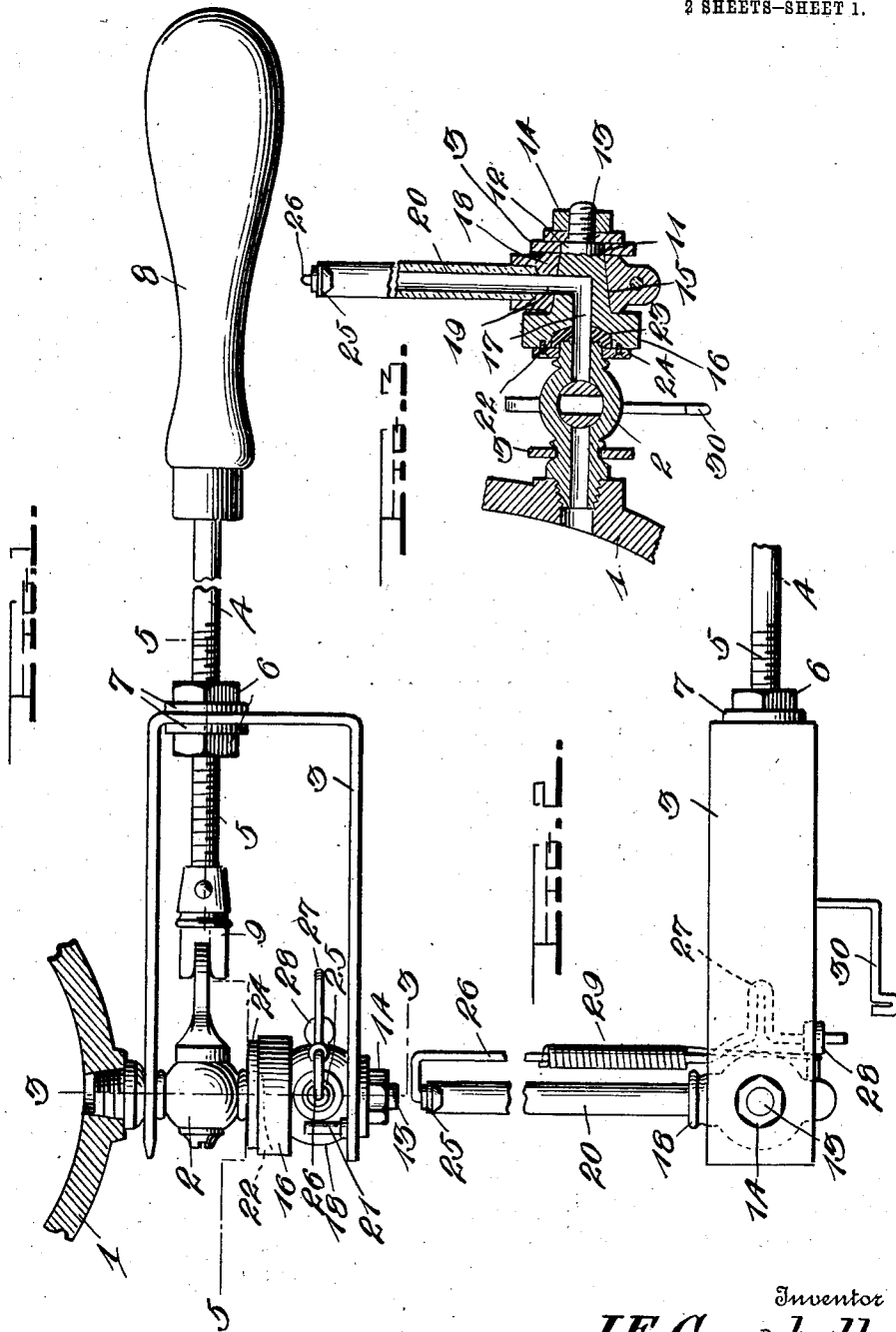


J. E. CAMPBELL.
OIL INDICATOR FOR AUTOMOBILES.
APPLICATION FILED SEPT. 27, 1911.

1,021,824.

