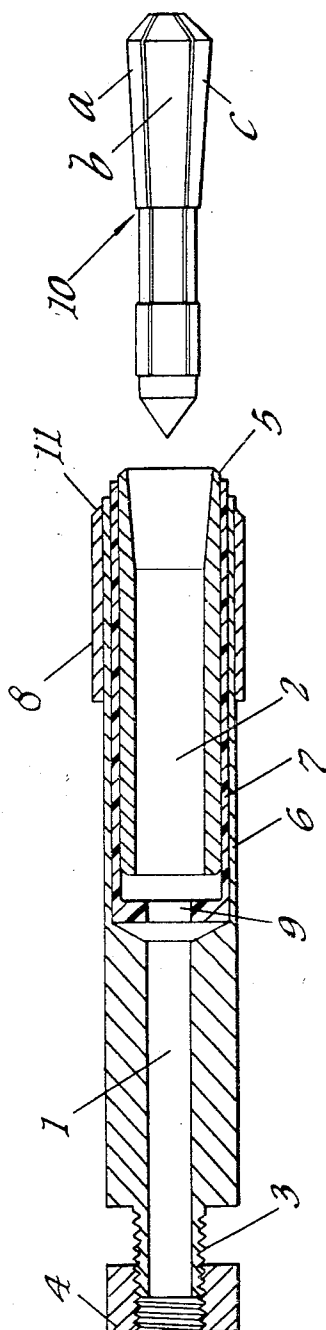


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HOLDERS FOR GEM STONES  
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## HOLDERS FOR GEM STONES

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4 Claims

### ABSTRACT OF THE DISCLOSURE

A holder for supporting a gem stone on a polishing wheel comprising an elongate metal body provided with a compartment at its front end for retaining a gem carrying press-pot and an outer sliding ring which can be advanced along the body for use as a polishing stop.

This invention relates to a holder for supporting a gem stone during polishing.

It is conventional to polish a gem stone, for example a diamond, by gripping it in a press-pot which in turn is gripped by a holder, with the holder being located in a dop. The dop in turn is attached to an arm which is used to locate the gem over a polishing wheel, and the arm is referred to in the art as a tang.

It is known to provide press-pots which are made of suitable metal shaped in the form of an elongated pear. At the blunt or leading end of the pear, in a cavity is defined in which the gem stone is to be located and the pear is split axially from the blunt end to a point towards the sharp end so that a series of fingers are provided. These fingers expand radially outwardly to permit the gem to be located in the pot or cavity and on radially inward movement of the fingers the gem is gripped sufficiently tightly for polishing to be carried out on an underlying wheel. Radially inward movement of the fingers is accomplished by pushing the press-pot axially into a bore in the leading end of the polishing holder.

In operation, the holder and the press-pot are normally inclined to the vertical and polishing takes place in a plane which will ultimately cause contact to be established between the leading tip of the press-pot and the wheel surface. If axial slits, between which are defined the press-pot fingers, do not close, these gaps between adjacent fingers could fall in the path of the polishing wheel and contact with the metal of the press-pot could be delayed if a gap is directly in such path. This is of significance if an electrical path is to be established through the holder to indicate completion of a facet. The effect of the presence of one of these gaps could be such that the polishing wheel continues its attack on the stone beyond the limit predetermined for the form of polish required, and a badly polished stone might result.

The present invention consists in a holder for supporting a gem stone during polishing with the holder having an elongate compartment at its forward end for frictionally retaining a gem carrying press-pot inserted therein, and a ring axially slidably mounted on an outer surface of the holder and the ring having a circumferentially continuous front edge serving as a guide to terminate polishing of a series of facets around the gem when the ring is advanced along the outer surface.

The invention also provides a holder as set out in the preceding paragraph including means to adjust its effective length. For instance, a cylindrical nut may be located on a threaded shank provided at the rear end of the holder. By screwing the nut axially outwardly the effective length

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of the holder is increased. Likewise, when the nut is turned up on the threaded shank the effective length is shortened.

In order to illustrate the invention an example is described hereunder with reference to the accompanying drawing, showing a cross-section through a holder and a press-pot for insertion therein.

