

(No Model.)

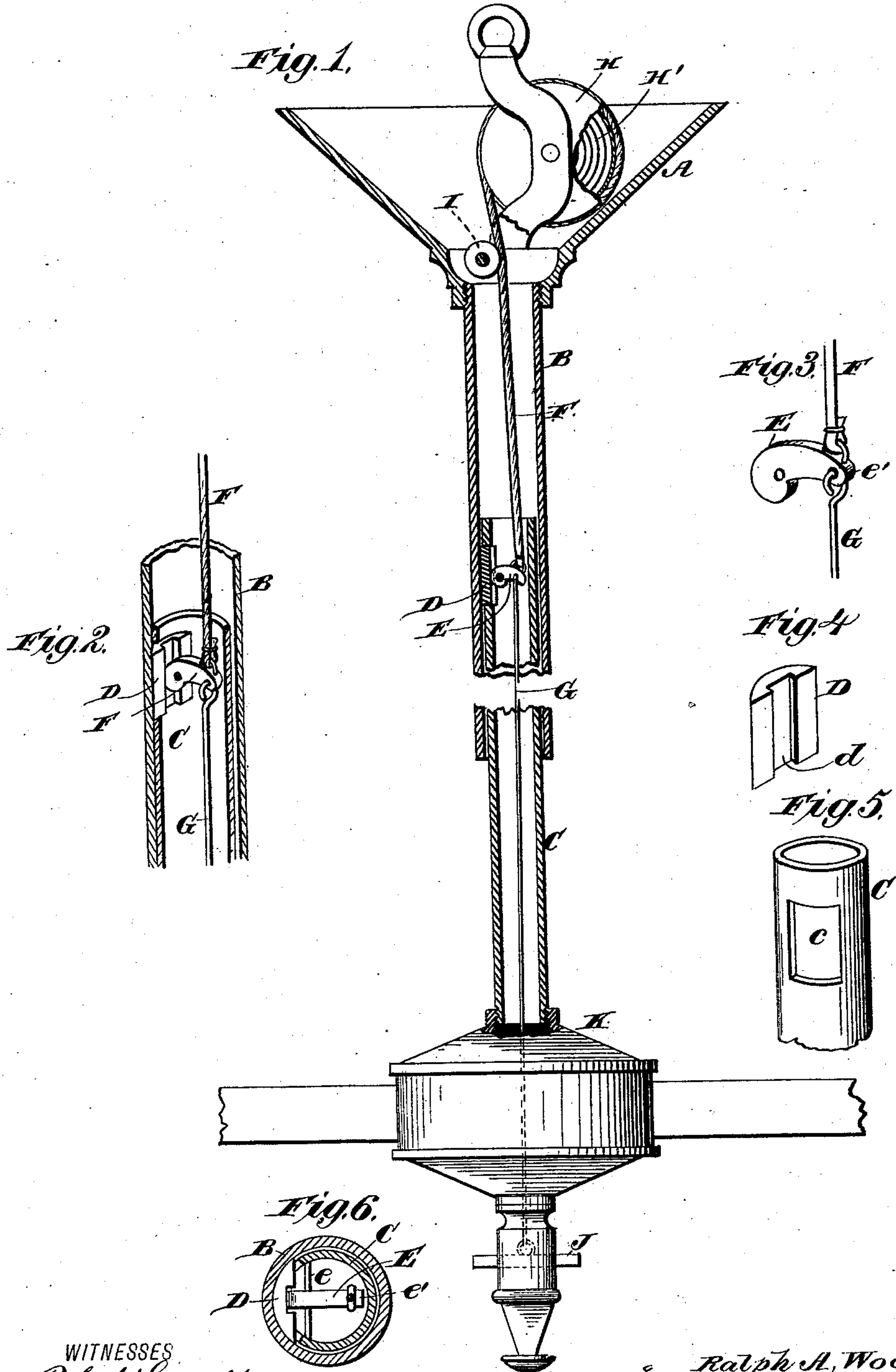
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F. H. CHAPMAN & R. A. WOODING.

