(No Model.)

N. JENKINS.

ADJUSTABLE LAMP HANGER.

No. 492,808. Patented Mar. 7, 1893.

Fig. 1.

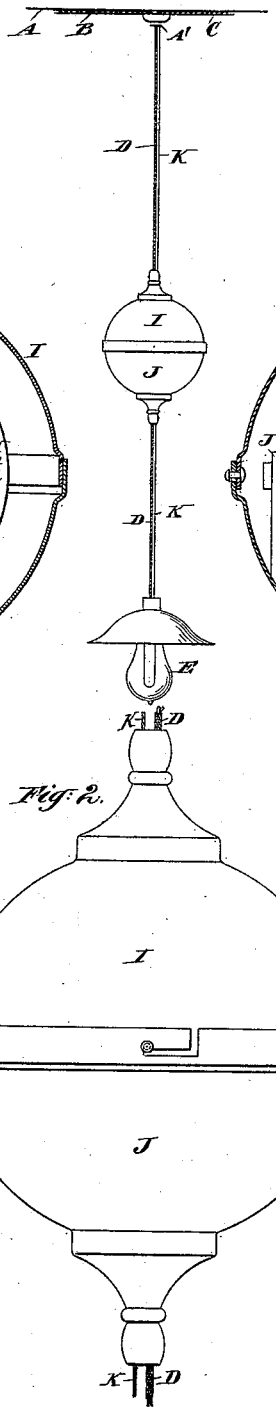

Fig. 3.

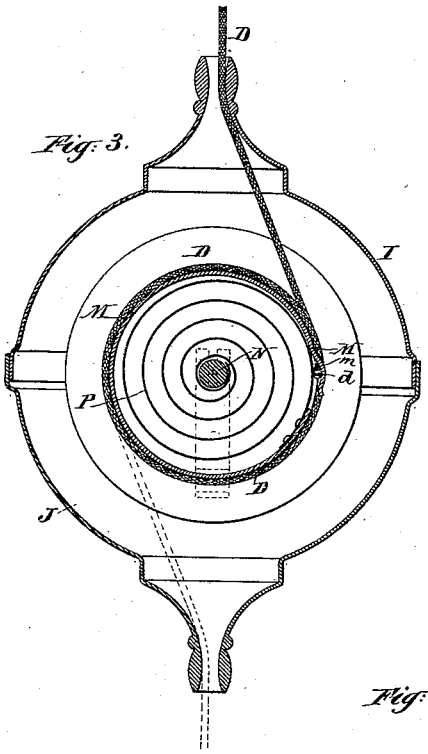

Fig. 4.

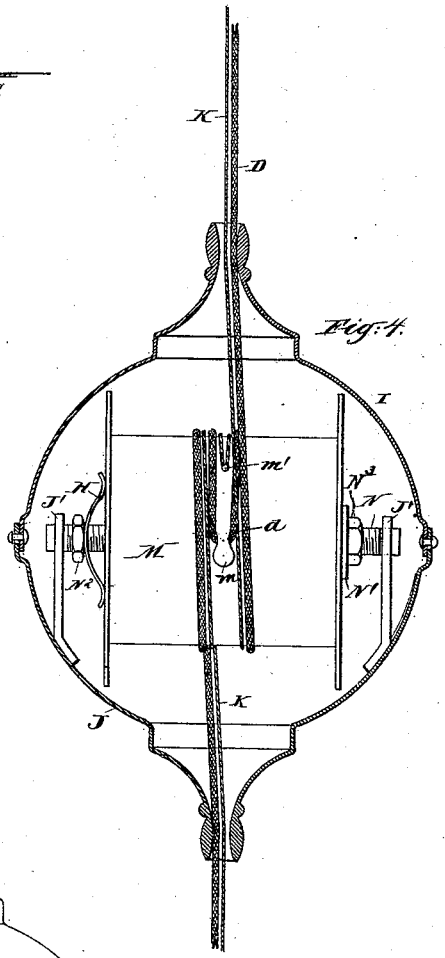

Fig. 2.

Witnesses:
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Inventor:
Nicholas Jenkins
by his Attorneys
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

NICHOLAS JENKINS, OF WATERBURY, CONNECTICUT.

ADJUSTABLE LAMP-HANGER.

