July 15, 1930. J. H. BROWN 1,770,874

HOROLOGICAL LAMP

Filed April 29, 1930 2 Sheets-Sheet 1

Fig. 1.

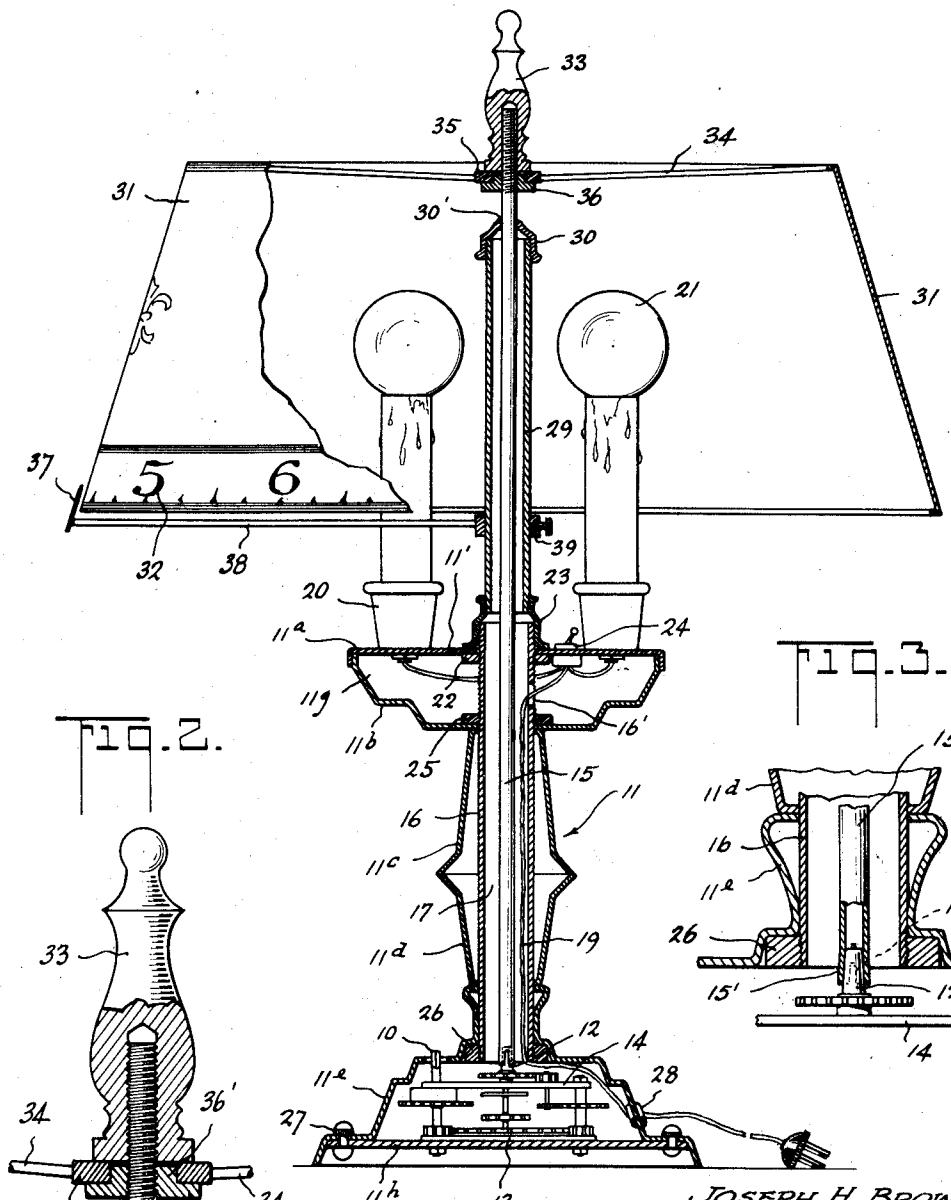

Fig. 2.

Fig. 3.

