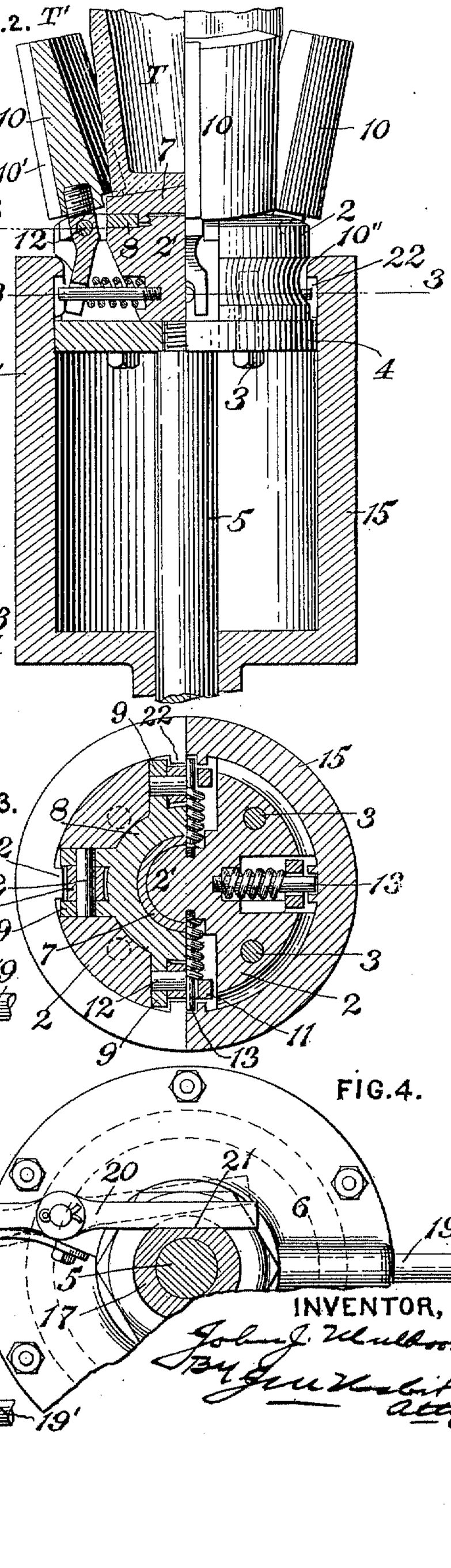

FIG. 3.

FIG. 4.

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GLASS-MOLD.

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To all whom it may concern:

Be it known that I, JOHN J. MULDOON, a resident of Rochester, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Glass-Molds, of which the following is a specification.

One object of this invention is to provide a glass mold with interchangeable wall-forming members which carry the surface decoration imparted to the article molded therein, and which may be changed whenever it is desired to vary the pattern, the side members being the only parts which need to be substituted to secure this result. This is a marked advantage over the present practice which requires an entire new mold for each pattern.

A further purpose is to arrange for moving the wall-forming members outwardly for releasing the formed article. It is necessary to hold the movable wall members fitting tightly together when the mold is in service, and a further purpose of the invention is to provide improved removable mold embracing means for this purpose.

The invention is also directed to certain structural details, as will hereinafter appear.

In the accompanying drawings, Figure 1 is a vertical section of the mold and jacket, also the jacket operating means, and with a pressing plunger entered in the mold. Fig. 2 is a view of the mold partly in elevation and partly in vertical section, with its wall members moved outward to release the formed article, the jacket being in lowered position and in such position operating to open the mold. Fig. 3 is a sectional plan on the broken line 3—3 of Fig. 2. Fig. 4 is a sectional plan on line 4—4 of Fig. 1.

Referring to the drawings, 2 designates the mold base secured by screws 3 to head 4 on the upper end of the supporting bar or rod 5, the latter secured at the bottom of and rising through cylinder 6.

7 is the removable mold bottom which, in the present adaptation, is threaded to boss 2′ on the top face of base 2. As thus arranged, the mold bottom operates to clamp the ring-like spider 8 to the base, the latter carrying the four sets of bearing lugs 9. Rising from the mold bottom are the wall forming side members 10, four being here shown, and each provided at its lower end with the downwardly and outwardly sloping arm 11, pivoted at 12 between lugs 9, the lower portion of the arm being apertured to pass horizontal rod 13 secured to the base and confining spring 14 behind arm 11 and thereby holding the mold member 10 in inward position, with all of said members fitting together and forming a continuous mold wall.

The wall members are held closed together by a removable jacket 15 which rises above wall members 10 and embraces and confines the mold ring 16. The mold is designed especially for tumblers, and as here shown the upper portion T′ of the tumbler T is formed in ring 16.