EXTENSION TUBE FOR LAMPS AND CHANDELIERS.

No. 301,861.

Patented July 15, 1884.



WITNESSES  
*Robert Everett*  
*John Connolly*

INVENTORS,  
*Ralph A. Wooding*  
*Frank H. Chapman,*  
By *Wm H Balcock* Attorney

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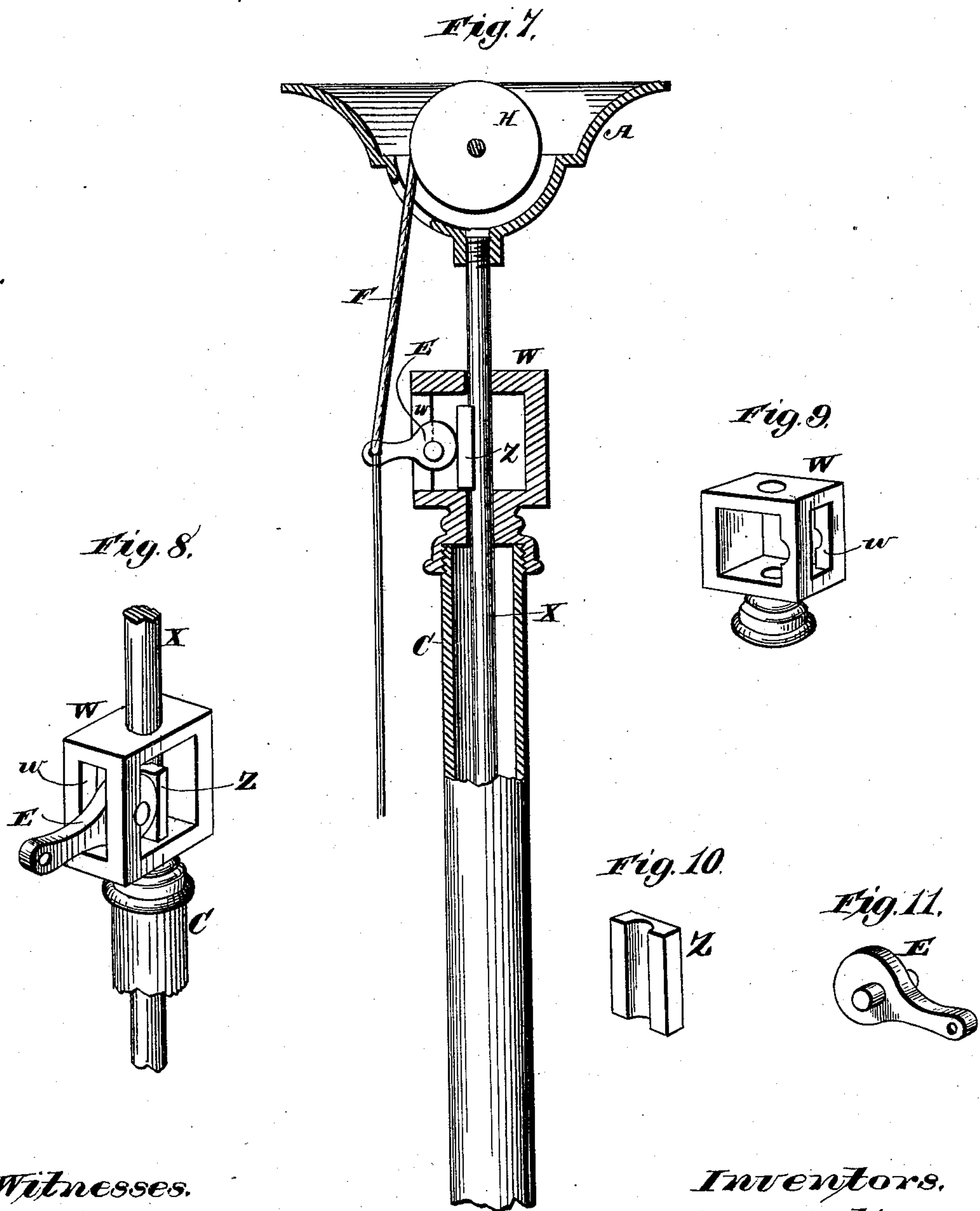
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Atty.