SPECIFICATION forming part of Letters Patent No. 492,808, dated March 7, 1893.

Application filed April 19, 1890. Serial No. 348,749. (No model.)

To all whom it may concern:

Be it known that I, NICHOLAS JENKINS, of Waterbury, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement Relating to Electric Lights, of which the following is a specification.

The improvement is intended more particularly for what are known as incandescent lights, used in the interiors of buildings; and it will be described as thus applied. I can use the ordinary duplicate conducting wires protected by an efficient insulating coat, constituting a single conducting cord, sufficiently flexible to be wound and unwound on a windlass or spool of moderate size. I mount such a spool in bearings in an inclosing case which protects it from dust and other injurious influences. The spool is inclosed with a volute spring, which exerts a nearly constant tension under all conditions, tending to turn the spool and take up the conducting cord with sufficient force to balance the gravity. Friction is produced by another spring sufficient to insure that the light shall remain in any position in which it is left. I have devised an arrangement whereby a bight or sharp fold of the single conducting cord is secured to the periphery of the spool, and both the parts of the cord extend therefrom and are wound around the required number of times. One end is then led upward, and passes out through a smooth hole of suitable size in the top of the inclosing case, while the other end is led downward through a corresponding hole in the bottom of the inclosing case. The wire which leads upward is soldered or otherwise efficiently connected both mechanically and electrically with a suitable fixture above through which the electric current is received; and the end which extends downward is properly split and connected with the lamp, which latter may be of any ordinary or suitable construction.

In operation the current flows through the cord or conductor in one side of the conducting cord, down to the lamp, and performs the required service there, of maintaining a strong illuminating condition in the carbon or other agent employed to radiate the light, and returns through the conductor in the other part of the cord. The cord is of moderate length and is continuous throughout. I attach importance to the fact that there is no transition, or point of possible imperfect conduction between the fixed electrodes at the top and lower end of the cord. Whether the lamp is drawn to its lowest position or is worked in any other position, the current finds an easy and continuous passage through the cord, from one end to the other. It passes around the bight in the cord with the same facility as through any other portion.

I provide a separate cord or tension device, which lies parallel to the conducting cord, and is wound and unwound from the spool in the same manner. This tension cord is a trifle shorter than the conducting cord, so that in pulling the lamp down and in the less straining conditions the tension is all taken by the tension cord. This relieves the electrical cord from the strain, and enables it to longer and more perfectly fulfill its functions.

The accompanying drawings form a part of this specification, and represent what I consider the best means of carrying out the invention.

Figure 1 is an elevation showing the entire device. The remaining figures show portions on a larger scale. Fig. 2 is an elevation. Fig. 3 is a central vertical section. Fig. 4 is a vertical section at right angles to the section in Fig. 3. The parts inclosed in casing are shown in elevation in Fig. 4.

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

A is the ceiling of the room, and B C are the two conductors, which are properly insulated in the buildings, and connected to a dynamo or other source of electricity not shown.

D is my cord, made with the proper duplex conductor insulated electrically from each other and properly coated making the proper flexible and well insulated conduit by which the current can descend to the lamp and return. It is of length more than sufficient to extend in a right line to the lowest position at which the lamp is to be worked.

E is the lamp, properly connected to the lower end of this cord; it may be the ordinary horse-shoe carbon, mounted in a vacuum in a properly conditioned glass case.

At the midlength of the cord D I form a fold or bight *d*, and engage it with a snap-catch *m* on the periphery of a light grooved pulley or spool M, which latter is mounted loosely on an arbor N, and connected thereto through the intervention of a long and slender volute spring P, the outer end of which is fixed to the spool and the inner end to the arbor, and is so conditioned as to exert a constant tension urging the spool M in the direction to wind up the cord, accumulating the latter in successive turns on its periphery; but it is ready whenever required to yield and allow it to be given off again.

N′ is a collar on the arbor N, against which one end of the spool M is pressed.

H is a bent spring which exerts a gentle force against the other end of the spool, finding its abutment in a nut N^2, which is mounted on a threaded portion of the arbor N. The tension of the spring H, and consequently the friction which obstructs the turning of the spool M on the arbor N, may be varied at will by turning the nut N^2 slightly in one direction or the other.

