

F. C. H. STRASBURGER.
 CENTERING BELL FOR BOTTLE FILLING MACHINES.
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947,314.

Patented Jan. 25, 1910.

Fig. 1.

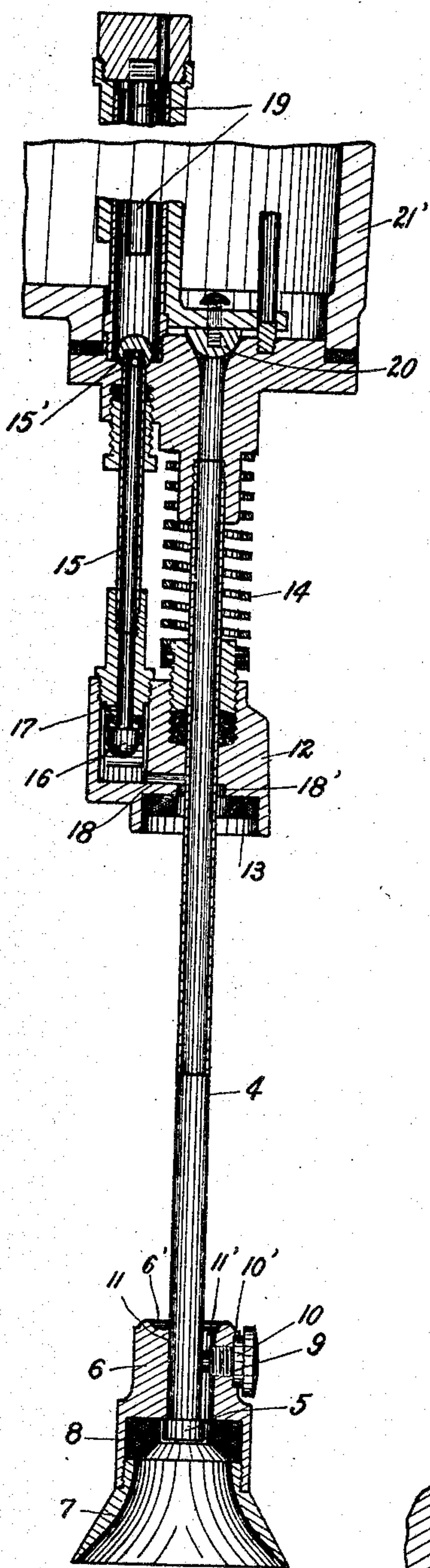


Fig. 2.

