

(No Model.)

C. P. BOOTH.
TAPE WINDING MECHANISM FOR LIGHTING DEVICES OR OTHER ARTICLES.
No. 475,996.
Patented May 31, 1892.

Fig. 1.

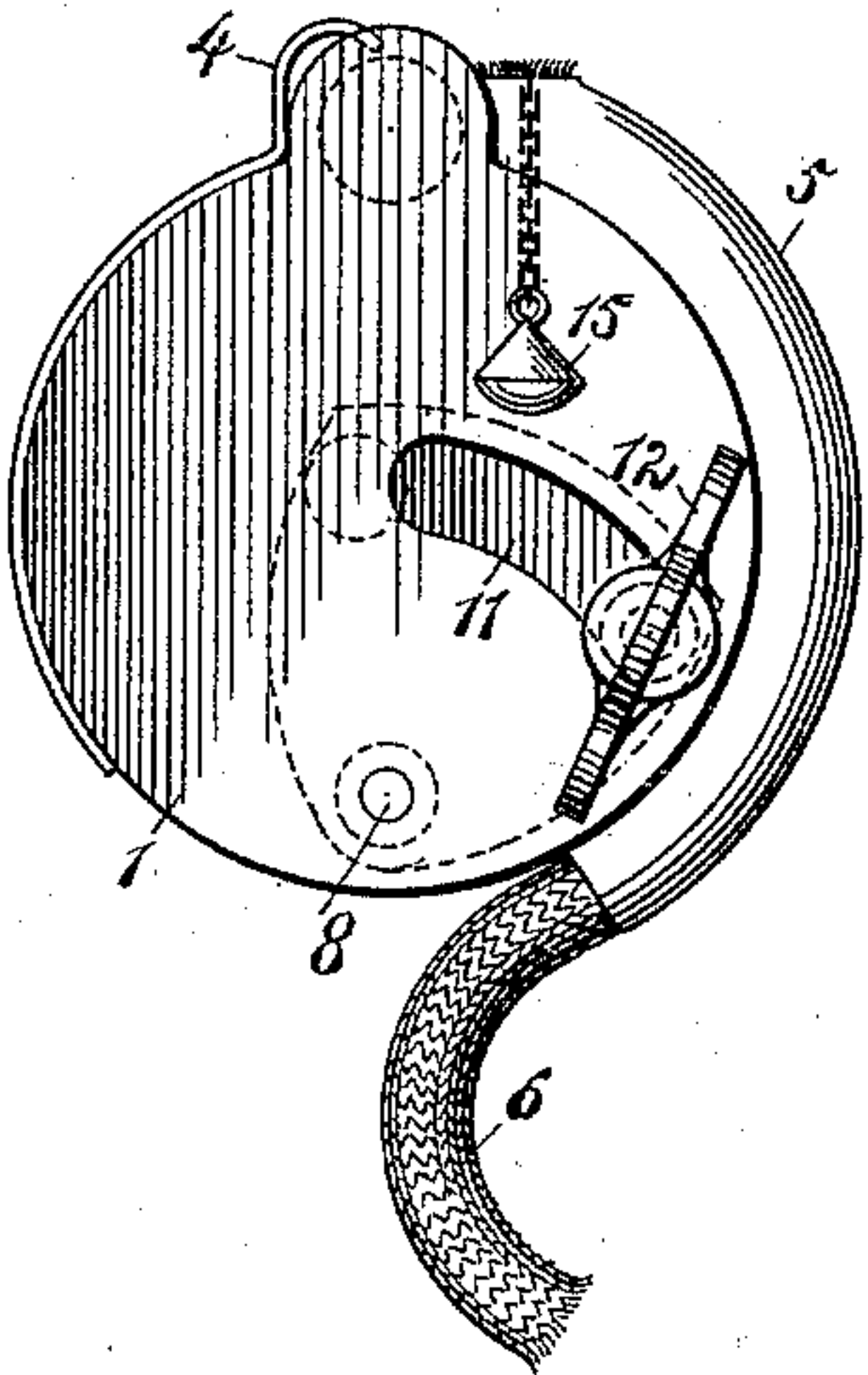


Fig. 2.

