

T. W. TROTTER.
ADJUSTABLE SUSPENSION CORD FOR ELECTRIC LAMPS.
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938,802.

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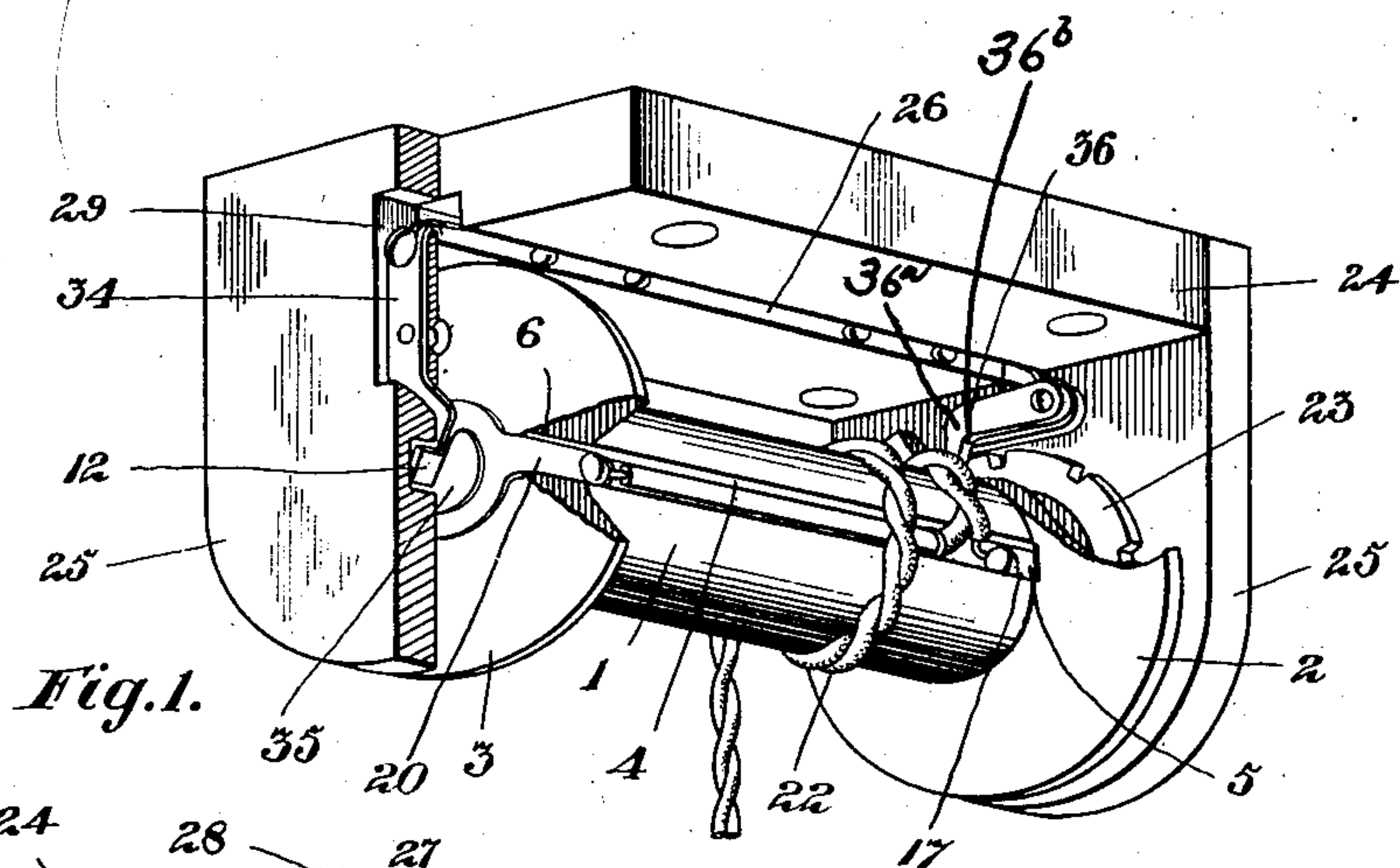


Fig. 1.