Patented Apr. 2, 1912.

2 SHEETS-SHEET 1.



Witnesses

Chas. L. Gristauer.
L. H. Ellis.

By

Watson E. Coleman.
Attorney

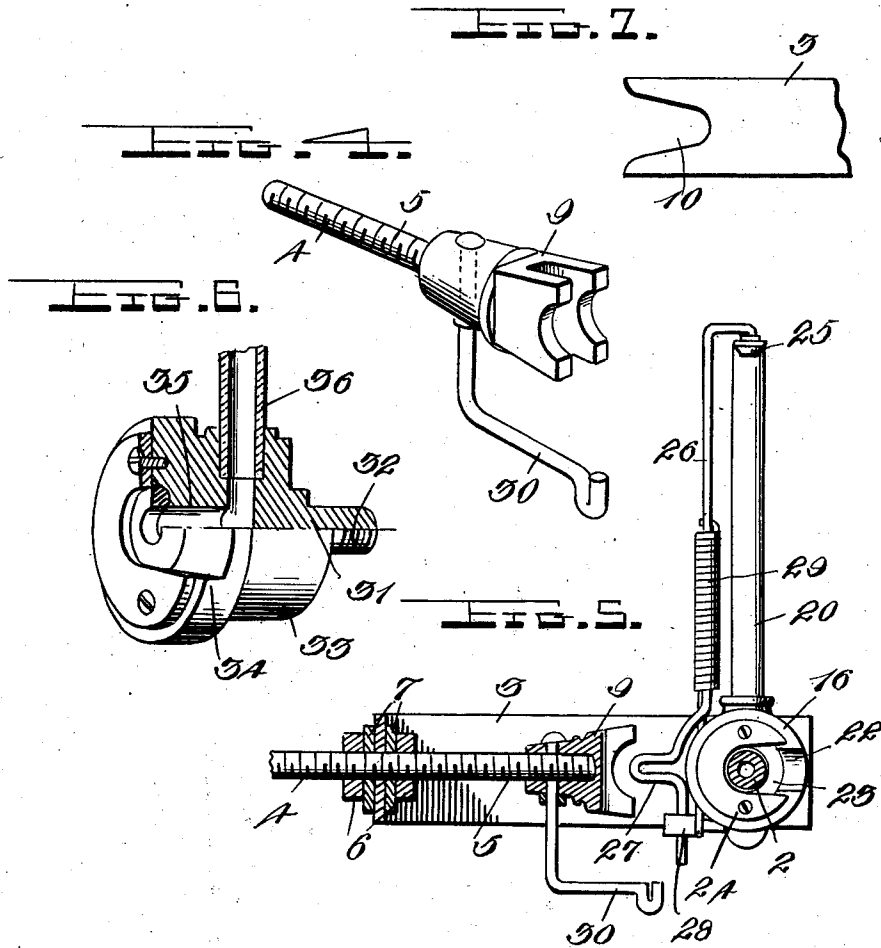
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UNITED STATES PATENT OFFICE.

JOHN ELMER CAMPBELL, OF NEW CASTLE, PENNSYLVANIA.

OIL-INDICATOR FOR AUTOMOBILES.

1,021,824.

Specification of Letters Patent.

Patented Apr. 2, 1912.

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To all whom it may concern:

Be it known that I. JOHN ELMER CAMPBELL, a citizen of the United States, residing at New Castle, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Oil-Indicators for Automobiles, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to new and useful improvements in oil indicators or testers and more particularly to an oil indicator or tester for automobiles, and my object is to provide a device of this character which will readily indicate the amount of oil in the transmission case of an automobile.

A further object of the invention resides in providing a tube which may be readily applied to the pet-cock of a transmission case to allow the oil within said case to flow within said tube and indicate the level thereof, and a still further object of the invention resides in providing means whereby said tube may be applied to the pet-cock without necessitating the operator crawling below the machine.

