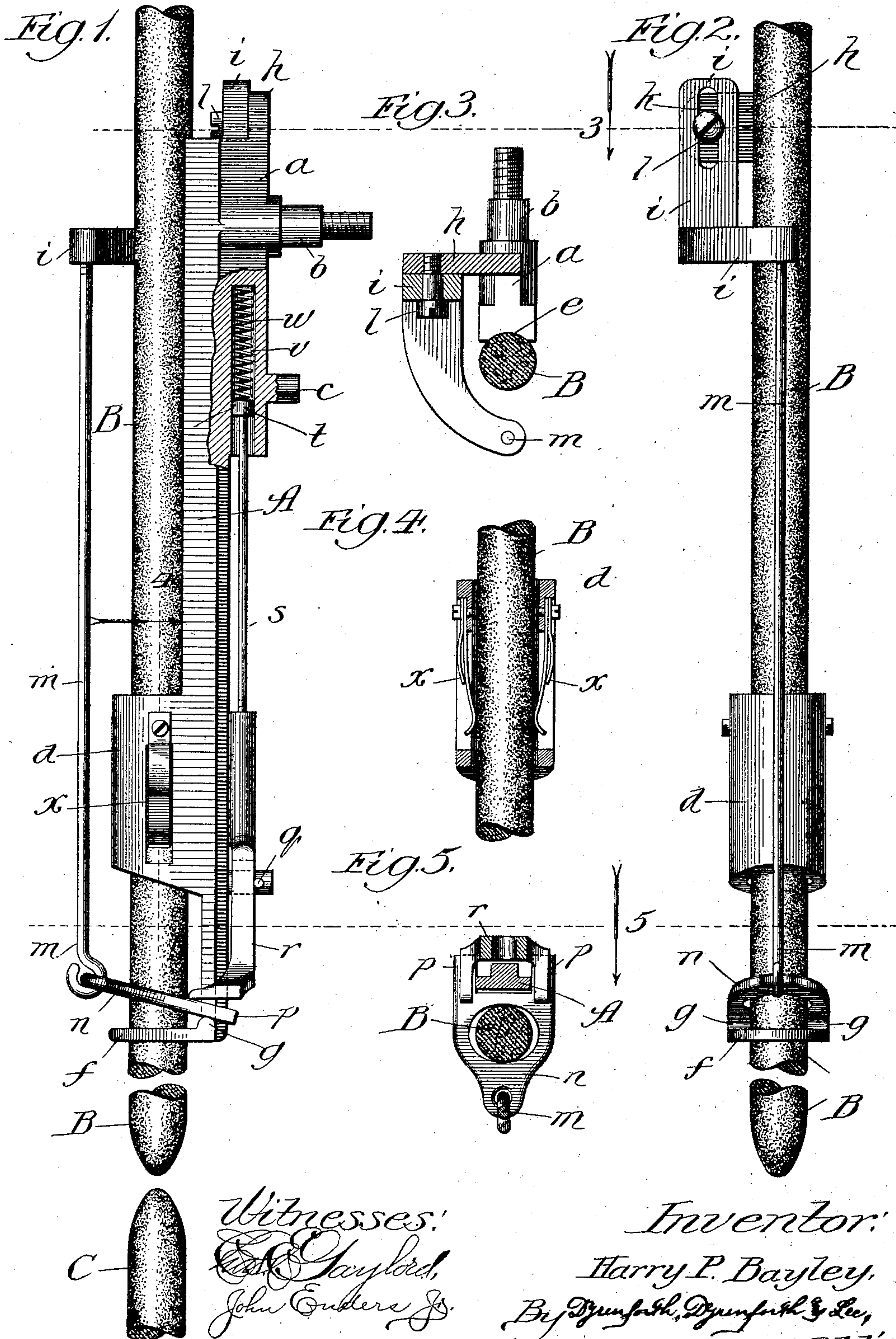


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CARBON HOLDER FOR ELECTRIC ARC LAMPS.

APPLICATION FILED JAN. 5, 1903.

NO MODEL.





# UNITED STATES PATENT OFFICE.

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## CARBON-HOLDER FOR ELECTRIC-ARC LAMPS.

SPECIFICATION forming part of Letters Patent No. 726,497, dated April 28, 1903.

Application filed January 5, 1903. Serial No. 137,868. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY P. BAYLEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Carbon-Holders for Electric-Arc Lamps, of which the following is a specification.

My invention relates to improvements in carbon-holders for electric-arc lamps.

My object is to provide such a carbon-holder of improved construction for use more especially in electric headlights, which will operate to maintain proper feeding of the carbon without danger of interruption under the trembling and jarring of parts during travel and which, furthermore, will enable the upper or gravitating carbon to be more readily inserted into operative position than has been the case with electric-headlight carbon-holders as heretofore provided.

To the above ends my invention consists in the general construction of my improved carbon-holder, as well as in details of construction and combination of parts, all as hereinafter set forth and claimed.

Referring to the drawings, Figure 1 is a broken view showing in side elevation my improved carbon-holder portion of an electric headlight with a part in section and the carbons in place; Fig. 2, a similar view of the front side of the carbon-holder; Fig. 3, a horizontal section taken on line 3 through Figs. 1 and 2; Fig. 4, a vertical section on line 4 in Fig. 1, and Fig. 5 a horizontal section on line 5 through Figs. 1 and 2.