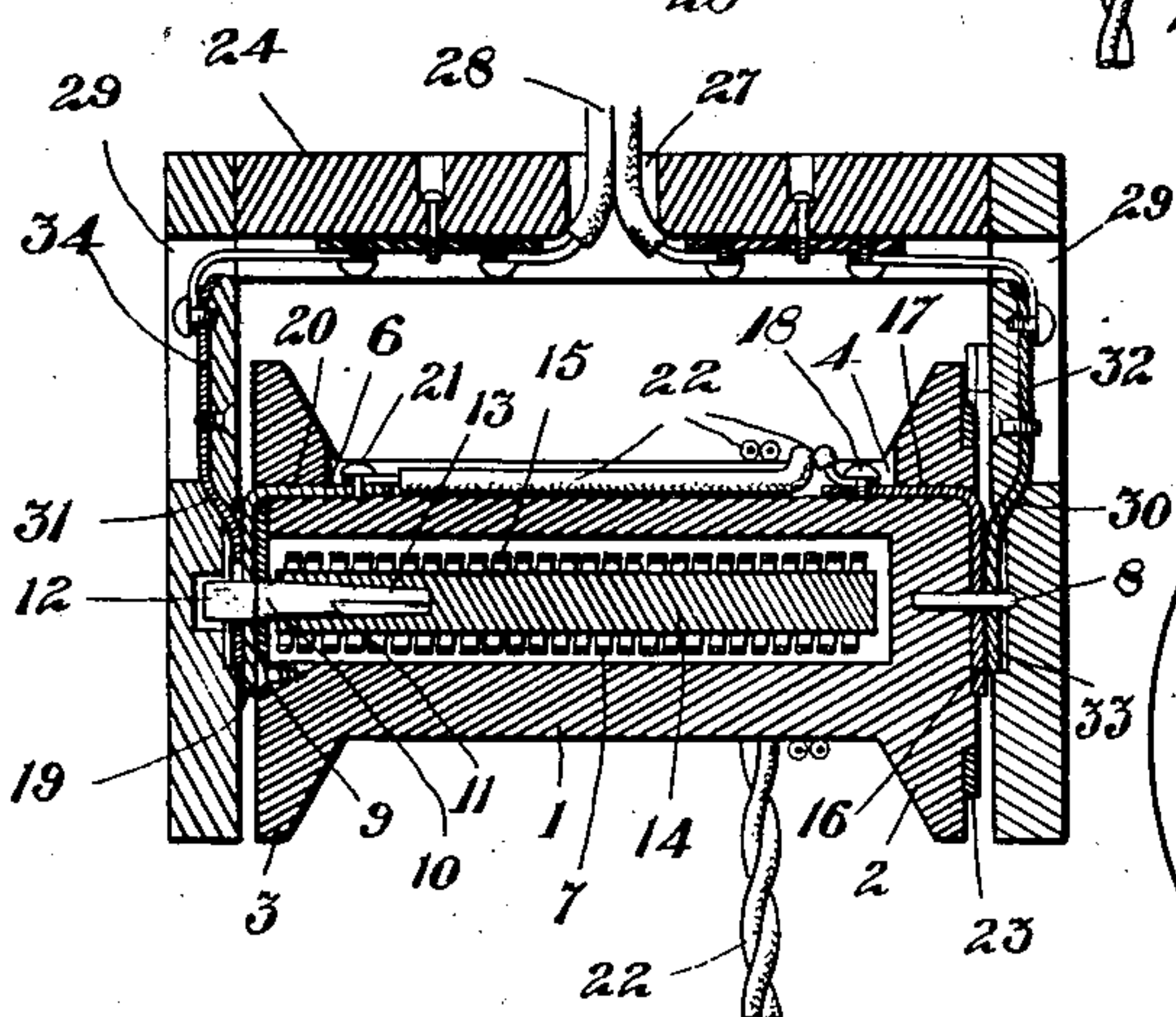


Fig. 2.

