(No Model.) 2 Sheets—Sheet 1.

S. DARLING.

PEN CLEANER.

No. 370,379. Patented Sept. 27, 1887.

Fig. 1.

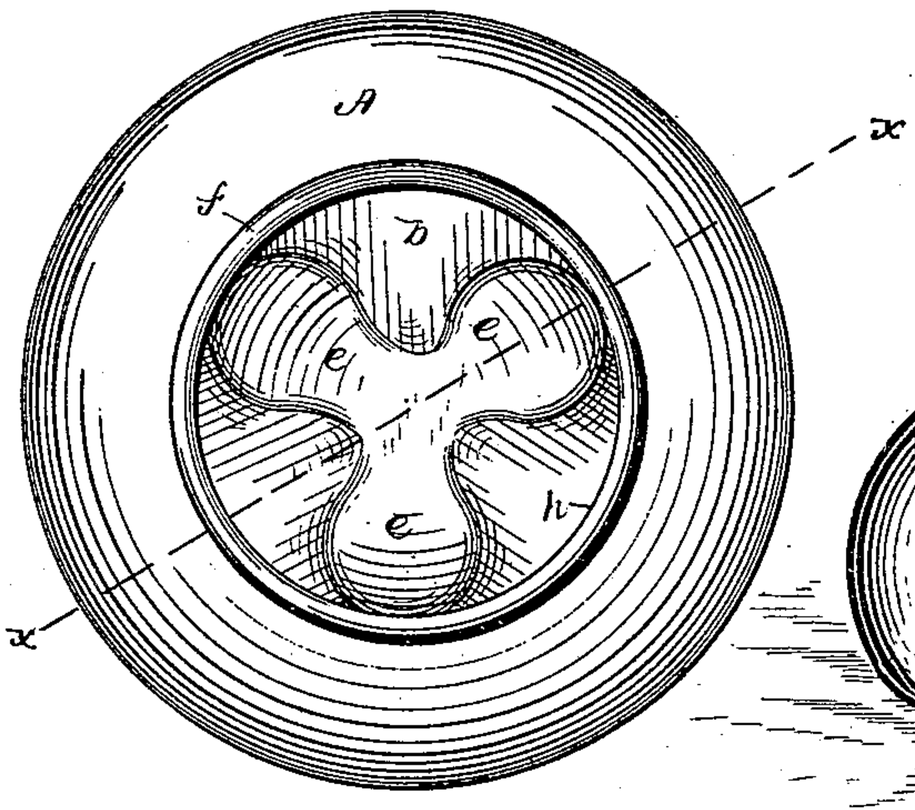


Fig. 2.

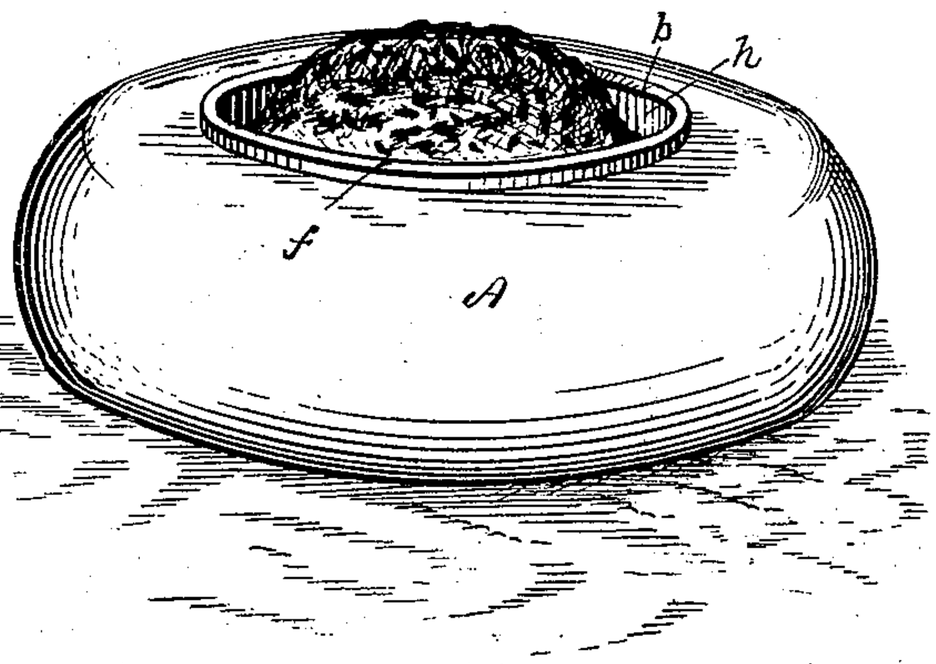


Fig. 3.

