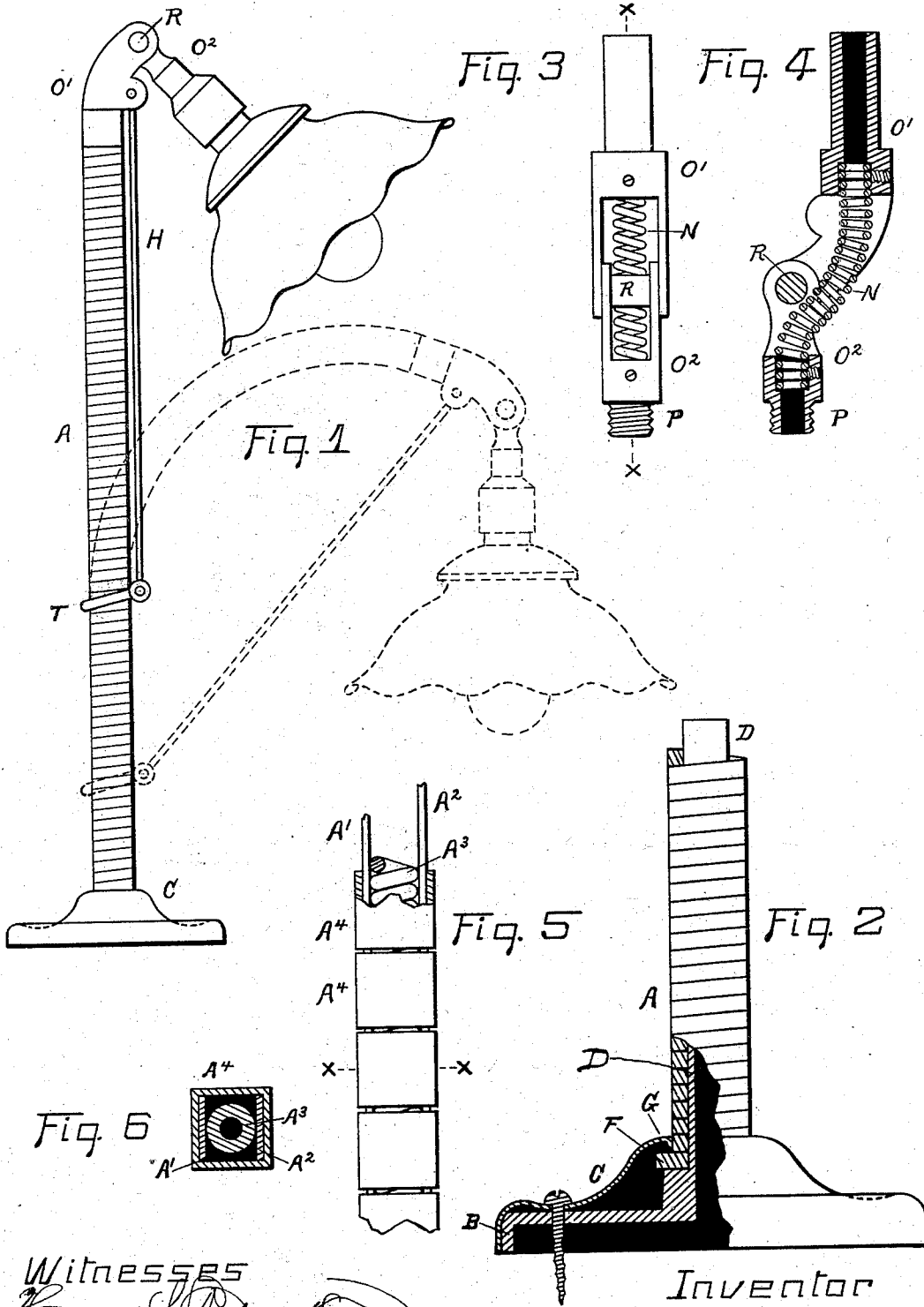


(No Model.)

F. W. DAVENPORT.
ELECTRIC LIGHT FIXTURE.

No. 504,866.

Patented Sept. 12, 1893.



Witnesses
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FRANK W. DAVENPORT, OF PROVIDENCE, RHODE ISLAND.

ELECTRIC-LIGHT FIXTURE.

SPECIFICATION forming part of Letters Patent No. 504,866, dated September 12, 1893.

Application filed July 22, 1893. Serial No. 481,209. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. DAVENPORT, a citizen of the United States, residing in the city and county of Providence, State of Rhode Island, have invented certain new and useful Improvements in Electric-Light Fixtures, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof, and in which similar letters refer to similar parts throughout the several views.