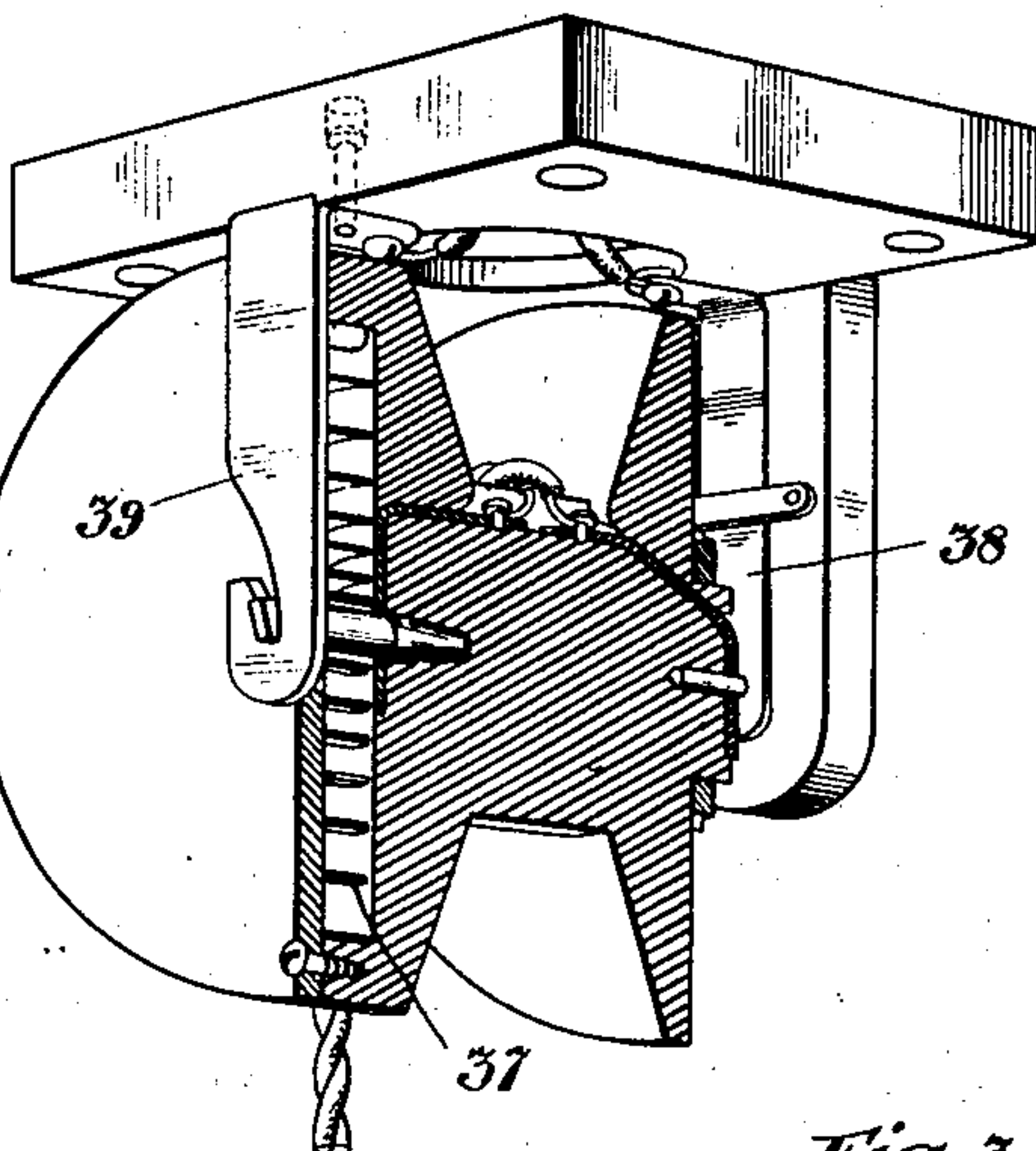


Fig. 3.