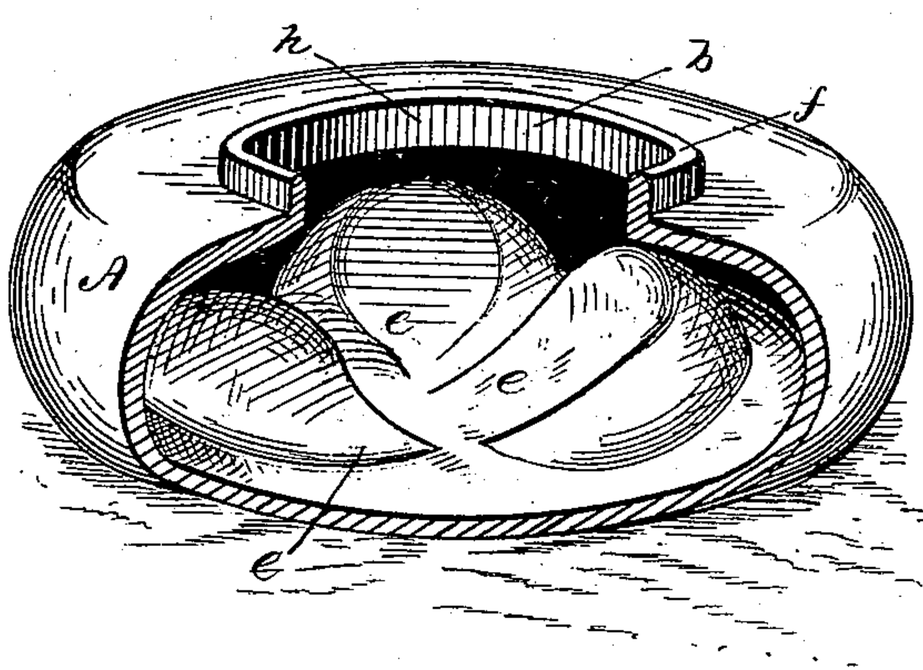


Fig. 4.

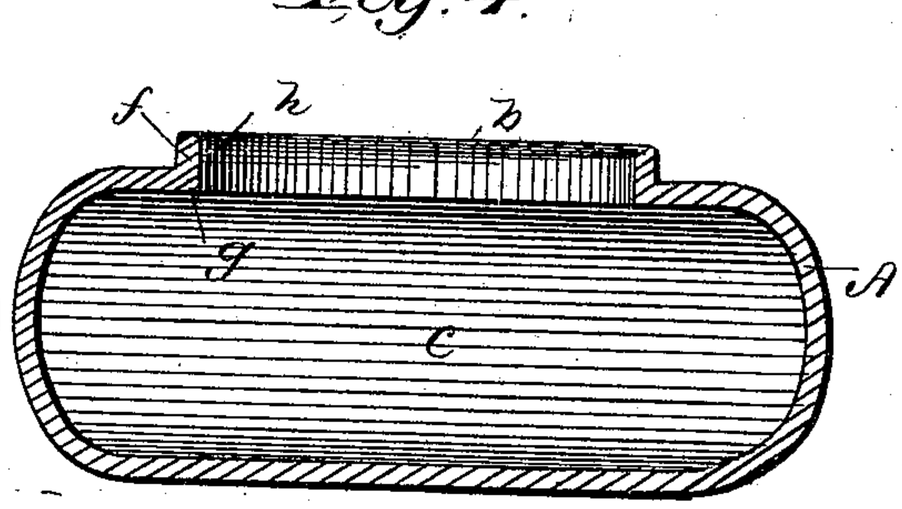
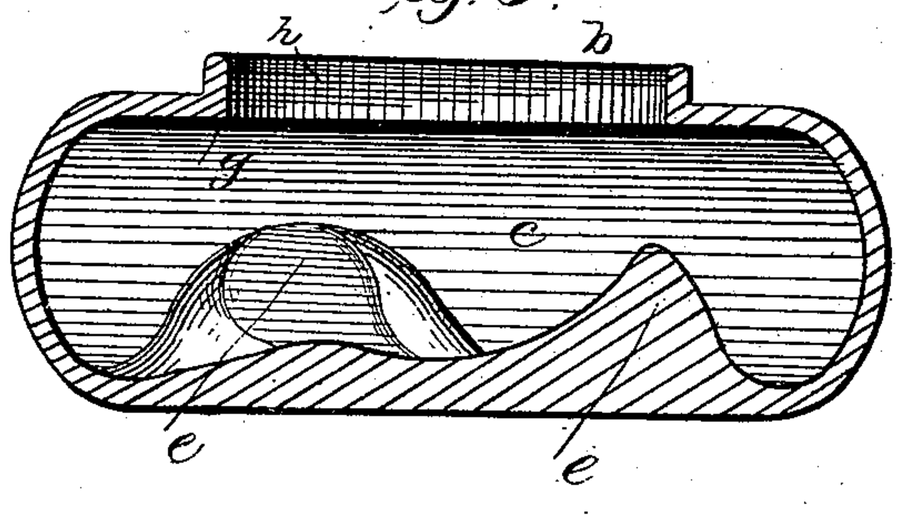