A still further object of the invention resides in providing a tool which may be readily carried on the machine and which may be applied to the pet-cock of the transmission case from one side of the machine, and still another object resides in providing the device with a substantial wrench adapted to engage the valve of the pet-cock to open and close the same.

Still another object of the invention resides in providing an air vent mechanism in connection with the tube which is operable from the operation of the substantial wrench, and a further object resides in providing a protecting means for the tube.

A still further object of the invention resides in providing a device which is extremely simple, durable and inexpensive in construction.

With these and other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

In the accompanying drawings forming a part of this application, Figure 1 is a top plan view of the preferred form of my invention applied to use. Fig. 2 is a side elevation thereof. Fig. 3 is a transverse sec-

tion as seen on line 3—3, Fig. 1. Fig. 4 is a detail perspective view of the shaft with the wrench head thereon. Fig. 5 is a longitudinal section as seen on line 5—5, Fig. 1. Fig. 6 is a detail perspective partly in section showing a slightly modified form of my invention. Fig. 7 is a fragmentary side elevation of the frame showing the slot therein for engaging the pet-cock.

In carrying out my invention, I shall refer to the drawings in which similar reference characters designate corresponding parts throughout the several views and in which—

1 indicates a transmission case of an engine on an automobile of a well known make having the pet-cock 2 extending therefrom, through which the oil in said case may find an exit, and in order to observe the amount of oil in said case at any time, I have provided my improved indicating device. My device comprises first, a metallic frame 3 of substantially rectangular design, one end wall of which is omitted and the opposite end wall of which has extending therethrough, a shaft or rod 4, which rod has that portion thereof extending through the frame, threaded, as shown at 5, and engaging the threaded portion 5 of said rod on the opposite sides of the end wall referred to, are the nuts 6, said nuts contacting lightly against the washers 7 on opposite faces of said end wall, thereby preventing any longitudinal movement of the shaft with respect to the frame 3. Through the medium of these nuts 6, it will be seen that the shaft or rod 4 may be adjusted with respect to the frame and said rod has the outer end thereof provided with a handle member or the like 8, while the opposite or inner end thereof is provided with a head 9 which is slotted to form a pair of jaws or substantial wrench members thereon. This head or wrench member 9 on the shaft 4 is adapted to engage the stem or operating portion of the valve on said pet-cock 2, and in order to engage the device with the pet-cock so as to allow said wrench head or the like to engage the pet-cock for operating the same, the free end of one of the side walls of this frame member 3 is slotted, as shown at 10, to receive therein that portion of the pet-cock at the junction thereof with the transmission case. As the shaft 4 may be made of any desired length, it will be appreciated that under any conditions, the pet-cock may

be operated from a short distance therefrom, that is to say, should the pet-cock be applied on the transmission case of an automobile, it will not be necessary for the operator to crawl under the machine to open and close the pet-cock.

The side wall of the frame 3 adjacent its free end and immediately opposite the slot 10 therein, is provided with a squared opening 11 through which extends the squared portion 12 of a short shafting or the like 13, that portion of said shafting extending beyond the outside of said side wall being threaded to receive a nut 14, whereby the same may be held firmly within the frame 3. That portion of the shaft 13 adjoining the opposite side of the portion 12 and extending within the frame 3, is tapered, as shown at 15, the free end of said tapered portion, which forms the free end of the shafting, being provided with an integral collar 16, and extending through the longitudinal center of said shafting from the end having the collar formed thereon, is a slot or channel-way 17 which curves in its length and terminates in one side of the tapered portion 15. When this shafting 13 is properly positioned in the one wall of the frame 3, the terminal of the channel-way 17, which is mounted in the tapered portion 15 thereof, is disposed so as to face upwardly, and rotatably mounted on this tapered portion 15 and fitting snugly between the inner face of the side wall of the frame and the collar 16, is an additional collar or the like 18, said collar having its inner periphery tapered coincident to the taper of the portion 15 of the shaft and also provided with an opening 19 therein which extends completely through from the outer to the inner periphery thereof. Securely mounted within the opening 19 in said collar 18, is one end of a glass tube 20, the connection between said tube and collar being both air and water-tight, and it will be seen that when the tube is moved to a substantially upright position, as shown in Fig. 2, the opening 19 within which the lower end of said tube is mounted, is adapted to register with the termination of the channel 17 in the shaft 13, whereby any liquid which may flow through said channel 17, may be indicated in the tube 20, and in order to limit the movement of the collar 18 in one direction on the shaft 13, I provide a stop pin 21 on the frame 3, which so limits the movement of said collar 18 as to position the opening 19 thereof in direct registration with the one end of the channel 17, the position of which is shown in Fig. 2. The tube mounted within the collar 18 may be turned down within the frame 3, and it will be seen that the tool may be readily carried from place to place without breaking said tube.

