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2,723,548

DESK OR TABLE TYPE PYROPHORIC LIGHTER

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Fig. 1.

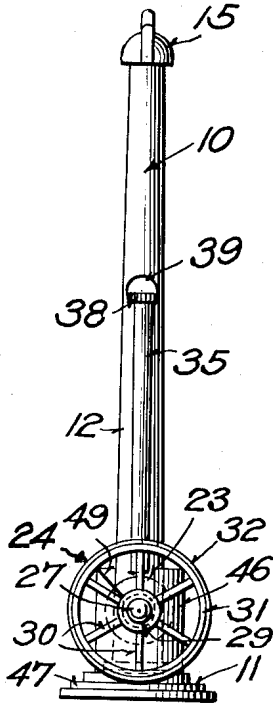


Fig. 2.

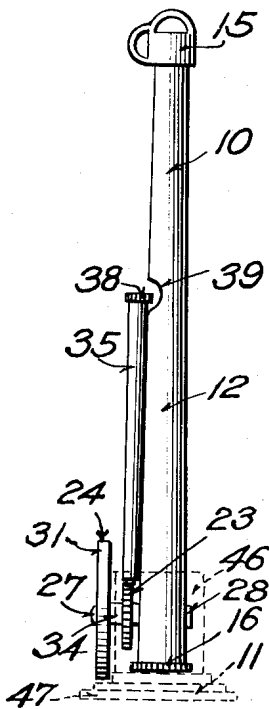


Fig. 3.

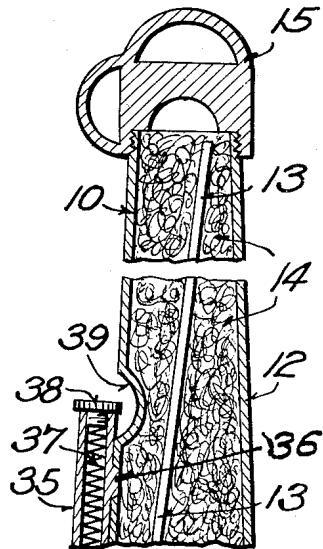


Fig. 5.

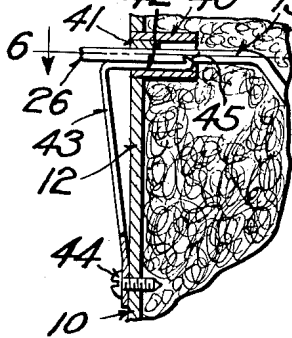


Fig. 7.

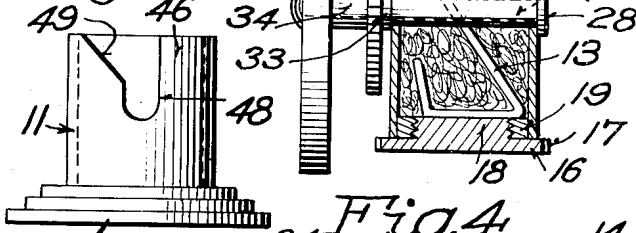


Fig. 4.

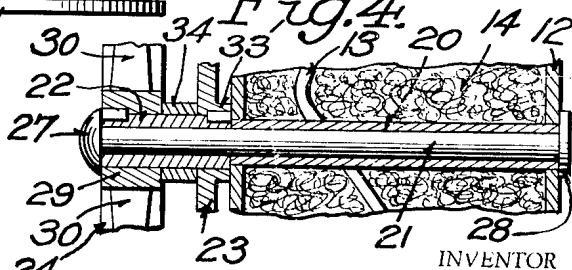
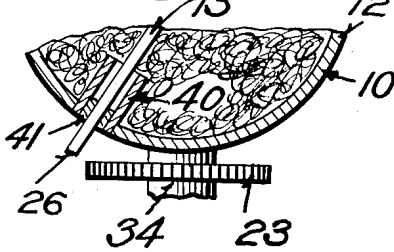


Fig. 6.



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DESK OR TABLE TYPE PYROPHORIC LIGHTER

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4 Claims. (Cl. 67—4.1)

This invention relates to pyrophoric lighters used for lighting cigarettes and cigars, and particularly to those of the type which, when not in use, are placed on a desk, table top or the like.

The invention contemplates a lighter of this character which may be given various ornamental forms and which is normally supported in an upright position in a socketed holder or stand adapted to rest on the top of a desk or table, the body of the lighter being readily liftable out of the holder when it is to be used and carrying a large friction wheel adapted to be rolled on the top of a table or the like to rotate the abrading wheel against the pyrophoric material to produce sparks which ignite the fuel saturated wick.

The principal object of the invention is to provide a device of the above indicated character which is simple and practical, effective in operation, convenient to use and in which the wick may be readily ignited.

Another object of the invention is to provide spring means associated with the wick to assist in feeding it out of the fuel chamber.

With the above and other objects and advantages in view, the invention resides in the novel combinations and arrangements of parts and the novel features of construction hereinafter described and claimed, and illustrated in the accompanying drawings which show the present preferred embodiment of the invention.

