

(No Model.)

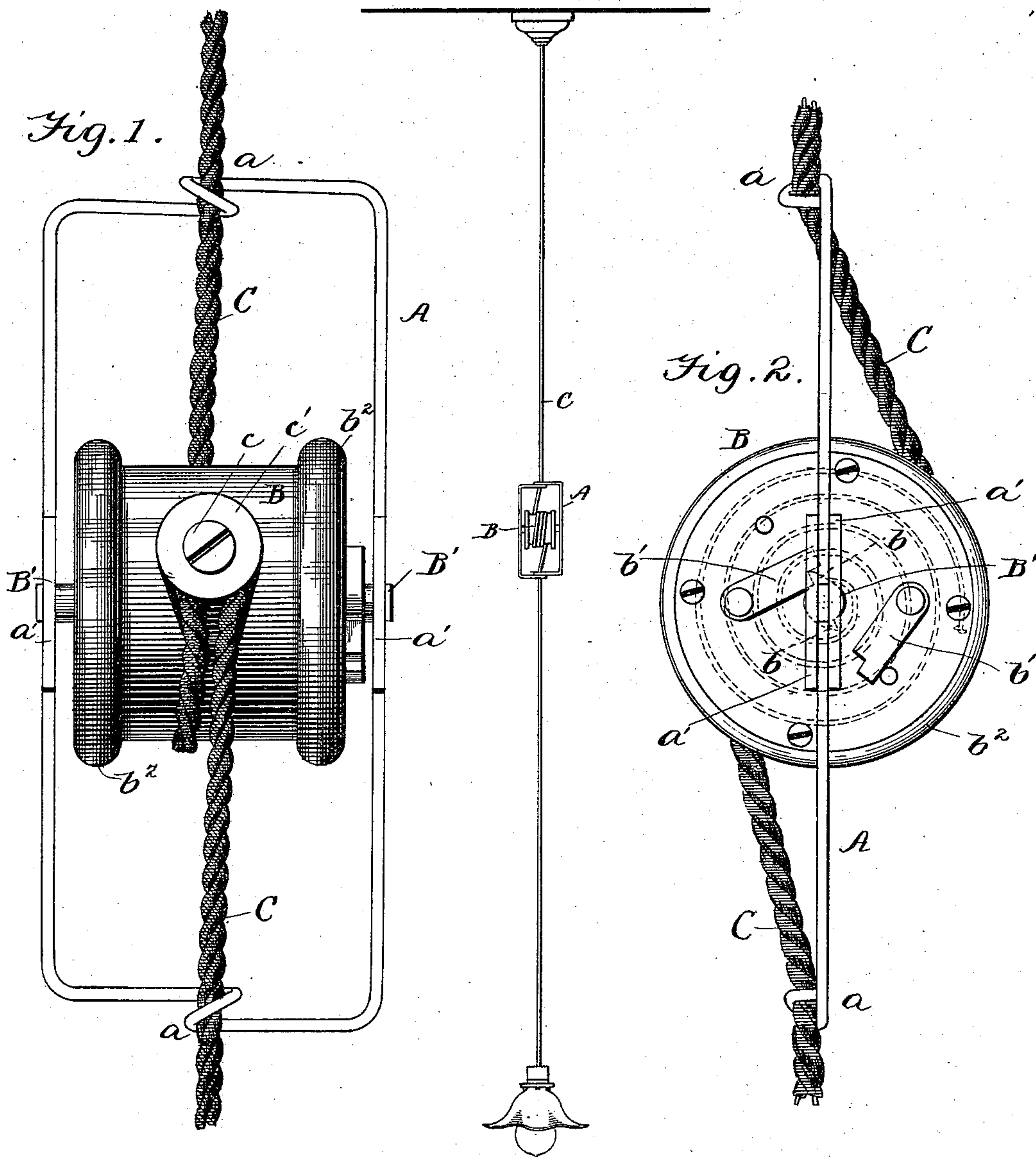
2 Sheets—Sheet 1.

S. O. & M. A. NEWTON.  
EXTENSION DEVICE FOR INCANDESCENT LAMPS.

No. 438,779.

Patented Oct. 21, 1890.

Fig. 4.



