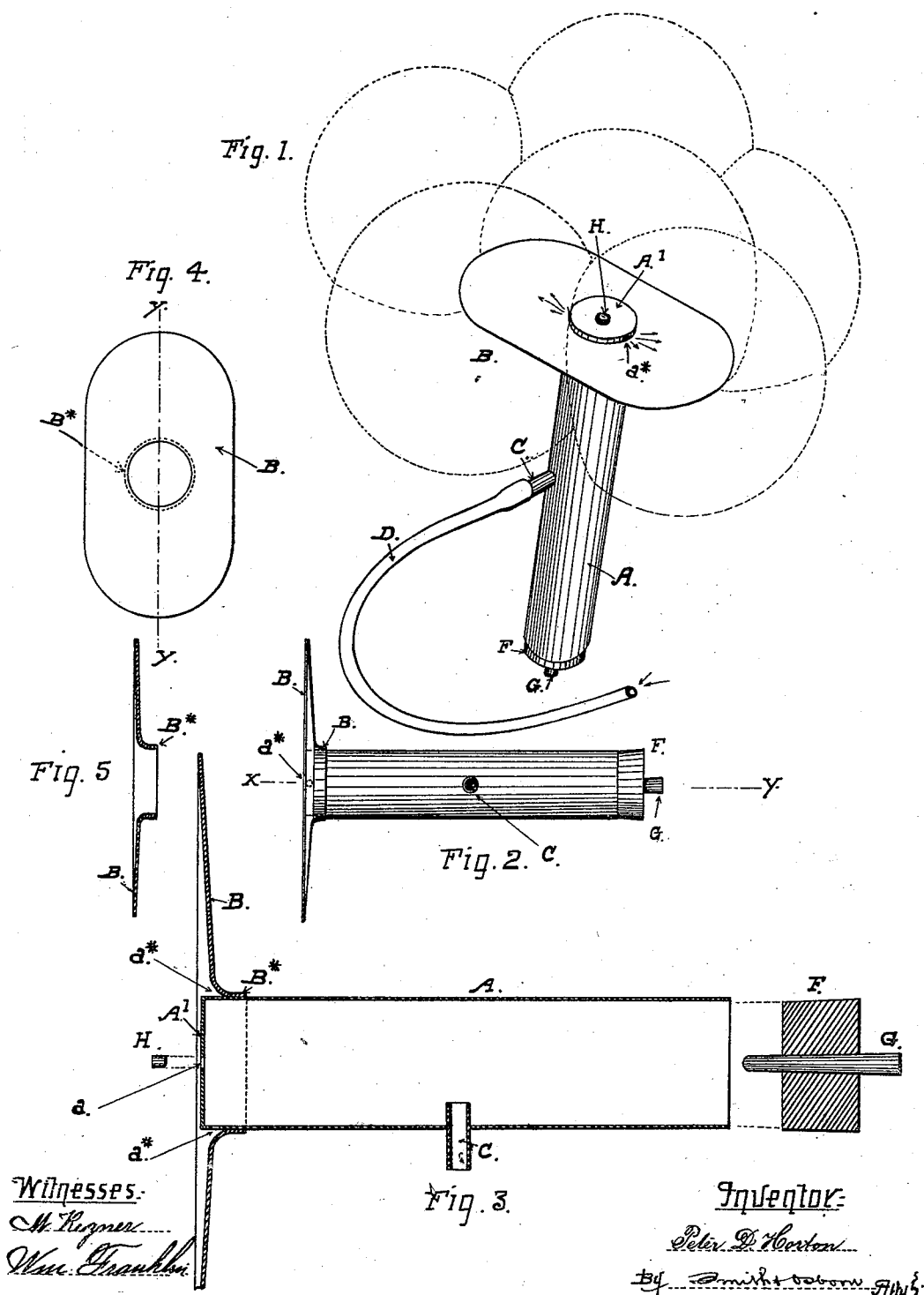


(No Model.)

P. D. HORTON.
BUBBLE BLOWER.

No. 517,118.

Patented Mar. 27, 1894.



UNITED STATES PATENT OFFICE.

PETER D. HORTON, OF OAKLAND, CALIFORNIA, ASSIGNOR TO WILLIAM H. H. HUSSEY AND WM. H. HUTTON, OF SAME PLACE.

BUBBLE-BLOWER.

SPECIFICATION forming part of Letters Patent No. 517,118, dated March 27, 1894.

Application filed June 8, 1893. Serial No. 477,008. (No model.)