In the drawings:

Fig. 1 is a front elevation of the lighter supported on its holder;

Fig. 2 is a side view of the lighter, the holder being shown in dotted lines;

Fig. 3 is an enlarged vertical front-to-rear sectional view of the lighter with parts broken away;

Fig. 4 is a further enlarged section showing a portion of Fig. 3;

Fig. 5 is a detail vertical section showing the wick holding and feeding spring;

Fig. 6 is a detail horizontal section taken substantially on the line 6—6 of Fig. 5; and

Fig. 7 is a front view of the holder.

Referring more in detail to the drawings the numeral 10 denotes, as a whole, the pyrophoric lighter and 11 the holder or stand adapted to be placed on a desk or table and in which the lighter is removably supported in an upright position. The lighter comprises an elongated tubular body 12 to serve as a reservoir for the lighter fluid or fuel and to contain the wick 13 and cotton or other absorbent material 14. The body 12 is preferably of circular shape in cross section and tapered toward its upper end which is closed by an ornamental cap 15 which may be permanently or removably mounted. The larger cylindrical lower end of the body, through which the wick, absorbent and fuel are introduced, is closed by a screw cap 16 having an annular flange 17 of greater diameter than the body and a reduced threaded plug portion 18 to screw into a threaded ring 19 soldered or otherwise se-

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cured in the bottom of the tubular shell or body 12 as seen in Fig. 3.

Extending transversely through the lower portion of the body is a tube 20 with its ends soldered or otherwise permanently secured in the front and rear portions of the body. Extending through the tube 20 is a shaft or rod 21 on the front end of which is rotatably mounted a sleeve 22 carrying a large friction wheel 24 and a small abrading wheel or disk 23. The rough periphery of the disk 23 operates against the lower end of a spring pressed stick of pyrophoric material 25 to throw sparks toward the end 26 of the wick 13 as hereinafter described. While the supporting element 21 may be a removable bolt, it is preferably in the form of a rivet having at its front end a head 27 while its other end is upset or headed at 28 against the rear end of the tube 20. The wheel 24 is shown as having a hub 29, radial spokes 30 and a rim 31 with a tire 32. The disk 23 has a hub 33 and between the latter and the wheel hub is a spacing sleeve 34. The two hubs may be keyed or otherwise connected with the sleeve 22 to turn therewith but the sleeve 22 is freely rotatable on the rivet between its head and the adjacent wall of the body 12.

The stick or rod of pyrophoric material 25 projects from the lower end of a tube 35 mounted vertically on the front of the body 12 preferably by a pair of tongues 36 which are riveted or soldered in slots in the body as seen in Fig. 3. A coil spring 37 in the upper portion of the tube 35 thrusts against the material 25 and a screw cap 38 threaded in the top of the tube. Since this tube is disposed in contact with the body, a portion of the latter adjacent the top of the tube is depressed as at 39 to facilitate the application and removal of the cap.

The wick extends out of the body 12 through a fixed radially disposed tube 40 as shown in Fig. 6. In this tube or nipple is fixed a bushing 41 having a bore of a size to prevent free movement of the wick. In the bottom of the nipple is a longitudinal groove or recess to receive the upper portion 42 of an angular leaf spring 43. The lower vertical portion of the spring is secured to the body 12 by a screw 44 and at the end of the horizontal upper portion 42 is a tooth or spur 45 which grips the portion of the wick within the tube and bushing. The spring is so constructed that when it is positioned as shown in Fig. 5, the wick will be held with its free end 26 projecting beyond the bushing. The spring may be used as a means for feeding the wick out of the body as its end 26 burns away. By holding the end 26 and pushing the spring inwardly the spur will be moved to take a new grip on the wick at a point inwardly of the position shown in Fig. 5 so that when the spring is released it will return to its former position and pull the wick outwardly. The projecting end or portion 26 may thus be renewed from time to time. If the wick is burned to a point so close to the end of the nipple that the projecting end 26 cannot be gripped, the spring may be moved in an outward direction to pull the wick through the nipple a distance sufficient to enable it to be gripped and pulled outwardly. The spring thus serves both as a holding means and a feeding means for the wick.

It will be noted that the diameter of the friction wheel 24 is such that its periphery 32 is disposed beyond the flat outer face of the flange 17 so that when the body 12 is held in an upright position, the rubber tire friction wheel may be rolled on the top of a desk, table or other flat surface to rotate the abrasion wheel 23 to cause sparks which ignite the wick. The wick may thus be readily ignited when the lighter is to be used. When not in use the lighter is supported in an upright position by merely lowering it into a socket in the holder or stand 11. The socket is formed by an open top cylinder 46 on an ornamental base 47 adapted to rest on the top of a table or the like. In the

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wall of the cylinder 46 is a vertical notch or slot 48 with an enlarged upper end formed by cutting away the upper portion of one edge of the notch, as at 49. The width of the notch is slightly greater than the diameter of the spacer 34 which is adapted to enter it when the lower end of the lighter is dropped in the socket of the holder. The internal diameter of the cylinder 46 is slightly greater than that of the flange 17 which is adapted to rest on the bottom of the socket when the spacer is disposed in the notch. The beveled portion 49 at the upper end of the notch facilitates the entrance of the spacer in the notch. The lighter may thus be supported in an upright position but may be easily lifted out of the holder when it is to be used.