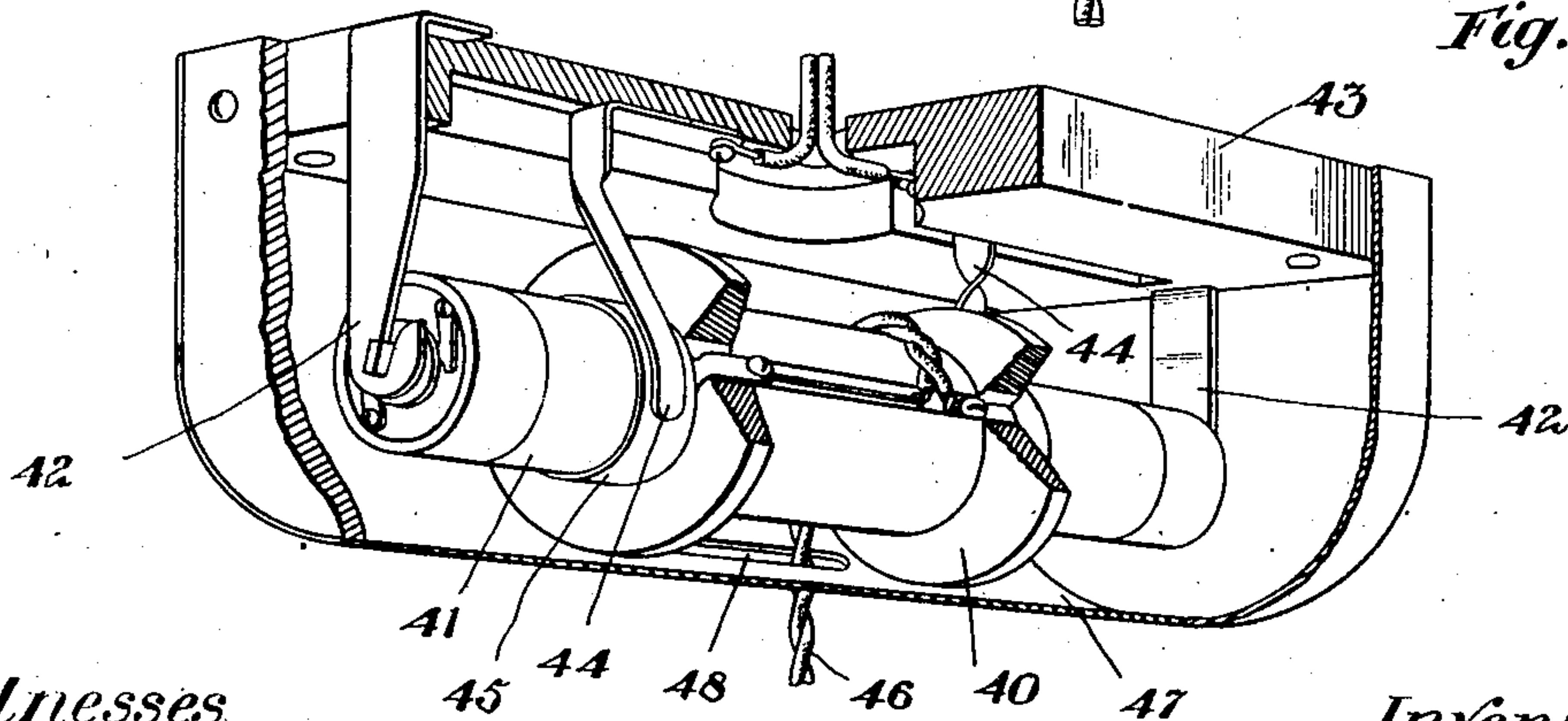


Fig. 4.

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UNITED STATES PATENT OFFICE.

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ADJUSTABLE SUSPENSION-CORD FOR ELECTRIC LAMPS.

938,802.

Specification of Letters Patent.

Patented Nov. 2, 1909.

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To all whom it may concern:

Be it known that I, THOMAS WELLINGTON TROTTER, a subject of the King of Great Britain, resident of the town of Sault Ste. Marie, in the district of Algoma, Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Adjustable Suspension-Cords for Electric Lamps, of which the following is a specification.

The invention relates to improvements in adjustable suspension cords for electric lamps, as described in the present specification and illustrated in the accompanying drawings that form part of the same.

The invention consists essentially in the novel construction and arrangement of parts whereby the lamp may be raised or lowered by the winding and unwinding of the cord on a spring rotated spool electrically connected to the stationary supply wires and controlled by a slip catch means.

