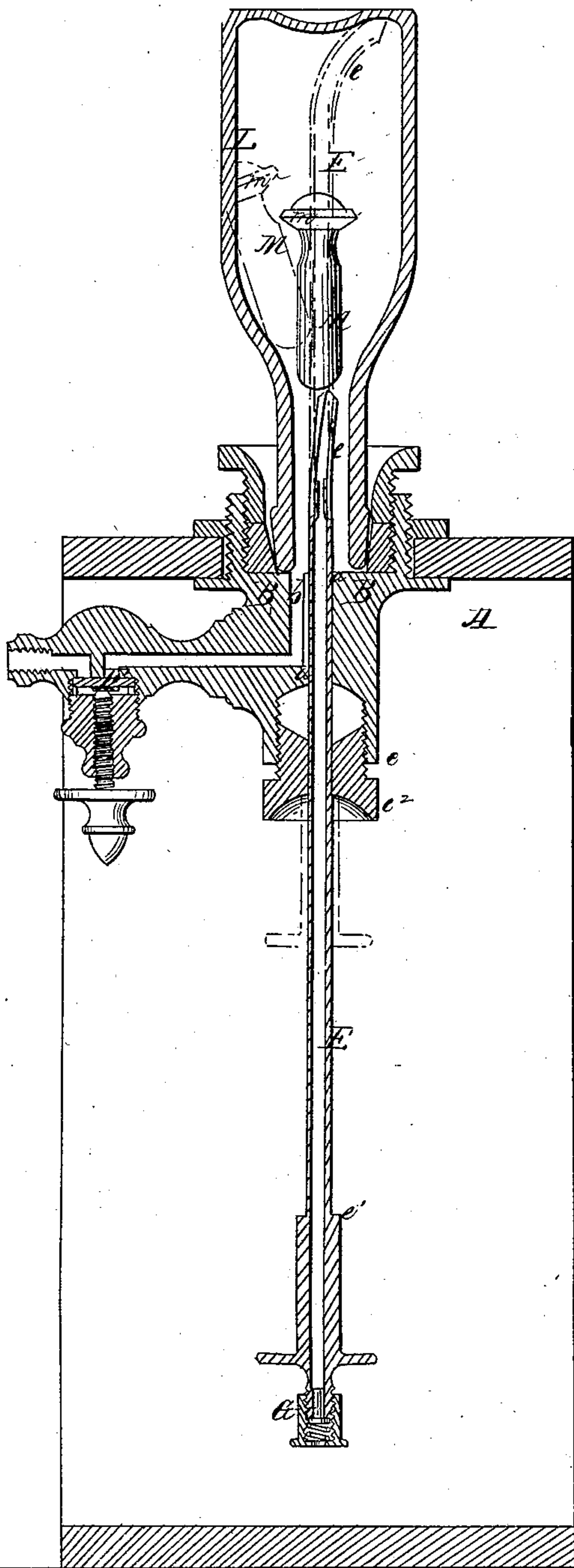


J. Matthews Jr,

Filling Bottles,

Nº 50,832.

Patented Nov. 7, 1865.



Witnesses

J. N. Coombs

W. L. Llewellyn

Inventor,

John Matthews Jr,

UNITED STATES PATENT OFFICE.

JOHN MATTHEWS, JR., OF NEW YORK, N. Y.

IMPROVED APPARATUS FOR FILLING BOTTLES.

Specification forming part of Letters Patent No. 50,832, dated November 7, 1865.

To all whom it may concern:

Be it known that I, JOHN MATTHEWS, Jr., of the city, county, and State of New York, have invented a new and Improved Apparatus for Filling Bottles; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, said drawing representing a central vertical section of an apparatus constructed according to my invention.

This apparatus is more especially intended for filling bottles which are closed by inwardly-opening valves or stoppers of a greater specific gravity than the liquid with which the bottles are filled. The bottle is filled in an inverted position, the fluid entering it by a passage in a cup having a lining of india-rubber, into which the neck of the bottle fits water and air tight, and the air escapes from it through a separate passage, composed of a tube passing through the aforesaid cup and reaching to the inverted bottom of the bottle, where, as it is the highest part, the air is collected.