# UNITED STATES PATENT OFFICE.

FRANK H. CHAPMAN, OF MERIDEN, AND RALPH A. WOODING, OF KENSINGTON, CONNECTICUT, ASSIGNORS TO THE CHARLES PARKER COMPANY, OF MERIDEN, CONNECTICUT.

## EXTENSION-TUBE FOR LAMPS AND CHANDELIERS.

SPECIFICATION forming part of Letters Patent No. 301,861, dated July 15, 1884.

Application filed June 29, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, FRANK H. CHAPMAN, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, and RALPH A. WOODING, a citizen of the United States, residing at Kensington, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Extension-Tubes for Lamps and Chandeliers; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to devices for clamping together the telescopic tubes of the extension-fixture of a lamp or chandelier, in order that the latter may be held at any desired elevation, and to devices for releasing the said tubes from this clamping, so that they may be moved up and down.

The said invention consists in a cam pivoted to one of said tubes and bearing against the other, in combination with means for turning said cam in one direction, so as to cause it to operate, as stated.

It also consists in the combination of said cam and its actuating devices with a shoe, which is forced by said cam through an opening in the inner tube against the inner side of the outer tube, for the purpose of clamping said tubes, as stated.

It also consists in the combination, with said cam and tubes, of suitable releasing devices.

It also consists in the combination, with said tubes and cam, of a spring-drum in the canopy, a cord passing thence to the cam to operate the latter, and a guide-pulley in the bottom of the canopy, whereby the said cord is directed to the center of the inner tube, all as hereinafter set forth.

Heretofore tubes of this sort have frequently been clamped together by means of wedges operating against them, either mediately or immediately, or by other sliding pieces, which operate against inclines and cause certain parts to bind against the tubes. In such con-

structions, however, there is always some risk of dislodging the loose wedges or other loose pieces, and in case the cord or other attachment thereof breaks this is very likely to happen. Such pieces, when thus displaced, are easily lost, and the work of replacing them in their former positions is inconvenient and tedious. Moreover, they wear the tubes needlessly by sliding up and down in contact therewith. There are also other disadvantages which need not here be enlarged upon. For these defects our cam hereinafter described is an effectual remedy.

In the accompanying drawings, Figure 1 represents a longitudinal vertical section through the canopy and extension-tubes of an extension chandelier-fixture provided with my improved clamping devices. Fig. 2 represents a detail interior perspective view of the latter and parts of the tubes, showing the cam and shoe in operation. Fig. 3 represents a detail view of the cam and its immediate attachments. Fig. 4 represents an exterior detail view of the upper end of the inner tube. Fig. 5 represents a detail perspective view of the shoe, and Fig. 6 represents a transverse section taken through the tubes and inclosed devices just above the cam. Figs. 7, 8, 9, 10, and 11 represent modifications of my invention.

A designates the canopy of an extension-fixture; B, the fixed outer tube, secured as usual thereto; C, the inner tube, movable telescopically within said outer tube, and provided near its upper end with an opening, *c*; and D, a shoe which fits said opening, but has free motion inward and outward in the same. The outer face of said shoe conforms to the inner face of outer tube, B, and the flat inner face of said shoe is provided with a vertical guideway or channel, *d*, which receives the operative part of a cam, E, pivoted on gudgeons *e* within said inner tube. To the opposite part or tail *e'* of said cam are attached an upwardly-extending cord or chain, F, and a downwardly-extending cord or rod, G, both being inclosed within the extension-tubes aforesaid. The said cord F passes upward to a drum, H, which turns in bearings on said canopy, and provided with an inclosed spring, H', which tends to rotate said drum so as to draw on said cord and cause said cam to turn



against said shoe and force the latter against the outer tube, thereby clamping said tubes at any desired point or degree of extension.