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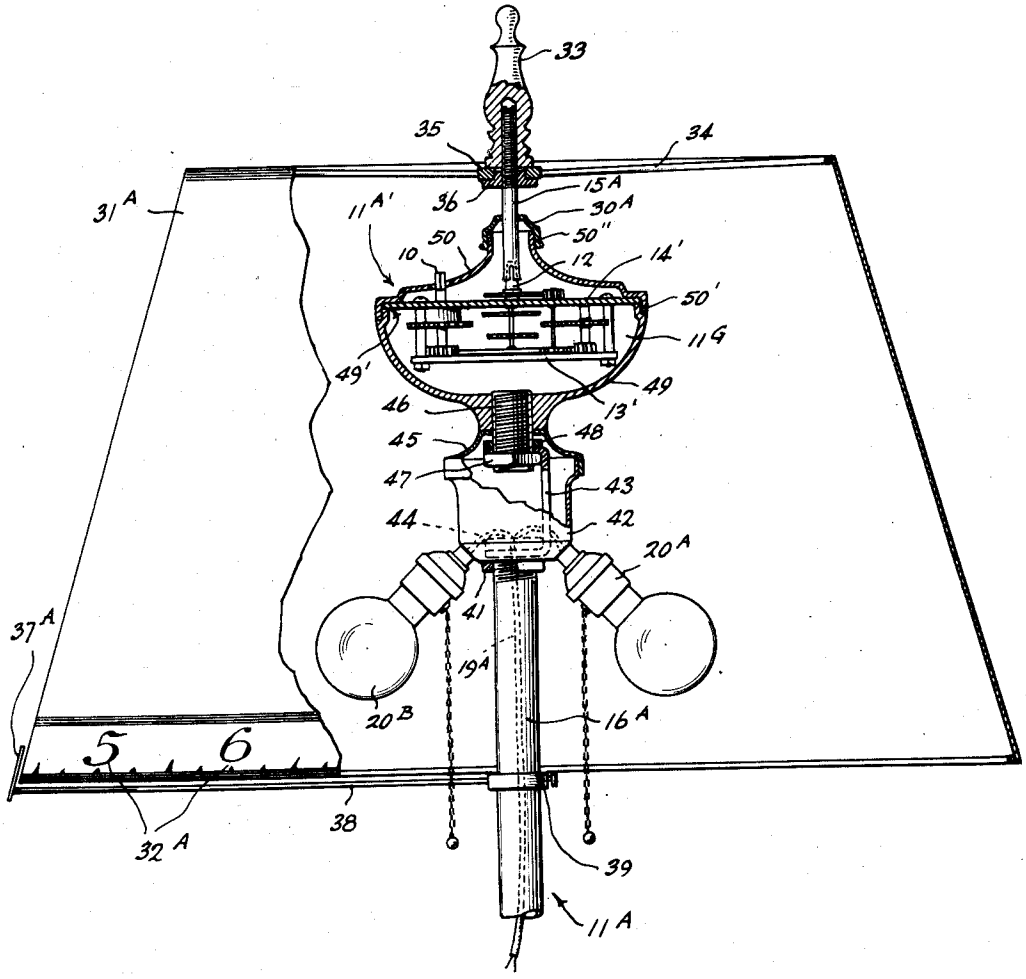
Fig. 4.



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HOROLOGICAL LAMP

Application filed April 29, 1930. Serial No. 448,186.

This invention relates to clock lamps.

The underlying aim of the invention is to provide a horological lamp wherein the lamp stand may include a clock mechanism (mechanically, electrically or otherwise driven), and wherein the shade over one or a plurality of electric light bulbs (such shade carrying say hour, half and quarter hour markings uniformly arranged peripherally or circumferentially thereof) may be rotated by said clock mechanism relative to a fixed index; yet a horological lamp wherein certain new and valuable advantages will be incorporated directed toward providing a more reliable, less expensive and generally more attractive horological lamp than heretofore proposed.

To the ends last mentioned, one of the particular objects of the invention is to provide a horological lamp wherein a standard clock mechanism, for instance, a key-wound or synchronous motor type of mechanism purchaseable from another manufacturer, may be employed because conveniently placed at a location in or on the lamp ordinarily resulting from the decorative design or configuration thereof, and employed in an improved manner for rotating the lamp shade from the hour-hand-drive-shaft of the clock mechanism.

Other particular objects of the invention are to provide an arrangement as last described, wherein the clock mechanism, located in or on the lamp below the top of the shade, may have a connection to the shade of such a type that the shade may be removed or applied very quickly and without special tools; wherein said connection will be a vertically journaled shaft at the center of the shade and so not traveling through an orbital path to cause varying shadows; wherein the wiring to make it possible to light the lamp or lamps may lead directly thereto, because the lamp socket or sockets are fixed relative to said shaft and all other parts rotated by the clockwork mechanism, thereby to avoid the necessity for collector rings and brushes, and for special lamp sockets, and also for other than standard tube and shell components at many if not the great majority or all of the parts of the new clock lamp; and wherein further, assembly of the lamp is rapid and easy even to unskilled labor, this due in part to the use of the components last-mentioned and in part to the fact that the electric conductors to the lamps are extended to avoid mechanical entanglements, sliding-contact interruptions and schematic complexity.