The objects of the invention are to suspend an electric lamp from a flexible cord in such a manner that it may be raised or lowered to any desired position and the electrical contact maintained continuously and the cord taken up and given out as the said lamp is raised or lowered, and to devise an article neat in appearance and simple in construction.

In the drawings Figure 1 is a perspective view of one form of my device shown partly broken away. Fig. 2 is a vertical longitudinal sectional view of the device shown in Fig. 1. Fig. 3 is a sectional perspective view of a modified form of my device. Fig. 4 is a perspective view partially broken away of a further modified form of my device.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 is a spool having the flanges 2 and 3 at each end thereof and a longitudinal slot 4 in its periphery extending from end to end and orifices 5 and 6 through said flanges communicating with said slot and a central cylindrical recess 7 extending inwardly from one end thereof and terminating adjacent to the opposite end. 8 is a pivot pin secured in the flanged end 2 centrally thereof and forming the rotating pivot for said spool at one end. 9 is a plate fixedly secured to the flanged end 3 of said spool and closing the recess 7 and having a central circular orifice 10, said plate being preferably of non-conducting

material. 11 is a pin having a circular portion turning in the orifice 10 in the plate 9 and a flattened outer end 12 and a tapered inner end 13 extending into the recess 7 in said spool and rigidly secured to the rod 14 centrally arranged in said recess.

15 is a spiral spring encircling the rod 14 and secured thereto at one end and at the other end to the plate 9 or other portion of the rotatable spool.

The construction and arrangement of the spring portion of the spool 1 are quite well known and are merely shown and described as used in conjunction with the peculiar construction of the other parts of the invention and it must be understood that any arrangement of spring spool may be used, the modified form shown in Fig. 3 being particularly shown to illustrate the adaptation of a flat coil spring instead of a spiral spring.

16 is a circular plate of brass or other suitable conducting material having a central orifice therethrough through which the pin 8 extends and a laterally bent tongue 17 extending through the orifice 5 into the slot 4 and rigidly secured to the spool by the screw 18.

19 is a plate similar to the plate 16 and encircling the pin 11 and having the tongue 20 extending through the orifice 6 and secured in the slot 4 by the screw 21.

22 is the electric cord, one wire of which is secured to the tongue 17 by the screw 18, the other wire extending longitudinally of the slot 4 and secured to the screw 21. The terminals of the cord are thus arranged far apart and below the surface of the said spool and the said cord may be wound around the spool without danger of affecting the contacts. The cord extends around said spool and a suitable lamp of any form may be secured to the depending end.

23 is a notched ring rigidly secured to the outer face of the flange 2 having shallow rectangular shaped notches formed in the periphery thereof.

24 is the supporting bracket for the spool 1 which is rigidly secured to the ceiling by suitable screws, said bracket having the depending ends 25 and a longitudinal groove 26 in the under side of the top portion communicating with a central orifice 27 through which the electrical supply wires 28 are introduced.

29 are vertical recesses in the outer face of the ends 25, communicating at the top with

the groove 26 and at the bottom with the inwardly extending openings 30 and 31.

32 is a strip of brass or other suitable electrical contact material rigidly secured in one of the recesses 29 and extending through the opening 30 and having a flat circular end 33 at its lower end, said flat circular end having a central orifice therein forming a journal bearing for the pin 8 and spring held in contact with the plate 16.

34 is a strip of brass or other suitable contact material having a slotted lower end 35 to receive the flattened end 12 of the pin 11 and spring held in contact with the plate 19 and rigidly secured in the recess in the other end of the said bracket. The contact strips 32 and 34 are electrically connected to the wires 28 through suitable electrical connections arranged in the groove 26. It will therefore be seen that, through the electrical connections described, the cord 22 is constantly in electrical connection with the supply wires and the spool may be rotated and the said cord wound or unwound upon said spool as desired without the electrical contact being broken. The spool is operated in a similar manner to the ordinary window blind roller.

