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3,355,847

STREET LIGHTING COLUMNS

Filed June 16, 1964

2 Sheets-Sheet 1

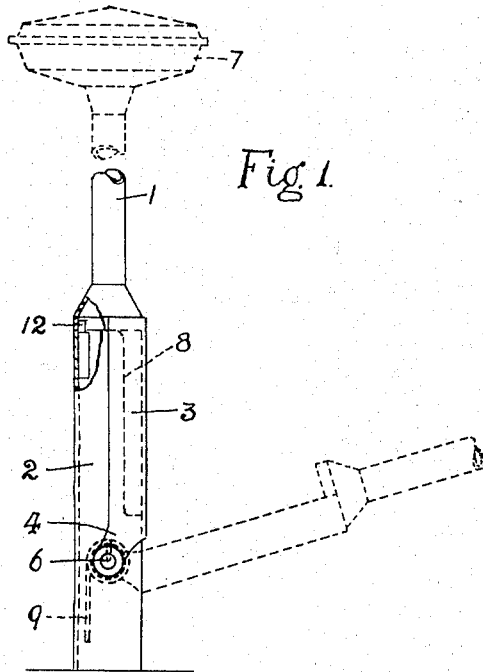


Fig. 1.

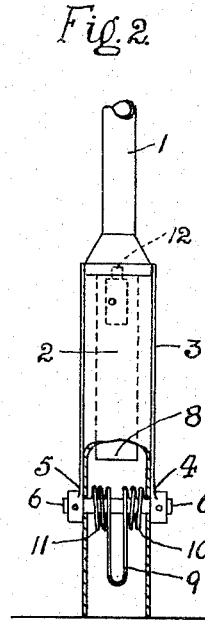


Fig. 2.

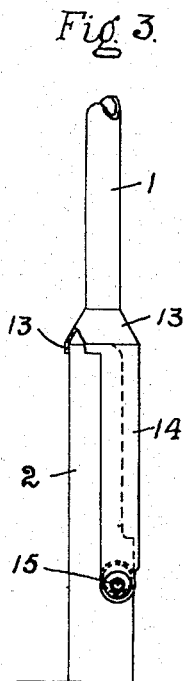


Fig. 3.

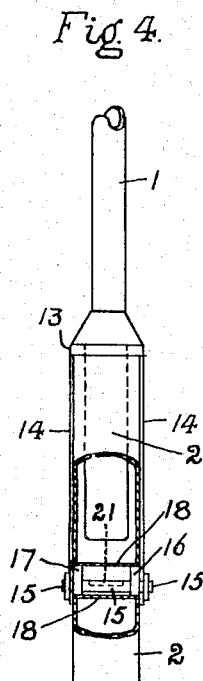


Fig. 4.

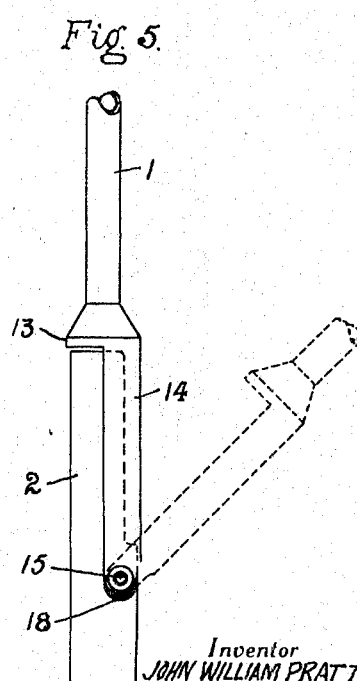


Fig. 5.

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Fig. 6.

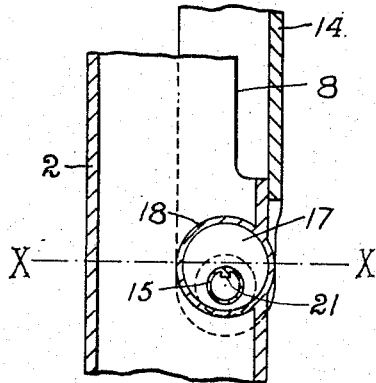


Fig. 7.

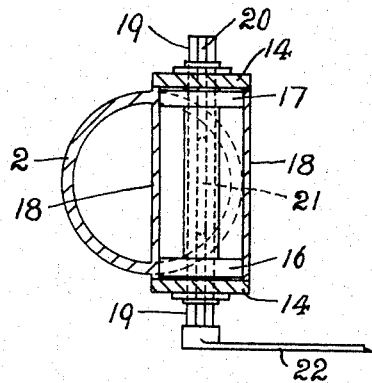


Fig. 8.

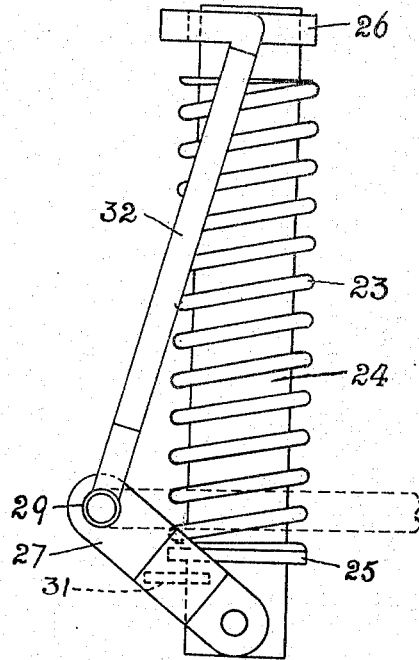


Fig. 9.

