

(No Model.)

2 Sheets—Sheet 1.

S. RUSSELL.
STUDENT LAMP.

No. 312,514.

Patented Feb. 17, 1885.

Fig. 1.

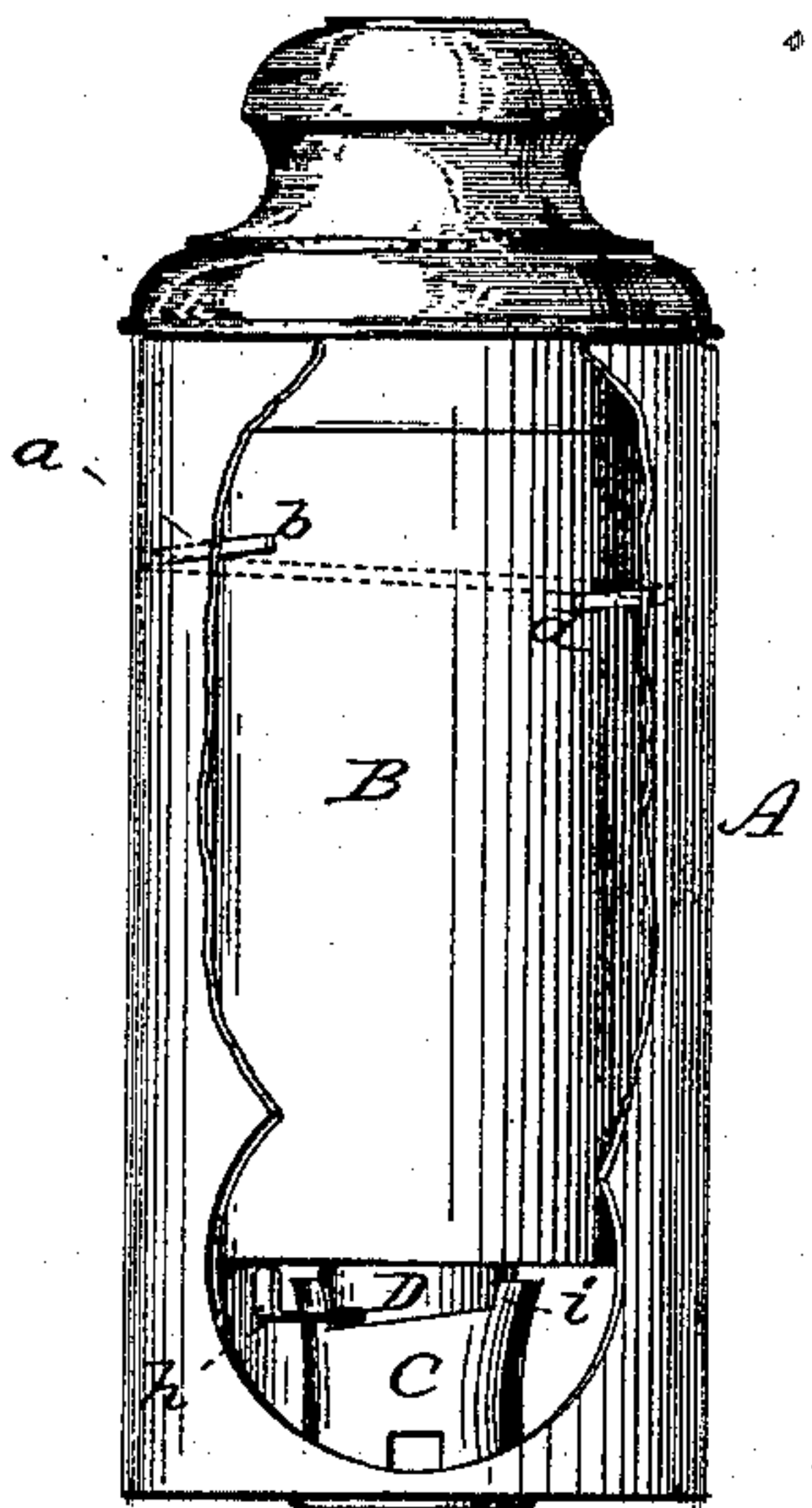


Fig. 2.

