No. 788,707. PATENTED MAY 2, 1905.

S. T. COVERSTONE.

LIGHT TOWER.

APPLICATION FILED JAN. 30, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

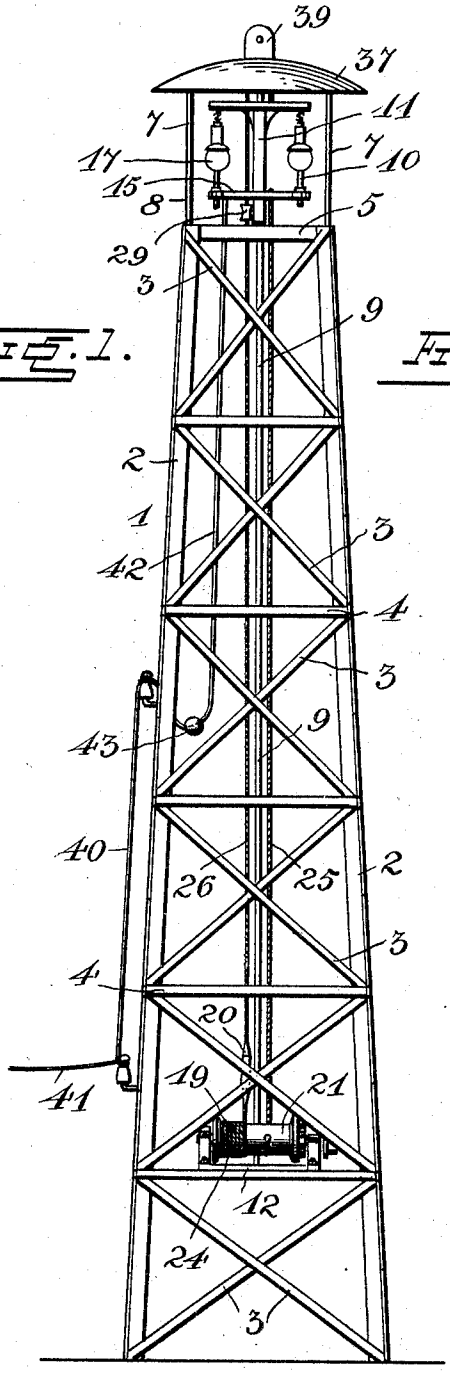
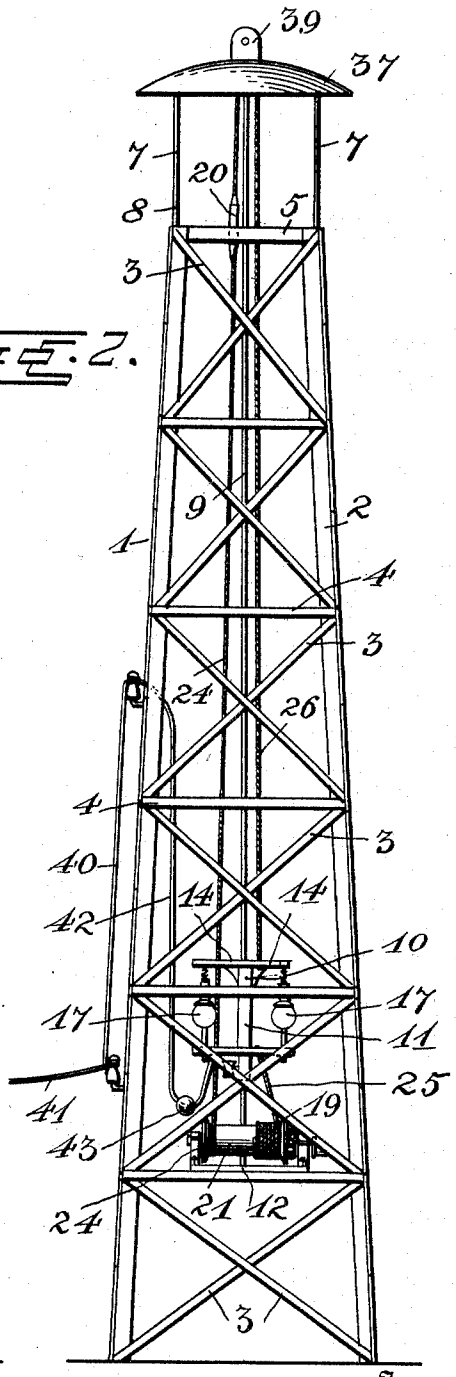