As stated, this instrument is adapted to be applied to a pet-cock so that the slot 10 in one side wall thereof engages that portion of the pet-cock from the junction thereof with the transmission case and the mouth or outlet of the pet-cock is adapted to be positioned over the terminal of the channel 17 in the outer face of the collar 16, and in order to allow this mouth of the pet-cock to readily position itself, the outer face of said collar is provided with a groove or channel-way 22, the wall of which is beveled. Surrounding the opening of the channel-way 17 and mounted in this groove 22, is a rubber washer 23 to prevent the loss of any oil that may pass from the pet-cock to said channel-way, and in order to retain said washer in position, a substantially semi-circular or horseshoe-designed plate 24 is screwed to the outer face of said collar 16. The mouth of the pet-cock may then readily enter the groove 22 and contact with the washer 23, whereupon the valve may be opened and the oil allowed to pass through the shaft 13 to the tube 20.

It is extremely essential that some covering means be applied to the outer or upper end of the tube 20 so as to prevent the oil from leaking therefrom when moved to its inoperative position, but it is also essential that an air vent be provided to allow the oil to flow properly therein, when desired, and to this extent, I provide a closure 25 formed of any preferred material for the upper end of said tube which closure is designed somewhat conically and is mounted on one end of an angular arm or rod 26, said arm extending longitudinally along the side of said tube. The angular portion of this rod is at the upper end thereof to which is secured the closure 25, and the lower end thereof is bent outwardly and thence inwardly to form an extension or finger 27, the free or lower end of said rod being disposed loosely through a keeper 28 formed on the movable collar 18. Extending longitudinally of the rod or arm 26, is a coil spring 29, one end of which is connected with the upper angular end of said rod having the closure thereon, and the opposite end of which is engaged with the keeper 28, whereby it will be seen that the normal position of said closure will be in its closed position over the upper end of the tube 20. From this construction, it will be seen that the tube may be moved into its operative or inoperative position without affecting the closure and adjunctive parts thereof, whatsoever, but in order to open said closure, the wrench head 9 is provided with an angular arm 30, which, when the tube is disposed in its upright position, is below the extension or finger 27 of the rod 26, whereby when said shaft 4 is turned to open the pet-cock 2, said arm 30 will contact with

the extension 27 to raise said arm or rod 26 to correspondingly remove the closure 25 from its normal and closed position. When the rod 4 is turned in the opposite

direction to close the pet-cock 2, the closure will be returned to its normal position through the medium of the coil spring 29.