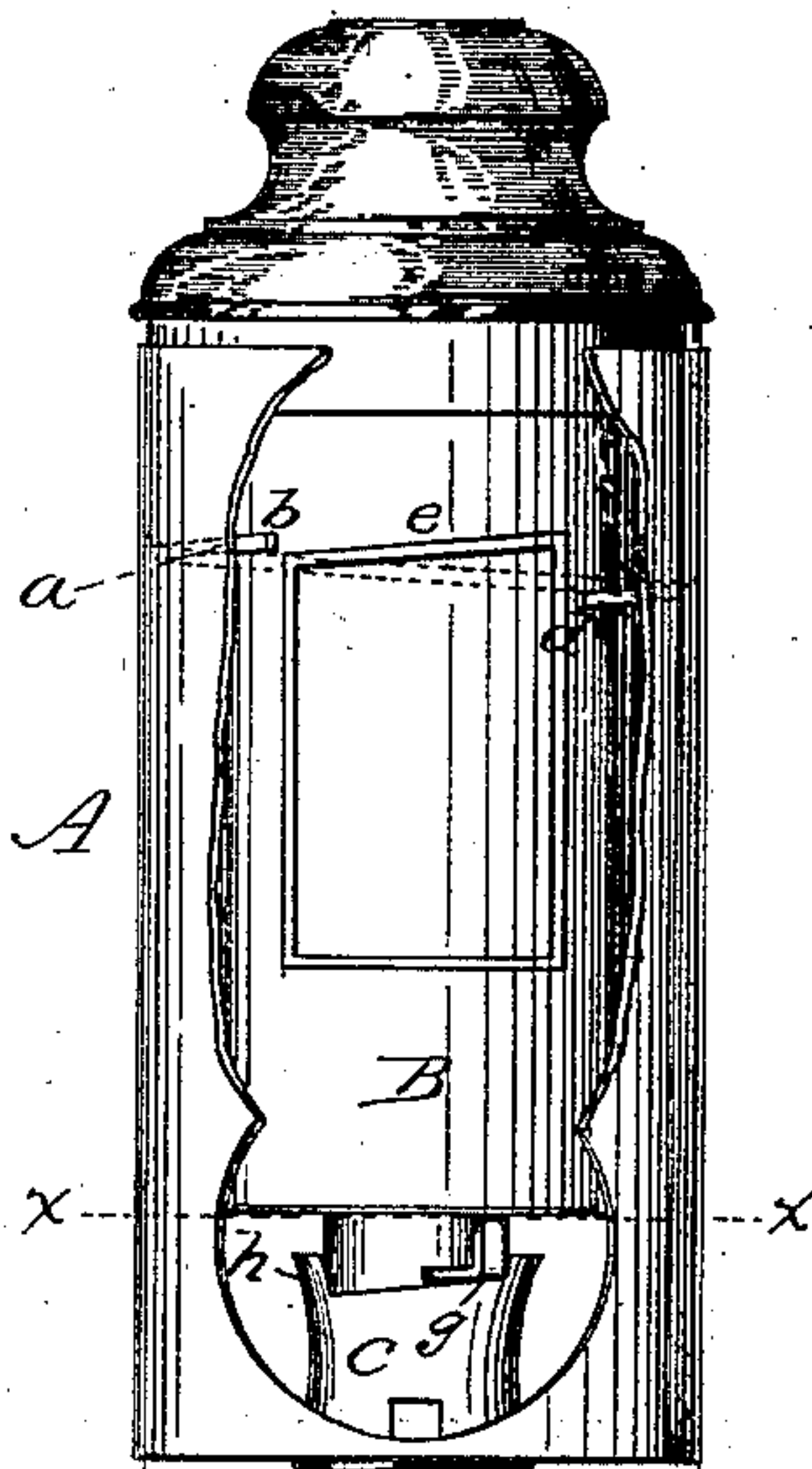


Fig. 3.