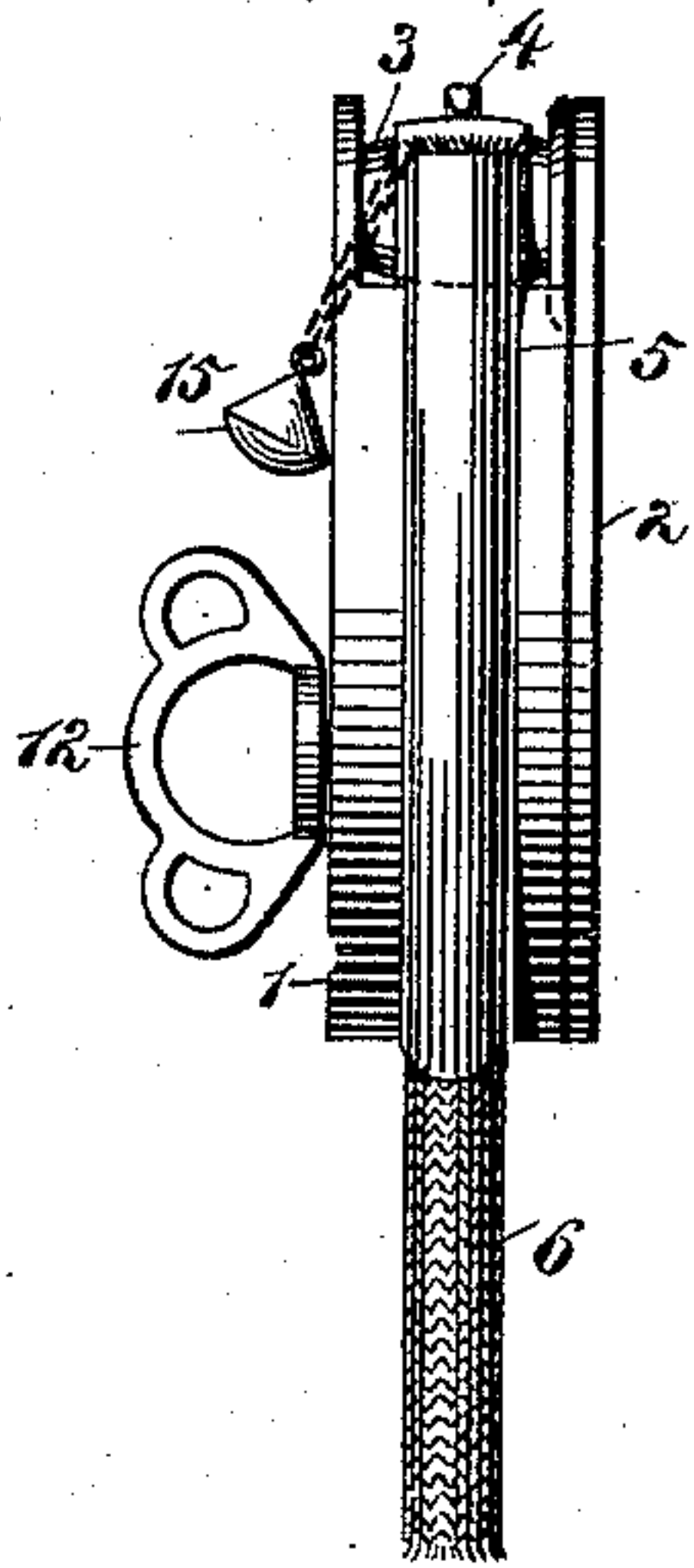


Fig. 3.