WITNESSES:

*Wm. S. Obier.*  
*Thomas K. Leuchard*

INVENTOR  
*Samuel O. Newton*  
*Melville A. Newton.*  
BY *W. J. Johnston*  
ATTORNEY.

(No Model.)

2 Sheets—Sheet 2.

S. O. & M. A. NEWTON.  
EXTENSION DEVICE FOR INCANDESCENT LAMPS.

No. 438,779.

Patented Oct. 21, 1890.

Fig. 5.

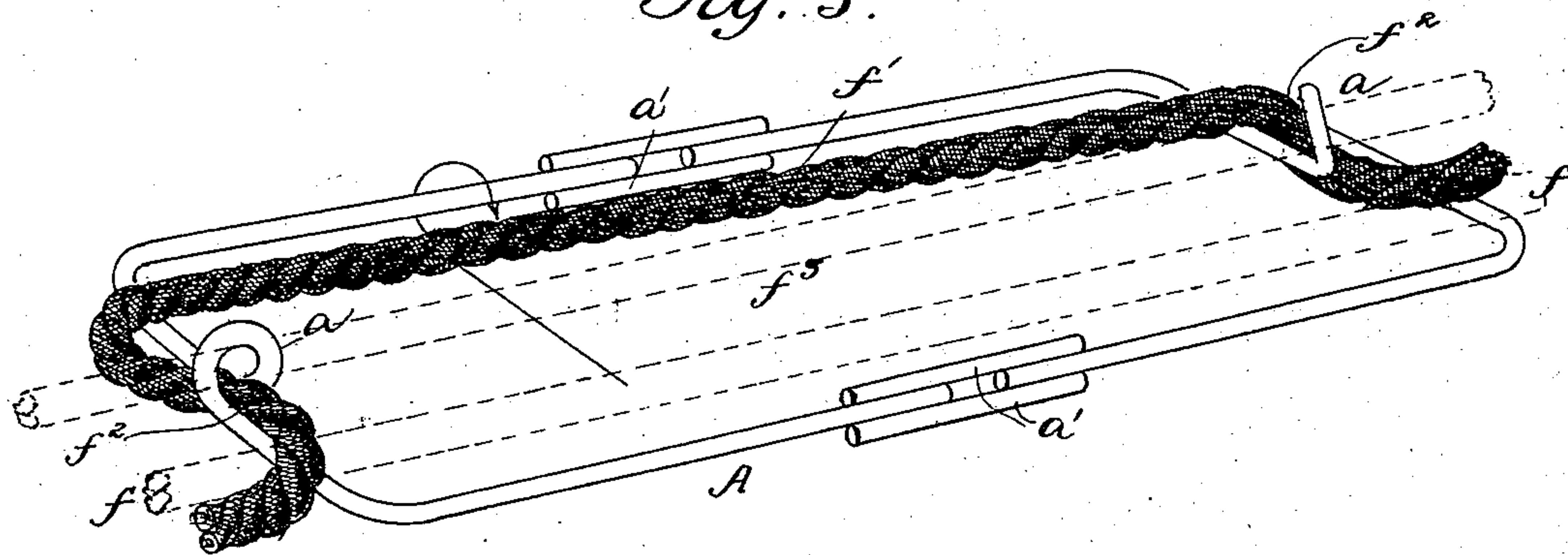


Fig. 6.

