F. W. KRAPF, JR.

CHRISTMAS TREE HOLDER.

APPLICATION FILED SEPT. 16, 1914.

1,241,127.

Patented Sept. 25, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

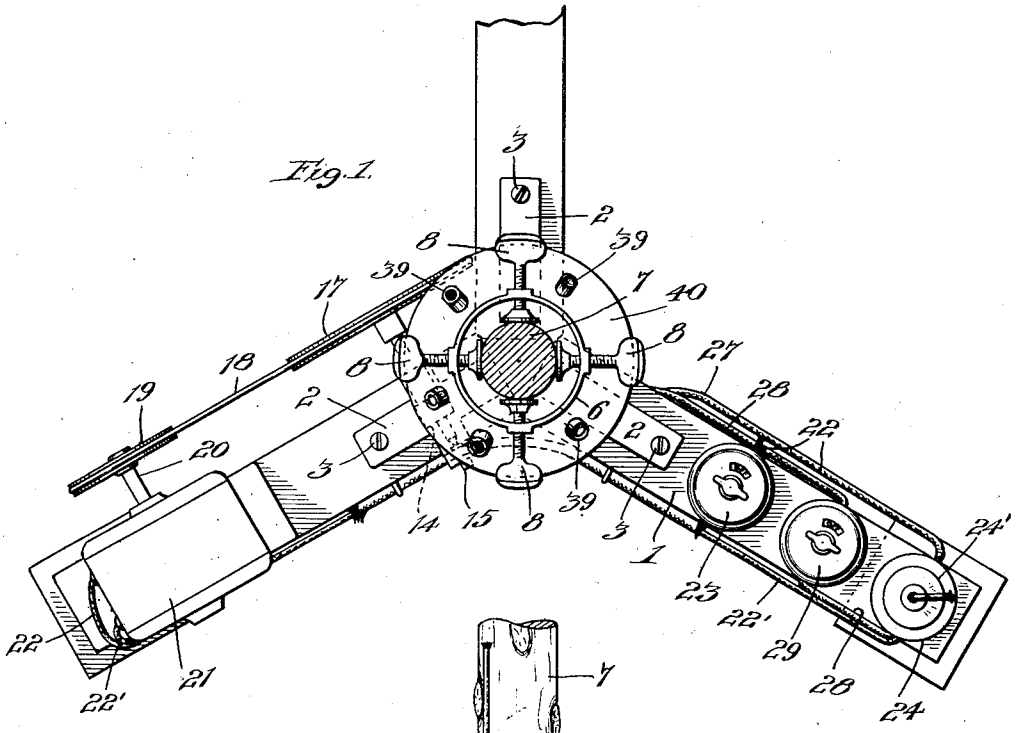


Fig. 2.

