March 8, 1938. F. P. SHAYES ET AL 2,110,310

DEVICE FOR DETECTING OIL IN WELL CORE SAMPLES

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Fig. 1.

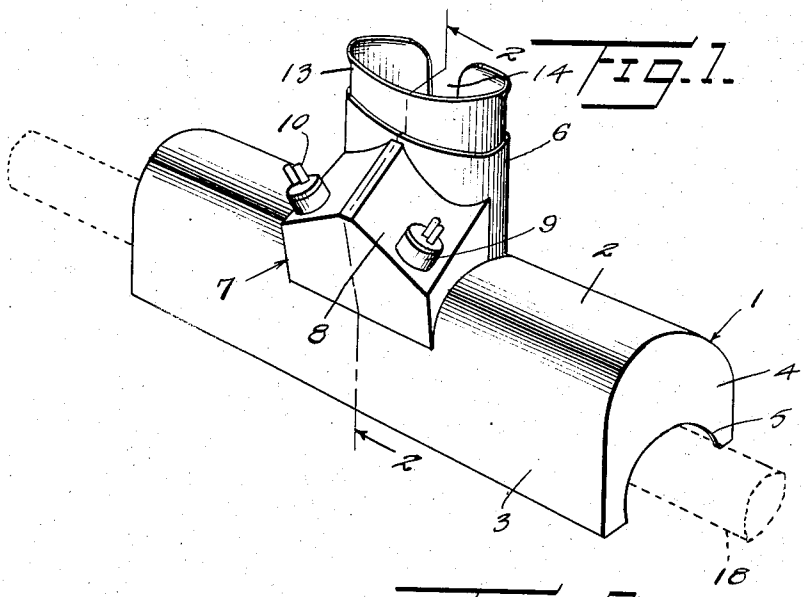


Fig. 3.

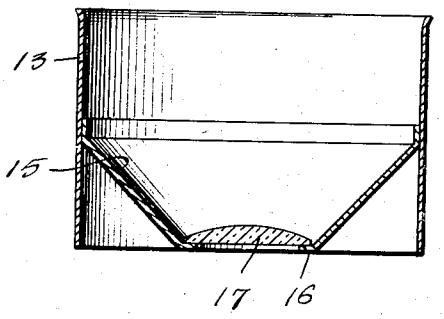
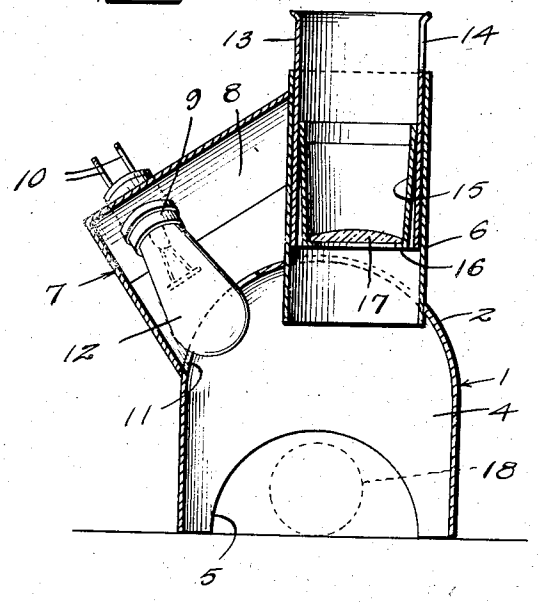


Fig. 2.



Inventors

F. P. Shayes

W. W. Hammond

By Watson E. Coleman

Attorney

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DEVICE FOR DETECTING OIL IN WELL CORE SAMPLES

Fred P. Shayes and Weldon W. Hammond, Beeville, Tex.

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1 Claim. (Cl. 250—34)

This invention relates to a method of identification and means for carrying out the same.

The present invention has for its primary object to provide an improved method of determining the presence in a formation sample or core taken from a well hole, of oil or gas and other petroleum derivatives by subjecting the sample to the action of ultra violet rays, whereby to produce a fluorescence of the oil or gas.

Another object of the invention is to provide a novel device whereby the method of detecting the oil and gas may be carried out.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claim.

In the drawing:

Figure 1 is a view in perspective of the device designed for carrying out the present method;

Figure 2 is a sectional view on the line 2—2 of Figure 1;

Figure 3 is a view in section through the lens carrying portion of the examining device.

Referring to the drawing wherein like numerals of reference designate corresponding parts throughout the several views, the device for carrying out the method of oil and gas determination in core samples taken from oil wells, comprises an elongated housing indicated generally by the numeral 1 and having the rounded top wall 2 joined by the integral vertical side walls 3. The ends of the housing are closed by walls 4, each of which has an arcuate opening 5 cut in its lower edge. The underside of the housing is open.

Secured in and extending through the top wall 2 is a fixed sight tube 6, which is disposed vertically when the housing 1 is placed in position over a core sample, and joining this sight tube at one side is a light box 7 having the upwardly converging top walls 8, in each of which is fixed a socket 9 of the type normally used for receiving the base of an electric incandescent lamp. Outside of the light box 7, each of the sockets is provided with the connecting prongs 10 by means of which attachment of a current conducting wire with the socket is facilitated. The interior of the box 7 opens into the inside of the sample housing 1, through the opening 11 which is made in the wall 2, as illustrated in Figure 2, and this opening serves the double purpose of facilitating the mounting in each of the sockets 9 of an ultra-violet ray producing unit, such as is indicated by the numeral 12, and the projection of the rays created by such unit into the housing 1 onto a sample of material disposed therein.

Telescopically disposed in the fixed tube 6 is a shiftable sight tube 13, the top edge of which is rounded or turned outwardly and provided upon the side remote from the light box 7 with the vertical top edge opening 14 into which the bridge of the nose of the user of the device is disposed when the eyes are brought into position over the open upper end of the shiftable tube. Within the shiftable sight tube 13 is an apron 15 which converges downwardly to the ring 16 which carries a dispersing or enlarging lens 17.

In the operation of the present device, a core sample, such as is indicated in dotted lines in Figures 1 and 2, and designated 18, is disposed upon a suitable flat surface and the housing 1 is placed longitudinally thereover in the manner shown. By energizing either or both of the units 12, the ultra violet rays will be cast downwardly upon the sample and the presence of petroleum oil, gas or other derivative of petroleum in the sample will be shown by the changing of the invisible ultraviolet rays into visible rays so that a fluorescence will be obtained. By this simple means, the presence of petroleum products in a core sample may be readily determined without necessitating the performance of chemical operations or the carrying of the core sample away from the well hole.

What is claimed is:—

A device for detecting oil in an oil well and core sample, comprising an elongated casing adapted to receive a core drill sample, said casing having openings in the opposite end walls whereby the sample may be inserted and closely covered by the casing, a sight tube extending downwardly through the top wall of the casing substantially midway of the ends thereof, said sight tube being of greater width longitudinally of the casing than transversely thereof and formed at its outer end to facilitate placing the face thereagainst whereby the entire length of a sample in the casing may be scanned, a housing upon the top of the casing at one side of said tube and overlying an opening in the wall of the casing, said housing having a top wall divided in two portions disposed in downwardly diverging relation, and an electric lamp socket carried by each wall portion and projecting through the same to receive an ultra-violet ray tube and maintain the same in position to discharge rays through said last opening, the outer end of each socket being adapted to have an electric current conductor connected therewith.

FRED P. SHAYES.
WELDON W. HAMMOND.