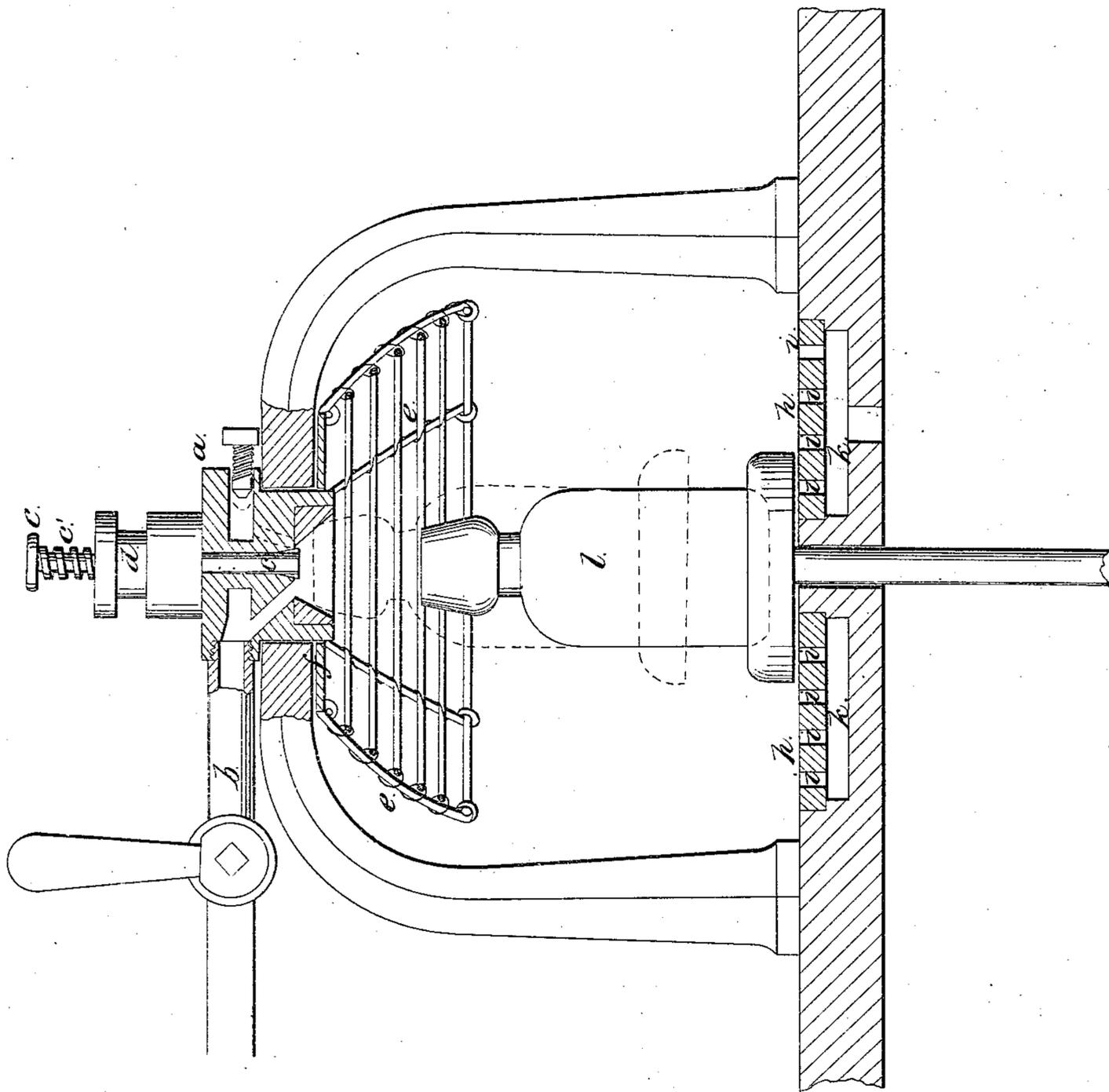


J. Matthews, Jr.

Filling Bottles.

No. 41,082.

Patented Jan. 5, 1864.



Inventor.

Witnesses.

*S. W. Maynard
Samuel P. Baker*

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by his attorney
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UNITED STATES PATENT OFFICE.

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

IMPROVEMENT IN BOTTLING LIQUIDS UNDER PRESSURE.

Specification forming part of Letters Patent No. 41,082, dated January 5, 1864.

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 certain new and useful Improvements in Machines for Bottling Liquids Under Pressure; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the annexed drawing, making a part of this specification, which is a central vertical section of my machine.