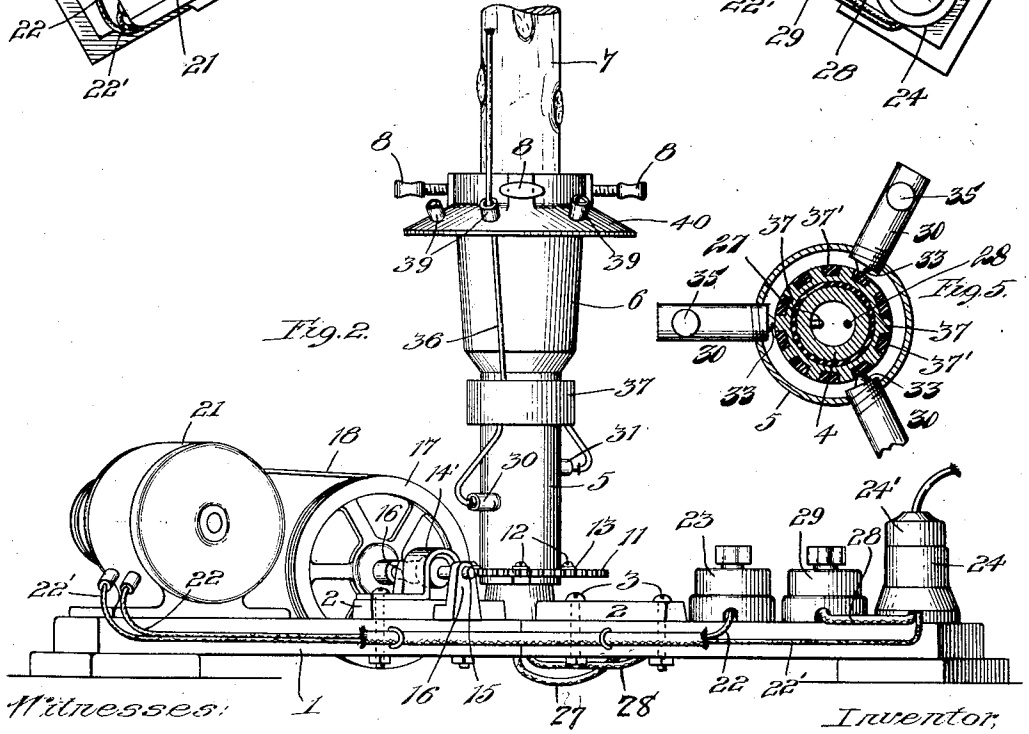


Fig. 5.

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2 SHEETS—SHEET 2.

Fig. 4.

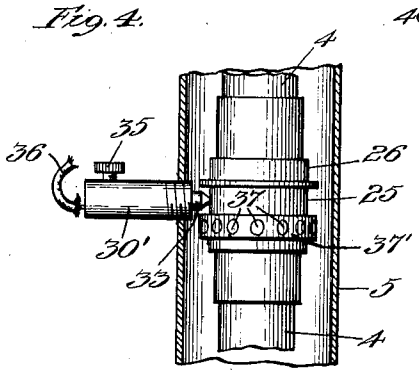


Fig. 3.

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UNITED STATES PATENT OFFICE.

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CHRISTMAS-TREE HOLDER.

1,241,127. Specification of Letters Patent. **Patented Sept. 25, 1917.**

Application filed September 16, 1914. Serial No. 861,985.

To all whom it may concern:

Be it known that I, FREDERICK W. KRAPF, Jr., a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Christmas-Tree Holders, of which the following is a specification.

My invention relates to improvements in Christmas tree holders of the class adapted to rotatably support a Christmas tree and maintain electric lights in the tree. The object of my invention is the production of a device of the character mentioned which will be of improved construction and efficient in operation. Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which

Figure 1 is a top plan view of a Christmas tree holder embodying my invention,

Fig. 2 is a side elevation thereof,

Fig. 3 is an enlarged central vertical section of the device,

Fig. 4 is a central detail illustrating a different arrangement of one of the electric contact brushes of the device from that shown in Fig. 3, and

Fig. 5 is a detail section taken on line x—x of Fig. 3.

The preferred form of construction as illustrated in the drawings comprises a base 1 consisting of three radially extending members rigidly connected at their inner ends by a metallic member 2 which is secured to the former by means of bolts and nuts 3 as clearly shown in the several views. Rigidly secured in and arising from the member 2 centrally thereof is a tubular post 4 around which is arranged a rotatably mounted sleeve 5. The sleeve 5 depends from the lower end of a socket 6 to which said sleeve is rigidly fixed as clearly shown in Fig. 3. The socket 6 is adapted for the reception of the lower end of a Christmas tree stem 7, thumb screws 8 being provided at the upper end of said socket for engagement with the tree stem as clearly shown in Fig. 1 so as to securely hold the same in position in said socket. Provided at the upper end of post 4 are ball bearings 9 and interposed between the lower end or base of said post and the adjacent portion of member 5 are ball bearings 10 which are provided obviously for the purpose of alleviating friction.

Encircling the lower end of member 5 is a worm wheel which is rigidly secured thereto by screws 12 which pass through ears 13 formed at said end of member 5. The worm wheel 11 meshes with a worm 14 fixed to a shaft 15 rotatably mounted in bearings 16 arising from base 1. The arrangement is such as will be seen that upon rotation of shaft 15 worm wheel 11 will be rotated with the result of effecting corresponding rotation of the Christmas tree which is mounted in socket 6. Fixed to one end of shaft 15 is a channel pulley 17 around which travels an endless rope belt 18 which also passes around a channel pulley 19 provided upon the power shaft 20 of an electric motor 21 mounted upon base 1 as clearly shown in Figs. 1 and 2. The arrangement is such, as will be seen, that rotation of the Christmas tree is secured through operation of motor 21. The electric conductor wires 22 and 22′ coöperating with motor 21 extend along the base 1 to a socket 24 with which coöperates a feed plug 24′ of any suitable electric circuit whereby electricity may be supplied. Interposed in the conductor wire 22 is a conventional switch 23 whereby the circuit of the motor may be made or broken.