My invention relates to devices for supporting electric lamps in adjustable positions, and consists of a resilient arm which can be forcibly bent from its normal form, and will automatically return to such normal form when it is released, said arm being provided with means for holding an electric lamp, and with means for adjusting and forcibly holding said arm in other than its normal form, and against the action of its resiliency.

In the drawings Figure 1 shows a side view, with an electric lamp attached. Fig. 2 shows a view of the standard and a portion of the yielding arm, the parts being broken away to show the interior. Fig. 3 is a front view of the jointed head piece. Fig. 4 is a section through line *xx* of Fig. 3. Figs. 5 and 6 are modifications.

In Figs. 1 and 2 A is the resilient arm. It consists of a stiff wire spiral, made preferably of spring wire and sufficiently strong to remain normally straight under any load it is intended to carry. It is also sufficiently resilient to return to its normal form when it is bent therefrom and then released. A small portion of the coil at the end is bent outward, as shown at *E*, Fig. 2, for a purpose to be shown farther on.

In Fig. 2, B shows a base or supporting part. It is provided with a fixed central tube D, which tube is adapted to enter part way into the resilient coil A, and form a support for the same, as also a pivot upon which the coil may turn.

C is a cap piece designed to slip over the resilient coil and fasten upon the base piece B, serving to hold the coil down on the base by reason of the part G, which overhangs the outward extension F of the resilient coil, as before described.

In Figs. 3 and 4 is shown the jointed head piece. This head piece is made in two parts O' and O² both of which have a passage lengthwise of their centers. The reduced end of the part O' fits into the end of the resilient coil where it is held by a set screw or otherwise. The part O² is threaded at P to receive an electric lamp socket, said parts O' and O² being both provided with extensions, which are jointed together by the pivot R.

N is a flexible shield intended to receive and protect the conducting wires. This shield is preferably made in the form of a spiral coil, and is fastened by its ends in the enlarged openings of the parts O' and O² by set screws. This arrangement provides a smooth and continuous passage for the conducting wires around the joint, and prevents injury from chafing, while its flexibility admits free movement of the joint. The conducting wires from the lamp pass through the central passage in the part O² through the flexible shield around the pivot R, through the central passage in the part O', through the resilient coil, and the tube D to the circuit.

Referring to Fig. 1, H shows a rod which has a pivoted connection with the head piece of the coil. Said rod is provided with a ring T which is pivoted at its other end, and loosely encircles the resilient coil.

The operation of the device is as follows: By drawing down the lamp against the resiliency of the coil, said coil will bend, and the ring T will slide down the coil. When the lamp is released the resiliency of the coil will draw up one side of the ring causing it to bind or lock against the coil. Of course by holding the ring level it will travel freely up and down the coil. In this way the lamp may be adjusted and locked in various positions. The resilient coil may also be swung around on its supporting tube D, such movement being preferably limited by a stop (not shown) in order to prevent twisting of the conducting wires. This arm in Figs. 5 and 6 comprises two flat strips of spring steel A' and A², which are separated by an intermediate member A³, such member being preferably a spiral coil, and the several parts are held together by numerous short sections of four sided tubing A⁴, which tubing holds all the parts against lateral movement yet per-

mits them to move longitudinally in relation to one another. This manner of making the flexible arm is found desirable in certain forms of fixture, and admits of adjusting and retaining the arm in various positions by simply clamping the strips A' and A² against longitudinal movement.

It will be found in practice that the location of the resilient parts of the arm is of considerable importance, and it is desirable to have such parts not located near to the base of the arm, as such arrangement makes the fixture liable to bend at that part, and causes lack of stability. It is partly for such reason the tube D is introduced a considerable distance into the resilient arm, which results in throwing the operating resilient parts about one third, or one fourth the length of the arm away from the base.

Other forms of arm will suggest themselves, and also other retaining devices as a chain secured near one end of the arm and adapted to engage a hook near the other end.

It will be understood the foregoing illustrates only a few of the practical forms in which my invention may be embodied, and I do not confine myself to resilient arms constructed exactly as herein described, or to these particular means for controlling the resiliency. I claim in combination any form of flexible resilient arm having practically a homogeneity of structure, and capable of operating substantially as described.

My invention involves a radical departure in methods of supporting electric lamps.