My invention consists, firstly, in an improvement in the machine employed for introducing the liquid into that class of bottles which have a spring-stopper in the neck, instead of a cork and fastener; secondly, in an improved construction and arrangement of the screen which protects the workman from the flying pieces of glass when a bottle is burst; and thirdly, in a manner of so constructing the table immediately around the bottle that the waste liquid may escape without running over the edges of the table and annoying the workman.

In filling spring-stopper bottles the difficulty occurring in the use of the ordinary machine is that, although the liquid under pressure is at first fully able to overcome the resistance of the spring and enter the bottle against that resistance, it often happens that the bottle will not entirely fill, for the reason that a portion of the air within the bottle, being retarded in the effort to escape, is condensed above the liquid which has entered to an extent sufficient, combined with the spring on the stopper, to cause the stopper to close against the pressure of the liquid, and thus no more can enter. This difficulty I overcome by the addition of a plunger, so arranged in relation to the bottle that while the filling is going on the workman can hold back the stopper at pleasure, irrespective of the pressure of the liquid.

The screen, as hitherto constructed, has not been made to inclose the upper part of the bottle, for the reason that it is necessary that the workman should see when the proper quantity of liquid had entered, and if the bottle burst the face of the workman was the only part exposed, although that is the part for which protection is most desired. This I correct by attaching a screen of wire-work or other open material to the lower part of the filling-tube, and so arranged that it shall sur-

round the neck and upper part of the bottle, whether the filling-tube be brought down to the bottle or the bottle moved up to the tube.

In all machines some waste occurs of the liquid, both by dripping from the filling-tube and from broken bottles. To prevent this from running over the table, a projecting ring has been made around the center, at suitable distance, or a groove has been similarly placed, but both of these have been found objectionable from the fact that in the hurry of working the operator often strikes a bottle against the raised part or against the edge of the groove and breaks the bottle. As it is necessary that the surface of the table should be smooth, I get rid of the liquid by inserting a plate flush with the surface of the table and drilled with holes, through which the liquid is drained into a receptacle below.

My construction is as follows: At *a* is seen the feeding-head, to which the liquid under pressure enters from the pipe *b*. It has at the lower end an india-rubber mouth-piece inserted, and there is a passage from the pipe *b* through the head to a small hole, the size of which can be regulated by a set-screw or by a spring-valve to govern the due escape of air, and has also a passage to the mouth, all this being of usual construction. To this I attach a plunger, *c*, working through a stuffing-box, *d*, and so placed as to act directly in line with the axis of the bottle to be filled. The lower end extends down near to the neck of the bottle, and when pressed down against the face of a recoil-spring, *e'*, will enter the neck of the bottle.

The screen *e* is of hemispherical form, and may be made of wires bound together in "bird-cage style," as shown. These wires are attached to a circular plate, *f*, which is affixed to the mouth of the feeding-pipe. The screen should extend as far down toward the table as will permit a bottle to be conveniently placed on the center.

Around the center I place a disk of metal, *h*, lying flush with the surface of the table and extending as far from the center as it can conveniently. The upper surface of the disk is to be quite smooth, and through it are holes *i*, thickly placed, communicating with a reservoir, *k*, cast in the metal of the table and having an escape at any convenient point.

In operation, a spring-stopper bottle, *l*, is

placed upon the center; the workman presses a treadle, which throws up the bottle to the position shown in dotted line, when its neck will be embraced by the mouth of the feeding-head. If now the liquid be turned on, the bottle will at once commence filling, and to insure a filling, as well as for rapid action, the workman presses the plunger *c* down into the neck of the bottle, against the stem of the stopper, and holding it there, keeps the stopper full open until the bottle is filled, the air escaping in the ordinary manner.

The eye of the workman will be generally on a line with the lower edge of the screen and the outer edge of the bottom of the bottle when that is in contact with the feeding-head, for, as the screen is attached to the feeding-head, it will retain its relation to the bottle, whether the head or the bottle be moved to bring them into contact; hence the head of the workman is fully protected at all times,

and, if desired, a board set on edge at the side of the table will protect his body.

If a bottle be broken, the liquid, as well as that from dripping, will readily pass off through the holes in the disk *h*.

I claim—

1. The combination, with the feeding-head, of a plunger, operated in the manner and for the purpose substantially as set forth.

2. Attaching the screen to the mouth of the feeding-head, whether the head is fixed or movable, in the manner and for the purpose substantially as described.

3. Surrounding the bottle with a perforated drain-plate, lying flush with the surface of the table, substantially as set forth.

JOHN MATTHEWS, JR.

Witnesses:

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