A is a vertical bar forming the main body portion of an upper-carbon holder. The bar A is provided along its rear upper portion with a projecting boss *a*, carrying an attaching-bolt *b* and a short stud *c*. The carbon-holder is fastened in place in a headlight-casing (not shown) at the bolt *b*, the stud *c* entering a socket in the said casing to steady the holder against lateral play. On the forward side of the bar A is a sleeve portion *d*, and the bar from its upper end to the lower end of the sleeve portion presents a vertical concave carbon guide-face *e*. Projecting horizontally forward from the lower end of the bar A is a carbon-guiding ring *f*, and on

said ring at opposite sides of the bar A are shoulders *g*, with rounded tops presenting fulcrums. On the boss portion *a* of the holder is a laterally-projecting arm *h*, presenting a bearing-face for the vertically-sliding clutch-bracket *i*. The bracket *i* has a vertically-elongated slot *k*, through which passes a retaining guide-screw *l*, fastened in the arm *h*. The screw *l* serves to hold the clutch-bracket *i* in vertically-sliding contact with the arm *h*. Extending downward from the free end of the clutch-bracket *i* at the forward side of the holder is a clutch-rod *m*, pivotally connected at its lower end with a clutch *n*. The clutch *n* is in the form of a ring with a projection at the forward end perforated to engage the clutch-rod *m*, as shown, and provided at its opposite or rear side with backward-projecting lugs *p*, which rest upon the fulcrums *g*. Confined between the rear side of the bar A and a guide-pin *q* is a vertically-sliding clutch-foot *r*, bifurcated at its lower end to straddle the bar A and engage the clutch-ring *n* forward of the fulcrums *g*. The clutch-foot is upon the lower end of a rod *s*, having a head *t*, which slides in a socket *v* in the boss portion *a*. In the socket *v* is a spring *w*, exerting pressure upon the head *t* to press the clutch-foot yieldingly downward against the clutch-ring *n*. The vertically-sliding clutch-bracket *i* may rest in a common manner upon the top lever (not shown) of an electromagnetic device for controlling the feed of the upper carbon. The upper carbon B may be placed in position by simply passing it into the headlight-casing and inserting it through the sleeve *d*, clutch *n*, and guide-ring *f* to rest upon the lower carbon C. In opposite sides of the guide-sleeve *d* are contact-springs *x*, which press gently against the carbon B in a manner to maintain contact therewith without interfering with the carbons sliding by gravity when released by the clutch *n*. The contact-springs *x* bear at all times against the surface of the carbon B, and thus prevent breaking of the circuit and consequent sparking when the carbon is fed downward or is shaken by movement of its support. When the feed-controlling electromagnetic device lowers its lever, the clutch-bracket *i* and rod *m* drop and swing the clutch



*n* downward upon the fulcrum *g*. This downward movement of the clutch causes it to release the carbon *B* and permit it to slide downwardly in its guides. In the subsequent rise of the top lever of the controlling electromagnetic device the bracket *i* is raised on the guide-screw *l* and swings the clutch *n* upward to engage the carbon and hold it firmly in the desired position with relation to the lower carbon *C*.

My improved carbon-holder permits the carbon to be inserted in position without removing the holder or any part of it from the head-light-casing. The carbon when in place is held by the sleeve *d*, concave guide *e*, and ring *f* in vertical position, and the contact-spring *x*, while tending to neutralize trembling of the carbon during travel, prevents all danger of sparking, as before stated. The moving parts of the holder, while strong and durable, are very sensitive and respond quickly to the movement of the controlling electromagnetic device to feed the carbon.

While I prefer to construct my improvements throughout as shown and described, they may be variously modified in the matter of details without departing from the spirit of my invention as defined by the claims.

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

1. In a carbon-holder for electric-arc lamps, the combination of a stationary bar having a

vertical concave carbon-guiding face, a carbon-guiding sleeve on said bar, a carbon-engaging contact-spring in said sleeve, and a carbon-guiding ring at the lower end of said bar, substantially as set forth.

2. In a carbon-holder for electric-arc lamps, the combination of a vertical bar, means for fastening said bar in place in the lamp structure, a carbon-guiding surface on said bar, a carbon-guiding ring at the lower end of said bar, shoulders upon said ring, a vertically-sliding clutch-bracket fastened to said bar, a clutch-rod on said bracket, and a clutch-ring pivotally connected with the clutch-rod and fulcrumed on the said shoulders, substantially as described.

3. In a carbon-holder for electric-arc lamps, the combination of a vertical bar, means for fastening said bar in place in the lamp structure, a carbon-guiding surface on said bar, a carbon-guiding ring at the lower end of said bar, shoulders upon said ring, a vertically-sliding clutch-bracket fastened to said bar, a clutch-rod on said bracket, a clutch-ring pivotally connected with the clutch-rod and fulcrumed on the said shoulders, and a spring-pressed clutch-foot resting upon said clutch-ring, substantially as described.

HARRY P. BAYLEY.

In presence of—

W. B. SCARBOROUGH,  
M. T. WHITAKER.