Fig. 5.



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(No Model.) 2 Sheets—Sheet 2.

S. DARLING.

PEN CLEANER.

No. 370,379. Patented Sept. 27, 1887.

Fig. 6.

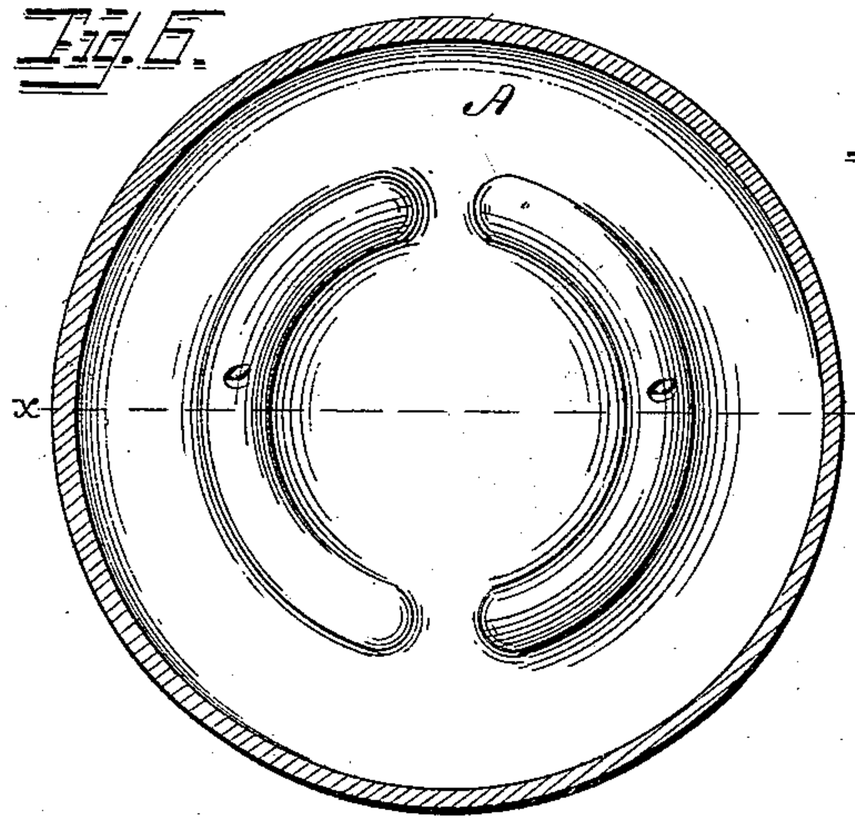


Fig. 8.