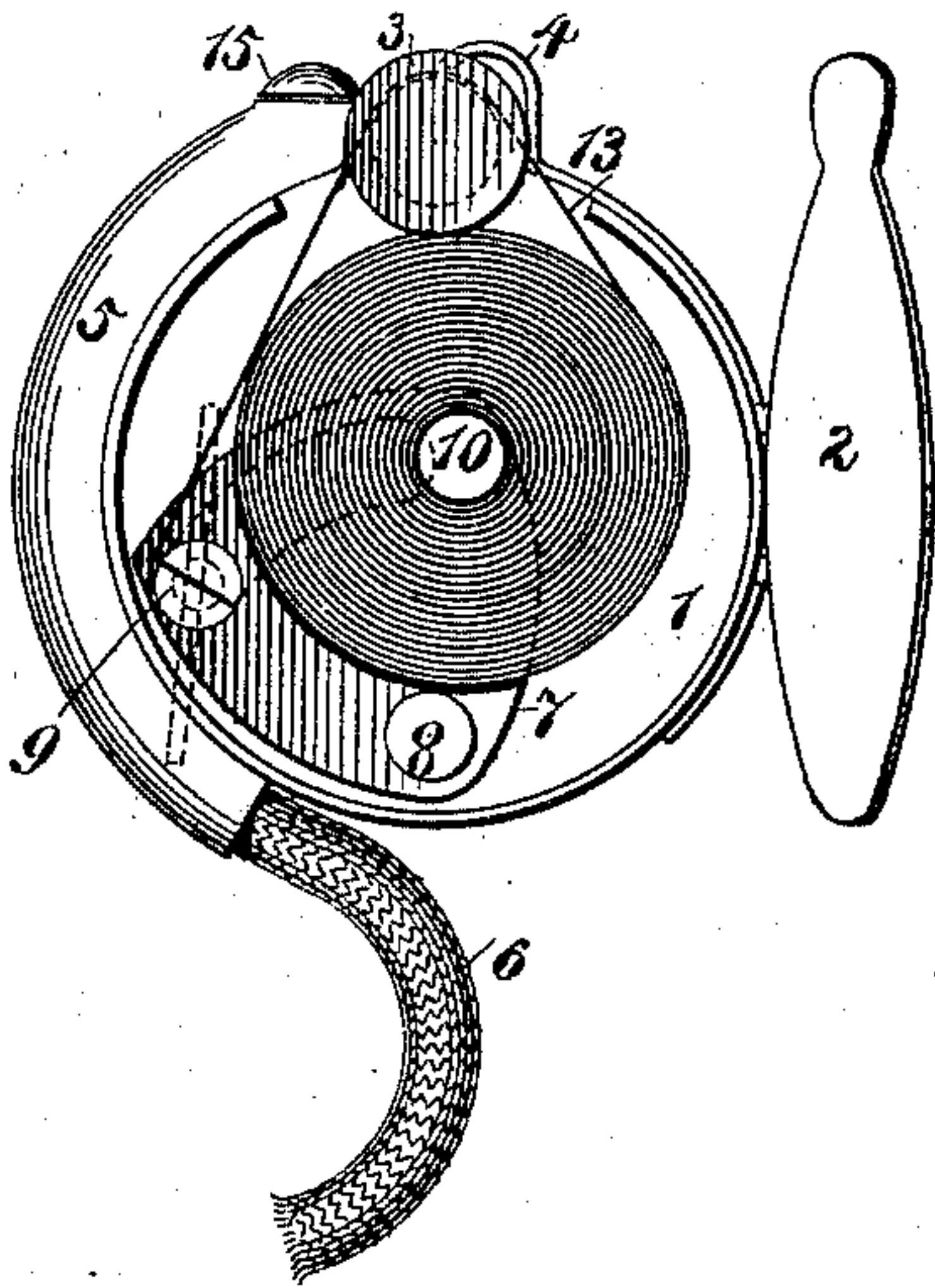


Fig. 4.