To all whom it may concern:

Be it known that I, PETER D. HORTON, a citizen of the United States, residing in Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Bubble-Blowers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it most nearly appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification, and in which—

Figure 1 is a perspective view of my bubble-blower. Fig. 2 is a side view. Fig. 3 is a longitudinal section on line xy Fig. 2, and on an enlarged scale. Fig. 4 is a plan of the part which I call the expander. Fig. 5 is a longitudinal section on line xy Fig. 4.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to improvements in devices for blowing soap bubbles, and the invention consists in a tube or hollow cylinder closed at one end by a fixed head having a hole or opening in the center and holes or openings in the sides below the head, a bubble-forming or bubble-spinning-plate surrounding the head of the tube or cylinder and an air-inlet in the side of the tube below the head to which is attached a flexible tube or mouth-piece of indefinite length, the end of the cylinder opposite the head being closed by a removable plug or stopper, all constructed and combined for operation as hereinafter more fully set forth.

In the drawings, A is the tube or cylinder and A' the closed end or head on which the soap solution is spread. This end of the cylinder is perforated with a hole a in the center and two or more holes $a^x a^x$ in the sides below the head, as shown in Figs. 1 and 3. Through these holes the air blown into the cylinder A is forced in various directions across the plate B, producing bubbles. When the hole a in the head is stopped by a plug the air will issue only from the side openings $a^x a^x$ and bubbles will be formed from these side-openings extending over the head or end of the cylinder and uniting or merging into each other, thereby producing a bubble or

series of bubbles of considerable beauty and magnitude. The magnitude of the bubble or bubbles, however, is largely due to the plate B which I have denominated "the expander." This part of the device is fixed to the cylinder a little below the holes $a^x a^x$ by a flange or rim B^x, and may be formed a little dishing; so that a groove or channel is produced around the head between the cylinder and the flange B^x, the effect of which is to cause the soap-suds to collect around the cylinder and over the air outlets $a^x a^x$. This plate may be circular, or oval, or oblong in form. The soap is spread upon the head of the cylinder by rubbing upon it a thick solution of soap, and the excess or surplus thereof passing down into the groove is held there and serves as a reserve to draw upon to attenuate the bubbles which are formed by the air issuing from either or all of the perforations in the cylinder. Care should be taken, of course, to keep these holes well supplied with the soap-solution, either from the reserve that may collect in the cylinder or by frequent application of the soap to the head A' of the cylinder.

In the lower end of the cylinder A is fitted a cork or stopper F provided with an aperture closed by a plug G; by removing this plug and applying the soap-solution to the face of the stopper over the opening, bubbles can be formed in quick succession from this end of the cylinder as well as from the head or opposite end at the same time; but where large bubbles are wanted, or the production of a number of united bubbles is desired the lower end of the cylinder should be kept closed, in which case a small quantity of soap-solution may be poured into the cylinder where it will be held as a reserve by the stopper F. The cylinder then forms a reservoir for the bubble making solution and by means of this reservoir the bubble-blower becomes automatic in effect by suddenly tossing it up with sufficient force to dash the solution against the closed head A' and into the air-apertures. In this way is furnished additional material from time to time from which to form bubbles of larger size and of greater variety of shapes than has heretofore been obtained from devices of this kind.

Air is supplied to the cylinder by a pipe or stem C fixed in one side below the closed end A' to which a flexible or other tube or mouth-piece D is attached.

5 When all of the holes are open bubbles will be formed at and from each hole or opening, at the same time; but when the center hole in the head is stopped bubbles will be formed upon either or both sides of the cylinder and as they expand under the pressure of air from within, the bubbles will become united with a diaphragm between each of the series, when the bubble making solution contained inside the cylinder is dashed against 10 the head of the chamber by shaking the device up or down at intervals during the blowing it will form a film over the holes and new bubbles will be formed and will become united with those already formed on the plate until 20 a number or mass of bubbles is produced upon and around the expander. This effect is multiplied with novel and pleasing effect as the pressure of air is kept up by blowing into the cylinder through the tube D.

25 As thus constructed and operated my bubble-blower furnishes a cheap source of amusement to both young and old.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

30 1. In a device for blowing bubbles a cylinder A closed at both ends to contain the soap-

solution and having one or more holes or outlet apertures in one closed end or head in combination with an expander B fixed to the head of the cylinder below said hole or holes and shaped to produce a groove or channel around the cylinder as described, for the purpose set forth. 35

2. A bubble-blower consisting of a tube or hollow cylinder having a fixed head at one end provided with perforations, a removable stopper in the opposite end having an aperture and a removable plug closing said aperture and means for conveying air into the cylinder, consisting of a flexible pipe or tube, substantially as described. 40 45

3. A bubble-blower consisting of a tube or cylinder adapted to form an air chamber and solution holding receptacle by having a fixed head at one end and a removable stopper in the opposite end, air-outlet apertures in said closed ends, a removable plug fitted to the removable stopper to close its aperture, a bubble-expander consisting of a flaring plate or disk around the cylinder below the head, and an air-tube connecting with the cylinder, substantially as described. 50 55

In testimony that I claim the foregoing I have hereunto set my hand and seal.

PETER D. HORTON. [L. S.]

Witnesses:

C. W. M. SMITH,
CHAS. E. KELLY.