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

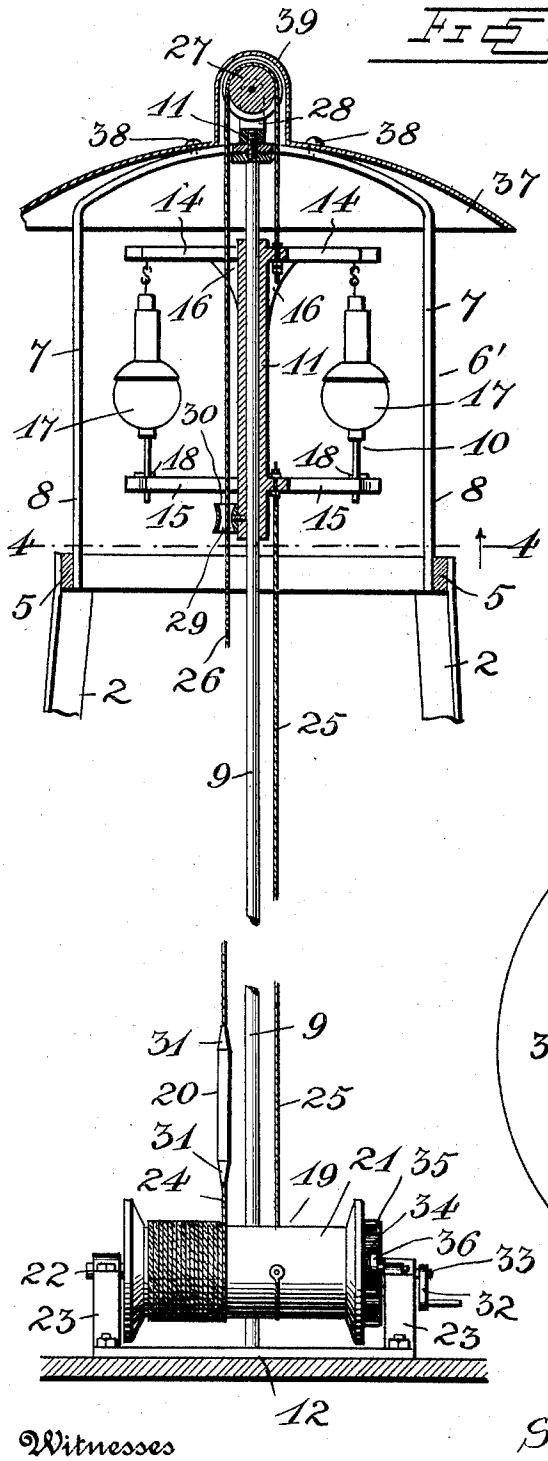


Fig. 5.