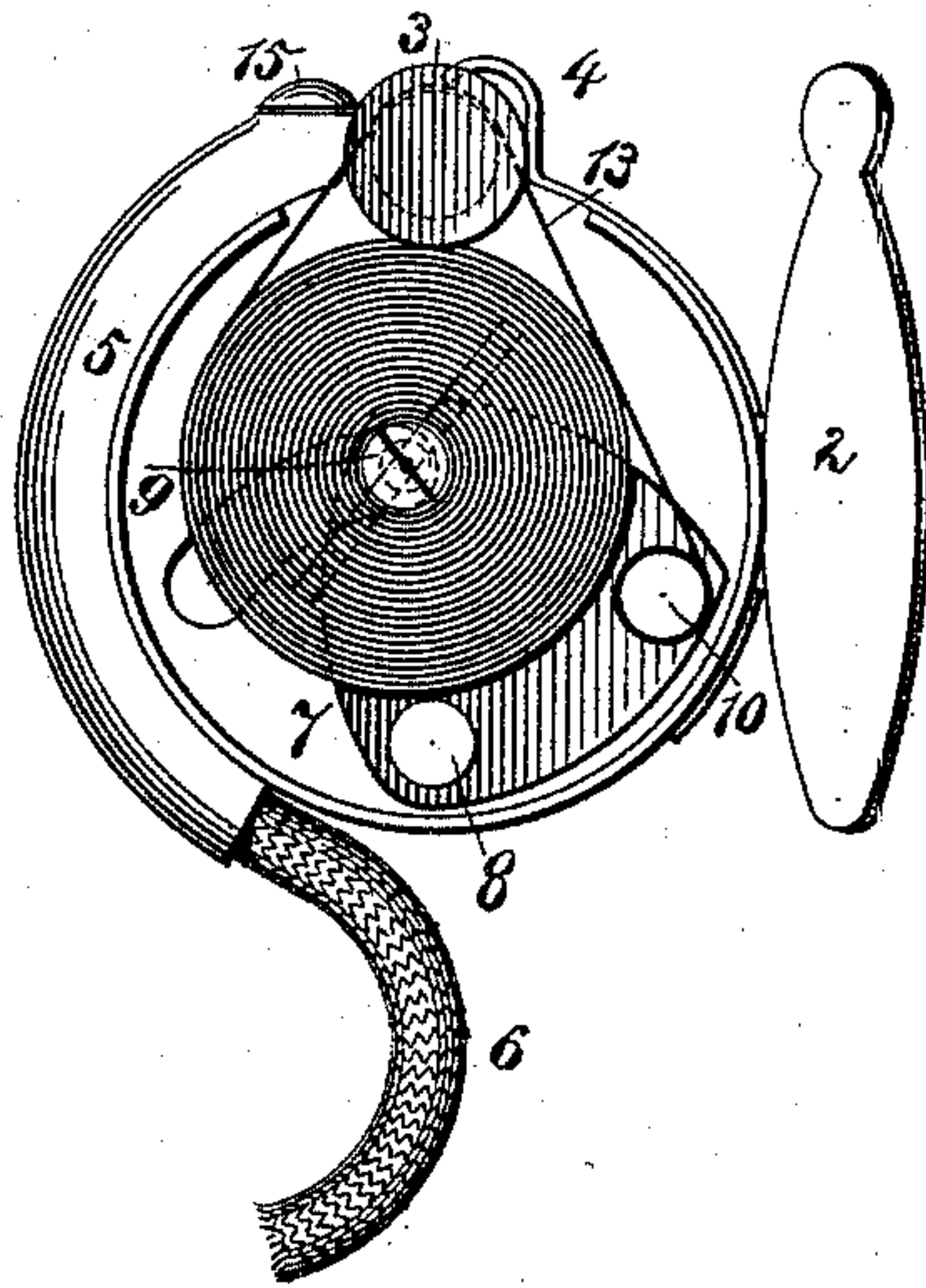
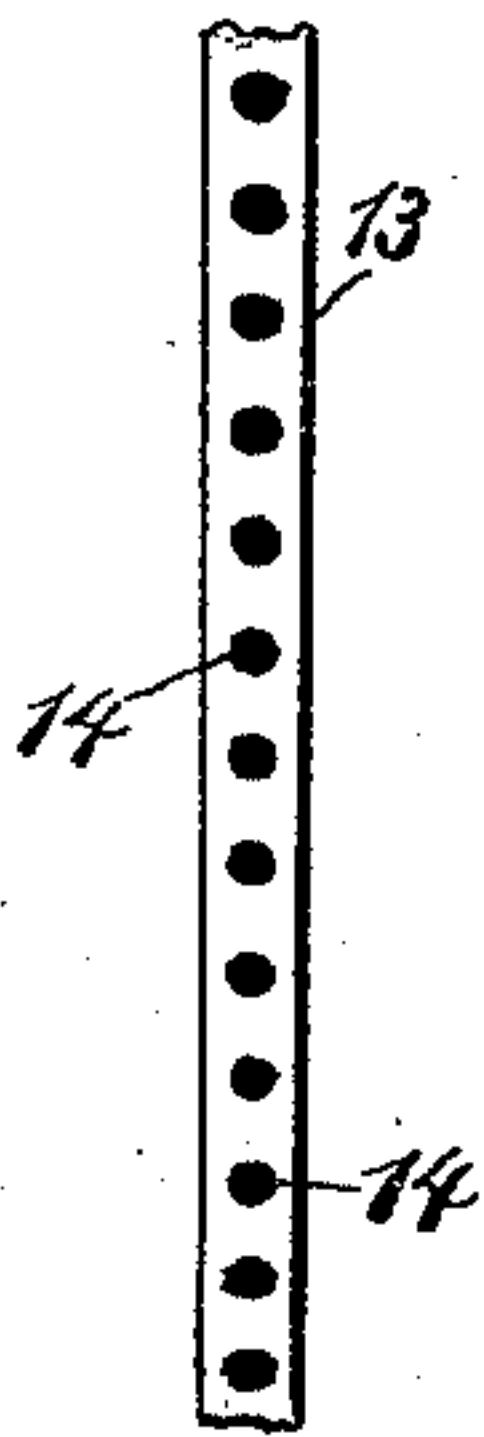


Fig. 5.