Another object is to provide an improved clock lamp, incorporating some or all of the advantages just noted, wherein the vertical shaft for rotating the shade shall be easily and quickly brought into or removed from operative relation to the general combination yet to be held to an appointed axis of rotation by journalling or guiding means facilitating a gravity-secured or a gravity-assisted coupling to the hour hand shaft of the clockwork mechanism and at the same time avoid the use of ball bearings or other rolling antifriction journalling means (to save expense and avoid assembly difficulties) and yet reduce the turning-friction of the shaft to an inconsiderable factor (to permit the use of a standard clock-work mechanism of either the spring or electric drive type).

Other objects and advantages of the invention will be hereinafter specifically pointed out, or will become apparent, as the specification proceeds.

With the above indicated objects in view, the invention resides in certain novel constructions and combinations and arrangement of parts, clearly described in the following specification and fully illustrated in the accompanying drawings, which latter show embodiments of the invention as at present preferred.

In said drawings:

Fig. 1 is a central vertical section, par-

tially in elevation, showing one of said embodiments;

Fig. 2 is an enlarged detail, partially in elevation and partially in section;

Fig. 3 is another enlarged detail, also partially in elevation and partially in section; and

Fig. 4 is a view similar to Fig. 1, but showing another embodiment.

Referring now particularly to Figs. 1, 2 and 3, the clock-work mechanism may be assumed to be of the spring-actuated type, the winding key receiving shaft being indicated at 10; and in the present case such mechanism is shown as positioned within the lamp stand 11 in the basal part thereof, and so as to project upwardly such winding key and also a time shaft, as the hour hand shaft 12.

Said mechanism, whether of the spring or electric driven type, is purchaseable from the manufacturer in such form as to include a desired type of bottom plate 13 and a desired type of top plate 14 forming part of the framing for the mechanism; such plates being seen also in Fig. 4 at 13′ and 14″.

Reverting to Figs. 1, 2 and 3, said hour hand shaft, as shown most clearly in Fig. 3, is tapered upwardly, to be sleeved by a cylindrical wall 15′, slotted, and preferably at opposite sides, as indicated at 15″; this wall being carried at the lower end of a vertical shaft 15. Said shaft 15 is shown as tubular, and is preferably of standard brass tubing. Spaced from and co-axially surrounding the shaft 15 will be noted a second and here thicker walled straight tube 16. The shaft 15 is of an external diameter such that when the same is assembled in the combination as hereinafter described, there will be provided an annular chamber 17 about the same and within the tube 16; these parts being preferably so selected, the straight tube 16 being also preferably cut from standard tubing, that the chamber 17 is ample for the stringing therethrough of the conductors 19, and yet the tube 16 may be employed as a rigidifying and assembly-tie element for the shell portions 11^a, 11^b, 11^c, 11^d and 11^e previously spun into shape or otherwise provided to form the external or ornamental portions of the stand 11.

The upper end of the stand may be circumferentially enlarged as indicated, and to provide a flat platform 11′, to facilitate the mounting on the element 11^a of as many standard lamp sockets 20 for lamps 21, as desired.

Centrally this element 11^a is pierced as shown for the passage therethrough of the externally threaded upper portion of tube 16; a nut 22 below the element 11^a being employed on said threaded portion of the tube, in co-action with a reducer 23 applied to said threaded portion above element 11^a, to furnish a lock-nut set for anchoring element 11^a at a predetermined point along the length of the tube. At 24 is indicated a switch for turning on and off the lamps 21; or one or more suitable switches may be incorporated, anywhere on the stand, or elsewhere, as on the sockets 20, for controlling the lamps individually or in different groups.

The threaded upper portion of tube 16 extends down far enough to permit a nut 25 to be located at the bottom of a wiring chamber 11^g formed between elements 11^a and 11^b; while the lower end of said tube 16 is also externally threaded for the application of a nut 26, to be applied to co-act with nut 25, so that there may be drawn upon the tube and between the two nuts the shell portions 11^b, 11^c, 11^d and 11^e. This establishment of the main external conformation of the desired design of lamp stand is performed before the clock-work mechanism, previously suitably firmly secured to a bottom sheet 11^h, is put into place, by applying bolts 27. Precisely to locate the axis of shaft 12 as predetermined, the holes in shell portion 11^e, and in said sheet, for receiving said bolts, are preferably cut by jigs or templates.