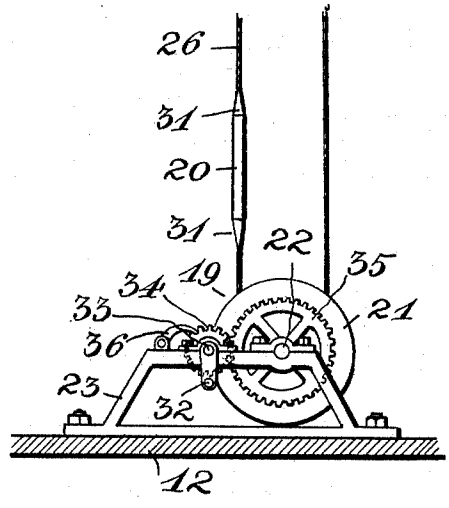
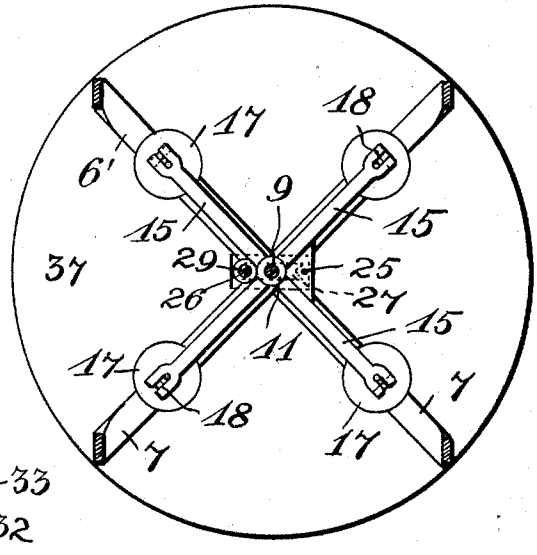


Fig. 4.



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No. 788,707. Patented May 2, 1905.

UNITED STATES PATENT OFFICE.

SAMUEL T. COVERSTONE, OF MOUNT PLEASANT, MICHIGAN.

LIGHT-TOWER.

SPECIFICATION forming part of Letters Patent No. 788,707, dated May 2, 1905.

Application filed January 30, 1905. Serial No. 243,301.

To all whom it may concern:

Be it known that I, SAMUEL T. COVERSTONE, a citizen of the United States, residing at Mount Pleasant, in the county of Isabella and State of Michigan, have invented certain new and useful Improvements in Light-Towers; and I do 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.

My invention relates to improvements in light-towers, and particularly to that class of such devices in which the lights may be lowered from their normally elevated position in the tower, so as to permit the person in charge to have ready access to them for the purpose of trimming, renewing, cleaning, repairing, or the like.

The object of the invention is to improve and simplify the construction and operation of devices of this character, and thereby render the same more durable and efficient in use and less expensive to manufacture.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a side elevation of a light-tower constructed in accordance with my invention, the lights being in their elevated position. Fig. 2 is a similar view of the same, the lights being shown in their lowered position. Fig. 3 is a vertical sectional view on an enlarged scale. Fig. 4 is a horizontal sectional view taken on the line 4 4 of Fig. 3 and looking in the direction indicated by the arrow, and Fig. 5 is an end view of the windlass used for raising and lowering the lights.

Referring to the drawings by numeral, 1 denotes a tower which may be of any desired size, form, and construction, but which is preferably made of iron or steel, and consists of four upwardly-converging corner posts or beams 2, connected by crossed diagonal braces 3 and intermediate parallel braces 4. The upper ends of the corner-beams 2 are connected by bars or beams 5, which form a square or rectangular head 6. Upon this head 6 is secured a frame 6′, which consists of two curved or bowed bars 7, crossed at their center and having their ends 8 extending downwardly and connected to the head 6, so as to form continuations of the corner-beams 2.

Extending centrally through the tower is a vertical guide-rod 9, upon which is slidably mounted a light-hanger 10. This rod 9 may be solid or tubular in cross-section, and its upper end is screw-threaded, as at 11, and passed through alining openings formed in the crossed portions of the bows or bars 7. The lower end of the rod 9 is secured upon a platform 12, which is provided adjacent to the lower end of the tower for the purpose of supporting the mechanism, by means of which the light-hanger 10 is raised and lowered. This platform may be of any desired construction and is at a sufficient height from the ground to prevent persons upon the latter from having access to the operating mechanism upon it.