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CHARLES P. BOOTH, OF CAMDEN, NEW JERSEY, ASSIGNOR TO THE MAGIC INTRODUCTION COMPANY, OF NEW JERSEY.

TAPE-WINDING MECHANISM FOR LIGHTING DEVICES OR OTHER ARTICLES.

SPECIFICATION forming part of Letters Patent No. 475,996, dated May 31, 1892.

Application filed August 20, 1891. Serial No. 403,197. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. BOOTH, a citizen of the United States, and a resident of the city and county of Camden, in the State of New Jersey, have invented certain new and useful Improvements in Tape-Winding Mechanism for Lighting Devices and other Articles, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

In lighting devices in which a tape provided with ignitable pellets is drawn over a support and such pellets exploded and the exhausted tape wound upon a revolving spindle it has heretofore been necessary to provide a tape-chamber much larger in size than the roll of tape used, the tape being coiled in one portion of such chamber before and in the other after using, and in those lighting devices designed for the pocket this is found to be a great detriment, as it is advisable to have the same as small as possible.

The object of my invention is to overcome the difficulty mentioned by rerolling the expended tape into practically the same space occupied by it before using, and this I accomplish by means of a device extremely simple in construction and easy of operation, which is fully disclosed in the following specification, of which the accompanying drawings form a part, wherein similar numerals of reference designate like or equivalent parts wherever found throughout the several views, and in which—

Figure 1 represents a rear view of the exterior of a lighting device provided with my improved tape-winding mechanism; Fig. 2, a side view; Fig. 3, an interior view showing the freshly-inserted igniting-tape in position to be drawn across the support and ignited; Fig. 4, a like view showing the tape fully expended and rewound within its chamber, and Fig. 5 a view of a section of the tape with the pellets or fulminates thereon.

Referring to the drawings, the numeral 1 designates the shell or casing of the lighting device, which may be of any preferred form and which is preferably provided with a side or cover 2, hinged, as shown. Secured to the back of the casing 1 is a support 3 for the

tape, preferably in the form of a roller, as shown, resting upon which is the point of the curved spring-scratcher 4, secured to the casing 1 in any desired manner, as is also the tube 5, adapted to receive the wick or punk 6. Within the casing 1 is a plate or slide 7, preferably in the general form of a quadrant and pivoted, as shown at 8, and this plate 7 is provided with a spindle 9 and stud 10, the spindle 9 being revolvably mounted in the plate 7 and passing through a slot 11 in the casing 1 and being provided with an external thumb-piece 12, by which the same may be rotated.

The operation of the device is as follows: A coil of tape 13, provided with ignitable pellets 14 thereon, is placed in position upon the stud 10, and the end thereof is passed over the support 3, under the end of the spring-scratcher 4, and secured to the revolving spindle 9, preferably by being placed in a slit formed in the end thereof, when the mechanism will be in the position shown in Fig. 3. It being then desired to ignite the wick or punk 6, the same is drawn out of the tube 5 by pulling on the cover 15, secured thereto by a small chain, as shown, and the thumb-piece 12 is then rotated, which, rotating the spindle 9, causes the tape 13 to wind thereon, drawing the same over the support 3 and exploding a fulminating-pellet as the same passes beneath the scratcher 4, and ignites the wick 6, which may be extinguished when desired by drawing the same back into the tube 5 until the air is excluded therefrom by the cover 15. This operation may be repeated until all of the tape 13 has been drawn from the stud 10 and rewound upon the spindle 9, the plate or slide 7 being gradually forced toward the center of the device by the impact of the roll of expended tape against the side wall of the casing 1, as the same is rewound upon the spindle 9 until the tape is entirely used up, when the spindle 9 will be found to have traveled along the slot 11 to the center of the device to the position shown in Fig. 4 and to have assumed nearly the position occupied by the stud 10 at the beginning of the operation, as shown in Fig. 3.

It is evident that, instead of a wick, as 6, I may use a candle or oil-receptacle having a

wick, or that the lighter may be attached to a gas-burner and used for lighting the same; also, that my improved tape-winding mechanism may be used in other than lighting devices, wherein it is desired to uncoil and re-coil tapes, &c., in a limited space, and that many changes may be made in the construction, combination, and arrangement of the parts thereof without departing from the scope of my invention, and I do not limit myself to the particular form shown; but,

Having particularly described my invention, its construction and operation, what I claim, and desire to secure by Letters Patent, is—

1. A mechanism for winding and holding tape, &c., having a movable plate provided with two studs or spindles, one of which is revoluble, the arrangement being such that a coil of tape placed upon one spindle may be rewound upon the other by revolving the same and when so rewound will occupy at least a part of the space which it occupied before being rewound, substantially as shown and described.