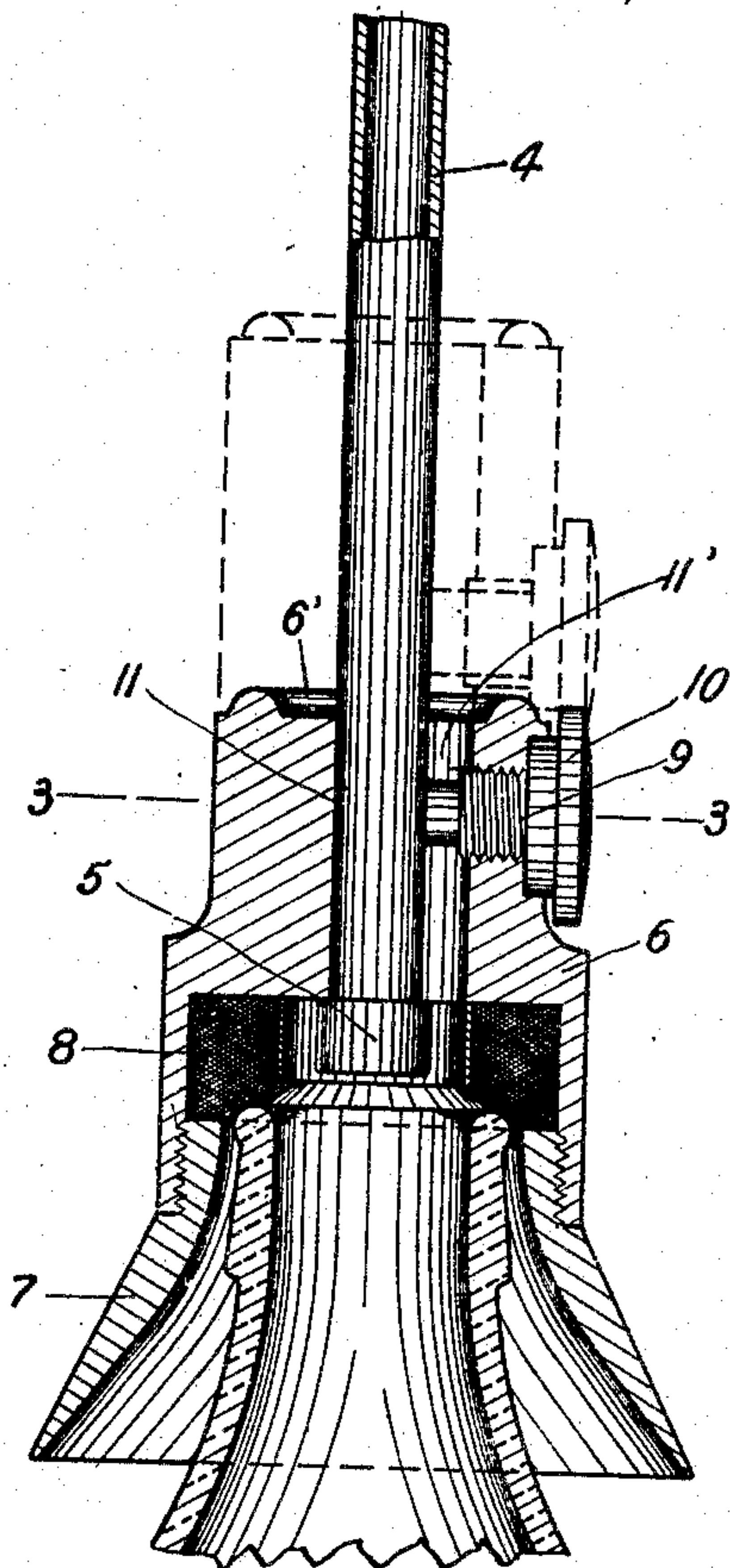


Fig. 3.