The holder is a cylindrical piece of suitable metal constituting a body 1a which is bored centrally to provide a hole 1 through which a tool may be passed to eject a press-pot. A press-pot compartment 2 is provided in the leading end of the holder body and the bore 1 communicates with the compartment. At the rear or trailing end of the holder body a threaded shank 3 of reduced diameter is located and a nut 4 is fitted over the shank. The nut and the holder body are of uniform diameter and the nut and rear portion of the body are adapted frictionally to engage in a bore in a dop. (The shank and threaded nut could alternatively be replaced by a suitable head screw and threaded hole in the end of the holder body.)

By means of the nut the effective length of the holder body may be varied to adjust for different projections of gem stones from the press-pot.

The compartment in the holder body 1a for the press-pot accommodates a metallic sleeve insert 5 for gripping the press-pot and between the inert and outer walls 6 of the holder body there is a nylon insulating sleeve 7. Over the cylindrical body of the holder a metal ring 8 is frictionally fitted and this metal ring is capable of axial movement into any desired position. It will be seen that when a press-pot is inserted into its compartment the press-pot will be electrically insulated from the remainder of the holder by the insulating sleeve 7. However, it is possible to establish electrical connection between the pot and the holder through the bores 1 and 9.

The form of press-pot employed is conventional and is characterized in a metal pear-shaped body 10 which is adapted to be inserted in the compartment with its blunt end projecting therefrom. In the blunt end a cavity (not shown) is provided for the accommodation of portion of a gem stone and the sides of the press-pot are split axially to define a series of fingers a, b and c. These fingers expand radially to permit a gem to be fitted in the pot and contract to grip the gem. Radial contraction is effected when the press-pot is pushed into the compartment in the holder body.

The leading end of the press-pot tapers outwardly, and a slope or bevel is also to be seen on the leading edge 11 of the ring surrounding the holder body.

When a stone is to be polished the press-pot is opened to permit the back of the stone to be inserted in the cavity in the leading end of the press-pot. The press-pot is then pushed into the compartment so that radial contraction of the fingers takes place with the stone firmly gripped between them. The ring 8 is then advanced to ensure that during polishing, when the required depth of polish is obtained, the leading edge 11 of the ring contacts the polishing surface. Then, an electrical circuit can be completed between the polishing plate, ring and holder, and the operation can be terminated. The slits between adjacent fingers of the press-pot are now shielded by the ring and when polishing of a facet is complete, electrical contact will be established through the ring 8 and the body 1a of the holder to stop the operation and raise the stone off the polishing plate. In case the ring fails to contact the polishing wheel in good time, a further electrical path may be provided through the press-pot.

It will be appreciated that the ring 8 is provided with a circumferentially continuous front edge which functions as a guide for terminating polishing of a series of

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facets around the gem when the ring is advanced along the outer surface of the holder body.

When the stone has been polished it is removed from the press-pot for a further stone to be inserted therein. Any differences in the extent to which the stone project from the press-pot is taken into account by adjusting the nut on the threaded shank at the rear end of the holder.

Many more examples of the invention exist each differing from the other in matters of detail only. The essence of the invention is the provision of the sliding ring or other suitable device for ensuring that polishing is not permitted in the gap between two adjacent fingers of the press-pot as well as to provide a depth control in regard to polishing. A further aspect of the invention, together with the ring, is means for adjusting the effective length of the holder.

I claim:

1. A holder for supporting a gem stone during polishing, comprising a body having an elongate compartment at its forward end for frictionally retaining a press-pot inserted therein with said press-pot gripping a gem in its free end, and a ring surrounding and axially slidably mounted on an outer surface of said body, said ring

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having a circumferentially continuous front edge serving as a guide to terminate polishing of a series of facets around the gem when the ring is advanced along said outer surface in the direction of the free end of the press-pot.

2. The holder as claimed in claim 1, including means operably related to said body to adjust its effective length.

3. The holder as claimed in claim 2, in which the adjusting means comprises screw adjusting means at the rear end of the body.

4. The holder as claimed in claim 1 in which said body is provided with a longitudinal bore formed leading into said compartment to enable a tool to be passed therethrough to eject the press-pot from the compartment.

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OTHELL M. SIMPSON, Primary Examiner

### Dedication

3,466,813.—*Alec Leibowitz*, Marylebone, London, England. HOLDERS FOR GEM STONES. Patent dated Sept. 16, 1969. Dedication filed Sept. 7, 1973, by the assignee, *Spectrum Diamonds (Proprietary) Limited*.

Hereby dedicates the entire remaining term of said patent to the Public.

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