The light-hanger 10 comprises a sleeve or tube 13, which is adapted to slide freely upon the rod 9, and which has projecting radially from its upper and lower ends supporting-arms 14 and 15. The upper arms 14 are braced from the sleeve 13, as shown at 16, and from their outer ends are suspended electric lights 17, preferably in the form of the usual electric-arc lamps. The lower portions of the lamps are connected, as shown at 18, to the outer ends of the lower arms 15, so that they will be prevented from swinging.

In order to move the lamp-hanger 10 from its elevated position within the frame 6′ (shown in Fig. 1) to its lowered position above the platform 12, (shown in Fig. 2,) I provide upon the platform 12 a windlass or hoisting device 19 and connect the same by means of cables or other flexible connections to said hanger 10 and a counterbalancing-weight 20. The windlass 19 comprises a double drum 21, which is secured upon a shaft 22, journaled in suitable bearings in a support or bracket 23, secured upon the platform 12. Secured upon said drum 21 and wound in opposite directions thereon are two cables 24 and 25, the

former of which is secured to the weight 20 and the latter of which is secured to the lower end of the lamp-hanger 10. Another cable, 26, is provided and has one of its ends secured to the weight 20 and its other end secured to the upper end of the lamp-hanger 10 after being passed over a guide-pulley 27, which is journaled in a block 28, secured upon the upper threaded end 11 of the guide-rod 9. The cable 26 passes through a guide ring or loop 29, which has its upper and lower ends outwardly flared or funnel-shaped, as shown at 30, to permit the weight 20 to pass freely therethrough. The weight 20 is of cylindrical form and has its upper and lower ends, to which the cables 26 and 24 are secured, tapered, as shown at 31, so that the weight may readily enter the guide 29. The drum 21 is operated by means of a crank-handle 32, which is secured upon a short shaft 33, mounted in bearings upon the support 23. Upon said shaft 33 is a pinion 34, which meshes with a gear 35, secured upon one end of the winding-drum 21. A pivoted locking-pawl 36 is provided upon the support 23 and engages the pinion 34, as clearly shown in Fig. 5.

In order to throw the light from the lamps 17, which are preferably but not necessarily four in number, as shown, down upon the ground or street adjacent to the tower, I provide upon the top of the frame 6 a reflector 37, which is dished or concave, as shown. This reflector is preferably made of copper or other suitable metal and has its under side nickel-plated or otherwise finished, so as to provide a good reflecting-surface. The reflector is secured upon the bows 7 of the frame 6′, preferably by means of bolts or screws 38, and at its center is provided a dome 39, which is adapted to cover and protect the guide-pulley 27 and its block 28.

Electricity is supplied to the lamps 17 through electric-conductor cables 40, which extend from the platform 12 to the top of the tower. These cables have their lower portions 41 secured upon the corner-beams 2; but their upper portions 42 are loose, so that the lamp-hanger 10 may be readily raised and lowered. In order to prevent these loose portions 42 of the cables from interfering with the movement of the lamp-hanger when the same is operated, I provide upon said portions weights 43, which cause the same to lower as the hanger is lowered.

The construction, operation, and advantages of the invention will be readily understood from the foregoing description, taken in connection with the accompanying drawings. It will be seen that when the lamp-hanger is in its elevated position in the top of the tower the counterbalancing-weight will be in its lowered position above the platform, as shown in Fig. 1, and that when the lamp-hanger is lowered by operating the crank-handle 32 of the windlass 19 the weight 20 will be elevated.

While I have shown and described the preferred embodiment of my invention, it will be understood that I do not wish to be limited to the precise construction herein set forth, since various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

A tower having a vertical guide-rod therein, a light-holder having a sleeve slidable vertically on said guide-rod, a guide-loop on one side of said sleeve, a pulley above the guide-rod, a lowering-cable attached to the light-holder, a hoisting-cable attached to the light-holder, passed over the pulley, through the guide-loop of the holder and having a countersunk balancing-weight adapted to pass through the guide-loop, and an endless cable to which the lowering and hoisting cables are attached.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SAMUEL T. COVERSTONE.

Witnesses:
C. A. KELLOGG,
C. W. RICHES.