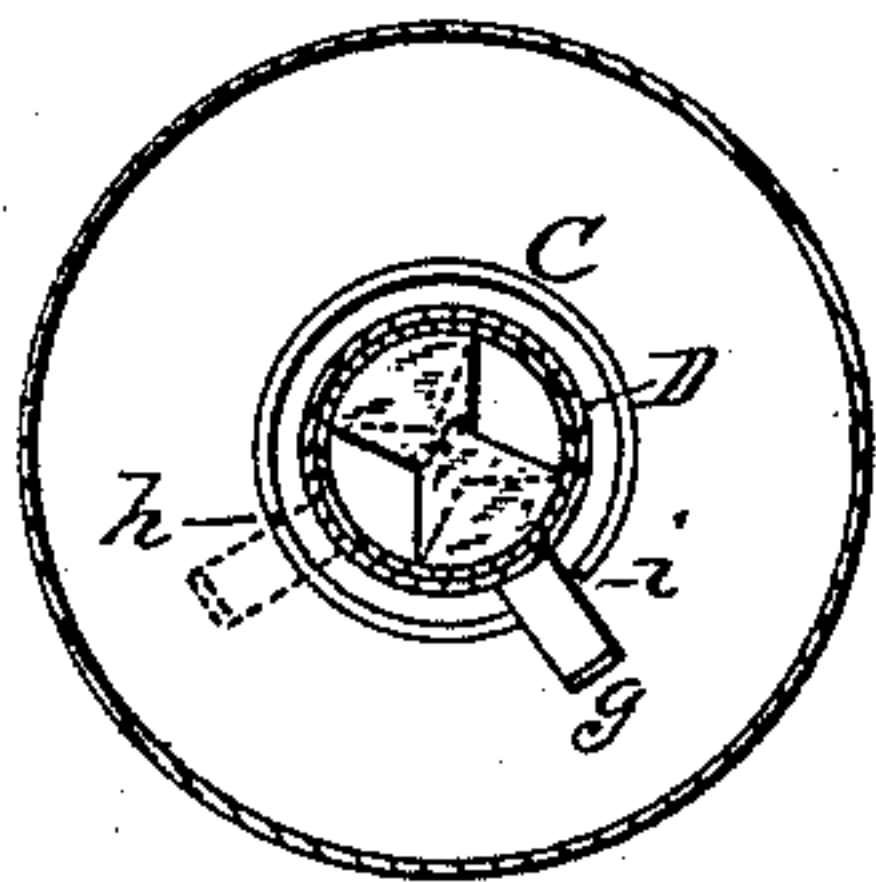


Fig. 4.



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(No Model.)