I J are the two halves of a casing of sheet metal or other suitable material, which incloses the spool and arbor. They are united by a bayonet joint. The ends of the arbor N are flattened and are received in corresponding notches in the brackets J′, so that the arbor is efficiently defended against being revolved. The upper part of the cord D is led through a smooth hole in the center of the top of the part I. The lower part is led through a corresponding hole in the center of the lower part J.

The snapcatch *m* is mounted in a recess in the periphery of the pulley, and is a flat piece of hard brass or other suitable elastic material bent as shown. The bight *d* of the conducting cord D is engaged with this snapcatch by being pressed with gentle force under the free end; as will be readily understood. The elastic character of the snapcatch causes it to retain the bight efficiently.

K is what I term a tension cord. It is a slender flexible connection of wire, preferably three fine wires laid together with a slight twist. It is engaged with a post or pin *m*′, and makes the same number of turns upon the periphery of the spool as the conducting cord. One end is led up and attached to the point A′ adjacent to the conductors B C at the top; and the other end is led downward and connected to the lamp. I make the tension cord K a very little shorter than the conducting cord D, so that in the use of the invention all the mechanical strain in pulling down the lamp is received by the tension cord K, and no appreciable tensile force is felt by the conducting cord D.

The cord D will under ordinary conditions maintain the continuity of its conductor and the completeness of its insulation for a long period.

I coat the periphery of the spool with rubber or with insulating varnish, and thereby insure still further against any bad results if the insulation should by any chance become imperfect.

Modifications may be made by any good mechanic without departing from the principle or sacrificing the advantages of the invention.

I have represented the parts I J of the case as deeply stamped or spun from brass, and have made my experiments in this manner; but the form and material of these parts may be varied indefinitely.

Parts of the invention may be used without the whole. I can dispense with the tension cord K, and allow the gentle force to be received by the conducting cord D, either constructed in the ordinary manner or specially with a tension strand inclosed within its covering which shall lie straight and shall be so conditioned as to receive the most or the whole of the tension, and thus efficiently relieve the conducting wires from mechanical strain.

The tension cord may be attached to the same snapcatch or other fastening as the conducting cord D; but I prefer independent fastenings as described.

An important quality of my invention is the capacity for applying it to conducting cords already in use. The ordinary cords are sufficiently flexible. My invention may be applied by simply disconnecting the lamp from the lower end of the ordinary conducting cord, and slipping on the two parts of the casing, forming a bight in the mid length of the cord, applying the same to the snapcatch, winding the two parts of the same cord on the spool, and properly engaging the arbor with the brackets, and applying the two halves of the case together and locking them. Then the lamp being again properly connected to the lower end, it may be raised and lowered at will; and the nut N^2 being adjusted to maintain just sufficient friction through the spring H, the device is ready to serve for an indefinite period. In such case the separate tension cord K may be applied along side, taking care to properly adjust the longths.

The invention allows the lamp to be held reliably in position and easily shifted when required.

I claim as my invention—

1. The combination with a flexible electric conductor, and a tension cord of somewhat less length than said conductor or so as to take the tension therefrom, of a spring actuated windlass provided with holding means for said conductor and said tension cord, said means comprising a spring catch adapted to clamp the said conductor and thus to restrain its shifting and the consequent tendency to alter the relative lengths of the conductor and cord on one side of said windlass, which alteration might subject said conductor to tension, substantially as described.

2. The combination with the windlass, case, cord, and suspended device, of a constantly operating spring brake tending to restrain the windlass against movement in either direction, and a spring for actuating the windlass of a force greater than can be resisted by said spring brake, so that on relieving the windlass of the weight of said suspended device the spring will rotate the windlass against the resistance of said brake, which will afterward co-operate with said spring to uphold the said suspended device, substantially as described.

3. The combination with the two part case, of the standards fastened to one of said parts, the arbor with squared ends engaging corresponding openings in said standards, the nuts on said arbor, the windlass loose on said arbor, and the brake spring interposed between one of said nuts and the end of said windlass, substantially as described.

In testimony whereof I have hereunto set my hand, at Waterbury, Connecticut, this 19th day of March, 1890, in the presence of two subscribing witnesses.

NICHOLAS JENKINS.

Witnesses:
CLIFFORD J. HACKETT,
WALTER D. FORD.