

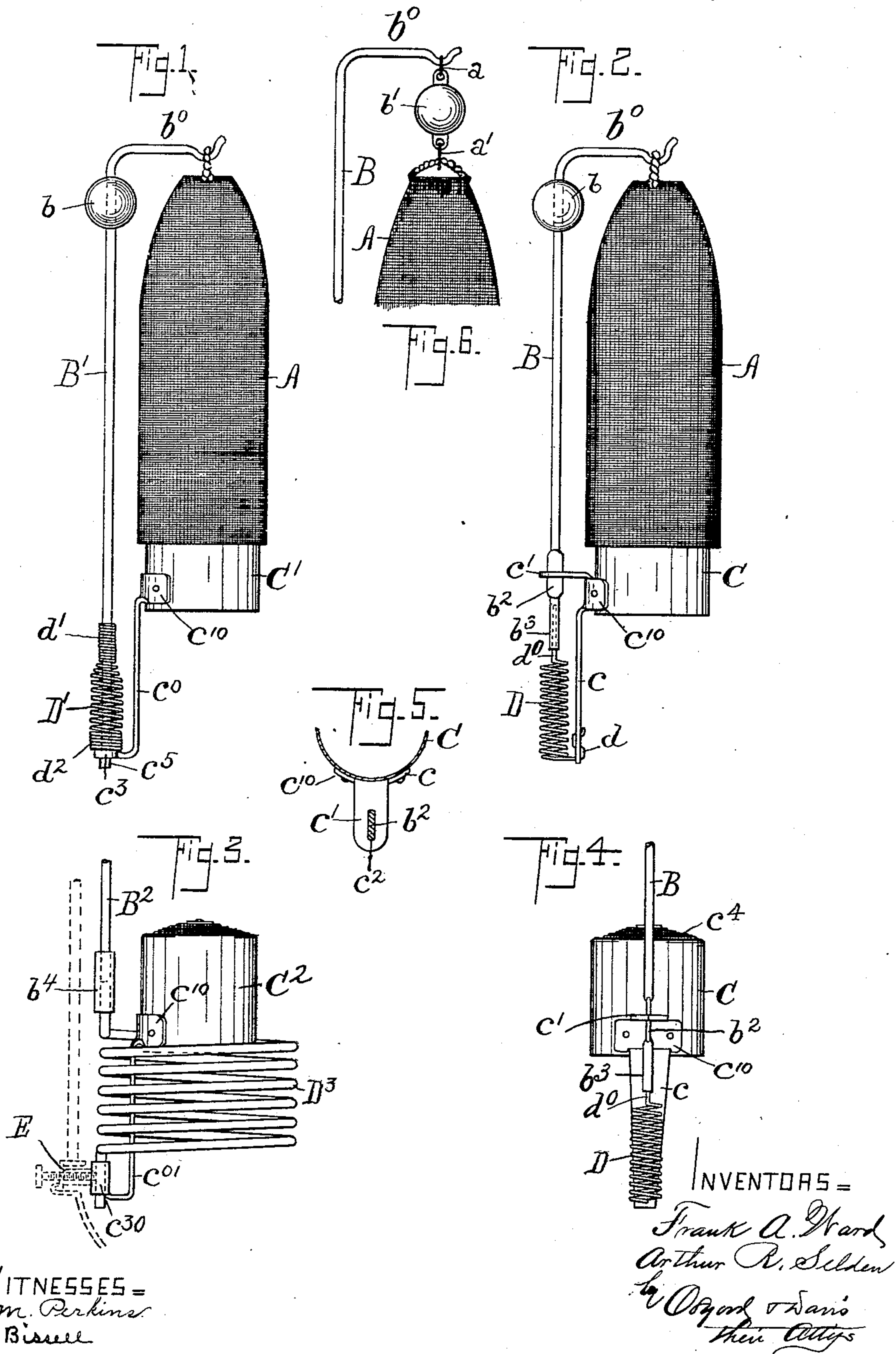
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F. A. WARD & A. R. SELDEN.
SUPPORTING DEVICE FOR INCANDESCENT MANTLES.

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NO MODEL.



UNITED STATES PATENT OFFICE.

FRANK A. WARD AND ARTHUR R. SELDEN, OF ROCHESTER, NEW YORK.

SUPPORTING DEVICE FOR INCANDESCENT MANTLES.

SPECIFICATION forming part of Letters Patent No. 733,522, dated July 14, 1903.

Application filed March 21, 1902. Serial No. 99,319. (No model.)

To all whom it may concern:

Be it known that we, FRANK A. WARD and ARTHUR R. SELDEN, citizens of the United States, and residents of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Supporting Devices for Incandescent Mantles, of which the following is a specification.

10 This invention relates to supporting devices for incandescent mantles; and it consists in the devices hereinafter described and claimed.