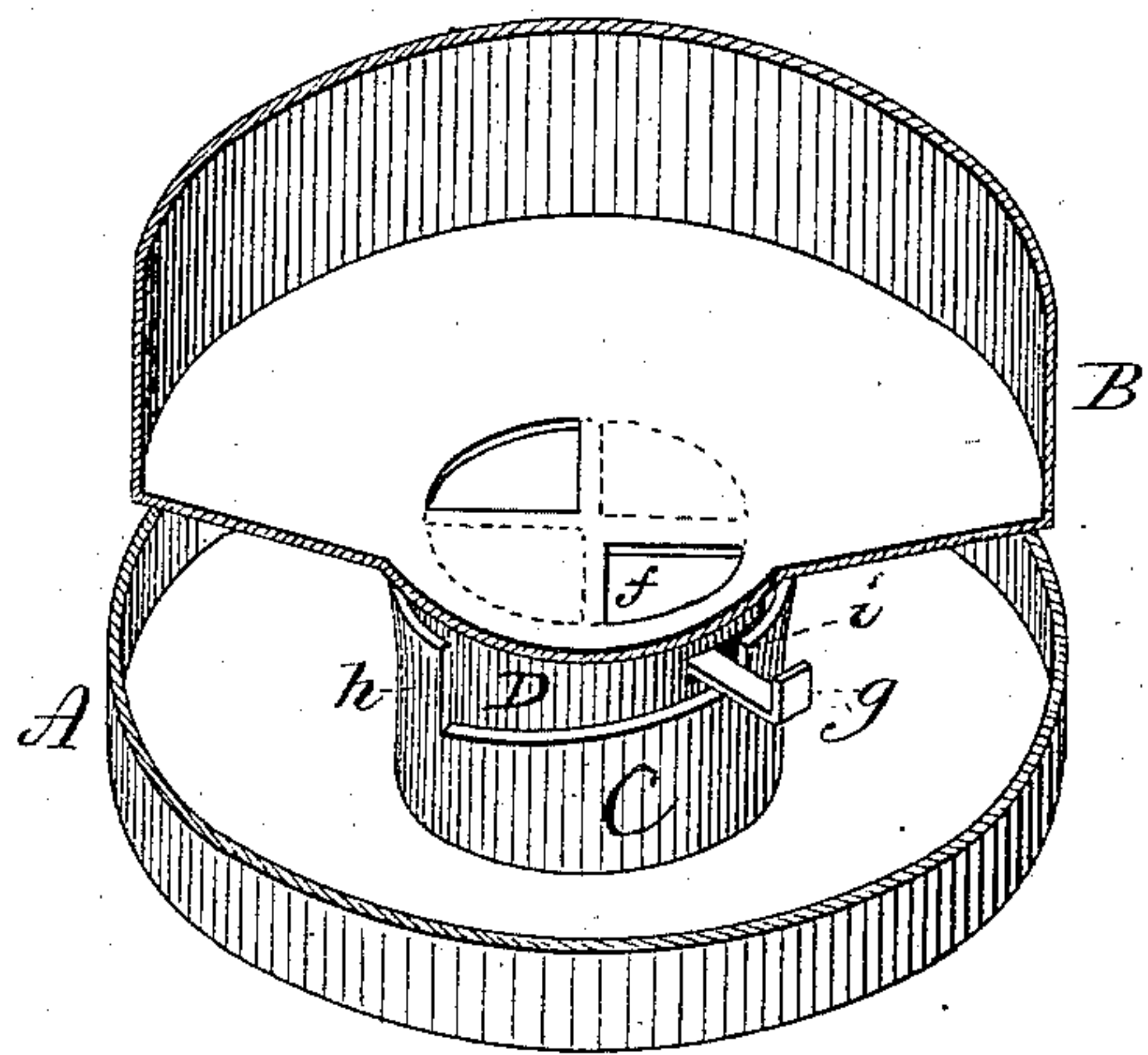
2 Sheets—Sheet 2.

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Fig. 5



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UNITED STATES PATENT OFFICE.

STERNE RUSSELL, OF WATERBURY, CONNECTICUT, ASSIGNOR TO THE
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STUDENT-LAMP.

SPECIFICATION forming part of Letters Patent No. 312,514, dated February 17, 1885.

Application filed August 4, 1881. (No model.)

To all whom it may concern:

Be it known that I, STERNE RUSSELL, of Waterbury, in the county of New Haven and State of Connecticut, have invented new Improvements in Student-Lamps; and I do hereby declare the following, when taken in connection with accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view, part of the receiver broken away to show the fount in its secured position; Fig. 2, the same, showing the fount as introduced preparatory to securing or as in a condition for removal; Fig. 3, a transverse section on line *x x*, looking down; Fig. 4, a modification; Fig. 5, a perspective view of the lower part of the receiver and of the fount, showing the valve arrangement.

This invention relates to an improvement in founts for the class of lamps commonly called "German study-lamps," the object of the invention being, first, to lock the fount in its holder, and, second, to mechanically start the fount from its down position to overcome a difficulty experienced in taking the fount from the receiver, due to the fact that after the fount is once set it is liable to "stick" in the receiver, so that considerable inconvenience is experienced in raising it; and the invention consists in constructing the receiver with a spiral rib upon its inner surface, extending partially around the receiver, combined with a corresponding projection on the fount, which may pass through between the ends of the rib to a point below the highest end of the rib, and then, by a partial rotation, will be moved beneath the rib, the inclination of the rib forcing the fount to its down position, also in providing the receiver with a cam near its bottom, upon which a projection on the fount will ride down as the fount is being secured and up as the fount is being turned to relieve it from the spiral rib, and which up movement causes the fount to rise within the receiver, and as more fully hereinafter described.