Mounted upon the upper end portion of post 4 are annular contact rings 25 and 26 which are insulated from each other and from said post as clearly shown in Fig. 3. The contact rings 25 and 26 are connected with corresponding ends of electric conductor wires 27 and 28 which pass through openings provided in post 4, downwardly through the latter and along one side of one of the branches of base 1 as clearly shown in Fig. 1. The wire 27 unites with the wire 22 leading to the socket 24, wire 28 being connected with the opposite side of said socket as shown, so that in the operation of the device current will also be supplied from the main circuit introduced through the plug 24′ to conductor wires 27 and 28. A conventional switch 29 is interposed in the wire 28 for controlling the circuit passing therethrough.

Coöperating with contact rings 25 and 26

are brushes 30 and 31 respectively mounted in the sleeve extension 5 of socket 6. Each of said contact brushes comprises a tubular body 32 which is incased in a suitable casing of insulation which is threaded in the member 5 so as to permit of ready attachment or detachment of the brushes. Loosely mounted in the inner end of the body 32 of each of said brushes is a contact member 33 with which coöperates a helical compression spring 34 for pressing the same inwardly to engagement with the contact ring 25 or 26 as the case may be. Provided at the outer ends of brushes 30 and 31 are screws 35 which serve to secure the respective ends of conductor wires 36 to said brushes as clearly shown in Fig. 3. Each conductor wire 36 extends upwardly into the tree to a series of electric lights, not shown, which are mounted in the tree. With the arrangement set forth it will be seen that brushes 30 and 31 serve to electrically connect the respective ends of conductor wires 36 with the contact rings 25 and 26.

Contact ring 25 is formed with a series of spaced contact points 37 which project through a ring 37′ of insulating material for engagement by the contact members 33 of brushes 30 which are spaced circumferentially around member 5. By this arrangement it will be seen that the circuit through the conductor wire 36 of each brush 30 will be intermittently opened and closed, thereby resulting in the flashing of the lights in the circuit during rotation of the tree. The brushes 30 are so spaced relatively to each other that the contact members 33 thereof will be brought into registration with the contact points 37 successively, that is only one of said points 33 will be in circuit closing position at a time, as clearly shown in Fig. 5. This arrangement is adopted to prevent flashing of all of the lights of the tree at once, it being clear that with this arrangement, the lights in the tree will be flashed in groups, each group containing as many lights as there are arranged in each of the conductor wires 36 of the brushes 30.

Also mounted in the member 5 is a brush 30′ of a construction identical to that of the other brushes above described. The brush 30′ is mounted in the member 5 in a plane above the brushes 30 so that the contact member 33 thereof will engage against the upper smooth end portion of the ring 25, remaining constantly in contact therewith during the rotation of the tree. The lights which are connected with the conductor wire 36 leading from the brush 30′ will therefore be constantly lighted since the brush 30′ remains in constant electrical connection with the ring 25. With this arrangement then it will be seen that in the operation of the tree some of the lights will be flashed while others will be constantly lighted. All of the conductor wires 36 leading from the various brushes 30 and 30′ connect with the common return brush 31 as will be readily understood.