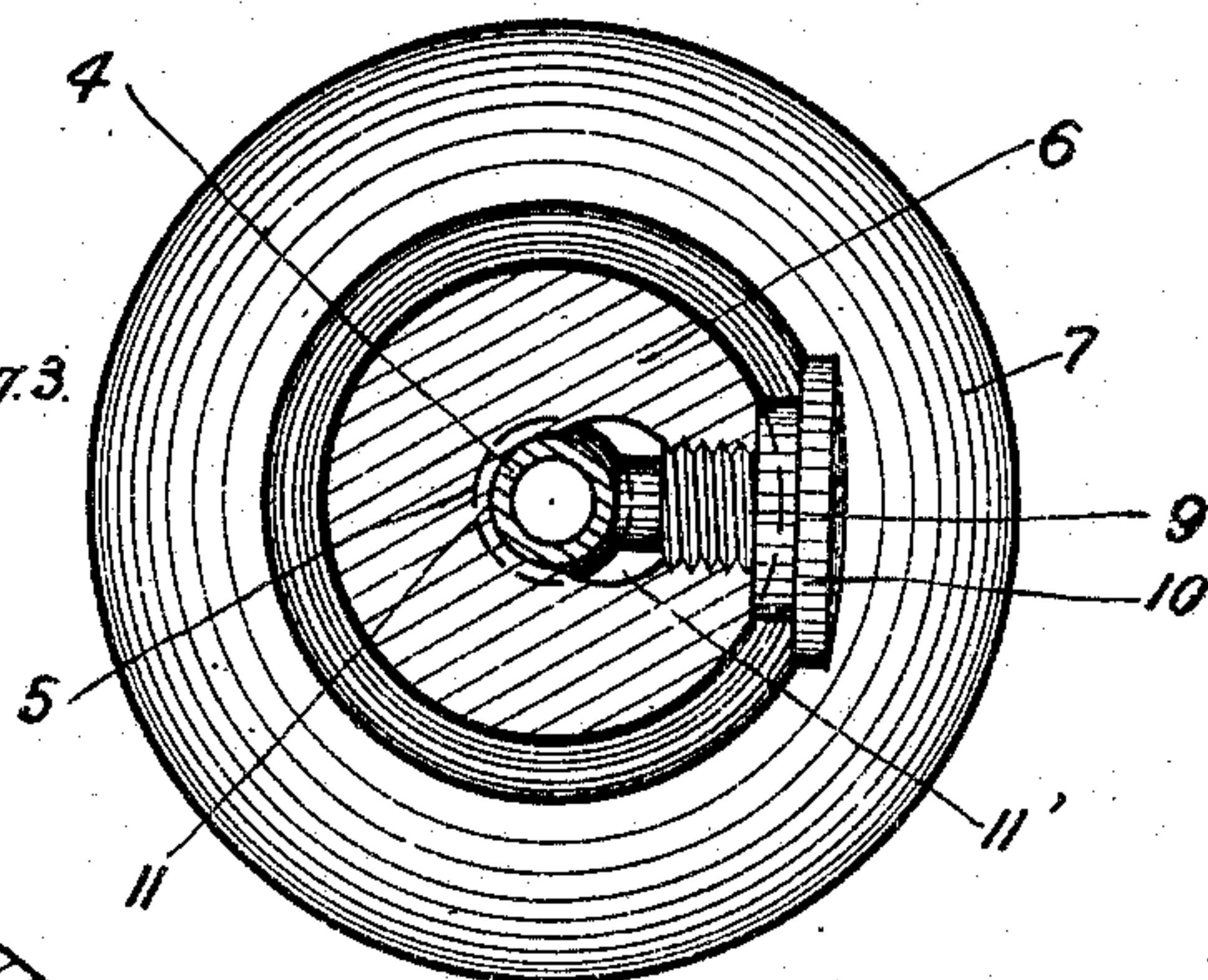
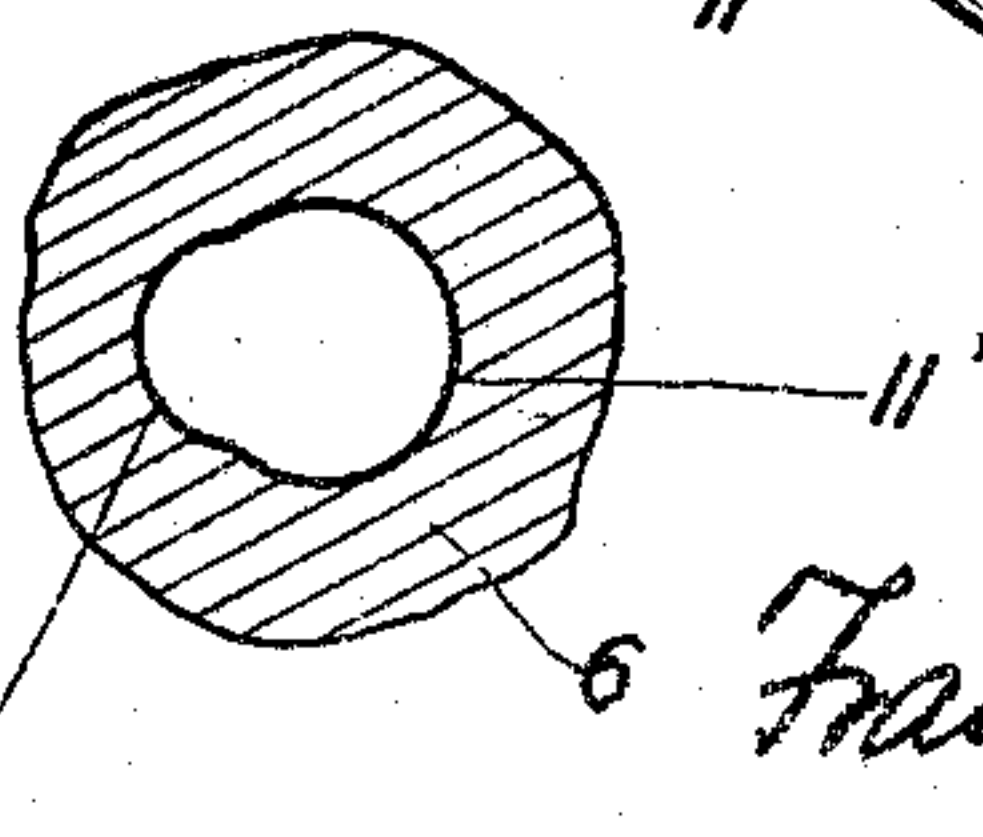


Fig. 4.



WITNESSES:

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FRANK C. H. STRASBURGER, OF CHICAGO, ILLINOIS, ASSIGNOR TO BOTTLERS MACHINERY MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CENTERING-BELL FOR BOTTLE-FILLING MACHINES.

947,314.

Specification of Letters Patent. Patented Jan. 25, 1910.

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To all whom it may concern:

Be it known that I, FRANK C. H. STRASBURGER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Centering-Bells for Bottle-Filling Machines, of which the following is a specification.

In bottling beer or other carbonated liquids it is especially desirable to reduce to a minimum the agitation of the liquid and hence a filling tube which reaches almost to the bottom of the bottle during the filling operation has been employed so that there will be comparatively little fall for the liquid after it leaves the tube. But a filling machine is frequently used for filling bottles of different heights, such as pints and quarts, and to make the filling tube extend down in each size of bottle the desired distance it is necessary to provide different sets of tubes or to employ other means for accomplishing this result. To exchange the tubes every time the size of bottles is changed would be burdensome and expensive, causing injury to the threaded ends of the tubes and the packing through which these threaded ends are drawn. It has also been proposed to make the bell in sections so that parts can be removed to shorten the bell and adapt it for taller bottles, but this is a more expensive way of accomplishing the result than I have devised.

The object of my invention is to provide a plurality of centering bells for each filling tube and construct them so that they can be readily removed and substituted one for the other as required to accommodate the particular bottle which it is desired to fill.

