F. W. LONG.

Bird-Cage Support.

No. 213,433. Patented Mar. 18, 1879.

Fig. 2

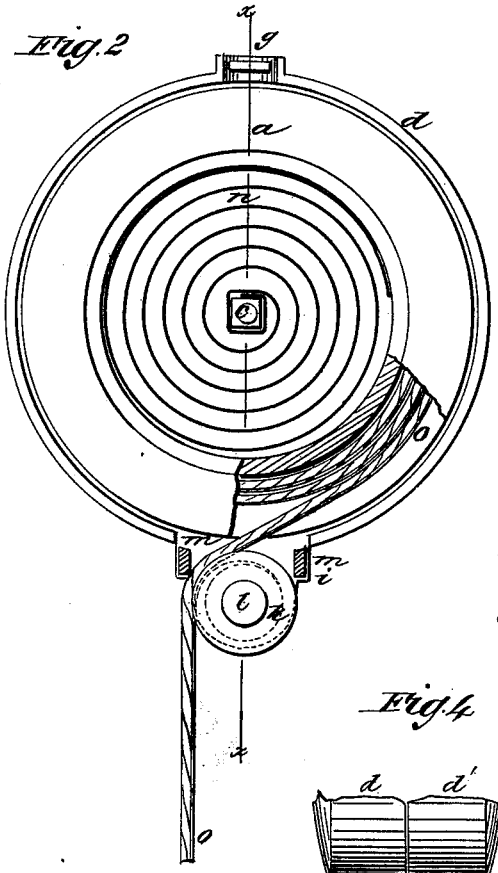


Fig. 1

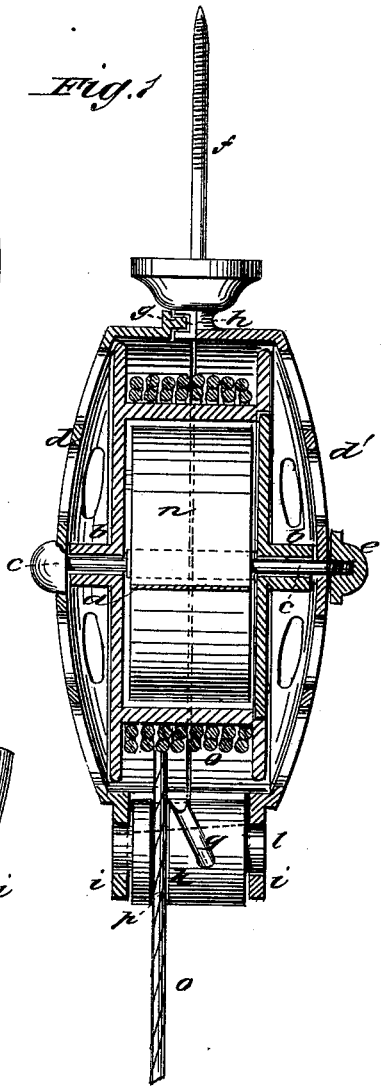


Fig. 4

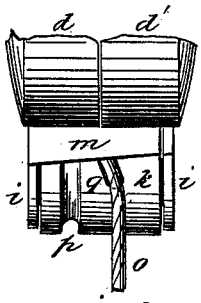
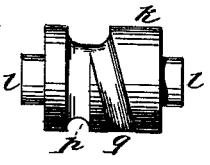


Fig. 3.



WITNESSES:

Francis McArdle,

C. Sedgwick

INVENTOR:

F. W. Long

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANCIS W. LONG, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN BIRD-CAGE SUPPORTS.

Specification forming part of Letters Patent No. **213,433**, dated March 18, 1879; application filed August 20, 1878.

To all whom it may concern:

Be it known that I, FRANCIS W. LONG, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Bird-Cage Support, of which the following is a specification:

The object of my invention is to furnish a spring-hanger for bird-cages which will hold the cage at any height and permit it to be drawn down.

My invention consists in mounting a spring-drum, on which a cord is wound, in a two-part case, and in journaling a grooved roller between the flanges formed on the lower part of the said case, so that the cord to which the cage is attached may be held at any desired point by the grooved roller and the lips which project from the case on each side of the said roller.

In the accompanying drawings, Figure 1 is a vertical section of my spring-support. Fig. 2 is a side view with one side of the case removed. Fig. 3 is an elevation of the cam-roller, and Fig. 4 shows the cord as held by the roller.

Similar letters of reference indicate corresponding parts.

a is a hollow drum or reel, formed with hubs *b*, and mounted on an arbor, *c*, in the two-part case *d d'*.

I prefer to make the drum *a* of wood, and the case *d d'* of metal, in open-work on the faces, to render it light and more or less ornamental. The case is circular, and the parts *d d'* are held together by a nut, *e*, that screws upon the projecting end of arbor *c*, the other end of said arbor being cast into or secured to the other part of the case.

One side of drum *a* is made removable, as shown, to give access to the interior of the drum. *f* is a screw, cast with the part *d'*, and serving as a means of attaching the support to a ceiling or at the top of a window. The part *d* is formed with a lug, *g*, that enters a slot or mortise, *h*, in the part *d'*, and acts to retain the parts *d d'* in position.

At the side opposite to screw *f*—that is, the under side of the case—the parts *d* and *d'* are each formed with a flange, *i*, that support the roller *k*, the hubs *l* of which enter holes in the flanges *i*, so that said roller may turn therein.

The projecting side of *d* is removed above the roller *k*, and the part *d'* is formed with projecting lips *m*, which come at each side of the roller *k* and contiguous thereto.

n is a spring, similar to a clock-spring, upon the arbor *c* and within the drum *a*. One end of spring *n* is secured to arbor *c*, and the other to the drum *a*.

o is a cord wound upon the drum *a*. The roller *k* has an annular groove, *p*, cut in its surface, to permit the passage of the cord *o* between the roller *k* and one of the lips *m*. The roller *k* has also cut in its surface an inclined groove, *g*, running from the groove *p*, and terminating upon the surface of *k*—that is to say, the bottom of groove *g* is eccentric to the axis of *k*.

When the cord *o* is drawn off the drum *a* it winds the spring *n*, which will rewind the cord when it is released. To hold the cord at any point to which it may be drawn out, it is caused to take the groove *g*, which carries the cord to the surface of roller *k* until it binds against the lip *m*, and is held firmly.

r is a thimble upon the cord *o*, and *s* is a hook that is screwed into the lower end of thimble *r*. The cord enters the top of *r*, and the loose end comes out at one side, and by turning hook *s* the inner end of the same is caused to bind upon the cord *o*, and the thimble prevented from slipping upon the cord.

The cage is hung on the hooks *s*, and the weight thereof will draw the cord off the drum *a* until there is tension enough on the spring to sustain the cage. If it then hangs too low, the thimble *r* is to be slipped up until the cage is balanced at the right place. Then the cage may be drawn down and held by the roller *k*, as described, at any point; or the roller may at all times be depended upon for holding the cage, and the spring kept under tension.

It is evident that other forms of cam-rollers may be substituted for the one shown. I do not limit myself in this particular, nor to the exact details of construction set forth, as such details may be varied without departing from my invention.

A flat band might be substituted for the cord, and operate in the same manner in connection with a cam device adapted to it.

Having described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the case *d d'*, the drum or reel *a*, the spring *n*, the cord *o*, the grooved roller *k*, and the projecting lips *m*, substantially as described.

FRANCIS W. LONG.

Witnesses:
URIAH A. FENTON,
JOHN S. PIEN.