2. A mechanism for winding and holding tape, &c., having a revoluble spindle so mounted as to be capable of movement substantially at right angles to its axis, and means for supporting a coil of tape and rewinding it upon the revoluble spindle by rotating the same, the tape when rewound occupying at least a part of the same space occupied by the coil before rewinding, substantially as shown and described.

3. A lighting device or other article having a casing provided with means for holding and rewinding a coil of tape, consisting of a support for the coil and a revoluble and sliding spindle upon which the tape is rewound so mounted as to slide toward the center of the casing as the tape is rewound thereon, so that the tape when rewound may occupy substantially the same space within the casing as when first introduced, substantially as shown and described.

4. A lighting device or other article having a casing provided with means for holding and rewinding a coil of tape, consisting of a support for the coil and a revoluble spindle upon which the same is rewound so arranged that the rewound tape will occupy substantially the same space it occupied when upon the support, said revoluble spindle being adapted to slide toward and the support away from the center of the casing as the tape is rewound, substantially as shown and described.

5. In a lighting device, the combination, with a casing adapted to receive a coil of tape having ignitable pellets thereon, of a support over which the tape is drawn, means for igniting the pellets one by one as they are drawn over the support, and a revoluble spindle upon which the tape is rewound as it is drawn over the support, said spindle being so mounted as to slide toward the center of the casing as the tape is rewound thereon and the rewound tape

occupying substantially the same space as when first introduced in the casing, substantially as shown and described.

6. In a lighting device, the combination, with a casing adapted to receive a coil of tape having ignitable pellets thereon, of a support over which the tape is drawn, a scratcher adapted to ignite the pellets one by one as they are drawn over the support, and a revoluble spindle upon which the tape is rewound as it is drawn over the support, said spindle being so mounted as to slide toward the center of the casing as the tape is rewound thereon and the rewound tape occupying substantially the same space as when first introduced in the casing, substantially as shown and described.

7. A lighting device or other article having a casing adapted to receive a coil of tape and provided with a movable plate pivoted at one end and having at the other two studs or spindles, one of which is revoluble and adapted to rewind upon itself a coil of tape first mounted upon the other spindle, the arrangement being such that the coil of rewound tape occupies substantially the same space within the casing that it did when first introduced therein, substantially as shown and described.

8. In a lighting device, the combination, with a casing adapted to receive a coil of tape having ignitable pellets thereon, of a support over which the tape is drawn, means for exploding the pellets one by one as the tape is drawn over the anvil, a movable plate pivoted at one end and provided at the other with two studs or spindles, one of which is adapted to receive the coil of fresh tape and the other being revoluble and adapted to receive and wind upon itself the expended tape, and means for rotating the revoluble spindle, substantially as shown and described.

9. In a lighting device, the combination, with a casing adapted to receive a coil of tape having ignitable pellets thereon, of means for supporting an inflammable wick, a support over which the tape is drawn in proximity to the wick, means for exploding the ignitable pellets one by one as the tape is drawn over the support, so as to ignite the wick, and a movable plate having two spindles, one of which is revoluble, the arrangement being such that the unexpended tape is supported upon one spindle and drawn over the support and rewound upon the other after the pellets thereon are exploded as such rewinding-spindle is rotated, substantially as shown and described.

10. In a lighting device, the combination, with a casing adapted to receive a coil of tape having ignitable pellets thereon, of means for supporting an inflammable wick, a support over which the tape is drawn in proximity to the wick, means for exploding the ignitable pellets one by one as the tape is drawn over the support so as to ignite the wick, a plate pivotally attached at one end to the interior of the casing, two studs mounted upon the pivoted plate at the movable end thereof, and

means for rotating one of said studs, substantially as shown and described.

11. The combination, in a device for winding tape, &c., of a spindle upon which the tape is supported in the form of a coil, a revoluble spindle upon which such tape is rewound from the first spindle as the latter is rotated, means for rotating the rewinding-spindle, and means for moving both the supporting and the
10 rewinding spindles substantially at right an-

gles to the axis thereof as the tape is drawn from one and rewound upon the other, substantially as shown and described.

Signed at the city and county of Camden, in the State of New Jersey, this 14th day of 15 August, A. D. 1891.

CHARLES P. BOOTH.

Witnesses:

W. K. BROWN,
DAVID RANKINS.