In order to hold the conductor wires 36 in close proximity with the socket 6 a ring 38 of insulating material is employed for loosely engaging with said wires as clearly shown in Fig. 3. Also tubes 39 of insulating material are mounted in an annular outwardly extending flange 40 provided at the upper end of socket 6 through which the conductor wires 36 may pass, the tubes 39 serving to hold said wires separated and prevent tangling thereof. The flange 40 serves in the capacity of a deflector for the needles dropping from the Christmas tree, preventing said needles from accumulating upon the worm wheel 11 and worm 14 to interfere with operation thereof. Also a curved deflector plate 14′ secured to the base member 2 is positioned over the worm 14 to further guard against needles or other obstructive matter finding its way onto said worm and the adjacent or meshing portion of said worm wheel 11. The inner end of member 14′ is positioned for engagement with the upper side of worm wheel 11 so as to serve as a means of locking the latter and hence the socket 6 against relative upward movement. With the arrangement set forth it will be seen that the socket together with the extension 5 thereof are free for upward movement except for the member 14′, and so that in case it becomes necessary to detach said socket member 5, this may be readily and easily effected by removing the member 14′ which will unlock said parts to permit of the desired removal.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. In a device of the class described, the combination of a base; a socket member, adapted to accommodate a Christmas tree, rotatably supported by said base; electric conductor wires leading to said base; electric conductor wires leading from said socket to a series of lights in the tree; means for rotating said socket; means for intermittently making and breaking a circuit through said conductor wires during rotation of said socket, and means carried by said socket member inclosing said circuit making and breaking means, substantially as described.

2. In a device of the class described, the combination of a base; a socket member, adapted to accommodate a Christmas tree, rotatably supported by said base; electric conductor wires leading to said base; electric conductor wires leading from said socket to a series of lights in the tree; means for rotating said socket; means for closing a circuit through said conductor wires during rotation of said socket; and tubular members of insulating material on said socket through which the conductor wires leading from said socket pass for holding said wires in close proximity with the axis of rotation of the tree, substantially as described.

3. In a device of the class described, the combination of a base; a socket member, adapted to accommodate a Christmas tree, rotatably supported by said base; electric conductor wires leading to said base; electric conductor wires leading from said socket to a series of lights in the tree; means for rotating said socket; means for closing a circuit through said conductor wires during rotation of said socket; tubular members of insulating material on said socket through which the conductor wires leading from said socket pass; and a ring of insulating material encircling said socket and embracing said wires for holding the latter in close proximity with the outer surface of said socket, substantially as described.

4. In a device of the class described, the combination of a base; a socket member, adapted to accommodate a Christmas tree, rotatably supported by said base; electric conductor wires leading to said base; electric conductor wires leading from said socket to series of lights in the tree; means for rotating said socket; means for intermittently making and breaking the circuit through some of said conductor wires and constantly closing the circuit through the other of said contact wires during rotation of said socket, and means carried by said socket member inclosing said circuit making and breaking means, substantially as described.

5. In a device of the class described, the combination of a base; a socket member, adapted to accommodate a Christmas tree, rotatably supported by said base; electric conductor wires leading to said base; electric conductor wires leading from said socket to series of lights in the tree; means for rotating said socket; and means for successively intermittently making and breaking the circuit through some of said conductor wires and constantly closing the circuit through the other of said wires during rotation of said socket, substantially as described.

6. In a device of the class described, the combination of a base; a socket member adapted to accommodate a Christmas tree, rotatably supported by said base; electric conductor wires leading to said base; electric conductor wires leading from said socket to a series of lights in the tree; means for rotating said socket; means for closing a circuit through said conductor wires during rotation of said socket, said means comprising two annular contact members mounted on said base and insulated therefrom and from each other, said contact members being connected with said first mentioned conductor wires; a depending sleeve on said socket member rotatable therewith and inclosing said annular contact members; brushes carried by said sleeve and engaging with said contact members, said brushes being connected with said second mentioned wires, each of said brushes comprising a substantially radially disposed tubular holder mounted in and insulated from said sleeve member; a recess formed in each end of said holder; a spring pressed brush proper loosely mounted in the recess at the inner end of said holder, the recess at the opposite end of said holder being adapted to receive a conductor wire; and conductor wire securing means coöperating with the last mentioned recess, substantially as described.

7. In a device of the class described, a base, an upright on said base, a pair of contact rings on said base suitably insulated, a rotatable tree holding member, a depending sleeve on said member encircling said upright and brushes carried by said sleeve and engaging said rings, substantially as described.

8. In a device of the class described, a base, a fixed upright on said base, a pair of contact rings on said base suitably insulated, a rotatable tree holding member, a depending sleeve on said member rotatable therewith and inclosing said upright, brushes carried by said sleeve and engaging said rings and means for rotating said member and said sleeve, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERICK W. KRAPF, JR.

Witnesses:
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ARTHUR A. OLSON.