A pulley, I, turns in bearings in the lower part of canopy A, and guides said cord into the center of the tubes. A guide-pulley somewhat similarly arranged has been used with external cords or chains, but not with a cord or chain extending down through the tube. The drum H may be eccentrically arranged, as shown, or it may be centrally arranged with respect to the canopy, thus bringing its axis over the center of the tubes. In this latter position the guide-pulley or some equivalent device would obviously be necessary.

The cord or rod G is provided at its lower end with a movable tip or handle, J, arranged below the center box, K, through which said cord or rod passes. By pulling on this tip or handle the cam E is turned so as to release shoe D, and there is then no obstacle to moving the inner tube up or down until the lights are at the desired elevation. Said tip or handle is then released, and the spring H' and drum H again automatically draw through cord F on cam E, and cause it to act, as before, for clamping said tubes. As the cam E is journaled securely in said inner tube, it is not liable to displacement. It does not move up and down within the tube, wearing the same by friction. It does not require any special construction of either tube, except the making or leaving of opening c. It may be used without the shoe by slightly enlarging it; but the shoe shields the outer tube from scratching, and affords a wider, even, and more secure clamping-surface. Of course the shape of both shoe and cam may be considerably varied, and it may be operated for clamping by a downward draft and released by an upward draft, thus reversing the arrangement shown. It may also be forced into clamping position by a spring arranged in the tube below it, and bearing upward against the tail e'.

Divers other changes and modifications of the various devices hereinbefore described may be made without departing from the spirit of my invention. The improvements are applicable to lamp-fixtures as well as chandelier-fixtures.

In Figs. 7 and 8 we have shown the locking-cam E pivoted in an opening, w, of a box, W, which is secured upon the upper end of the movable tube C. In this instance said tube slides over a rod, X, which is secured to canopy A, instead of sliding within a tube, B, secured to said canopy. Said cam acts against the outside of a shoe, Z, inclosed within said box. This shoe is in nature and function the same as shoe D, already described; but its form is varied to fit the outside of a rod instead of the inside of a tube. Fig. 8 is a vertical sectional view of this modification; Fig. 9, a perspective detail view of the rod, box, cam, and shoe; Fig. 10, a detail view of the box; Fig. 11, a detail view of the shoe, and

Fig. 12 a detail view of the cam. The latter is shown as journaled on a rod which extends transversely through opening w; but gudgeons on said cam may be used instead. The remaining devices shown in Fig. 7 are lettered like the corresponding parts in the previous figures, and the operation is substantially the same.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The fixed upper part and the movable lower part of an extension lamp or chandelier fixture, in combination with a cam, E, pivoted to said lower part, a movable shoe arranged to be forced by said cam against said fixed part, and a suspension spring and cord attached to the tail of said cam and operating to automatically cause the latter to clamp the movable and immovable parts of the fixture together, substantially as set forth.

2. The stationary upper tube, B, and the movable inner tube, C, sliding within the former, and provided with an opening, c, in combination with a shoe, D, fitting in said opening, but adapted to be forced outward against tube B, and a cam, E, pivoted to the inside of said inner tube, and having a suspension-cord attached to its tail e', whereby the said cam may be turned to force said shoe against said outer tube, for the purpose set forth.

3. The movable shoe D, having a vertical channel or groove, d, in combination with inner tube, C, having an opening, c, which is adapted to receive said shoe, and a pivoted cam, E, which is arranged to turn against said shoe and clamp said tubes B C together, the said cam fitting into said channel, substantially as set forth.

4. The stationary upper part and the movable lower part of a lamp-fixture, in combination with a cam pivoted to one of said parts and arranged to clamp the same to the other part, a suspension-spring located in the canopy, and a cord connected to said spring and operating on said cam independently of the weight of said lower part to cause it to clamp the said parts together, substantially as set forth.

5. A movable lower tube and a stationary upper tube for a lamp or chandelier fixture, in combination with a cam pivoted within said lower tube and arranged to clamp the same to the upper tube, and a suspension cord and spring operating on said cam, the said cord extending down within said tubes and provided with a guide-pulley attached to the canopy, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANK H. CHAPMAN.  
RALPH A. WOODING.

Witnesses:

DEXTER W. PARKER,  
RALPH A. PALMER.