The side wall of tube 16, within chamber 11^g, has a hole 16′, for the leading from said chamber and into the annular chamber 17, of the wires 19 after they have been connected to the standard sockets 20; these wires being simply passed down through the chamber 17, and out of the open lower end of tube 16, and thence through the hollow of the shell 11^e to their selected point of emergence from the lamp stand, as indicated at 28.

These wires, it will be seen, are entirely clear of the clock work mechanism and its supports; since the wiring is completed before said mechanism is brought into the assembly. Said wiring is also completed, it may be explained, before the shell parts of the stand 11 are coupled by screwing up the nut 26 relative to the nut 25, and the reducer 23 relative to the nut 22; the shell parts 11^a and 11^b preferably being well separated during the connection of the conductors 19 to the sockets 20, and the tube 16 being accessible from the exterior of the chamber 11^g during the passage of said conductors through the hole 16′.

Reducer 23 is threaded internally not only in its wider lower portion but also in its upper reduced portion; the latter portion having mounted therein the externally threaded lower end of a sleeve 29, also preferably of standard tubing. At its top, said sleeve has secured thereon a second reducer or fitment 30 shaped to provide a circumferential edge 30′ to establish a journalling support for the shaft 15 of minute width compared to the length of said shaft, that is, to provide what may be termed a floating bearing for the shaft. As a result of this arrangement, the

shaft 15, as practically the last assembling step in making up the lamp, may be brought operatively and absolutely accurately into the assembly by merely dropping the shaft through the fitment 30 and thence down through the sleeve 29 and the tube 16, to engage the wall 15′ at the lower end of the shaft 15 around the hour hand shaft 12, it having been found that the weight of said shaft 15, and of the parts carried thereby above the fitment 30, will prove sufficient to spread slightly said wall 15′, in the vicinity of the slot or slots 15″, to cause the shaft 15 to become seized by the taper of shaft 12. This seizure has been found to be adequate, in view of the floating bearing given the shaft 15 at the fitment 30, and the consequent minimization of friction as between the shaft and its journalling means, to insure against any slippage of the shaft 15 on the shaft 12 during rotation of the latter.

The just mentioned parts carried at the upper end of the shaft 15, are the following, secured to the externally threaded end portion of the shaft above the point of protrusion of said shaft from the fitment 30: A shade 31 of parchment or other suitable material, is provided to act as an ordinary shade of any desired shape and ornamentation and also to carry around its lower periphery a circumferential series of time interval calibrations as indicated at 32; the numerals shown being hour marking ones, and usually running from "1" to "12". A standard finial is preferably used, the upper end of the shaft 15 being given an external diameter and thread to fit the internal thread in the finial; and the shaft 15, being as aforesaid preferably made of a standard length of tubing from end to end, is of a diameter to permit such thread to be cut therein. The shade is preferably supported in the usual way by a skeleton 34, having the familiar central ring 35 to which the inner ends of the radial wires of such skeleton are secured. Ordinarily, as will be understood in the art, the skeleton 34 and the shade are clamped fixedly on the top of a lamp, for which purpose the lamp stand carries a standard of a diameter approximating the base of the finial, up to the point where the ring 35 is to be set on the standard, and above such point said standard is continued as a reduced terminal portion, so that an annular shoulder will be provided on which the bottom of the ring may rest and so that such reduced portion may carry a thread to coact with the thread in the finial. Here, however, in order to permit a standard ring 35 to be employed with a standard finial, and yet to keep the diameter of the shaft 15 of the small size desirable to have the shaft turning within the tube 16 as and for the purposes hereinabove explained, a shouldered nut 36 is incorporated, having an upper reduced portion 36′ for fitting inside the ring 35, and threaded throughout the length of its center hole with a thread corresponding to the thread in the finial and the thread on the upper end of shaft 15. It will thus be seen that finial 33 and nut 36 may be employed as a lock-nut set to anchor the shade fixedly, and at a desired height, at the top of shaft 15. This assemblage of parts is valuable for another purpose, which is to permit the time shown by the shade, relative to an index 37, to be reset at any instant, and without lifting the shaft 15 or having to attempt to rotate said shaft relative to the hour hand shaft 12. To reset the time reading, it is merely necessary to loosen the finial, then move the shade the required amount relative to shaft 15, and then again screw the finial down tight.

