United States Patent [19]

Greene

[11] **3,797,055**

[45] **Mar. 19, 1974**

[54] **TOOL FOR REMOVING LIGHTBULB BASES AND CLEANING LIGHTBULB SOCKETS**

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[21] Appl. No.: **314,436**

[52] **U.S. Cl.** ..... **7/1 G,** 51/181, 15/105, 15/111, 81/3 R, 81/72

[51] **Int. Cl.** **B25f 1/00**

[58] **Field of Search** ..... 81/3 R, 3.05, 72, 53.2; 7/1 R, 1 G; 15/111, 105, 104.01, 104.02, 104.03, 104.04; 51/181

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[57] **ABSTRACT**

A hand tool comprising an elongated metal member is disclosed with a central portion comprising a handle, one end of said tool being for cleaning a lightbulb socket and having radially extending brushes with abrasive means on the end of the member adjacent the brushes for cleaning the base contact of a socket while the brush means cleans the threaded side walls of the socket and the other end of the tool comprising a lightbulb base removal tool including a tapered conical member with radial flanges and end flanges insertable in a lightbulb base for gripping and removing the base from a socket.

11 Claims, 5 Drawing Figures

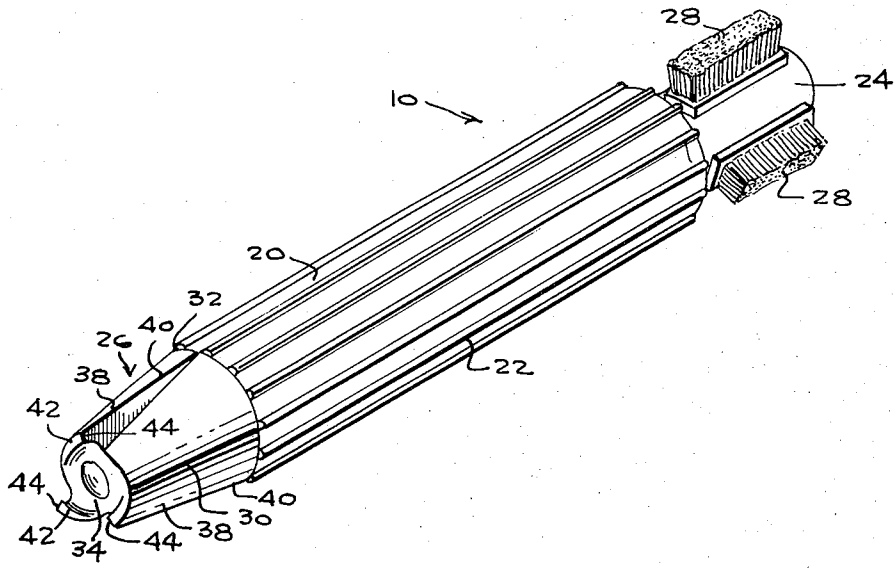


Fig-1

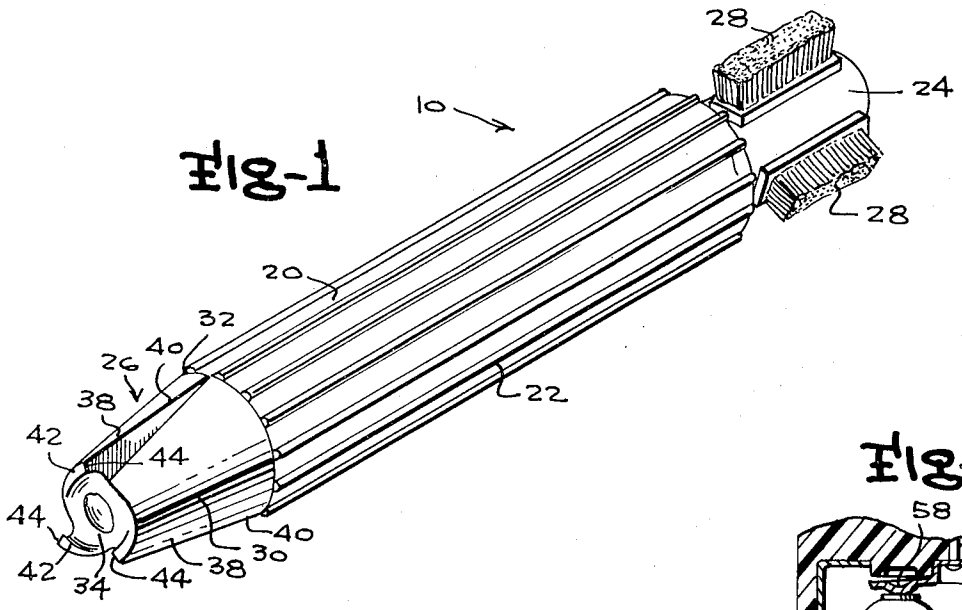


Fig-2

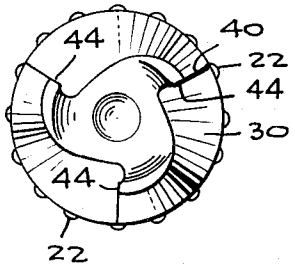


Fig-3

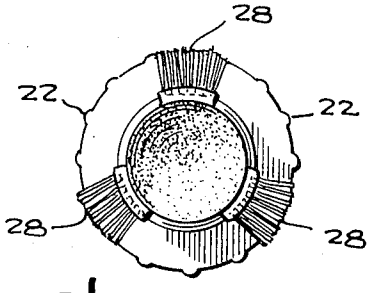


Fig-4

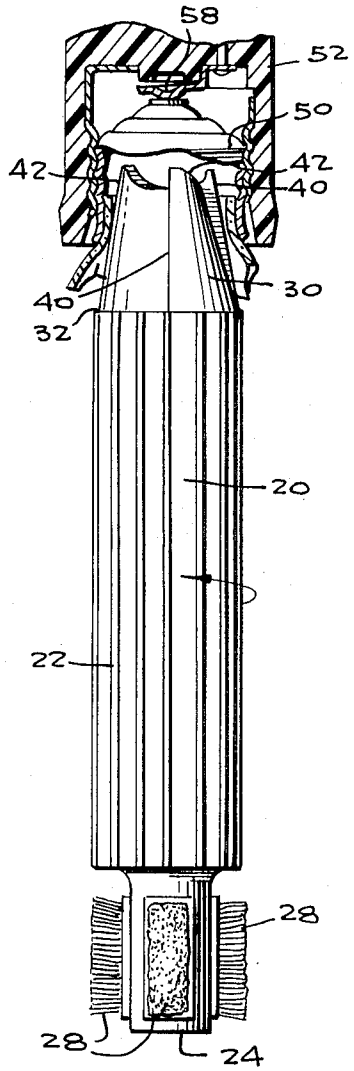
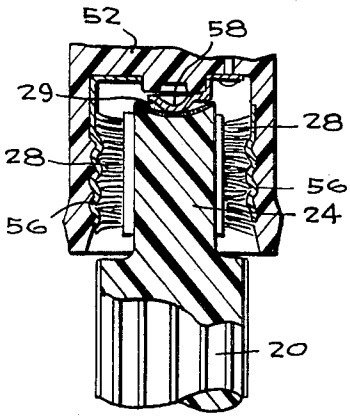


Fig-5



TOOL FOR REMOVING LIGHTBULB BASES AND CLEANING LIGHTBULB SOCKETS

This invention is in the field of hand tools and is specifically directed to a maintenance tool capable of removing the base of a broken lightbulb from the lightbulb socket and further capable of cleaning and removing corrosion and the like from the socket following removal of the lightbulb base from the socket.

The removal of the metal lightbulb base of a conventional lightbulb from a lightbulb socket is frequently made extremely difficult due to breakage of the glass envelope portion of the bulb which is normally manually grasped for rotation to effect bulb removal. Upon such breakage of the bulb envelope, jagged glass edges remain on the base which prevent manual removal of the base since there is no means which can be safely engaged by the user for enabling removal of the generally tubular threaded bulb base. Moreover, the fact that the life span of incandescent lightbulbs has been extended so that many bulbs last for many months and years frequently results in the occurrence of corrosion within the lightbulb socket which serves to provide a substantial obstacle to the removal of the lightbulb base at such time as such becomes desirable either through breakage of the bulb envelope or through failure of the bulb filament. Corrosion within the lightbulb socket can be particularly difficult problems in some industrial installations and in maritime installations such as on ships.