The object of the invention is to provide a support that is easy to apply to lamps now in use and increases the life of the mantle by obviating much of the danger of breakage thereof.

15 In the drawings, Figure 1 is an elevation of the mantle-support embodying this invention. Fig. 2 is an elevation of the modification thereof. Fig. 3 is an elevation of another modification of the mantle-support, a portion being omitted. Fig. 4 is an elevation from another point of view of a portion of the mechanism shown in Fig. 2. Fig. 5 is a plan view of a detail of the mechanism shown in Fig. 2, and Fig. 6 is an elevation of a modification of the mode and means of weighting the support.

20 Incandescent mantles of what is known as the "Welsbach" type are very frail and are apt to break when the fixture carrying the lamp or light experiences a sudden jar or shock, such as may occur in the ordinary operations of dusting and cleaning the fixtures, shades, &c., and this invention is intended to provide a yielding support for the mantle and to employ the inertia of a weighted body to tend to maintain the stationary position of the mantle when the fixture is jarred or moved suddenly.

25 In the accompanying drawings, A represents a mantle of the Welsbach type, which is supported from its upper end, as usual. Figs. 2, 4, and 5 show the preferred form of the device.

30 B is an arm for supporting the mantle A, which may have such form as may be demanded by the circumstances of the case. As an example of the invention this arm is shown herein as consisting of the standard

B, which has a vertical portion and a horizontal portion b^0 , from which the mantle is hung. The stem of the arm or standard B has a non-circular portion b^2 , that rests in a correspondingly-slotted guide c' , attached to a stationary part of the fixture, such as the sleeve or cap C, that fits and forms part of the fixed burner of the fixture, and has, as shown, a wire-gauze top c^4 , as shown in Fig. 4. The standard B terminates in an end adapted for connection with the supporting-spring D. One mode of connecting the spring and the standard B is to provide a socket b^3 in the end of the standard, into which the end d^0 of a coiled spring D is set. This spring has separated coils, and the upper end is set, preferably, in the axes of the coils, and the spring is fastened in any suitable way to a support c , attached to a stationary part of the fixture, such as the cap C. The spring D may be attached to the support c , as shown herein, by drilling a suitable number of holes—say three—in said support and passing the end d of said spring through said holes, as shown in Fig. 2. The flattened portion b^2 of the standard B passes through a slot in the guide c' , that fits said flattened portion b^2 , so as to permit free movement of the standard, but without unnecessarily loose movement, so that the standard is maintained in the vertical position by the engagement of the support c' and the connection of the spring D therewith.

For convenience of manufacture or in order that this invention may be applied to caps C now in use the guide c' and the support c are made in one piece with a portion c^{10} that is attached to the cap C.

It will be obvious that the upper part of the standard B may move vertically in correspondence with compressions and expansions of the spring D and may also move universally in limited arcs in substantially horizontal directions because the support c' is comparatively thin and the spring D may flex sidewise. After any such flexion the spring brings the support back to the vertical position.

Adjacent to the upper end of the mantle the arm or standard B is suitably weighted—as, for instance, by attaching thereto a relatively heavy ball b . Preferably the weight

should be at or near the point of support of the mantle. The inertia of a weight in the position stated tends to maintain the point of support of the mantle in a fixed position notwithstanding any shock or jar imparted to the fixture. The universal movement of the spring-supported standard B and the long leverage from the weighted portion of the standard to the fulcrum formed by the guide c' , as compared with that of the short arm of the lever extending from said guide to the spring, produce a delicately-hung device for supporting said mantle and obviates disadvantages of a rigid support therefor.

In case the spring D is heated, and therefore twists, the supporting-arm cannot turn because the upper end of the spring can turn in its socket and the flattened part b^2 of the support is held in the slotted guide c' .

The support is placed in the guide c' in any suitable way—as, for instance, by parting the guide on a line c^2 , Fig. 5, extending into the slot therein, separating the parted ends, inserting the flattened part b^2 of the support therein, and then bringing the parted ends of the guide together.

The spring D is placed as low as possible below the sleeve C in order to remove it from the action of the heat of the burner, and it is made of a small spring-wire, while the standard B is made of a heavier material that is heat-resisting.

Fig. 1 represents another construction of the device, dispensing with the guide c' . (Shown in Figs. 2, 4, and 5.) The spring D of Fig. 1 is wound closely together at its upper portion and is smaller in diameter than the main part of the spring. The lower part is wound closely together at the bottom, as shown at d^2 , and the middle portion is wound loosely or with the coils separated. The end d^2 is adapted to be set upon a lug on the support c^0 , while the upper closely-wound portion d' fits upon the standard B' , carrying the weight b^3 , while the middle portion is free to constitute a universal joint and spring-support for the standard B' . The lower end of the standard B' may, if desired, continue down through the spring and out through the standard c^0 with a square or non-circular end c^5 fitting in a perforation of similar shape in the portion c^3 of the standard c^0 , which carries the spring. Thus the action of the spring D' when heated and cooled will not cause rotation of the standard and a lateral or transverse movement of the mantle A with reference to the cap C' .