The index 37 is fixed on the outer end of a rod 38, the inner end of which rod is suitably secured to a collar 39 readily setable, fixedly and at a predetermined height on and in a predetermined angular relation around, sleeve 29. This arrangement permits the index 37 to be brought into the most ideal position relative to the time interval calibrations on the shade, regardless of unexpected and irregular shrinkages of parchment and similar parts which are often encountered no matter how carefully the shade is built up or how expensive the die equipment be for cutting various sheet elements going into the make-up of the shade. As already explained, the index 37 is preferably not used to reset the time; that being done by adjusting the shade angularly on shaft 15. The adjustability of the index 37 is important for other reasons, as just brought out. Also, in certain lamp designs, it is desirable to have the rod 38 extend radially in one direction, and in other designs, in other directions; for purposes of symmetry, as to balance ornamental masses, or ornamental and utility masses.

The embodiment of the invention just described is one illustrating a carrying out of the invention to provide what is known as a desk or table lamp. There will next be described an embodiment of the invention found to be very practical and inexpensive to provide a standard or junior floor lamp incorporating the principles of and partaking of the advantages of the invention.

Referring now to Fig. 4, in this latter connection, the upper portion of the stand is indicated at 11A. The portion of said stand thus shown is a straight tube 16A, which may be continued down, in a manner not shown, to terminate in any desired tripod or other form of pedestal or into a pottery, metal or other decorative or shell-like portion therebelow.

In this form of the invention shown in Fig. 4, also, we have the characteristic elements of a hollow stand incorporating a straight tube; standard lamp sockets 20A for standard bulbs 20B, arranged in locations fixed rela-

tive to said tube, so that the wiring connections 19A from said sockets may be passed longitudinally through said tube; a clock work mechanism having an hour hand shaft 12 projected upwardly therefrom, said mechanism being fixedly located within a chamber 11G in such manner that the wiring connections to the sockets may be made before the mechanism is installed, or vice versa; a vertical shaft 15A lowerable through a floating bearing 30A and from the exterior of a shell structure 11A' carrying said bearing, thereby to couple the lower end of the shaft 15A to the hour hand shaft 12; means for mounting a shade 31A on the upper threaded end of shaft 15A, and for adjusting such shade angularly on said shaft to relate time interval calibrations 32A on the shade to an index 37A, such mounting means including a standard finial 33, a skeleton support 34 for the shade having a central ring 35, and a shouldered nut 36, as in Fig. 1; and a rod 38 carrying at one end the index and at the other end a collar 39 setable on a sleeve support, also exactly as and for the same purposes as in Fig. 1.

The upper end of tube 16A is threaded as indicated, for the application of a nut 41, and the mounting thereabove of the bottom wall of a shell element 44, and the lower limb of a U-strap 43 by way of a suitable circular hole in such limb; these parts all being secured together by a lock nut 44 applied at the top to the same thread on tube 16A to which nut 41 is applied. This shell element has suitably secured in the side wall thereof the sockets 20A.

As soon as the wires 19A are connected to the usual terminals provided by said sockets, which terminals are now exposed by way of the open top of shell 42, and these wires are drawn down as shown through the tube 16A, the shell 42 may have its shell cover 45 applied quickly and securely merely by slipping such shell cover 45 down over a nipple 46. This nipple, having upper and lower external threads as shown, is, by the latter thread, and by nuts 47 and 48 forming a lock nut couple, secured at its lower end to the upper limb of strap 43; said limb having a circular hole through which the nipple may be passed, and such hole being aligned with the hole in the lower limb of the strap.

The housing or casing 11A' for the clock work mechanism includes a lower shell 49 and an upper or cover shell 50. Shell 49 has a bottom neck portion presenting a central vertical bore carrying a thread matching the external thread on the upper end of the nipple 46; and now such shell 49 is screwed down tightly on the nipple to anchor this shell securely, and to endwisely clamp the shell 42 and shell cover 45 together. The exterior of the upper rim portion of the shell 49 is preferably circular, and is finished nicely, preferably in a lathe, to establish an annular ledge 49' the outer periphery of which precisely matches the outline of the upper plate 14', in this case made circular, of the framing for the clock work mechanism; and then the upper outer portion of the shell 49 is further machined to provide a cylindrical portion having a thread, below said ledge. By this means, and by the provision of a depending skirt 50' on the cover shell 50 carrying an internal thread matching the thread last mentioned, the clock work mechanism may be quickly and easily housed and fixed in precisely the location predetermined, merely by laying the same in place as shown, and screwing down tightly the cover shell 50.

