No. 752,212. PATENTED FEB. 16, 1904.

B. A. ESTEP.

SPRING EXTENSION SUPPORT.

APPLICATION FILED APR. 2, 1900.

NO MODEL.

Fig. 3

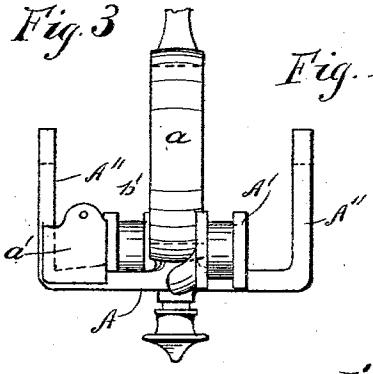


Fig. 1

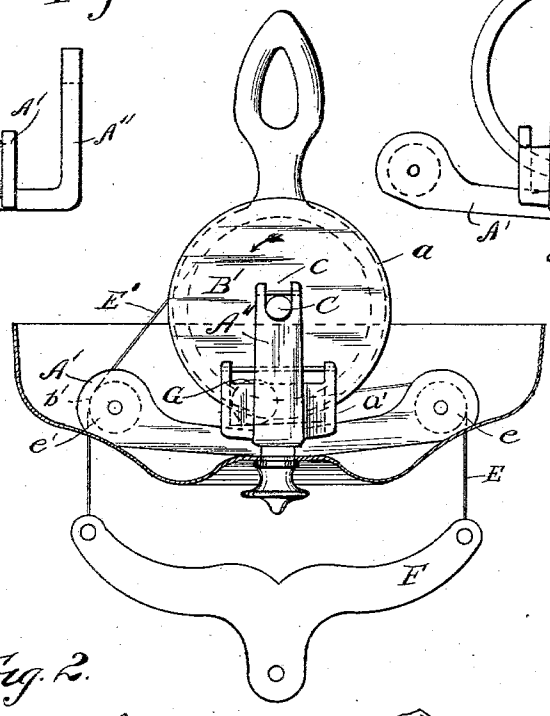


Fig. 4

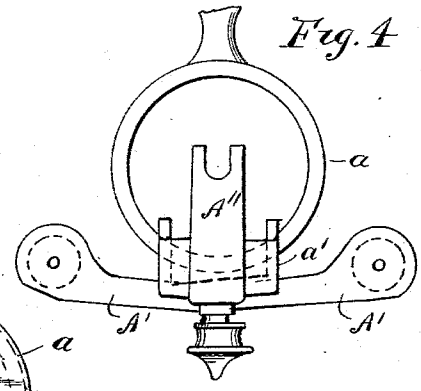
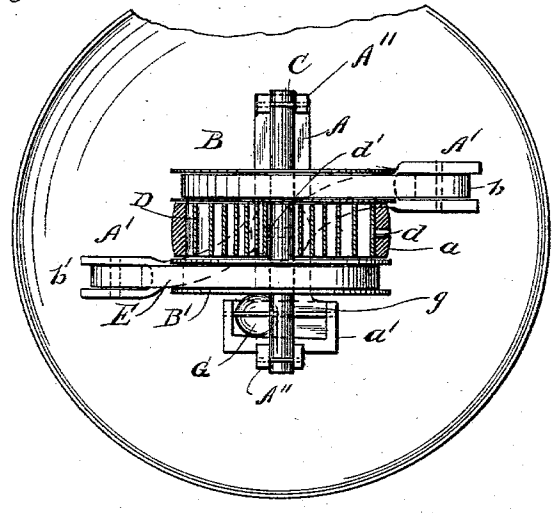


Fig. 2.



Witnesses:

S. S. Noble

Annie Phillips.

Inventor,

Blair A. Estep

by Clarence Hamilton

Att'y.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 752,212. Patented February 16, 1904.

UNITED STATES PATENT OFFICE.

BLAIR A. ESTEP, OF CHICAGO, ILLINOIS, ASSIGNOR TO SEARCH LIGHT MANUFACTURING COMPANY, A CORPORATION OF ILLINOIS.

SPRING-EXTENSION SUPPORT.

SPECIFICATION forming part of Letters Patent No. 752,212, dated February 16, 1904.

Application filed April 2, 1900. Serial No. 11,039. (No model.)

To all whom it may concern:

Be it known that I, BLAIR A. ESTEP, a citizen of the United States of America, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Spring-Extension Supports, of which the following is a specification.

My invention relates to spring-extension supports for lamps, bird-cages, and the like by which they may be placed at any desired height and secured in that position.

The special object thereof is to provide an adjustable means for supending lamps in which a gauze "mantle" is used and which by being heated to incandescence produces the light. These mantles are of very delicate and fragile construction, and the jar occasioned by the use of ratchets or other positive means of controlling the suspension device is very destructive thereto. It is therefore necessary to provide a smooth-working mechanism and one which shall operate without shock or jar.