In practice, it is a well known fact that many automobilists experience difficulty in determining the amount of oil in the transmission case of the engine of the machine, which is very often due to the fact that no indicating means is provided, and it becomes necessary for the operator to crawl beneath the machine to open the pet-cock for this purpose, and as this requires considerable time and labor, to say nothing of the inconvenience thereof, the attempt to determine the conditions is often neglected with the result that engines are often ruined. With my improved device in use, however, it will be seen that when it is desired to determine the amount of oil in the transmission case, it is only necessary to remove the instrument or tool from the tool box, raise the tube therein to a vertical position and apply the same to the pet-cock of the transmission case from one side of the machine. In applying the device to the pet-cock, the operator grasps the handle 8 and engages that portion of the pet-cock forming the junction thereof with the transmission case in the slot 10 of the frame 3 of the device and by forcing the device inwardly, the mouth of said pet-cock will enter the groove 22 in the outer face of the collar 16 and engage tightly against the washer 23 therein. This will position the mouth of said pet-cock in registration with the channel 17 of the shaft 13, and in positioning the device in this manner, the slotted wrench head 9 is adapted to engage the stem or operating portion of the valve of said pet-cock, whereupon a turn of the rod 4 in the proper direction by the operator will open the pet-cock to allow any oil within the transmission case to pass through into the channel of the shaft 13 and into the tube 20. As the shaft 4 is turned to open the pet-cock, the arm 30 in the head of the wrench will engage the extension 27 and force the same with the rod 26 upwardly to correspondingly remove the closure 25 from the upper end of the tube 20 for air venting purposes, and as the oil passes into the tube 20, it will seek its level in the transmission case. When the operator has observed the amount of oil in the transmission case through the indicating means, the rod 4 is turned to the opposite direction to close the pet-cock, whereupon the closure 25 will be automatically returned to its normal position over the upper end of the tube 20 and the device will be readily removed from its position

over the pet-cock by pulling outwardly thereon. When the operator has completed his test, the tube 20 may be turned to its lowered position between the walls of the frame 3, and the complete tool returned to the tool box or any other desired place on the machine.

In Fig. 6, I have shown a slightly modified form of my invention which is to take the place of the shaft 13 and its adjunctive parts and comprises a shaft 31 circular in cross section, one end of which is threaded, as shown at 32, to receive a nut (not shown) after the same has been applied to a frame (not shown) similar to the frame 3. Said shaft 31 is provided with an enlarged head 33 adjacent the threaded portion 32 and said head has formed integral therewith at the end thereof farthest from the threaded portion 32, a collar 34. A channel 35 extends through the longitudinal center of the shaft 31 from the end thereof having the collar 34 formed thereon and said channel-ways in its length and finds a terminal in one side of the head 32, said channel being enlarged at the last referred to terminal to receive therein, one end of a tube 36 which is held therein by any desired air and water-tight connection. The collar 34 has its outer face provided with the groove and washer, as in the other form to receive therein the mouth of the pet-cock when this device is applied to a frame, such as described in the other form, and when this device is properly applied, the same is, itself, adapted to turn within the frame without having a separate portion turned thereon. In the use of a device such as shown in this modification, the closure for the tube may or may not be used, as desired, but in any instance, it will be appreciated that fewer parts are necessary for the completion of substantially the same result.

From the foregoing, it will be seen that I have provided an improved tester or indicator for determining the amount of oil in the transmission case of an automobile, and it will further be seen that this test may be made without necessitating the operator crawling under the machine for the purpose of opening the pet-cock. It will still further be seen that this device may be readily applied to the pet-cock on the transmission case from one side of the automobile without any danger of leakage between said pet-cock and indicator. Furthermore, it will be seen that the indicator of this device comprises a tube which is movable in the frame of the device and which may be provided with a closure operable simultaneously with the operation of the pet-cock. It will still further be seen that this device is an entirely separate instrument or tool, and in being provided with the framework, as described, between the walls of

which the tube may be positioned, a protection is provided for said tube when in its inoperative position, so that when this tool is disposed in a tool kit or the like, said tool is not adapted to be readily broken or otherwise damaged. It will further be seen that since this device is removable and an entirely separate part from the pet-cock, the same may be always retained in a cleanly condition to be observed readily by the operator, thereby preventing any dust, dirt or other extraneous matter from entering the transmission case to cause obvious difficulties. It will still further be seen that the device is extremely simple and durable in construction, and is one which is very effective and useful in operation.

What I claim is:—

1. A device of the class described comprising a supporting member, a hollow member movably mounted therein, and provided with a movable closure, and an operating instrument also movably mounted in said supporting member adapted to operate the closure on said hollow member.

2. A device of the class described comprising a supporting member, a hollow member rotatably mounted thereon, a closure therefor normally held in its closed position and a manually operable member also carried on said supporting member adapted to raise said closure from its closed position when operated.