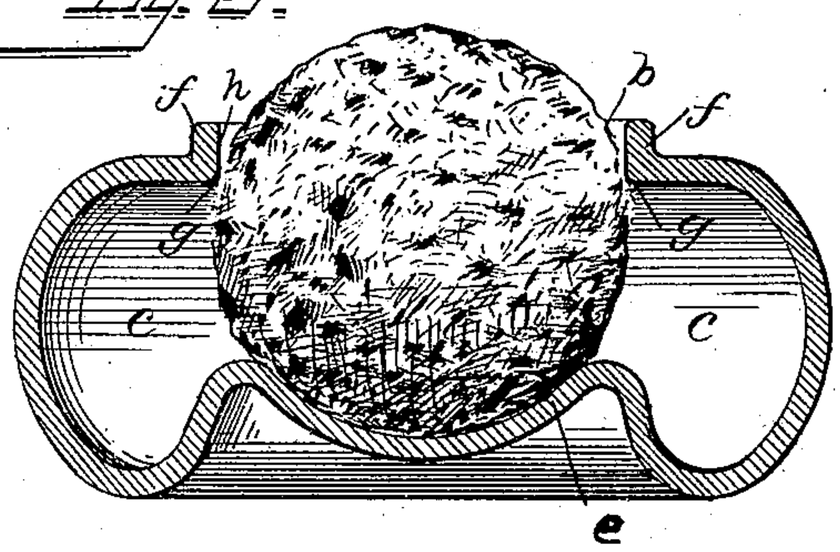
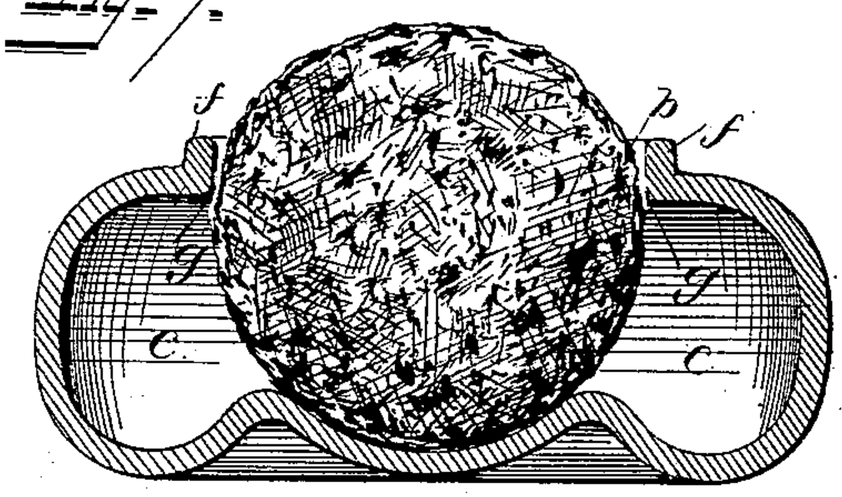


Fig. 7.



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UNITED STATES PATENT OFFICE.

SAMUEL DARLING, OF PROVIDENCE, RHODE ISLAND.

PEN-CLEANER.

SPECIFICATION forming part of Letters Patent No. 370,379, dated September 27, 1887.

Application filed August 10, 1883. Serial No. 103,382. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL DARLING, of the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Pen-Cleaners; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to a special construction of the sponge-cup and to a special adaptation to it of the sponge, all of which will be clear from the following description, the main objects being to permit the sponge to be freely turned in any direction about an imaginary axis; to keep it well saturated with water for a long period without being replenished; to expose but a relatively small amount of the water to the outer atmosphere; to better facilitate the cleansing of the sponge; to permit every portion of the surface of the sponge to become in turn the surface on which the pen may be wiped, and also to permit every such portion to come in turn into the body of the water and to rest on the bottom of the interior of the cup, and at the same time to make the whole device cheap and simple and consisting only of two parts—namely, the cup and its sponge.

Figure 1 is a top view of a sponge-cup without its sponge, having three guides in its bottom; Fig. 2, a perspective view of the cup with its sponge in place; Fig. 3, a perspective view of the cup alone, one of its sides being broken away the better to display interior guides for the sponge; Fig. 4, a section of the cup made without any guides in its bottom; Fig. 5, a central vertical section through line *x x* of Fig. 1; Fig. 6, a horizontal section of a cup having in its bottom two guides instead of three. Figs. 7 and 8 show slight variations in the form of the cup, the principle being, however, the same as in the preceding figures.

Pen-cleaners in which a sponge is employed as ordinarily constructed have defects which render them far from satisfactory. Usually the sponge, when wet, fills the cup, which leaves no room for any water except what is contained in the sponge, and the sponge necessarily needs to be replenished with water almost daily, besides which that limited portion only on which the pen is wiped is used continuously, thus filling it with ink which cannot be washed out except by lifting it out of the cup; and this is such an untidy task that it is usually allowed to remain a long time in an unfit condition for use, and then is thrown away and a new one furnished instead. In another class springs have been employed to uphold a piece of sponge, the saturation of the sponge being effected by frequently forcing it down into the water against the action of the springs; but this construction requires numerous and peculiar appliances to hold the sponge and prevent its being thrown out of the water by the spring, and the same uppermost surface of the sponge (which is tightly held in a given position) is continually used for wiping the pen. In another construction—such, for instance, as that shown in my Patent No. 73,956—some of these difficulties were remedied. A chamber for a bountiful supply of water was provided and a revoluble brush-wheel was used instead of a fixed sponge, which avoided the need of wiping a pen always on the same part of the brush; but it required that the brush should be mounted on a spindle or journal, and in order to provide the bearings for this journal the cup had to be made in two parts, with a journal-bearing in each part. The journal was then nicely adjusted, and the two parts then firmly held together to keep the journal and brush-wheel in place. In still another construction, in which sponges were arranged to be held up in space, so that they might be revolved in the water, they were pierced by a shaft having forks to hold them in position and insure their revolving with the shaft, and also having a finger-wheel for turning the shaft, and the cup had to be made in two parts for the insertion of this shaft in its bearings, and at the line of these two parts a leakage was always liable to occur. Neither of these rotary pen-cleaners permitted a universal movement of a sponge in every or any direction, so that every part of its surface could be used for wiping and every part be carried to the bottom of the cup and bear thereon, and none presented so large a wiping-surface for so small a body of sponge as is afforded by my

present invention, which I shall now proceed to describe.

