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H. BISCHOFF

ILLUMINATING PENCIL

Filed Oct. 11, 1926

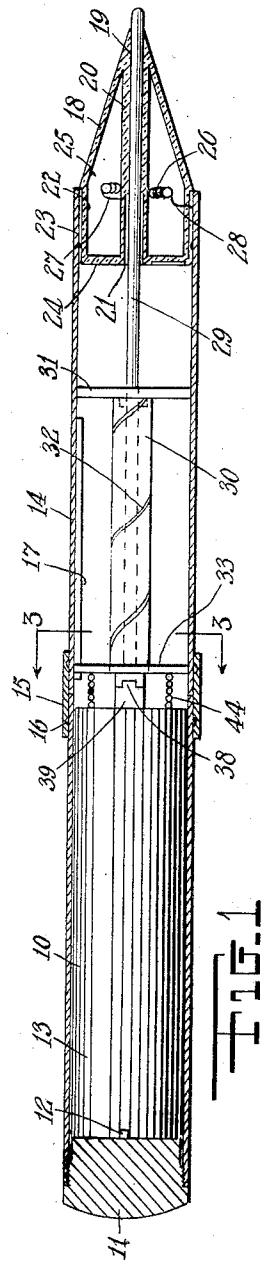


FIG. 1

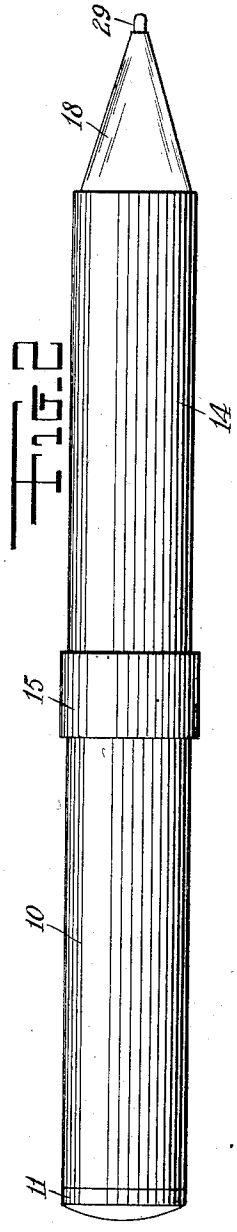


FIG. 2

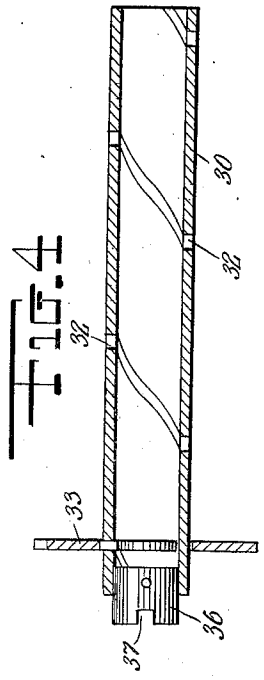


FIG. 4

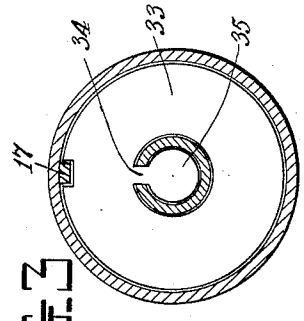


FIG. 3

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ILLUMINATING PENCIL.

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The main object of this invention is to provide a pencil having a glass head in which a filament is mounted for illuminating an area beneath the writing head.

Another object is to provide a pencil for illuminating an area beneath the place where it is to be used. The pencil is provided with a dry cell and a bulb in the form of a tapering head thru which the pencil lead passes and projects.

The above and other objects will become apparent in the description below, in which characters of reference refer to like-named parts in the drawing.

Referring briefly to the drawing, Figure 1 is a longitudinal sectional elevational view of the illuminating pencil, showing the mechanism in cooperating detail.

Figure 2 is an exterior longitudinal elevational view of the device.

Figure 3 is an enlarged cross sectional view taken on line 3—3 of Figure 1.

Figure 4 is a longitudinal sectional elevational view of the worm, showing the means of fitting the lead thru the head of the pencil.

Referring in detail to the drawing, the numeral 10 indicates the upper barrel of the pencil. One end of this barrel is provided with internal threads which are engaged by a threaded cap 11. Said cap is provided with a key 12 which fits into a diametral slot formed on the upper end of a dry cell 13. The second barrel 14 is placed end to end adjacent the first-named barrel 10 and is rotatably coupled to the barrel 10 by a sleeve union 15 which has annular canals into which bridges 16 formed on both barrels fit. The barrel 14 is provided with a key 17 which extends longitudinally about half its length. The lower open end of said barrel 14 removably receives therein a filament lamp formed of transparent glass. This filament lamp has a tapering nose 18 and a channel 19 extending thruout its entire length. The wall 20 which surrounds the circular channel 19 has a sleeve 21 embedded therein. The nose 18 of the filament lamp is integral with an encircling wall 22 which has a metallic encircling plate 23 embedded on its external face and a roof 24, the parts 18, 23, and 24, and the wall 20, forming a hermetically sealed chamber 25 in which a filament coil 26 is suspended. The lead 27 extending from one end of the coil 26 is connected to the metallic conducting sleeve 21 and the opposite lead 28 extending from the other end of the coil is joined to the encircling plate 23. A nude lead 29 is adapted to project from the nose 18 for writing purposes. This lead extends thru the channel 19 and passes axially into the second-named barrel 14. The lead passes thru a cylinder 30 which projects from the face of a circular plate 31 mounted rigidly in the barrel 14. This cylinder is provided with a helical channel 32. A circular plate 33 is slidably and rotatably mounted on said cylinder 30 and has an arm 34 which extends thru the channel 32 of the cylinder and is provided with a projecting circular end 35 which closes the cross section or bore of the cylinder and is adapted to have the end of the lead 29 in contact therewith. The upper end of the cylinder is provided with a closure plug 36 having a diametral slot 37 therein, in which the keyed end 38 of the terminal 39 of the dry cell 13 registers. A coil spring 44 seats upon the face or end of the dry cell and contacts with the plate 33, urging the latter downwardly when the barrel 14 is rotated independently of the barrel 10.