In the present embodiment, mold holding jacket 15 is movable vertically, being raised as in Fig. 1 to hold the mold tightly closed, and lowered as in Fig. 2 to effect the opening thereof. To thus move the jacket it may be secured to the tubular piston rod 17 which embraces supporting rod 5 and to which piston 18 is secured in cylinder 6, the latter being ported at its upper and lower ends, as indicated at 19, 19′, for admitting and exhausting air as required by means of valve mechanism of well known construction, not shown. A pivoted spring-held latch 20 may be mounted on the cylinder and arranged to automatically engage a notch 21 in piston rod 17 for positively holding the jacket elevated as in Fig. 1. When the jacket is to be lowered the operator may simply release this latch when the jacket may either lower by gravity to the position shown in Fig. 2, or be forced down by the admission of air or other fluid under pressure at 19.

As before stated, springs 14 hold the side wall members 10 normally closed together, and for opening them to release the tumbler or other article, lugs 22 on the inner face of jacket 15 travel in grooves 10′ of members 10 which are in vertical line with arms 11, and with the latter extending outward into the path of the lugs, so that as the jacket

lowers said arms are engaged and pressed inward by the lugs and the side members 10 turned outward on their pivots 12, as shown in Fig. 2. The side members 10 fit closely within the jacket, and when the latter is raised from the position of Fig. 2 the rounded upper extremity 10'' thereof engages the outer surfaces of the pivoted members and forces them inward into close relation, forming the continuous side wall for the mold.

It will be understood that the mold clamping or jacket element may be variously constructed and operated without departing from the invention.

The pattern for the surface decoration for the tumbler or other article is carried by the inner surfaces of wall members 10, and as the latter are interchangeable and may be readily removed, it is only necessary to substitute other members carrying the different pattern when an article of different design is to be made. Thus, the change may be quickly made from one design to another, the remainder of the mold remaining in service. If a different design of bottom is required the same may be changed as readily as the mold sides.

I claim:

1. In a glass mold, the combination of a mold bottom, segmental wall-forming members hinged to swing outwardly, the members when turned inward fitting together and forming a continuous wall, springs opposing outward swinging movement of said members and movable means operating in one position to lock the said members in wall-forming relation and in another position operating to swing said members outwardly on their hinges.

2. In a glass mold, the combination of a mold bottom, segmental wall-forming members hinged to swing laterally with relation to the bottom, said members fitting together around the bottom when in inward position and forming a continuous wall, means for swinging said members on their hinges, a mold ring at the upper end of the wall members and forming an upward continuation of the mold cavity, and a pressing plunger operative through the mold ring and within the mold space therebeneath.

3. In a glass mold, a mold bottom, side members rising from the bottom and pivoted at their lower ends to turn outward, the side members having downward extensions below their pivots, springs bearing on said extensions for holding the side members normally in inward position and fitting together and forming a continuous mold wall, and movable means holding the side members in inward position.

4. In a glass mold, a mold bottom, side members rising from the bottom and pivoted to turn outwardly to release the formed article and when in inward position fitting together and forming a continuous mold wall, downwardly and outwardly sloping projections on the side members beneath their pivots, springs holding the side members normally in inward position and fitting together, and means engaging the inclined projections of the side members for forcing them inward and the upper portions of the side members outward in opposition to the pressure of the springs.

5. In a glass mold, a mold bottom, side members rising from the bottom and adapted to turn outward for releasing the formed article, said members when in inward position fitting together and forming a continuous mold wall, a jacket open at its upper end and when raised around the mold engaging the side members and holding them in inward position, and coöperating means at the lower ends of the side members and adjacent the upper end of the jacket operating to move the side members outward when the jacket is lowered.

6. In a glass mold, a mold bottom, side members rising from the bottom and pivoted to turn outward to release the formed article, downwardly and outwardly inclined extensions at the lower ends of the wall members beneath the pivots thereof, a vertically movable jacket fitting around the side members, the side members being grooved vertically in line with said sloping projections, and lugs on the inner surface of the jacket movable in the grooves of the side members and adapted to engage said sloping projections when the jacket is lowered and open the wall members.

7. In a glass mold, a mold bottom, movable side members fitting together when in inward position and forming a continuous mold wall, a jacket movable vertically with relation to the mold and fitting therearound, a cylinder, a piston in the cylinder to which the jacket is connected and operating to move the jacket vertically, and means carried by the jacket for opening the wall members of the mold as the jacket lowers.

8. In a glass mold, a mold base, a rod supporting the base, a cylinder through which the rod extends, a mold bottom secured to the base, wall-forming side members pivoted to move outward and fitting together when in inward position and forming a continuous mold wall, a jacket movable vertically over the mold and fitting around the side members thereof and holding them in inward position, means carried by the jacket for moving the side members outward, a tubular piston rod embracing said base supporting rod and to which the jacket is secured, and a piston within the cylinder on said tubular rod.

9. In a glass mold, a mold bottom, mov-

able side members fitting together and forming a continuous mold wall, the wall members adapted to move outward to release the formed article, a movable member embracing the side members and holding them in inward position, the said movable member rising above the side members, and a mold ring supported on the upper ends of the wall-forming members and embraced by the said movable member.

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

JOHN J. MULDOON.

Witnesses:

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