My improvements consist in the form and construction of the several parts and in their relation to each other, all of which are more particularly hereinafter set out, and which are illustrated in the accompanying drawings, in which—

Figure 1 shows a side view of my invention. Fig. 2 is a top view of the same, the spring-casing being in horizontal section. Fig. 3 is an end view of the spring-case and framing, and Fig. 4 is a side view of the same.

Referring further to the drawings, in which like letters of reference denote like parts throughout, Figs. 3 and 4 show, respectively, end and side views of the main framing of my device. This consists of a base A, the cross-arms A′, the vertical posts A″, the spring-case *a*, and the ball-race *a′*. The said framing may be made in several parts secured together; but I prefer to construct it in an integrally-formed casting of appropriate material, such as brass or malleable iron. Sheaves B and B′ are mounted and securely fastened on the shaft C, which is journaled in the notches *c* of the uprights A″. The said uprights are formed or attached to the base or joist A and perpendicular thereto. The shaft C passes centrally through the spring-casing *a*. A coiled spring D is inclosed within the casing, and one end thereof is secured thereto by the rivet *d* or other suitable means, and the other or internal end of the spring is secured to the shaft C, as shown at *d′*. Tapes (preferably of metal) E and E′ are attached at one end to the sheaves B and B′ and are passed over pulleys *e* and *e′*, provided therefor in the ends of the cross-arms A′, the free ends of the said ribbons being then attached to the extremities of the yoke F. In order that the suspension-tapes may be kept parallel and may draw uniformly upon the yoke F, the pulleys *e* and *e′* are extended on the arms A′ to a distance equal to the spread of the yoke, and that the tapes may not bind in the sheaves by being fed into or off the same at an angle thereto the said arms are offset from the center of the structure, so that the pulleys when properly mounted thereon are in alinement with the said sheaves. The tapes E and E′ are wound upon the supporting-sheaves in the opposite direction to the convolutions of the spring D when the latter is unwound. Drawing the tapes off from the sheaves coils the spring, which then tends to wind up the tapes. The sheave B′ on the side of the apparatus next the controlling-brake should be set very close to the spring-case D, which thus becomes a support therefor against the action of the brake.

To control the action of the device and to hold the tape-carrying sheaves in any desired position, I provide a brake which comprises a case *a′* and a spherical pawl G, carried therein. The box or casing, which is mounted on the support or girder A, has a bottom which slopes from the point designated as *g* toward the opposite side and opposite end, at which latter point the width thereof is decreased. The tendency of this construction when the ball G is placed therein is to impel the same to take the normal position shown in the drawings.

The strength of the spring in the device shown should be greater than the weight which is to be attached to the yoke and supported thereby. In the absence of the ball G or a similar device for controlling the rotary

action of the sheaves the same would be rotated by the action of the spring D, so as to keep the yoke in its highest position. By a downward motion of the yoke the sheaves are rotated to wind the spring and to free the ball G. The latter is carried by friction upon the side of the sheave B′ to the broader and rear end of the ball-race *a*′. This ball-race being higher at the inner portion of the rear end tends to keep the spherical pawl out of contact with the sheave, and a slight inclination of the apparatus in the direction of the front of the ball-race will keep the said pawl at the rear end thereof. In this position the sheaves are permitted to revolve, so as to allow the yoke to be lowered or raised, as desired. The yoke being moved in the other direction, however, or toward the rear of the ball-race the ball G is permitted to roll into the narrow space at the front end of the ball-race, into which position it is crowded by the friction of the revolving sheave B′, which is thus clamped against the stationary spring-case and in turn is stopped thereby. This result is attained when the apparatus is hanging in the vertical position and is brought about by the inclination heretofore described in the base of the ball-race *a*′, which causes the friction-ball G at all times when the apparatus is in its normal position of suspension to assume a position in the front or narrow end of the ball-race.

What I claim, and desire to secure by Letters Patent, is the following:

1. The combination with the shaft, the spring-casing, and spring mounted therein, of sheaves arranged in said shaft on opposite sides of said casing, and a braking means for sliding one of said sheaves into engagement with said casing.

2. In combination with the shaft and casing having a spring mounted therein, sheaves arranged on opposite sides of said casing, one being slidably mounted, a ball arranged adjacent said movable sheave, and means whereby said ball will force said sheave into engagement with said casing.

3. In combination with the casing, the spring-actuated shaft, and the sheaves, one of which is slidably mounted, a case arranged on one side of said slidable sheave, a ball arranged in said case, and means whereby said ball normally forces said sheave into engagement with said casing.

Signed at Chicago, Illinois, this 29th day of March, 1900.

BLAIR A. ESTEP.

Witnesses:
M. H. CAZIER,
ANNIE PHILLIPS.