36 is a pawl having a downwardly projecting end portion 36^a formed with a slightly sloping back edge 36^b, the extreme end of said downwardly projecting portion being slightly smaller than the notches in the ring 23. The pawl 36 is pivotally secured to the bracket 24 above the notched ring, so that the portion 36^a extends beyond the vertical axis of the said ring, so that when the spool is rotated, on the cord 22 being pulled downwardly, the pawl will slip out of the notch and allow the said spool to rotate freely. On the tension of the cord being released, the spring 15 causes the spool to rotate in a reverse direction and when rotating slowly the pawl will drop into the first notch passing under the end thereof, but if the spool is allowed to rotate rapidly the pawl will slip over the notches in succession until the speed is reduced by the increasing of the tension on the cord. It will thus be seen that the slip catch means thus provided will allow the cord to be wound and unwound as desired and it will hold the spool securely in any desired position.

In the form shown in Fig. 3, the spool and the rigid contact plates secured thereto, are substantially the same as those shown in Figs. 1 and 2, the only difference being that a shallow circular recess is formed in one of the flanges of the drum to receive the flat coil spring 37. The supporting arms 38 and 39 are of practically the same formation as the strips 33 and 34 shown in Figs. 1 and 2 but extend directly from the top of the block instead of through orifices in the sides of the supporting ends.

In the form shown in Fig. 4, the detail construction is slightly different, in that the spool 40 is supported on an elongated roller 41, of the ordinary window shade type, supported from the depending ends 42 of the main supporting bracket 43. The electrical connections in this form are made through the spring brushes 44 connected to the supply wires and contacting with the commutator rings 45 encircling the roller and electrically connected to the ends of the cord 46. In this figure I have shown an inclosing casing 47 having a slot 48 in the under side thereof through which the suspending end of the cord drops. A similar casing may inclose the other forms of the device if it is so desired.

A very neat and serviceable article is produced which may be attached directly to the ceiling of a room so that there is but the one pendent cord supporting the light and the light may be raised or lowered at will by simply pulling it down slightly and allowing the cord to wind up until the desired position is reached when it may be rested by letting it rise slowly until the pawl 36 falls into one of the notches in the ring 23. In lowering, the same action is repeated, that is to say, the cord is drawn down until the light is in the desired position and the locking carried out in the same manner. The parts to the device may be constructed very cheaply and yet be very serviceable, the spring contacts insuring a continuous and even flow of current to the light.

What I claim as my invention is:—

1. In an adjustable suspension cord for electric lamps, a rigid bracket having downwardly extending arms, spring arms rigidly secured to the arms of said brackets and electrically connected to the electric current supply, a flanged spool having a pin rigidly secured centrally in one end thereof, said pin being journaled in an orifice in one of said spring arms, a pin rotatably mounted centrally in the other end of said spool rigidly held in an orifice in the other of said spring arms, a coiled spring secured at one end to said spool and at the other end to the latter pin, electrical contacts engaging said spring arms, an electric suspension cord electrically connected to said electrical contacts and winding on said spool, and slip catch means for holding said spool stationary.

2. In an adjustable suspension cord for electric lamps, a flanged spool having a central recess and a longitudinal groove in its periphery and orifices through said flanges communicating with said groove and a pin rigidly secured centrally in one end thereof, a pin rotatably mounted centrally of said spool and extending from its opposite end and having a flattened end, a coiled spring secured at one end to said spool and

at the other end to said pin, electrical contacts secured to the ends of said spool and surrounding said pins and having tongues extending through the orifices in said flanges
5 and secured at their ends in said longitudinal groove, an electric cord electrically connected to said tongues and winding on said spool, a rigid bracket having downwardly depending ends, a spring rigidly secured to
10 one of said ends and having its lower end extending inwardly from said bracket and having a central hole forming a journal for the rigid pin extending from said spool, said spring arm contacting with the electrical
15 contact on one end of said spool, a spring arm secured to the other end of said bracket and extending inwardly therefrom having a

slot in its lower end to receive the flattened end of the rotatable pin in said spool and contacting with the electrical contact at the
20 corresponding end of said spool, electrical connections joining said spring arms to the electric current supply, and a slip catch means for controlling the rotation of said
25 spool.

Signed at the town of Sault Ste. Marie, in the district of Algoma, Province of Ontario, in the Dominion of Canada, this 18th day of March, 1908.

THOMAS WELLINGTON TROTTER.

Witnesses:

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