

(No Model.)

H. E. CHAPMAN:
CARBON HOLDER FOR ELECTRIC ARC LAMPS.

No. 462,662.

Patented Nov. 3, 1891.

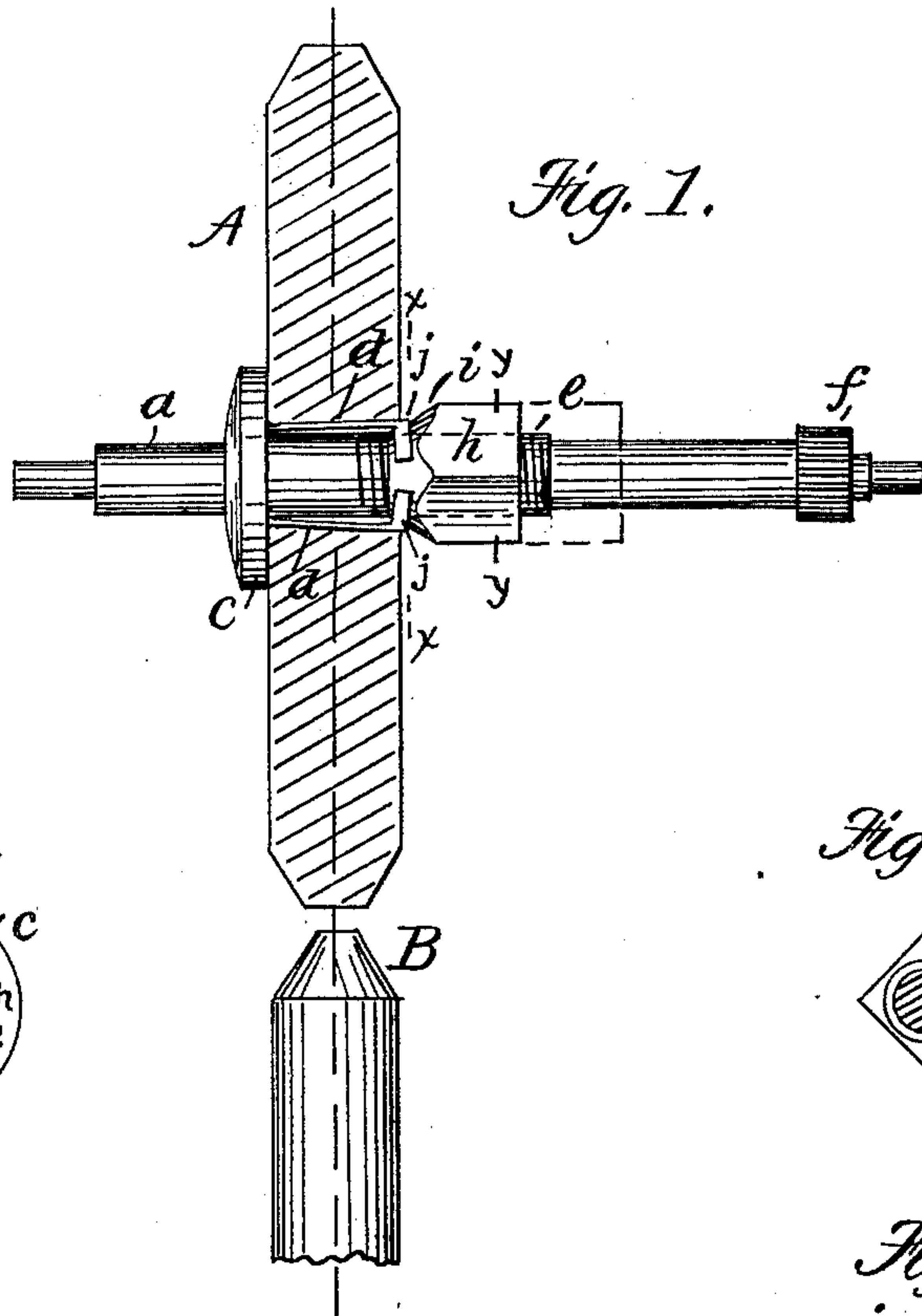


Fig. 2.