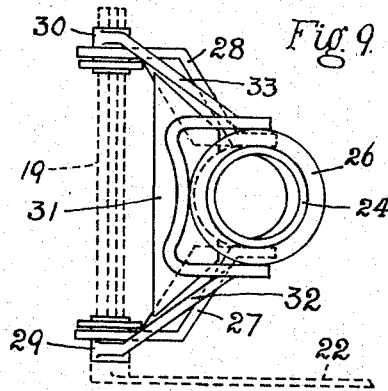
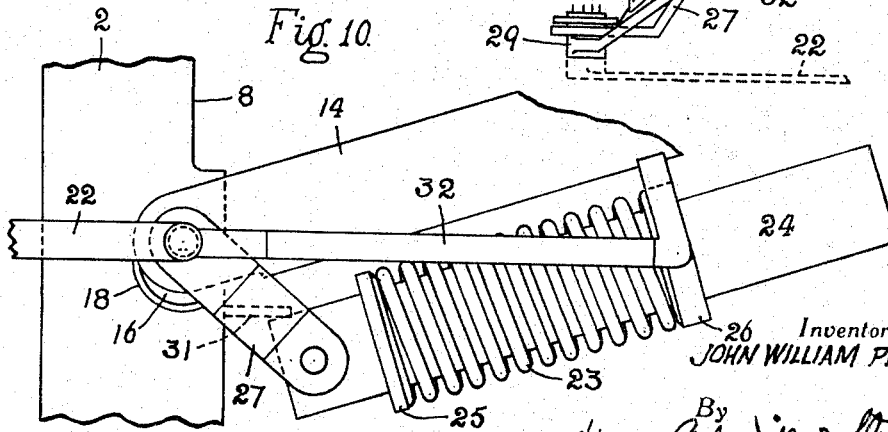


Fig. 10.



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STREET LIGHTING COLUMNS

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5 Claims. (Cl. 52—116)

This invention relates to improvements in street lighting columns and its object is to provide a simple construction for the column which will enable the lantern at the top of the column to be brought near to the ground for cleaning and maintenance purposes.

According to this invention the column comprises normally vertical upper and lower parts hinged together in which the upper part is formed with a downward extension which is mounted on a member which extends through the lower part of the column and forms a pivot for the upper part which is turned about the pivot to lower the lantern on the upper part. The upper part is locked in its vertical position by a sliding bolt or other means which is operated from the outside of the column by means of a removable key. The spring may be associated with the key so that one spring will serve any number of columns.

The invention will now be more particularly described with reference to the accompanying drawings in which:

FIG. 1 is a sectional side elevation and

FIG. 2 a front elevation partly in section showing one method of carrying out this invention.

FIG. 3 is a side elevation

FIG. 4 a front elevation, partly in section, of an alternative form of construction.

FIG. 5 is a side elevation of the column shown in FIGS. 3 and 4 showing the upper part of the column in its unlocked position for lowering.

FIG. 6 is a sectional side elevation of the hinge in the column and

FIG. 7 a sectional plan on the line X—X of FIG. 6 showing the construction of the hinge for the construction shown in FIGS. 3 and 4.

FIG. 8 is a side elevation of the return spring and

FIG. 9 a plan of the spring arrangement for use with the operating key for use with the construction shown in FIGS. 3 and 4.

FIG. 10 is a side elevation showing the spring arrangement shown in FIGS. 8 and 9 in use.

FIGS. 6 to 10 are drawn to a larger scale than the remaining figures.

Like numerals indicate like parts throughout the drawings.

In one method of carrying out this invention the column is made in two parts comprising an upper part 1 and a lower part 2 which is secured in the ground at its lower end. The upper part 1 is hinged to the lower part 2 and for this purpose a downward extension 3 is provided on the lower end of the upper part 1. The extension 3 is made a convenient length and its lower end is provided with two lugs or ears 4, 5 which are respectively pivoted to the lower part 2 of the column on opposite sides thereof by a pin 6 so that the upper part 1 of the column can be turned about the pivot pin 6 to lower the lantern 7 at the top of the column to a point which is a suitable distance from the ground for cleaning and maintenance purposes. The inner side of the extension 3 has suitable stiffening members secured thereto and these stiffening members may also carry the electrical control gear for the lantern. When the upper part of the column is turned about the pivot pin 6 the stiffening members and control gear pass through an opening 8 in the side of the lower part 2 of the column, the opening 8 being closed by the extension 3 when the upper part 1 of the column is in its vertical position.