A is the cup, made in a single piece. It may be of glass or other appropriate material, and has a circular opening, *b*, in its top of considerably less diameter than the area or breadth of the water space or chamber *c*, and which space may be of any desired dimensions to permit the cup to hold an ample supply of water largely in excess of that which the sponge can take up at one time. This space may also be made of any desired depth, so long as the globular or approximately spherical-shaped sponge which I employ may, when resting on the bottom of the cup, reach high enough in the circular opening *b* to permit the ready wiping of a pen thereon and the ready turning over of the sponge by the point of a pen or some other suitable instrument without dislodging it from its place or seat.

It will be observed that the ball-shaped sponge has no points of contact with the cup except at its bottom and at the cup's rim. Everywhere else it is free, so that no appreciable resistance is offered when turning it over in any direction.

The interior of the cup has, preferably on its bottom, a circular or dishing guide, *e*, made integral with the cup by molding, pressing, or casting, as the case may be, and in which guide the globular sponge rests on the cup's bottom. This guide may be broken into two or more parts to make passage-ways for the sediment to pass out into the surrounding water, and even one passage-way may answer the purpose; but the guide may be in any form that will hold the sponge in a central position, and also without a passage-way into the main body of water.

In the act of turning the sponge it is raised up a little from its seat, and its falling back, together with the pressure it receives against the edge of opening *b* and from the instrument that it is turned with, has a tendency to loosen and wash out any particles of dirt or ink deposit, which can then pass out through the passage-ways in the guides and away from the sponge. When the seat for the sponge is raised a little above the rest of the bottom of the cup, as shown at *e* in Fig. 8, any sediment will more readily pass away from the center toward the circumference of the cup.

The circular mouth *b* should have a vertical or raised rim or ledge, *f*, projecting above the cup, as shown, to serve as a guard against the accidental spilling over of the water and a means of finishing that part of the cup when it is blown in glass. The lower or innermost edge, *g*, of this mouth affords at every point a bearing for the globular sponge when it is turned or partially revolved, no matter in which direction it may be turned, because this sponge, having no fixed axis, will, when pushed or lifted lightly in any direction by the point of the pen to turn it in the water, be slightly shifted against some point on this lower edge, *g*, which thus for the moment becomes a fulcrum-point or bearing. Again, the sponge being substantially spherical and the inner face, *h*, of the mouth being substantially vertical, any water that may be squeezed out of the sponge in the act of turning it over falls back into the cup and not over the rim, for the sponge does not touch the top edge of the rim.

Another advantage of my construction is that the largest practicable renewable wiping-surface is afforded, so that but rarely will the pen be wiped twice in the same place. It is also a very easy and simple matter for any one with a shears to trim a small piece of sponge, which is always to be found in the stores, to the required shape.

Having thus described my improved sponge pen-cleaner, it will be seen that it has many advantages over those heretofore in use. Its cost is very little, including the sponge. Having a large reservoir of water, it will remain in good order for a comparatively long time. It is nearly, if not quite, self-cleansing. It is very effective and practical, and will keep a pen in better condition for a longer time, and can be kept in order with much less labor than any other known to me. It is also more economical in the use of sponge, and, having these qualities, writers will keep it in good working condition when they would not the kinds now in use, which require quite a different treatment, all of which greatly enhance its value.

The diameter of the opening should be less than two-thirds ($\frac{2}{3}$) of the diameter of the interior of the vessel; and the diameter of the sponge should be less than five-sevenths ($\frac{5}{7}$) of the interior diameter of the vessel.

The pen-cleaner sponge-cup herein described is also adapted to hold a sponge in the annular chamber surrounding the circular or dishing guide *e*, and the said annular chamber, when employed to hold a sponge for a pen-cleaner, is claimed in my pending application Serial No. 245,283.

I claim—

A pen-cleaner sponge-cup made with a spacious water-chamber, *c*, and circular opening *b*, and with the internal bottom guide, *e*, adapted to steady and guide a loose spherical sponge resting on the bottom of the cup, substantially as described.

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Witnesses:
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