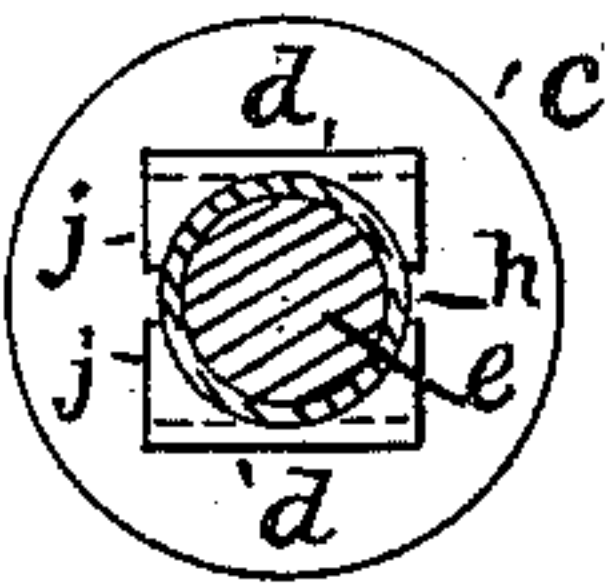


Fig. 3.



Fig. 4.

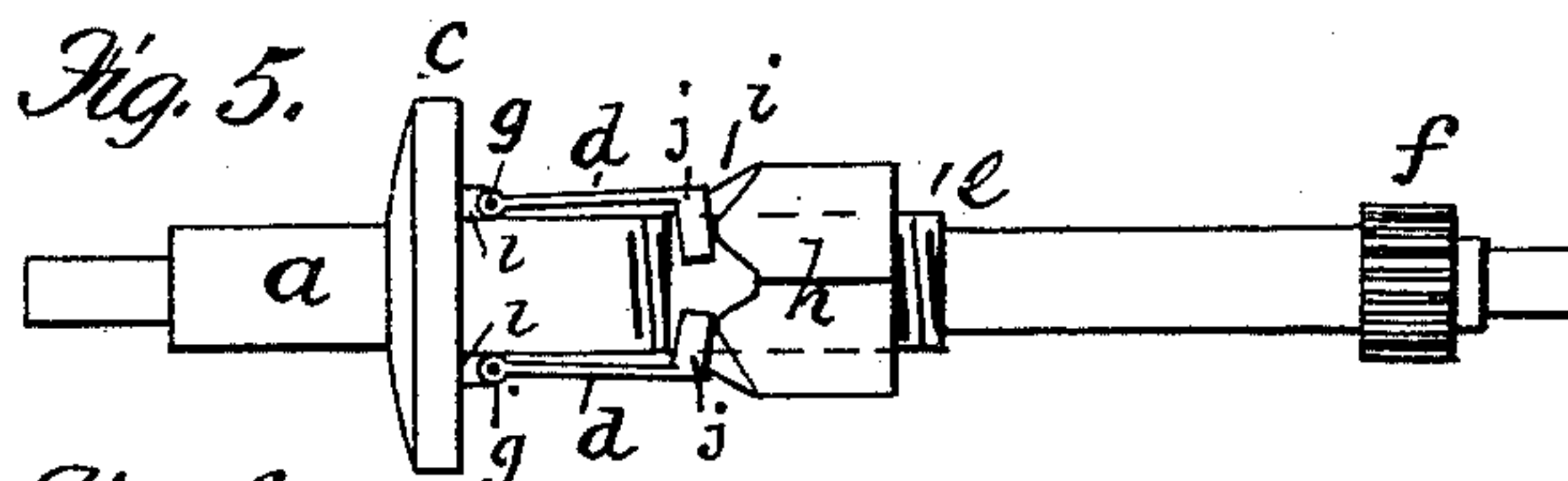
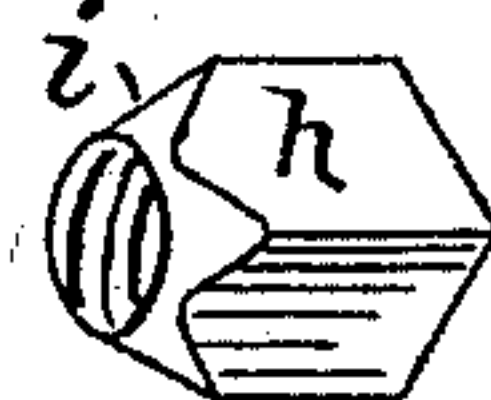
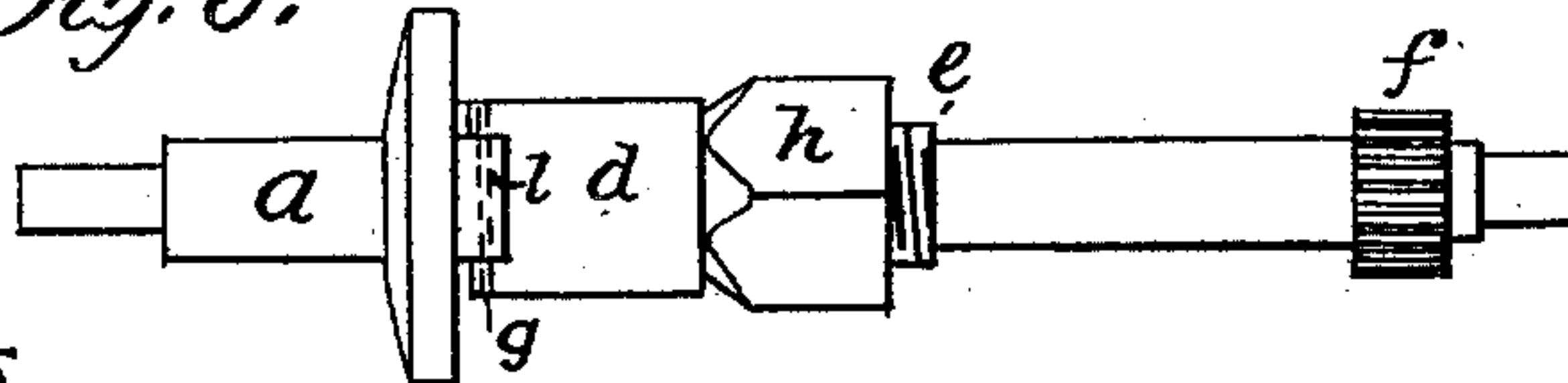


Fig. 6.



Witnesses.

M. A. Pierce.

U. M. Berthold.

Inventor.

Henry E. Chapman
by his attorney
Grosvenor & Pierce

UNITED STATES PATENT OFFICE.

HENRY E. CHAPMAN, OF MELROSE HIGHLANDS, ASSIGNOR TO THE RUSSELL ELECTRIC COMPANY, OF BOSTON, MASSACHUSETTS.

CARBON-HOLDER FOR ELECTRIC-ARC LAMPS.

SPECIFICATION forming part of Letters Patent No. 462,662, dated November 3, 1891.

Application filed May 1, 1891. Serial No. 391,173. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. CHAPMAN, residing at Melrose Highlands, in the county of Middlesex and State of Massachusetts, have
5 invented certain Improvements in Carbon-Holders for Electric Lamps, of which the following is a specification.

This invention relates to carbon-holders for electric lamps and of the variety of arc lamps
10 patented to E. C. Russell, July 15, 1890, No. 432,284, in which a rotative disk carbon constitutes the positive electrode and a pencil carbon the negative electrode.