In the accompanying drawings illustrating my invention Figure 1 is a sectional elevation showing my invention applied to one type of filling machine. Fig. 2 is a detail enlarged sectional view of the invention showing in full lines a bell for quart bottles and indicating in broken lines the height of a bell for pint bottles. Fig. 3 is a sectional view on the line 3—3 of Fig. 2. Fig. 4 is a detail sectional view.

Referring to the drawings 4 is a filling tube provided with an enlarged lower end 5 to prevent the bell from slipping off the tube. The lower end of the tube may be provided with a ferrule, as shown, or it may be flared to secure the proper enlargement

for the purpose indicated. The bell is preferably made in two parts 6 and 7 screwed together upon an intermediate rubber seat 8. The upper member or body 6 of the bell is provided with a bore to receive the tube 4 and the lower member is flared in a suitable manner to receive the upper end of the bottle, the mouth of which is adapted to engage the seat 8. The bore through the upper member or body 6 of the bell must be adapted to permit the enlarged lower end of the tube to pass therethrough and means must be provided for preventing the bell from slipping off of the tube except when it is desired to change the bells. I therefore provide a thumb screw 9 operating through the side of the body 6 of the bell and engaging the tube. This thumb screw holds the tube and body in engagement at the side of the tube opposite the screw so that the enlarged lower end of the tube will engage the bottom of the member 6 adjacent to the bore therein and prevent the bell from slipping off of the tube. I prefer to provide the screw 9 with a shoulder 10 which seats in a recess 10' in the body to make a tight fit and prevent the escape of air or gas around the screw.

The bore in the body 6 may be variously shaped and in the drawings I have shown one construction which has been found to be very satisfactory and which comprises two circular bores 11, 11' the latter 11' being larger than the former 11 and intersecting each other approximately at centers. The bore 11' is large enough to permit the passage of the enlarged end 5 of the filling tube which is adapted to fit in the bore 11.

When the parts are assembled the screw is adjusted to engage the filling tube and hold it in the bore 11 so that the bell will not slip off the tube and also so that the bell may slide freely on the tube without wobbling. It will be readily understood that the body 6 of the bell may be extended as indicated in broken lines in Fig. 2 to adapt the filling machine for smaller bottles. The exchange is made by simply loosening the screw and substituting the longer bell for the shorter one after which the screw of the longer bell is adjusted to secure the bell on the tube.

While my invention is particularly adapted for filling machines in which the bell is slidable on the tube it will be readily understood that it can be employed satisfactorily

on other kinds of filling machines and although I have shown the invention embodied in a bell slidable on a filling tube I do not intend to limit or restrict the scope of the invention thereby.

The filling machine illustrated in the drawings comprises a head 12 provided with a seat 13 to receive the upper end of the bell and movable on the filling tube against a spring 14. An air tube 15 is provided at its lower end with a check valve 16 and a side port 17 and forms a continuation of the air passage 18, 18' in the head. The upper end of this tube is provided with a normally seated valve 15' and when the air tube 15 is carried upward with the head 12 it engages the carrier 19 and unseats the liquid valve 20 within the tank 21. I prefer to provide a circular rib 6' on the upper end of the body 6 of the bell to engage the seat 13 in the head 12. The enlarged bore in the body 6 constitutes a continuation of the air passage in the filling machine so that when the air valve 15 is unseated communication between the tank and the bottle will be established to permit an equalization of pressure before the liquid begins to flow into the bottle.

What I claim and desire to secure by Letters Patent is:

1. The combination of a filling tube enlarged at its lower end, a bottle centering bell carried by and slidable on the tube and provided with an opening which will enable it to be slipped onto the tube over said enlarged lower end, and means for preventing the bell from slipping off the tube.

2. The combination of a filling tube enlarged at its lower end, a bottle centering bell carried by and slidable on the tube and provided with an opening which will enable it to be slipped onto the tube over said enlarged lower end, and an adjusting screw operating through the bell to engage the filling tube and prevent the bell from slipping off the tube.

3. The combination of a filling tube enlarged at its lower end, a bell provided with two intersecting bores to receive the filling tube and slidable thereon, one of said bores being large enough to permit the bell to be slipped onto the tube over the enlarged lower end thereof and the other bore approximately fitting the tube, and means for holding the tube in the smaller bore and thus preventing the bell from slipping off the tube.

4. The combination of a filling tube enlarged at its lower end, a bell carried by said tube and slidable thereon and provided with two circular bores intersecting each other at or about their centers, one of said bores being large enough to permit the bell to be slipped onto the tube over the enlarged end thereof and the other bore approximately fitting the tube, and a screw operating through the bell to hold the tube in the smaller bore and prevent the bell from slipping off the tube.

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Witnesses:

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