A number of devices have previously evolved for the purpose of enabling the removal of an incandescent light bulb base from an electric socket and other devices have previously evolved for enabling the cleaning of the side walls of conventional lightbulb sockets. The present invention represents a distinct improvement over the prior known devices in that it provides a remarkably effective means both for removing the lightbulb base and for subsequently cleaning the side walls as well as the end contacts of the lightbulb socket with all features being combined in a single hand-held tool.

Therefore, it is the primary object of this invention to provide a new and improved tool for removing lightbulb bases from their power sockets and for reconditioning lightbulb sockets.

The object of this invention is achieved through the provision of a hand-held tool in the form of a unitary metal member comprising a main handle portion having working means extending from each end. One end portion of the tool is provided with a tapering conical surface along which longitudinally extending radial flange members having sharp edges are provided. The end of the tapered conical portion has a plurality of lug fingers each of which includes sharp radial end edge surfaces for engaging the inner surface of a lightbulb base when inserted in the base to grip the base and enable rotation and removal of same from the socket in which it is located. The other end of the tool is provided with a socket cleaner means in the form of radially extending brush members dimensioned to engage the side walls of a socket with the outermost end portion including a concave abrasive surface for engagement with the base contact of an incandescent bulb socket so that rotation of the tool with the cleaning means on the interior of an incandescent bulb socket serves to simultaneously clean the side walls and the base contact.

A better understanding of the preferred embodiment of the subject invention will be enabled when the following written description is considered in conjunction with the appended drawings in which:

FIG. **1** is a perspective view of the preferred embodiment;

FIG. **2** is an end view of the tool means portion for removing a lightbulb base from a lightbulb socket;

FIG. **3** is an end view of the lightbulb socket cleaning portion of the tool;

FIG. **4** is a side elevational view partially in section illustrating the manner in which the lightbulb base means is inserted in a lightbulb base for enabling removal thereof from a lightbulb socket in which the base is positioned; and

FIG. **5** is a partial sectional view illustrating the operation of the lightbulb socket cleaning means of the preferred embodiment.

Attention is invited to FIG. **1** of the drawings in which is illustrated the preferred embodiment of the invention, generally designated **10,** which is formed of an elongated rod-like unitary metal member.

The preferred embodiment includes a cylindrical handle member **20** having an outer surface including a plurality of parallel longitudinal radial ribs **22** as best shown in FIG. **1.** The handle member **20** is dimensioned to be easily held in the hand of a user and the longitudinal radial ribs **22** provide an increased friction between the hand of the user and the handle for enabling rotation of the handle about its longitudinal axis during use.

Operative components of the tool are mounted on and comprise a first end portion **24** constituting a lightbulb socket cleaning tool and a second end portion **26** constituting a lightbulb base removing tool. Socket cleaning tool **24** comprises a cylindrical rod member of lesser diameter than the handle portion **20** with three wire brush members **28** extending radially outward from the member **24.** The end of the cleaning member is in the form of a concave abrasive surface **29.**

Second end portion **26** comprises a lightbulb socket removing tool in the form of a tapered conical body member **30** which tapers downwardly from its juncture **32** with the end of the handle member **20** to an end termination **34.** Three longitudinal radially extending flange members **38** extend outwardly from the conical surface **30** and are provided with longitudinal sharp edges **40** running along the length of the conical portion **30** as best shown in FIG. **1.** Additionally, end termination **34** is provided with three lug fingers **42** each of which extends in an axial direction with respect to the tool and includes a sharp radially oriented end edge **44.** The edges **44** are in a common radial plane with the longitudinal sharp edges **40** of the longitudinal flange members previously discussed.

Tapered body member **30** is dimensioned to be inserted in a lightbulb base **50** as shown in FIG. **4** so that the sharp edges **40** and **44** engage the interior surface of the lightbulb base to enable removal of the lightbulb base from the socket **52** in which it is positioned upon rotation of the tool in the direction of the arrow shown in FIG. **4.** It will be apparent that the conical shape of the tool and the sharp edges **40, 44** enables a forcrful engagement of the tool with the lightbulb base to enable rotation of the tool for removal of the base from the socket.