The upper part 1 of the column is turned from its vertical position against the action of a torsion spring which helps to some extent to counter balance the upper part. The spring may comprise a U-shaped part 9 and the ends of the arms of the U-shaped part 9 being integral with helical coils 10, 11 which may be formed with extensions which are arranged to pass through holes provided for the purpose in the pivot pin 6 which is secured to the lugs 4 and 5.

When the upper part 1 is turned on the pivot pin 6, the U-shaped part 9 moves into engagement with the inner side of the lower part 2 of the column and further movement of the upper part is then against the resistance of the coiled parts of the spring.

The upper part of the column is locked in its vertical position by means of a sliding bolt 12 which is mounted on one part of the column and engages with a suitable abutment on the other part. The bolt 12 is operated by a key from the outside of the lower part of the column.

An electrical power supply cut-out may be fixed in the lower part of the column and connected to the control gear by flexible cables. A door can also be provided in the lower part of the column to give access to the control gear whilst the upper part of the column is in its vertical position.

In the preferred construction shown in FIGS. 3 to 7 the upper part 1 of the column is provided at its lower end with a cup 13 which normally fits over the upper end of the lower part 2 of the column as shown in FIGS. 3 and 4. A downward extension 14 is provided on the upper part 1 of the column and the lower end of this extension 14 is freely pivoted on each side of the lower part 2 of the column on a tubular member 15. This tubular member 15 is eccentrically secured in two discs 16, 17 rotatably mounted in a sleeve 18 secured to the lower part 2 of the column. It will be seen that if the member 15 is turned through an angle of 180° from its position shown in FIGS. 3 and 4 to the position shown in FIG. 5 the discs 16, 17 will rotate in the sleeve 18 and the cup 13 will be lifted clear of the top of the lower part 2 of the column as shown in FIG. 5 and the upper part of the column can be lowered towards the ground.

In order to turn the member 15 a key is provided. This key comprises a shaft 19 to slide into the member 15 and the shaft 19 has a groove 20 therein to engage with a key 21 secured to the inside of the member 15. The shaft 19 is turned to rotate the member 15 by a lever 22 secured to one end of the shaft 19.

In order to take the weight of the upper part 1 of the column or at least a portion of its weight as it is lowered about the member 15 towards the ground, the spring arrangement shown in FIGS. 8 to 10 is provided.

This spring arrangement comprises a compression spring 23 disposed on a member 24 between a fixed collar 25 and a collar 26 which is slidable along the member 24. The member 24 is connected at its lower end to the outer ends of two arms 27, 28 having their other ends freely mounted on sleeves 29, 30 adapted to be mounted on the shaft 19 when inserted in the member 15. The arms 27, 28 are connected together by a cross member 31, the edge of which engages with the side of the lower part 2 of the column when the key and spring arrangement are in their operative positions. The collar 26 is secured to the upper ends of two arms 32, 33 which have their lower ends secured, respectively to the sleeves 29, 30.

The sleeves 29, 30 are placed on the shaft 19 as the latter is inserted in the member 15 and when the upper part 1 of the column is lowered, after turning the shaft 19 to raise the upper part of the column clear of the lower part, the extension 14 engages with and turns the arms 32, 33 about their pivotal point and the collar 26 moves along

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the member 24 as the upper part of the column is lowered and compresses the spring 23, as shown in FIG. 10, to take the weight or a part of the weight, according to the strength of the spring, of the upper part of the column. With this arrangement only one spring arrangement is required for any number of columns constructed as shown in FIGS. 3 to 7, with a consequent saving in the cost of the columns.

The downward extension to the upper part of the column covers an opening 8 in the lower part of the column as in the first described arrangement, when the column is erect and the control gear may be mounted on the downward extension so as to be easily accessible when the upper part of the column is lowered.

What I claim is:

1. A street lighting column comprising normally vertical upper and lower parts hinged together in which the upper part is formed with a downward extension which is mounted on a member which extends through the lower part of the column and forms a pivot for the upper part which is turned about the pivot to lower the lantern on the upper part, in which the lower end of the upper part is formed with a cup to fit over the upper end of the lower part, and in which the downward extension on the upper part is pivoted on a member which when turned by a key means includes means for raising the upper part of the column to disengage the cup thereon from the lower part of the column.

2. A street lighting column according to claim 1 in which the member is tubular and is secured eccentrically in two discs rotatably mounted in a sleeve secured in the lower part of the column.

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3. A street lighting column according to claim 2 in combination with a shaft inserted in the tubular member, a groove in the shaft, a key in the tubular member to engage in the groove and a lever on the end of the shaft for turning the shaft.

4. A street lighting column according to claim 2 in combination with a shaft inserted in the tubular member, a groove in the shaft, a key in the tubular member to engage in the groove, a lever on the end of the shaft and a spring device associated with the shaft to take the weight or part of the weight of the upper part of the column when the latter is being lowered.

5. A street lighting column according to claim 2 in combination with a shaft inserted in the tubular member, means to connect the shaft to the tubular member, a lever on the end of the shaft, sleeves on the shaft, a compression spring located between fixed and sliding collars on a member which is pivoted to the ends of arms which are pivotally mounted on the sleeves, a cross member between said arms to rest on the lower part of the column and arms secured to the sliding collar and the sleeves.

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