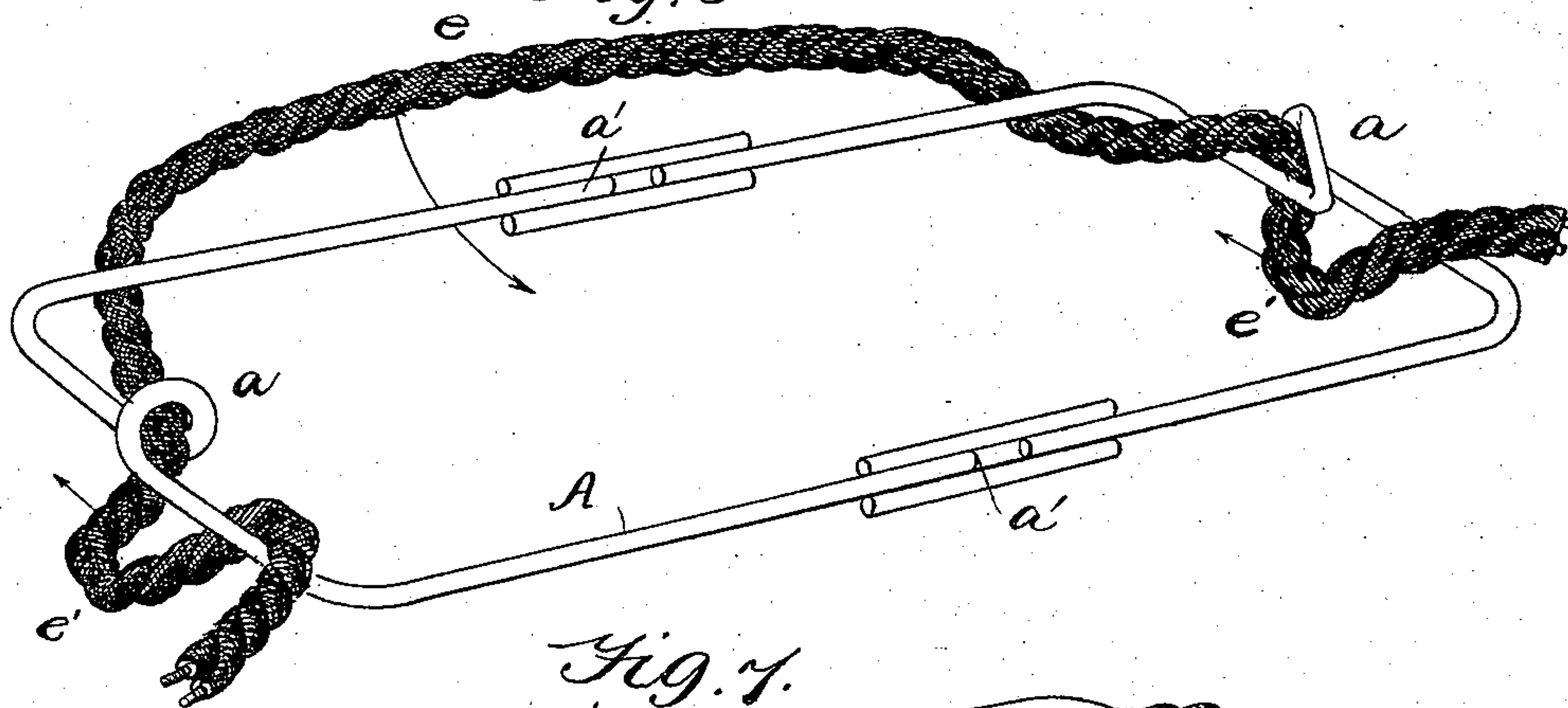


Fig. 7.