3. A device of the class described comprising a supporting member, a hollow member rotatably mounted on a horizontal axis thereon, and provided with a movable closure and an operating member rotatable on said supporting member on an axis at right angles to the axis of said hollow member and adapted to operate the closure upon its own rotation.

4. In a device of the class described, the combination with a pet-cock; of a frame adapted to be engaged therewith, a tubular member movably mounted in said frame and adapted to be engaged with the free end of said pet-cock when the frame is applied thereto, and means on the frame to open and close said pet-cock.

5. In a device of the class described, the combination with a pet-cock; of a frame adapted to be engaged with portions of said pet-cock, a hollow body member carried on said frame adapted to engage the free end of the pet-cock when the frame is engaged therewith, a tube mounted in said hollow body member, and means on the frame to open and close said pet-cock.

6. The combination with a pet-cock; of a frame adapted to be applied thereto, a hollow body member rotatably mounted in said frame and adapted for engagement with the free end of said pet-cock when the frame is applied thereto, a tube mounted within said

body member, means to limit the movement of said body member, and means on the frame to open and close said pet-cock.

7. In a device of the class described, the combination with a pet-cock; of a frame adapted to be applied thereto, a hollow body member rotatably mounted in said frame, means to limit the movement of said body member, a tube mounted in said body member, a rod extending through said frame and rotatably mounted therein, said rod being provided with a handle member at its outer end, and a slotted head on the inner end of said rod adapted to engage the pet-cock to open and close the same.

8. In a device of the class described, the combination with a pet-cock; of a frame adapted to be applied thereto, a shaft mounted in said frame and provided with a longitudinal channel, a collar rotatably mounted on said shaft and adapted to communicate with said channel, a tube mounted in said collar, and means carried on the frame to open and close the pet-cock.

9. The combination with a pet-cock; of a frame adapted to be applied thereto, a shaft mounted transversely of the frame, said shaft being provided with a longitudinal channel having one terminal thereof in the side of said shaft, a collar rotatably mounted on said shaft adapted for communication with said channel, a tube having one end thereof mounted in said collar, means to limit the movement of said collar on the shaft, and means carried on the frame to open and close said pet-cock.

10. The combination with a pet-cock; of a frame adapted to be applied thereto, a hollow body member in said frame and adapted to engage the pet-cock when the frame is applied thereto, a tube having one end thereof mounted in said body member and extending laterally therefrom, a removable closure for the free end of said tube, and means carried by the frame to open and close said pet-cock.

11. The combination with a pet-cock; of a frame adapted to be applied thereto, a hollow body member in said frame and adapted to engage the pet-cock when the frame is applied thereto, a tube having one end thereof mounted in said body member and extending laterally therefrom, a closure for the free end of said tube, means to normally retain said closure in its effective position, means carried on the frame to open and close said pet-cock, and means in connection with the last referred to means for moving the closure to its ineffective position.

12. The combination with a pet-cock; of a frame adapted to be applied thereto, a hollow body member in said frame and adapted to engage the pet-cock when the frame is applied thereto, a tube having one end thereof mounted in said body member

and extending laterally therefrom, a removable closure for the free end of said tube, spring means to normally retain said closure in its effective position, means on 5 the frame to open and close said pet-cock, and additional means in connection with the last referred to means to counteract the action of the spring means to remove said closure from its effective position.

10 13. In a device of the class described, the combination with a pet-cock, of a supporting member adapted for application thereto, a hollow member rotatably mounted thereon and provided with a movable closure and an 15 operating member for said cock adapted to also operate said closure.

14. In a device of the class described, the combination with a pet-cock, of a supporting member adapted for application thereto, a hollow member rotatably mounted on the 20 supporting member and provided with a movable closure, an operating member for said pet-cock and means in connection with said operating member for the operation of 25 said closure.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

JOHN ELMER CAMPBELL.

Witnesses:

MARJORIE SMITH,
J. CLYDE GILFILLAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."