Cleaning and removal of corrosion from a socket **52** is enabled by insertion of the cleaning end of the tool into a socket in the manner shown in FIG. **5.** It will be seen that the brush members **28** are dimensioned to engage the side walls **56** of the socket and the concave abrasive surface **29** engages the base contact **58** as shown in FIG. **5.** Subsequent rotation of the tool causes the brush members **28** to clean the side walls of the socket while the concave abrasive surface **29** cleans and removes corrosion from the base contact in an obvious manner.

Numerous modifications of the subject invention will undoubtedly occur to those of skill in the art; however, it should be understood that the spirit and scope of the invention is to be limited solely in light of the appended claims.

I claim:

1. A tool for removing broken lightbulb bases from, and subsequent cleaning of, electric lightbulb sockets, said tool comprising an elongated rod-like handle member dimensioned to be held in the human hand for rotation about its axis and having first and second end portions, said first end portion comprising a socket cleaner rod including brush means extending outwardly from said socket cleaner tool, said brush means being dimensioned to engage the side walls of an electric socket into which said socket cleaner rod is inserted and an abrasive end surface on said socket cleaner rod for engaging the base contact of an electrical socket when said socket cleaner rod is inserted in an electrical socket so that rotation of the tool causes the brush means to clean the side walls of the socket while the abrasive surface simultaneously cleans and removes corrosion from said base contact.

2. The invention of claim **1** wherein said abrasive end surface is of concave configuration.

3. The invention of claim **2** wherein said second end portion includes a lightbulb base removing tool portion having gripper means for engaging the inner surface of a lightbulb base to enable rotation of the lightbulb base to effect removal of the lightbulb base from an electric lightbulb socket.

4. The invention of claim **3** wherein said base removing tool portion comprises a conical body member tapering downwardly from its juncture with said handle member to an end termination.

5. The invention of claim **4** wherein said lightbulb base gripping means include longitudinal radial flange members provided on said conical body member and having sharp edges for engaging the internal side walls of a lightbulb base.

6. The invention of claim **5** additionally including plural end lug fingers extending in an axial direction and having sharp radial edge surfaces oriented radially to the axis of said conical portion.

7. The invention of claim **6** wherein said end lug fingers are aligned with said radial flanges and the sharp edges on said longitudinal radial flange members merge into and are aligned with said sharp radial edge surfaces on said end lug fingers.

8. The invention of claim **1** wherein said second end portion includes a lightbulb base removing tool portion having gripper means for engaging the inner surface of a lightbulb base to enable rotation of the lightbulb base to effect removal of the lightbulb base from an electric lightbulb socket.

9. The invention of claim **8** wherein said base removing tool portion comprises a conical body member tapering downwardly from its juncture with said handle member to an end termination.

10. The invention of claim **9** wherein said lightbulb base gripping means include longitudinal radial flange members provided on said conical body member and having sharp edges for engaging the internal side walls of a lightbulb base.

11. The invention of claim **1** wherein said second end portion includes a lightbulb base removing tool portion having gripper means for engaging the inner surface of a lightbulb base to enable rotation of the lightbulb base to effect removal thereof from a lightbulb socket and said elongated rod-like handle member, said socket cleaner tool and said lightbulb base removing tool portions are unitarily formed of metal, said abrasive end surface is of concave configuration, said base removing tool portion including a downwardly tapering conical body member extending from a juncture with said handle member and tapering downwardly to an end termination, longitudinal radial flange members provided on said conical body member extending along the length thereof in a generally radial direction and having sharp edges at their outermost extent for engaging the internal side walls of a lightbulb base, plural lug fingers extending in an axial direction and having sharp radial edge surfaces for engaging the internal bottom portion of a lightbulb base and additionally including longitudinal radial fingers on said handle member for aiding in the manual gripping of said handle member by a user.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,797,055 Dated March 19, 1974

Inventor(s) William H. Greene

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Delete "metal" in the following places:

Abstract, line 1

Column 1, line 48

Column 2, line 22

Column 4, line 34, delete "of metal".

Signed and sealed this 8th day of October 1974.

(SEAL)
Attest:

McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents

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