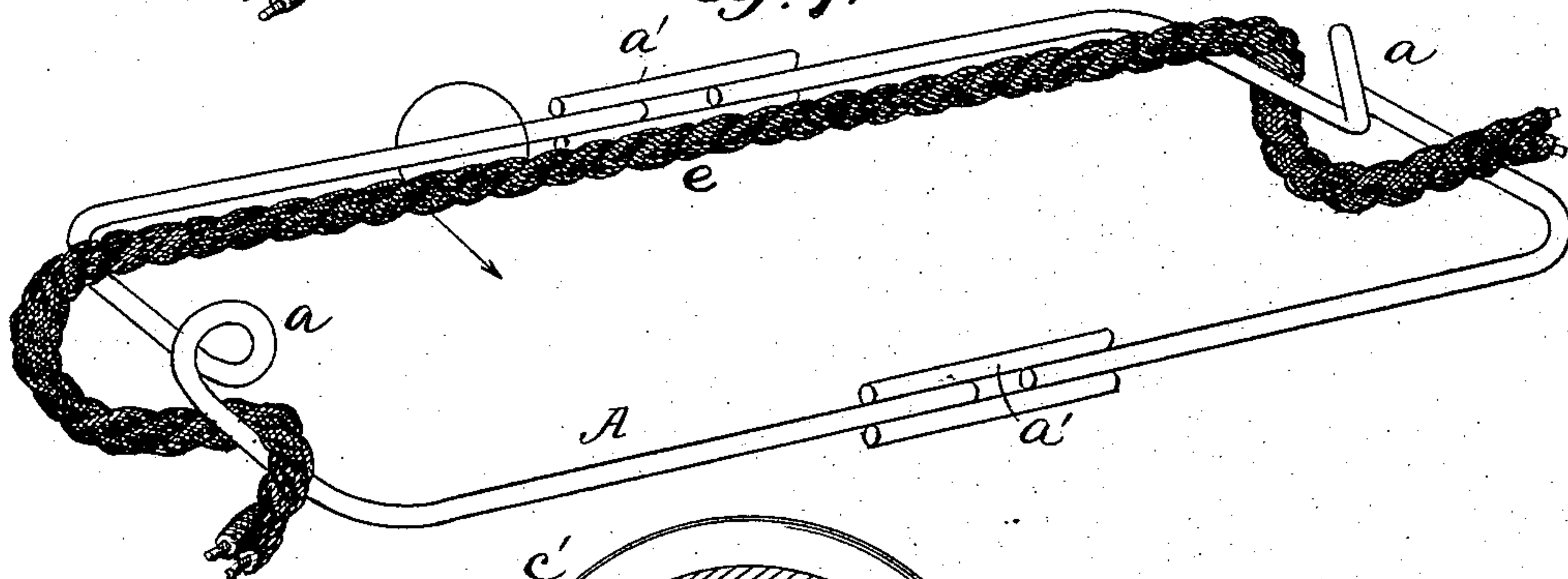
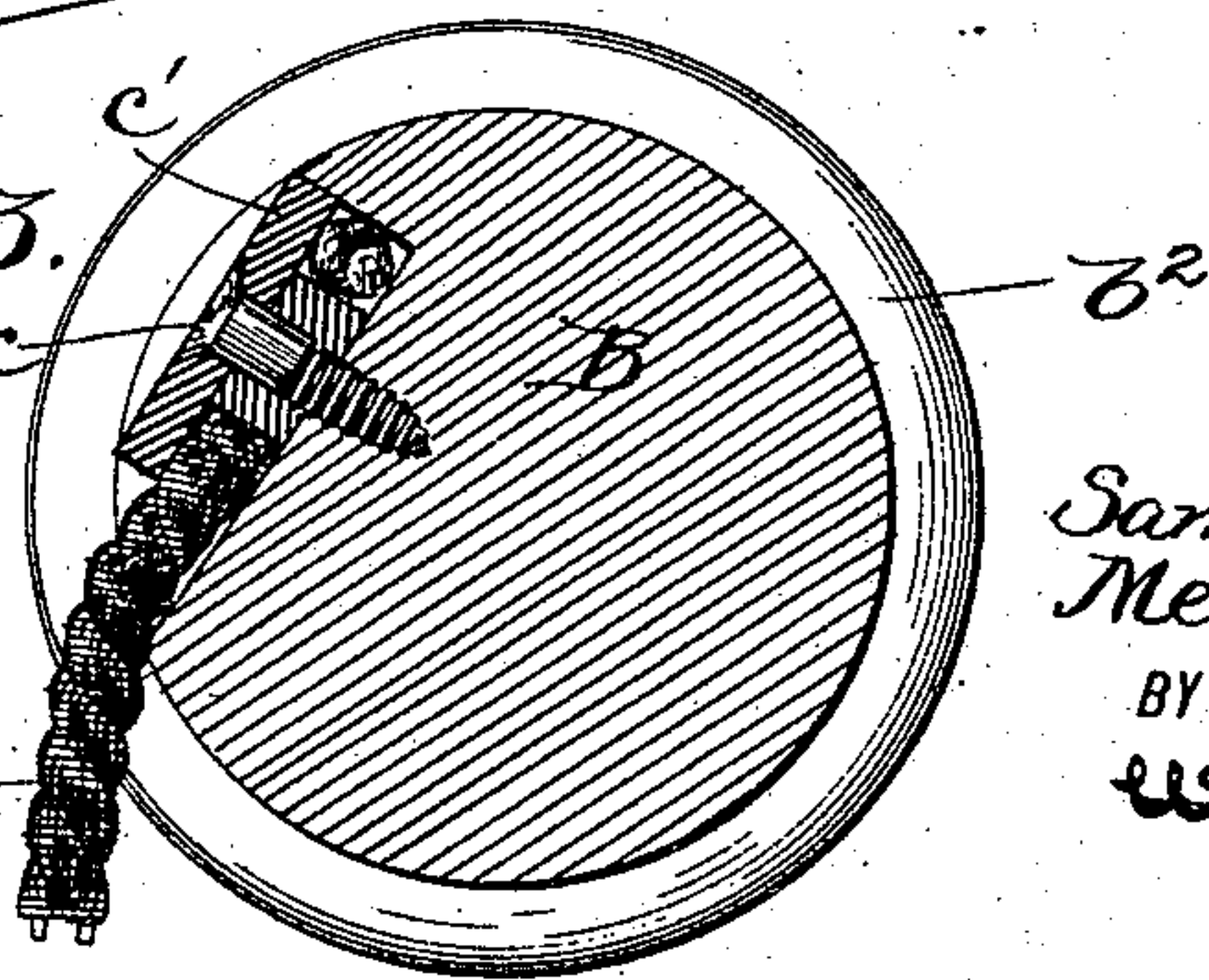