The manufacturer of the device by using different designs of wheels 24 and caps 15 may make the devices suggestive of different well known structures. As illustrated the wheel 24 simulates a wagon wheel, the body 12 simulates a wagon tongue and the cap 15 simulates a draft device at the end of a wagon tongue. The wheel might be made to simulate an automobile wheel and the cap to simulate the knob on a gear shift lever; or the wheel might be made to simulate a wheelbarrow wheel and the cap a wheelbarrow handle. The device may thus be given these and various other ornamental forms.

From the foregoing, taken in connection with the accompanying drawing, it will be seen that novel and advantageous provision has been made for carrying out the objects of the invention, and while preferences have been disclosed, attention is invited to the possibility of making variations within the scope of the invention as claimed.

I claim:

1. A pyrophoric lighter comprising an upright elongated body of circular shape in cross section forming a fuel reservoir, a shaft extending radially from said body adjacent its lower end, a sleeve rotatable on said shaft, a small abrasive wheel fixed on the inner end of said sleeve, a large friction wheel fixed on the outer end of said sleeve and spaced from said abrasive wheel, said friction wheel having a diameter to dispose its periphery below the bottom of said body, means on said body vertically above said abrasive wheel to hold a body of pyrophoric material in contact with the latter, and a wick extending from said body at one side of said abrasive wheel, in combination with means for supporting said body in an upright position when the lighter is not in use, said supporting means comprising a flat base to rest on a table top or the like and an annular wall rising from said base and forming an open-top socket to receive the lower end of said body, said wall having in its upper edge a downwardly extending slot of a size to receive the portion of said sleeve between the two wheels to dispose said friction wheel on the exterior of said wall and above said base when the lighter is in said supporting means.

2. A pyrophoric lighter comprising an elongated tubular body of circular shape in cross section forming a fuel reservoir, a shaft projecting transversely from said body adjacent one of its ends, a friction wheel and an abrading wheel supported on said shaft and mounted to rotate together, said friction wheel having a diameter to dispose its periphery beyond said one end of the body, a wick in said body and having an outwardly projecting end dis-

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posed adjacent said abrading wheel, a stick of pyrophoric material to coact with said abrading wheel, means for mounting said material on the side of said body, said shaft being disposed in a tube extending transversely through said body with its ends fixed in the opposite side walls of the latter, said wheels being carried by a sleeve rotatable on the projecting end of said shaft and being laterally spaced apart on the sleeve, in combination with means for supporting said body in an upright position when the lighter is not in use, said supporting means comprising a holder having a flat base to rest on a table top or the like and an open-top socket formed by an upright annular wall and of a size to receive said one end of the body, said annular wall having in its upper edge a downwardly extending slot to receive the portion of the shaft between the two wheels to dispose the friction wheel on the exterior of the holder when said one end of the body is in the socket.

3. A pyrophoric lighter to be supported on a table or the like in a socketed holder comprising an elongated tubular body forming a fuel reservoir, an upper cap closing the upper end of said body, a removable cap closing the lower end of said body, a tube extending transversely through said body adjacent said removable cap and having its ends fixed to the opposite sides of said body, a shaft in said tube and having an end projecting beyond one side of said body, a sleeve rotatable on the projecting end of said shaft, an abrading wheel mounted on the inner end of said sleeve to turn therewith, a friction wheel mounted on the outer end of said sleeve to turn therewith, said friction wheel having a diameter to dispose its periphery beyond the outer face of said removable cap, a tubular spacer on said sleeve between said wheels, a wick in said body having an outwardly projecting end disposed adjacent said abrading wheel, and a pyrophoric material holding tube disposed above said abrading wheel and extending longitudinally along the body and fixed thereto, the last mentioned tube containing a stick of pyrophoric material and means for feeding it against the periphery of the abrading wheel.

4. The structure of claim 3 in combination with means for supporting said body in an upright position when the lighter is not in use, said supporting means comprising a holder having a flat base to rest on a table top or the like and an open-top socket formed by an upright annular wall and of a size to receive the removable cap at the lower end of the body, said annular wall having in its upper edge a downwardly extending slot to receive said spacer and dispose the friction wheel on the exterior of the holder when the lower end of the body is in the socket.

References Cited in the file of this patent

UNITED STATES PATENTS

| | | | |
|----|-----------|-------------------|---------------|
| 55 | 409,506 | Schilling ----- | Aug. 20, 1889 |
| | 1,699,861 | Shapiro ----- | Jan. 22, 1929 |
| | 2,027,294 | Silberknoff ----- | Jan. 7, 1936 |
| | 2,208,672 | Holtzman ----- | July 23, 1940 |

FOREIGN PATENTS

| | | | |
|----|---------|-------------------|---------------|
| 60 | 249,926 | Switzerland ----- | May 1, 1948 |
| | 625,605 | France ----- | Apr. 25, 1927 |