The filament coil 26 is adapted to be rendered incandescent thru an electrical circuit whose energy is derived from the dry cell 13. The current passes from the dry cell thru the one terminal 39 into the cylinder 30 and thru the nude lead 29, finally passing thru the sleeve 21 with which the lead contacts, thence thru the filament coil 26, thru the lead 27, emerging from this coil thru the lead 28 into the plate 23 and completing the circuit thru the barrel 14, sleeve 15, and then thru the barrel 10 which lies in contact with the casing which forms one terminal of the dry cell 13. It is to be noted that to form a complete circuit thru these members, members 33 and 31 must be formed of some insulating material such as bakelite or hard rubber. When the current passes thru the filament coil 26, the same becomes incandescent and sheds rays of light thru the nose 18 of the filament lamp and illuminates an area around the active end of the device. In feeding the lead 29 out of the pencil, the upper barrel 13 is rotated while the lower barrel 14 is held rigid. In rotating the upper barrel independently of the lower one, the key 38 on the terminal 39 of the dry cell being mounted in a key way in the plug 36 of the member rigid in the cylinder 30, the latter is rotated. As an arm 34 of the insulating plate 33 passes thru the helical chan-

nel 32 in said cylinder, the plate 33 is lowered thru a worm action. Member 35 being a part of the plate 33 and filling the area of the bore of the cylinder, said member contacts with the inner end of the nude lead 39 and urges the same toward the nose 18 from which it projects.

It is to be noted that certain changes in form and construction may be made without departing from the spirit and scope of the invention.

I claim:—

1. A device of the class described comprising a pair of barrels arranged end to end and rotatable independently of each other, a sleeve joining said barrels, a transparent glass filament lamp closing one of said barrels, a filament coil in said lamp, a dry cell in one of said barrels, the terminals of said cell being connected respectively to those of said filament, a nude lead passing axially thru said lamp, and means for feeding said lead outwardly upon rotation of one of said barrels with respect to the other.

2. A device of the class described comprising a pair of barrels arranged end to end, a sleeve joining said barrels permitting individual rotation of the barrels, a dry cell in one of said barrels, a filament lamp mounted in the other barrel, said filament lamp comprising a conical nose and an axial wall having a bore extending entirely therethru, a nude lead slidably passing thru said bore, a metallic conducting sleeve surrounding said bore, an annular plate mounted on the periphery of said lamp, a filament coil having leads joined to said annular plate and sleeve surrounding said bore, one terminal of said cell being connected to said annular plate and the other terminal to said last-named sleeve, and means in one of said cylinders for projecting the lead out of said filament lamp.

3. A device of the class described comprising a pair of barrels arranged end to end, a sleeve joining said barrels permitting individual rotation of the latter, a dry cell in one of said barrels, a filament lamp mounted in the other barrel, said filament lamp comprising a conical nose and an axial wall having a bore extending entirely therethru, a nude lead slidably passing thru said bore, a metallic conducting sleeve surrounding said bore, an annular plate mounted on the periphery of said lamp, a filament coil having leads joined to said annular plate and sleeve surrounding said bore, one terminal of said cell being connected to said annular plate and the other terminal to said last-named sleeve, means in one of said cylinders for projecting the lead out of said filament lamp comprising a cylinder having a helical channel therein, a circular plate fixed in one of said barrels rotatably supporting said cylinder, an additional circular plate slidably mounted in the same barrel, and means on said second circular plate engaging said cylinder for causing said second-named circular plate to slide longitudinally in said barrel.

4. A device of the class described comprising a pair of barrels arranged end to end, a sleeve joining said barrels permitting individual rotation of the latter, a dry cell in one of said barrels, a filament lamp mounted in the other barrel, said filament lamp comprising a conical nose and an axial wall having a bore extending entirely therethru, a nude lead slidably passing thru said bore, a metallic conducting sleeve surrounding said bore, an annular plate mounted on the periphery of said lamp, a filament coil having leads joined to said annular plate and sleeve surrounding said bore, one terminal of said cell being connected to said annular plate and the other terminal to said last-named sleeve, means in one of said cylinders for projecting the lead out of said filament lamp comprising a cylinder having a helical channel therein, a circular plate fixed in one of said barrels rotatably supporting said cylinder, an additional circular plate slidably mounted in the same barrel, an arm extending toward the axis of said second-named washer having an annular plate on its extremity, said annular plate covering the area of the bore of said cylinder, the arm passing thru the helical channel, a key mounted longitudinally in one of said barrels, said second-named circular plate engaging said key for causing longitudinal sliding of said second-named circular plate from one end of said barrel toward the opposite end, and means for rotating said cylinder when rotating said opposite barrel.

In testimony whereof I affix my signature.

HANS BISCHOFF.