My invention has reference to a holder for
15 the disk carbon; and its object is to provide means whereby the carbon can be readily attached thereto and detached therefrom, and by which it will be centrally adjusted upon the holder and at right angles to the axis thereof.
20 In arc lamps of this description it is necessary that the disk carbon be maintained centrally of its thickness with the axis of the pencil carbon, so that when in operation the carbon of both electrodes will be evenly consumed
25 and a perfect arc maintained between the two until they are used up.

My invention provides positive means for insuring this result, and for holding the disk carbon securely while it is being rotated by
30 the holder.

In the drawings forming a part of this specification, Figure 1 is a side view of a disk carbon holder embodying my invention. Fig. 2
35 is a cross-section on line *xx* of Fig. 1. Fig. 3 is a cross-section on line *yy* of Fig. 1, and Fig. 4 is a perspective view of the wedge-nut detached. Figs. 5 and 6 are views showing slight modifications in the construction of the device.

40 *a* is a spindle detachably secured and journaled at both ends in bearings to the lower end of the carbon-rod, which is operated by the usual feeding and regulating magnets and mechanism in any suitable manner, having
45 upon one end a pinion *f*, which meshes with a rack, substantially as claimed in the above-mentioned patent. The central portion of the spindle *a* has a screw-thread *e* cut upon it, between which and the pinion *f* the spindle
50 is reduced in diameter. Upon the screw-

thread *e* is a nut *h*, having one end beveled, as shown, to act as a wedge. *c* is a collar having two separated spring-arms *d d* projecting from one side thereof, their ends *j j* turned inwardly, as shown, to encircle the
55 screw *e*. When the nut *h* is in the position of the dotted lines, the arms *d d* are parallel with the axis of the spindle *a*, and when in this position the disk carbon *A* is passed over the pinion *f* onto the arms *d d*, and against
60 the face of the collar *c* the nut *h* is screwed toward the same, its wedge end entering between the ends *j j* of the arms *d d*, separating and expanding them equally. By this means
65 the disk carbon is secured and centrally adjusted upon the holder and at right angles to its axis.

The collar *c*, with the arms *d d*, is made separate from the spindle *a*, and then permanently secured thereon by brazing or other-
70 wise to form an integral part thereof, so that the center line of the thickness of the disk carbon will always be in line with the axis of the pencil carbon *B*. When no positive means are provided for securing this result, much
75 trouble is occasioned by the unequal consumption of the two carbons.

The collar *c* is of sufficient diameter to form a solid abutment at a right angle to the axis of the spindle, against which the disk carbon
80 is held when the nut *h* is screwed up.

Figs. 5 and 6 show a side and top view, respectively, of a modified way of arranging the arms *d d* in connection with the collar *c*. Lugs *l l* are cast upon the side of the collar
85 and the arms are hinged to them, as shown. By this construction the arms are wedged apart as freely and equally by the nut *h* as in the form shown in the previous figures, and when the nut *h* is retracted the arms fall away
90 from the disk carbon by their own gravity.

I may use other ways of attaching the arms *d d* to the collar *c* without departing from the spirit of my invention.

I claim—

The herein described and shown means for holding the disk carbon of an electric lamp, consisting of a spindle having journals at both ends, having a pinion at one end, and provided with a screw-threaded portion at about its cen-
95 100

ter, a collar permanently secured to the spindle
beyond the screw-threaded portion with its in-
ner face at right angles to the spindle, arms
projecting from the inner face of the collar
5 toward the threaded portion of the spindle,
passing through the center of the disk carbon,
and having their ends turned inward so as to
encircle the spindle, and a nut mounted on
the screw-threaded portion of the spindle and
10 having its inner end beveled and adapted to

enter between the ends of the said arms, as
specified.

In testimony whereof I have signed my
name to this specification, in the presence of
two subscribing witnesses, this 30th day of 15
April, 1891.

HENRY E. CHAPMAN.

Witnesses:

GEO. WILLIS PIERCE,
E. C. RUSSELL.