A represents the receiver of a common study-lamp, and B the fount. Upon the inside of the receiver a spiral rib, *a*, is formed. This may

be done by securing a wire rib to the inner surface, or it may be done by a groove on the outside of the fount to raise a rib upon the inside, as seen in Fig. 4. This rib extends but partially around the receiver, and so as to leave a space between its two ends, *b d*. The external diameter of the fount is such as to pass freely up and down inside of the rib. On the surface of the fount a shoulder, *e*, is formed, inclined according to the inclination of the spiral rib *a*, and in length somewhat less than the distance between the two ends *b d* of the spiral rib, and so that as the fount is introduced the shoulder may pass down between the two ends, as seen in Fig. 2, and until its lowest end stands below the plane of the highest end, *b*, of the spiral rib in the receiver, then the fount turned to take the shoulder beneath the rib, the inclination of the rib will force the fount down, as from the position in Fig. 2 to that in Fig. 1. The projection which forms the shoulder I prefer to extend down on the surface of the fount to a considerable distance, in order to facilitate the introduction of the fount to the receiver, and as seen in Fig. 2. In the bottom of the receiver is the usual upward tubular projection, C, into which a corresponding downward tubular projection, D, on the fount extends.

In the extension D is the usual valve, *f*, (see Figs. 3 and 5,) from which an arm, *g*, extends radially outward.

In the upper edge of the tubular projections C a recess is cut, forming two vertical shoulders, *h i*, as seen in Fig. 5. As the fount approaches its down position in the receiver, the arm *g* enters the recess in the projection C, say at the shoulder *i*, it being understood that at this time the valve is closed. The fount is then rotated until the arm *g* strikes the opposite shoulder, *h*, where the further movement of the valve-arm will be stopped, and so that the continued rotation of the fount will cause the valve to open, and on the return of the fount the arm will strike the shoulder *i*, and cause the valve to close, there being a circumferential slot in the tubular projection D to permit such movement of the valve-arm, the slot shown in solid black, Fig. 5.

The bottom of the recess in the flange C, be-

tween its two ends, *h i*, is inclined downward to substantially the same extent of inclination as that of the spiral rib *a*, and so that as the fount is introduced when it arrives to the position for the shoulder *e* to pass beneath the spiral rib in the receiver, the arm *g* rests upon the highest part of the incline on the flange C. Then as the fount is turned and forced downward, as before described, the arms *g* rides down the incline to the other shoulder, *h*.

On the return of the fount, as for removal, the arm *g* rides up the incline on the flange C, and in such movement the incline on the flange acts as a cam to raise the fount, as from the position seen in Fig. 1 to that in Fig. 2, and so as to start the fount from its down position, and thereby overcome any tendency of the fount to stick in its down position.

I am aware that a lamp-fount detachable from its holder has been provided with a device which, by a rotative movement of the fount, will draw the fount down into the holder, and at the same time open the valve, and which device must necessarily give some degree of rise to the fount when the reverse rotation is made, such a device is found in Patent No. 204,303; but it consists of a screw-thread applied directly to the valve, requiring considerably more than a full rotation of the fount to draw it to its seat, and corresponding extent of rotation to reverse it. This construction, unless made so heavy as to be impractical, is liable to injury in the introduction of the fount, so as to render the apparatus inoperative, whereas by the construction which I have described, and by which forcing down and locking the fount is entirely independent of the valve, no such difficulty or injury of the parts is possible. Again, by

the construction of my invention any derangement of the valve in the introduction of the fount is prevented, from the fact that the locking device serves to guide the fount in its descent and bring the valve positively in its proper relation to the seat at the bottom.

I claim—

1. The combination of the receiver A, constructed with the spiral flange *a* upon its inner surface, with the fount B, constructed with a shoulder, *e*, inclined corresponding to the inclination of said spiral rib, substantially as and for the purpose described.

2. The combination of the tubular flange C at the bottom of the receiver constructed with an inclined recess in its upper edge, the fount provided with the valve *f* at its lower end, the arm *g*, extending from said valve into said recess in the flange C and so as to ride upon the said incline in turning the fount, substantially as described.

3. The combination of the receiver A, provided with the spiral flange *a* upon its inner surface, the fount B, constructed with a shoulder, *e*, upon its outer surface, inclined corresponding to the inclination of said spiral rib *a*, the tubular flange C in the bottom of the receiver constructed with the inclined recess in its upper edge, the valve at the bottom of the fount having an arm, *g*, extending therefrom into the said recess on the flange C and so as to ride on the inclined surface of the flange, substantially as and for the purpose described.

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Witnesses:

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