Fig. 3 shows still another modification of the device in which the cap C^2 has an arm c^0 , carrying a socket c^{30} , in which is fastened a coiled spring D^3 , having large coils, the axes of which coils substantially coincide with the axis of the cap C^2 . The upper end of the spring is fastened in any suitable manner to the standard B^2 —as, for instance, by the collar b^4 . Under the influence of heat the uncoiling of the spring D^3 will cause rotation of

the mantle about the axis of the cap C^2 , and the movement of the mantle need not be lateral or transverse with reference to the cap.

Instead of supporting the spring of any of these devices from the cap it may be supported from any suitable stationary part of the fixture—as, for instance, from a part of the frame, such as E, Fig. 3—or a double support may be employed—to wit, both the cap and the part E of the fixture.

In reference to weighting the mantle-support, Fig. 6 shows a modification of the above-described freely-movable supporting devices for carrying the mantle. The mantle A is freely connected to a weight having a suitable form, such as the ball b' , and said weight has a free connection to the support B. These connections may be by wire rings or loops a a' , preferably made of platinum. The weight then constitutes a part of the mantle-support and the proper inertia is provided. The joints or connections between the mantle and the supporting-standard B are universal joints, and though the standard or mantle may move the inertia of the weight b' tends to preserve fixity of position of the point of support of the mantle. The standard B may have the spring-supports to yield to vertical movements shown in the other figures. The standard B, B' , or B^2 , with its spring device D, D' , or D^3 , constitutes a spring-supporting arm for carrying the mantle.

Numerous changes may be made in the elements and combinations of the specific forms of device shown in the drawings without departing from the spirit of this invention as expressed in the following claims.

What we claim is—

1. The combination of an incandescent mantle and a freely-movable supporting device for carrying the mantle, which arm is weighted adjacent to the upper end of the mantle thereon, substantially as described.

2. The combination of an incandescent mantle, and a spring-supporting arm for carrying the mantle, which arm is weighted adjacent to the upper end of the mantle thereon, substantially as described.

3. The combination of an incandescent mantle, and a spring-supporting arm for carrying the mantle, which arm is so weighted that its inertia tends to maintain the mantle in a fixed position, substantially as described.

4. The combination of an incandescent mantle, a spring-supporting arm for carrying the mantle, which arm is weighted adjacent to the upper end of the mantle thereon, and means for preventing lateral or transverse movement of the point of support of the mantle with reference to the burner, substantially as described.

5. The combination of an incandescent mantle, a spring-supporting arm for carrying the mantle, which arm is so weighted that its inertia tends to maintain the mantle in a fixed position, and means for preventing lateral or transverse movement of the point of support

of the mantle with reference to the burner, substantially as described.

6. The combination of an incandescent mantle, a freely-movable supporting device for carrying the mantle, which supporting device is weighted adjacent to the upper end of the mantle, and a spring-support for said supporting device, substantially as described.

7. The combination of a fixed burner, an incandescent mantle, a universally-movable spring-supporting device for carrying the mantle, which supporting device is weighted adjacent to the upper end of the mantle thereon, substantially as described.

8. The combination of a fixed burner, an incandescent mantle, a standard for supporting the mantle, which standard is weighted adjacent to the upper end of the mantle thereon, a guide for said standard permitting vertical movement thereof, and a spring-support for said standard having a fixed support, substantially as described.

9. A fixed burner, an incandescent mantle, a mantle-support having a universal movement, embodying freely-yielding mechanism weighted adjacent to the upper end of the mantle thereon, and tending to maintain the support in a definite position, substantially as described.

10. A fixed burner, an incandescent mantle,

a mantle-support [having a universal movement, and freely-yielding spring mechanism tending to maintain the mantle-support in a definite position, substantially as described.

11. A fixed burner, an incandescent mantle, a substantially vertical standard for supporting the mantle, which standard is weighted adjacent to the upper end of the mantle, a guide for said standard in which said standard may rock and may move longitudinally, a spring-support for said standard, and a support for said spring-support, said guide and said last-mentioned support being attached to fixed portions of the fixture, substantially as described.

12. A fixed burner, an incandescent mantle, a vertical standard for supporting the mantle weighted adjacent to the upper end of the mantle thereon, a guide for said standard permitting vertical and angular movement thereof, a socket in the base of said standard, a coiled spring having its end set in said socket, and a fixed support for said spring, substantially as described.

FRANK A. WARD.
ARTHUR R. SELDEN.

Witnesses:

C. M. PERKINS,
F. BISSELL.