At its center said shell 50 is upwardly extended to provide an external threaded neck portion 50'', on which is screwed a reducer 30A like the reducer 30 in Fig. 1.

The winding key receiving shaft 10 will be seen, projecting upwardly to be always exposed at a point convenient for winding the clock work mechanism if spring driven, as in Fig. 1.

For a floor lamp, an arrangement like that above described in connection with Fig. 4 is preferred, to avoid an unsightly bulge in the lamp stand above the basal portion thereof to accommodate the clock work mechanism, and to avoid the whipping or other troubles encountered in a too long shade carrying vertical shaft where said mechanism is at or near the bottom of the stand as well also as the necessity of stooping to wind the clock work mechanism where spring driven.

The hereinbefore described constructions admit of considerable modification without departing from the invention; therefore, it is the wish not to be limited to the precise arrangements shown and described, which are as aforesaid, by way of illustration merely. In other words the scope of protection contemplated is to be taken solely from the appended claims, interpreted as broadly as is consistent with the prior art.

As already indicated, by the term "clockwork mechanism", particularly as used in the claims, is meant all the mechanism driven by an energy-storing winding spring, or by the electric current (by means say of a synchronous motor), or by other source of drive, up to and including the coupling to the shade shaft.

I claim:

1. In a clock lamp, the combination, with clockwork mechanism having an upwardly projected time shaft; of a hollow lamp stand housing said mechanism and time shaft; a light bulb socket supported by the stand; electrical connections to said socket passing through the hollow stand, said socket being fixed on the stand so that said connections may be fixed from their points of connection with said socket to their points of emergence from the stand; a vertical shade shaft manually up-

wardly endwisely withdrawable from the stand for complete separation at will from all integrity-of-stand-maintaining elements of the stand; means for frictionally coupling the lower end of the shade shaft to said time shaft to be rotated thereby; a shade having time interval calibrations; an always-accessible, releasable connection mounting said shade on the upper end of said shade shaft to cause the shade to be rotated with the shade shaft and by said clockwork mechanism; and stationary journaling means for the shade shaft below the top of the shade including a circular edge girthing the shade shaft at a selected position therealong, said edge being of small width as compared with the length of the shade shaft to minimize friction.

2. In a clock lamp having a rotatable shade carrying time interval calibrations, the combination of a clock mechanism anchored in a predetermined location below the top of said shade having a time shaft and so as to have an end portion of said time shaft of said mechanism project upwardly; a structure anchored in a predetermined location above said mechanism and presenting a substantially circular opening having edge portions arranged in a plane substantially perpendicular to the axis of said shaft and so that the center of said opening is substantially vertically aligned with said axis; a shade shaft passed downwardly through said opening to engage said time shaft adjacent its upper end and to extend above said edge portions and to obtain a stationary journaling support at said portions; said edge being of small width as compared with the length of the shade shaft to minimize friction; means partially carried at the lower end of said shade shaft and partially carried at the upper end of said time shaft whereby said shade shaft may be manually engaged near its upper end and thereby moved downwardly relative to said time shaft to frictionally secure both shafts together to cause said shade shaft to rotate with said time shaft and upwardly relative to said time shaft to disconnect said shafts to facilitate removal of said shade shaft; and means for securing the lamp shade to the upper end of the shade shaft to rotate therewith.

3. In a clock lamp, the combination, with clockwork mechanism having an upwardly projected time shaft; of a hollow lamp stand housing said mechanism; a light bulb socket supported by the stand; electrical connections to said socket passing through the hollow stand, said socket being fixed on the stand so that said connections may be fixed from their points of connection with said socket to their points of emergence from the stand; a vertical shade shaft manually upwardly endwisely removable from the stand for complete separation at will therefrom; means for frictionally coupling the lower end of the shade shaft to said time shaft to be rotated thereby; a shade having time interval calibrations; an always-accessible, releasable connection mounting said shade on said shade shaft to cause the shade to be rotated with the shade shaft and by said clockwork mechanism; said coupling means including overlapping parts of the shade shaft and said time shaft so arranged that upward removal of the shade shaft as aforesaid disconnects the two shafts.

In testimony whereof I hereby affix my signature.

JOSEPH H. BROWN.