Fig. 3.



WITNESSES:

Frank S. Ober  
Thomas L. Leuchard

INVENTOR  
Samuel O. Newton and  
Melville A. Newton.

BY  
W. J. Johnson  
ATTORNEY.



# UNITED STATES PATENT OFFICE

SAMUEL O. NEWTON AND MELVILLE A. NEWTON, OF NORTH PITCHER,  
NEW YORK.

## EXTENSION DEVICE FOR INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 438,779, dated October 21, 1890.

Application filed December 2, 1889. Serial No. 332,194. (No model.)

*To all whom it may concern:*

Be it known that we, SAMUEL O. NEWTON and MELVILLE A. NEWTON, citizens of the United States, residing in North Pitcher, in the county of Chenango and State of New York, have invented certain new and useful Improvements in Extension Devices for Incandescent Lamps, of which the following is a specification.

Our invention relates to extension devices for incandescent electric lamps.

The object of the invention is the production of an apparatus which shall be of such construction that it may be attached to or detached from the lamp-cord without in any way interfering with the lamp-circuit. In other words, the device constituting our invention is adapted to be connected and disconnected at will with and from the suspending flexible cord of the lamp without interfering with the operation of the lamp.

The invention consists, essentially, of a frame formed of stiff wire, bent at its opposite ends to form loops or eyes, and provided with bearings for a rotating spring-operated roller or spool fitted with a fastening device. The flexible insulated conductor of the lamp is bent double or looped between its extremities, the end of the loop being secured to the roller by said fastening device, and the legs or sides of the loop are led out in opposite directions through the eyes in the ends of the frame, one end connecting with the ceiling-block and the other with the lamp.

The details of the invention will be described with reference to the accompanying drawings, in which—

Figure 1 represents a front elevation of the device, showing the mechanism for attaching the flexible cord to the roller. Fig. 2 represents a side elevation of the device; Fig. 3, a central section of the roller; Fig. 4, a view showing the device in working position; Fig. 5, a diagram showing the manner of threading the flexible conductor on the frame, and Figs. 6 and 7 are diagrams showing the manner of removing the flexible conductor from the device.

Referring to the drawings by letter, A represents a frame made, preferably, of stiff wire

and of general oblong shape. The ends of the frame are looped in the manner shown at *a* to form guide-eyes, and on the sides of the frame re-enforcing strips are secured to form bearings *a' a'*. These bearings consist of rectangular holes, and are adapted to support the ends of the shaft *B'*, carrying the roller *B*. This roller is connected to the shaft by a coil-spring within it, (shown in Fig. 2,) one end of the same being attached to the roller and the other end to the shaft. This construction permits of movement of the roller relative to the shaft. The ends of the shaft are squared where they rest in the bearings, and it is thus prevented from turning when the roller turns.