I claim as new and desire to secure by Letters Patent—

1. In electric light fixtures, a resilient spiral coil capable of automatically returning to its normal form when forcibly bent therefrom and then released, said coil provided near one end with means for holding an electric lamp, a rod jointed by one of its ends near one end of the coil, and provided at its other end with a ring adapted to travel on other parts of the coil, in combination with a support having a tube extension adapted to receive a portion of the coil and support it.

2. In electric light fixtures, an arm provided near one end with an electric lamp, said arm being resilient, and capable of automatically returning to its normal form when forcibly bent therefrom and then released, in combination with means for adjusting and forcibly holding the arm in other than its normal form and against the action of its resiliency.

3. In electric light fixtures, an arm provided near one end with an electric lamp, and near the other end with a support upon which it may be revolved, said arm being resilient and capable of automatically returning to its normal form when forcibly bent therefrom and then released, in combination with means for adjusting and forcibly holding the arm in

other than its normal form and against the action of its resiliency.

4. In electric light fixtures, an arm capable of assuming either a straight or curved form, and provided near one end with means for holding an electric lamp, said arm being resilient and capable of automatically returning to its normal form when forcibly bent therefrom and then released, in combination with means for adjusting and forcibly holding the arm in other than its normal form and against the action of its resiliency.

5. In electric light fixtures, an arm provided near one end with means for holding an electric lamp, a considerable portion of the length of the arm nearest the base being practically unyielding as compared with other parts of the arm which are made yielding and resilient, and capable of automatically returning the arm to its normal form when forcibly bent therefrom and then released, in combination with means for adjusting and forcibly holding the arm in other than its normal form and against the action of its resiliency.

6. In electric light fixtures, a resilient arm capable of automatically returning to its normal form when forcibly bent therefrom and then released, means for adjusting and forcibly holding the arm in other than its normal form and against the action of its resiliency, said arm provided near one end with means for holding an electric lamp, in combination with a support having a tube or rod extension which is adapted to receive a portion of said arm and support the same.

7. In electric light fixtures, an arm provided near one end with means for holding an electric lamp, and near the other end with a support upon which it may be revolved, a considerable portion of the length of the arm nearest the base, or support, being practically unyielding as compared with other portions of the arm which are made yielding and resilient and capable of automatically returning the arm to its normal form when forcibly bent therefrom and then released, in combination with means for adjusting and forcibly holding the arm in other than its normal form and against the action of its resiliency.

8. In electric light fixtures, an arm provided near one end with an electric lamp, said arm being resilient and capable of automatically returning to its normal form when forcibly bent therefrom and then released, in combination with a retaining member adapted to engage parts adjacent to both ends of the arm.

9. In electric light fixtures, an arm capable of assuming either a straight or curved form, and provided near one end with an electric lamp, a considerable portion of the length of the arm nearest the base being practically unyielding as compared with other parts of the arm which are made yielding and resilient

and capable of automatically returning the arm to its normal form when forcibly bent therefrom and then released, in combination with a retaining member adapted to engage parts adjacent to both ends of the arm.

10. In electric light fixtures, an arm capable of assuming either a straight or curved form, and provided near one end with means for holding an electric lamp, said arm being resilient and capable of automatically returning to its normal form when forcibly bent therefrom and then released, in combination with a retaining member adapted to engage parts adjacent to both ends of the arm.

11. In electric light fixtures, an arm provided near one end with means for holding an electric lamp, a considerable portion of the length of the arm nearest the base being practically unyielding as compared with other parts of the arm which are made yielding and resilient and capable of automatically returning the arm to its normal form when forcibly bent therefrom and then released, in combination with a retaining member adapted to engage parts adjacent to both ends of the arm.

12. In electric light fixtures, a resilient spiral coil capable of automatically returning to its normal form when forcibly bent therefrom and then released, said coil provided near one

end with means for holding an electric lamp, in combination with means for adjusting and forcibly holding the coil in other than its normal form and against the action of its resiliency.

13. In electric light fixtures, a resilient spiral coil capable of automatically returning to its normal form when forcibly bent therefrom and then released, said coil provided near one end with means for holding an electric lamp, and near the other end with a support upon which it may be revolved, in combination with means for adjusting and forcibly holding the coil in other than its normal form.

14. In electric light fixtures, a resilient spiral coil capable of automatically returning to its normal form when forcibly bent therefrom and then released, said coil provided near one end with means for holding an electric lamp, in combination with a retaining member attached by one of its ends to the coil or to parts integral therewith, and provided at its other end with a ring or slide adapted to travel on other parts of the coil.

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Witnesses:

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