To enable others skilled in the art to construct my invention, I will proceed to describe it with reference to the drawing.

Firmly secured in a hole in the upper part of the table-stand A is the metallic socket-piece B, fitted in the center of its upper part with a screwed gland, C, and an elastic india-rubber ring or gasket, D, held down by the gland C. The bottom of this socket or cup A is provided with two passages, *a b*, the former arranged centrally, extending through its bottom and receiving a metallic tube, E, provided on its upper end with a short piece of rubber or elastic tube, *e*, which is secured thereon. This tube E extends vertically downward through the bottom of the socket-piece B, and through a stuffing-box, C, in the lower part of the said socket-piece. The passage *b*, which branches off laterally through the socket-piece B, is fitted with a stop-cock or valve, F, to open and close its communication with the reservoir or fountain containing the liquid with which the bottles are to be filled.

The bottle L is filled by this machine in an inverted position, as shown by the drawing. To do this the neck of the bottle is introduced

into the cup formed by the gland C and packing D, into the latter of which it fits perfectly water-tight, and is held down by the hand of the attendant or by any suitable mechanical means. The tube E is then pushed up into the bottle either by the hand of the attendant or by a treadle as far as permitted by a stop, *e*, on the tube E—that is to say, to the position shown in red outline, the elastic tube *e* being brought to the highest part of the bottle, close to the bottom. This tube *e* is cut or beveled off on its opposite sides to provide against its being closed in case of its coming perpendicularly in contact with the bottom of the bottle. In thus inserting the tubes E *e* into the bottle the stopper M is pushed in and pushed aside, as shown in red outline in the drawing. The bottle-tubes E *e* and stopper being in these positions, the cock or valve F is opened and the liquid is admitted by the cock or valve F through the passage *b*, and rises quietly in the bottle, driving the air upward and out through the tubes *e* E, and out at the spring-pressure safety-valve G in the end of tube E, which may be so regulated by the screw-cap G' as to "blow off" at any desired pressure when the bottle is being filled with gas-charged liquids. When still liquor is being introduced into the bottle the safety-valve may be removed or omitted. When the tubes E *e* are pushed upward to the position shown in the drawing by the red lines the air is taken from the highest point to which the liquid will flow, and hence the expulsion of every particle of air contained within the bottle is permitted. After the bottle has become sufficiently full the tube *e* E is drawn down to permit the stopper or valve M, (which I propose generally to make of wood, of greater specific gravity than the liquid, and with an elastic india-rubber collar or packing, *n*,) to enter the neck of the bottle by gravitation.

The liquid for which the apparatus is used is generally gas charged, and in such case the pressure will keep the valve or stopper tight when it is in the neck of the bottle. The valve or stopper may, however, be lighter than the liquid if some suitable means be employed in connection with the tube *e* to pull it into the neck of the bottle.

The advantage of filling the bottle in an in-

verted position and having air-passages *a* and *b* for the escape of air and entrance of the liquid is that the rising column of liquid in the bottle rests upon the stream entering at the lower part and prevents any agitation by which the water might pass out with the escaping air. This enables bottles to be filled more quickly than when the liquid enters at the highest part, and the entering liquid and escaping air have to pass each other in the same channel.

I will now state what I claim as my invention and desire to secure by Letters Patent:

1. In an apparatus for filling bottles, an arrangement of the parts whereby the bottles can be filled in an inverted position, substantially as herein specified.

2. In an apparatus for filling bottles, two

separate passages for the entrance of the liquid and egress of the air, substantially as herein described.

3. The socket-piece B, provided with a cup having an elastic lining, and with an inlet-passage, *b*, and fitted with a sliding tube, E, substantially as and for the purpose herein specified.

4. The elastic tube *e*, in combination with the sliding tube E, substantially as and for the purpose herein described.

5. The safety-valve G, in combination with the sliding tube E, substantially as and for the purpose herein specified.

JOHN MATTHEWS, JR.

Witnesses:

HENRY T. BROWN,
I. W. COOMBS.