One end of the shaft inside of the frame is provided with two lateral teeth *b b*, with which are adapted to engage two pawls *b'*, pivoted onto the side of the roller in such a way that as the roller rotates the pawls will fall by gravity into and out of engagement with the teeth and thus prevent its movement. This locking of the roller is only effected when the roller is moving slowly. If it is allowed to rotate very fast, the pawls will not drop quickly enough to catch. This is the ordinary construction of what is known as the "Hartshorn roller." The roller is made of some considerable width, and its face is bounded by the side flanges *b<sup>2</sup>* to retain the cord which it is adapted to receive. At a point on the face of the roller it is gouged out to form an orifice, into which may be placed a screw and washer *c c'*. (Shown in Figs. 1 and 3.) This washer when in place is about flush with the face of the roller, so that no obstruction will be formed.

C represents the flexible cord supporting an incandescent lamp. This cord is secured to the roller by forming a loop therein and passing the same around the screw *c* and beneath the washer *c'*. It is held in this position by forcing the screw in. The two sides of the loop lead out from beneath the washer, one passing through an eye *a* in the frame and the other passing around the roller and upward through the other eye *a* in the frame. If the roller is locked by the engagement of a pawl with one of the teeth *b*, it may be released by pulling down on the lower cord,



thus slightly rotating the roller, and then on letting go suddenly the roller will rapidly rotate and wind up both ends of the cord upon itself. It may be stopped at any point desired by putting tension on the cord, thus forcing the roller to slow down in speed and allow the pawls to engage with the teeth. This device inserted at any point in the flexible conductor of an incandescent lamp, as illustrated in Fig. 4, may be used to raise and lower the lamp to any position desired.

In operation the movement of the lamp vertically is just twice that of the frame carrying the roller, because two convolutions are wound upon the roller with each rotation.

It will be observed that the device for securing the cord to the roller does not necessitate the breaking of the circuit in any way.

We will now describe how the cord may be threaded through the eyes of the frame without interfering in any way with the operation of the lamp. The lamp is lowered until the cord is entirely unwound from the roller, exposing the screw *c*. This screw should then be loosened sufficiently to remove the cord from under the washer. After this has been done the roller is removed entirely from the frame by springing the sides of the frame apart in an obvious manner. This leaves the cord extending straight through the eyes. Referring now to Fig. 6, that portion of the cord between the eyes is grasped in one hand and carried into the position *e* beneath the left side of the frame. That portion of the cord just outside of the eyes is then brought inside of the frame in the form of a loop shown at *e' e'*, and one side of the loop adjoining the eye is carried to the left in the direction of the small arrows until it is released from the eye. The part *e* is then carried back in the direction of the arrow until the cord assumes the position shown in Fig. 7. The movement of the part *e* then continues over the frame in the direction of the arrow, Fig. 7, clearing the corners of the frame. It is then entirely free from the frame, and the latter may be removed. To replace the device, a cord is placed against the frame in the position shown by dotted lines *f f*. The cord inside the frame is then

grasped and carried under the left side of the frame and brought up into the position *f'*. The parts *f<sup>2</sup>* may then be forced between the wires forming the eyes. Then by straightening the cord it will assume the position shown by dotted lines *f<sup>3</sup>*. The roller is then inserted in the frame, and the loop is formed in the cord and secured upon the roller, as before described.

The guide-eyes, being substantially in a horizontal plane, allow the cord *C* to pass freely through them in running to or from the drum, and the said eyes being formed of open side coils, not closed, the cord can be readily threaded through both without breaking the circuit.

Having thus described our invention, we claim—

1. A frame provided with a looped guide-eye at each end, said eyes being open and in a horizontal plane, a spring-operated roller carried by said frame, and a fastening device connected with said roller, in combination with a flexible conducting-cord of an electric lamp, said cord being formed with a loop which is held by said fastening device connected with the roller, one end or side of the loop extending downward through a guide-eye to the lamp and the other end or side extending upward through a guide-eye to the point of suspension.

2. The combination, with the flexible conductor for the purpose set forth, of the frame *A*, having the guide-eyes *a a*, through which the conductor is adapted to pass, the removable roller *B*, adapted to be connected with a loop in the flexible conductor, said roller being provided with the countersunk screw and washer around which the loop is adapted to be passed and secured, for the purpose set forth.

In witness whereof we have hereunto affixed our seals and signed our names in the presence of two subscribing witnesses.

SAMUEL O. NEWTON. [L. S.]  
MELVILLE A. NEWTON. [L. S.]

Witnesses:

H. R. HAKES,  
FRANK P. HAKES.