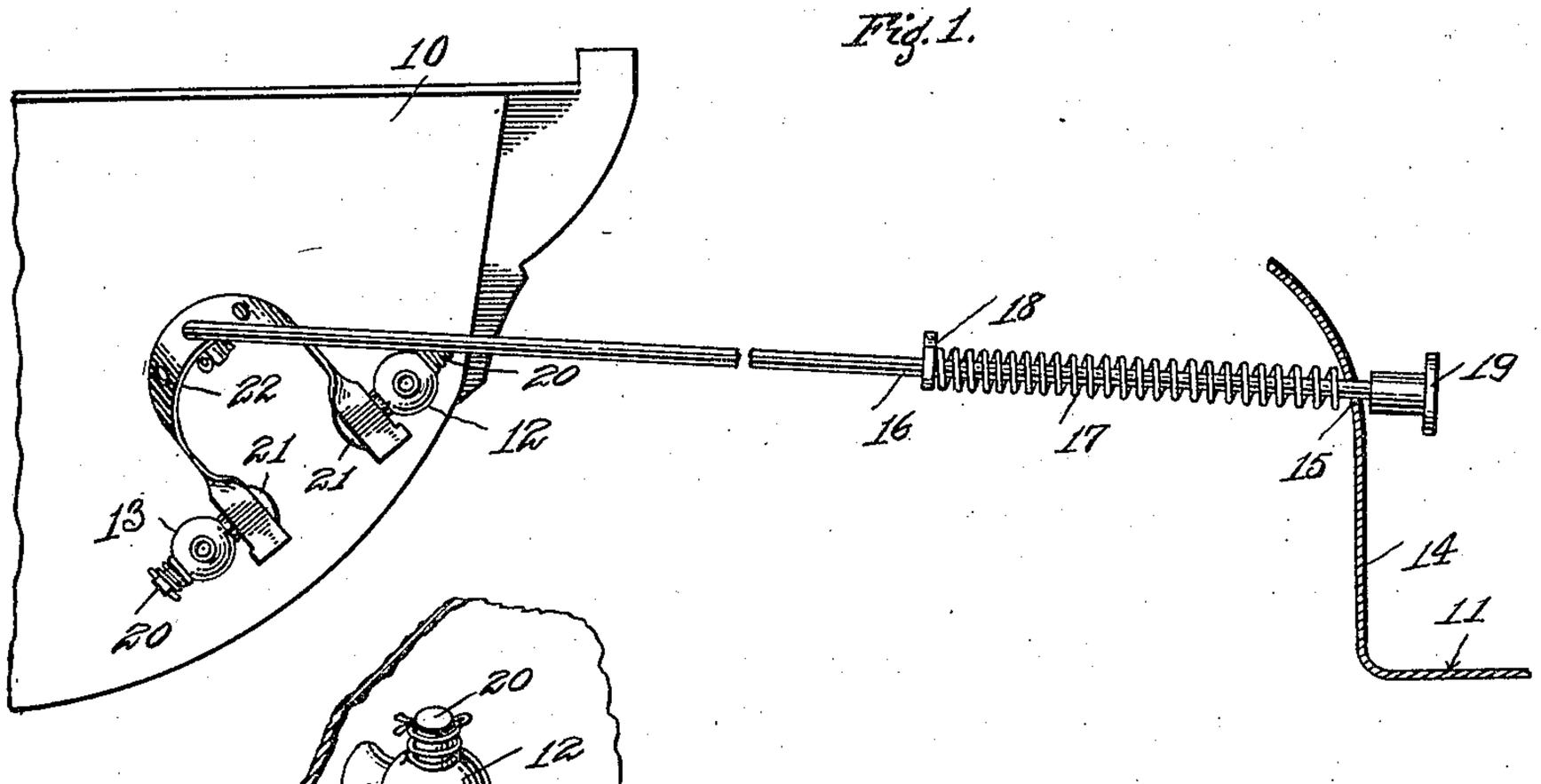
Nov. 18, 1924. 1,516,139

J. W. BLACK

OIL GAUGE FOR CRANK CASES

Original Filed April 19, 1923

Fig. 1.



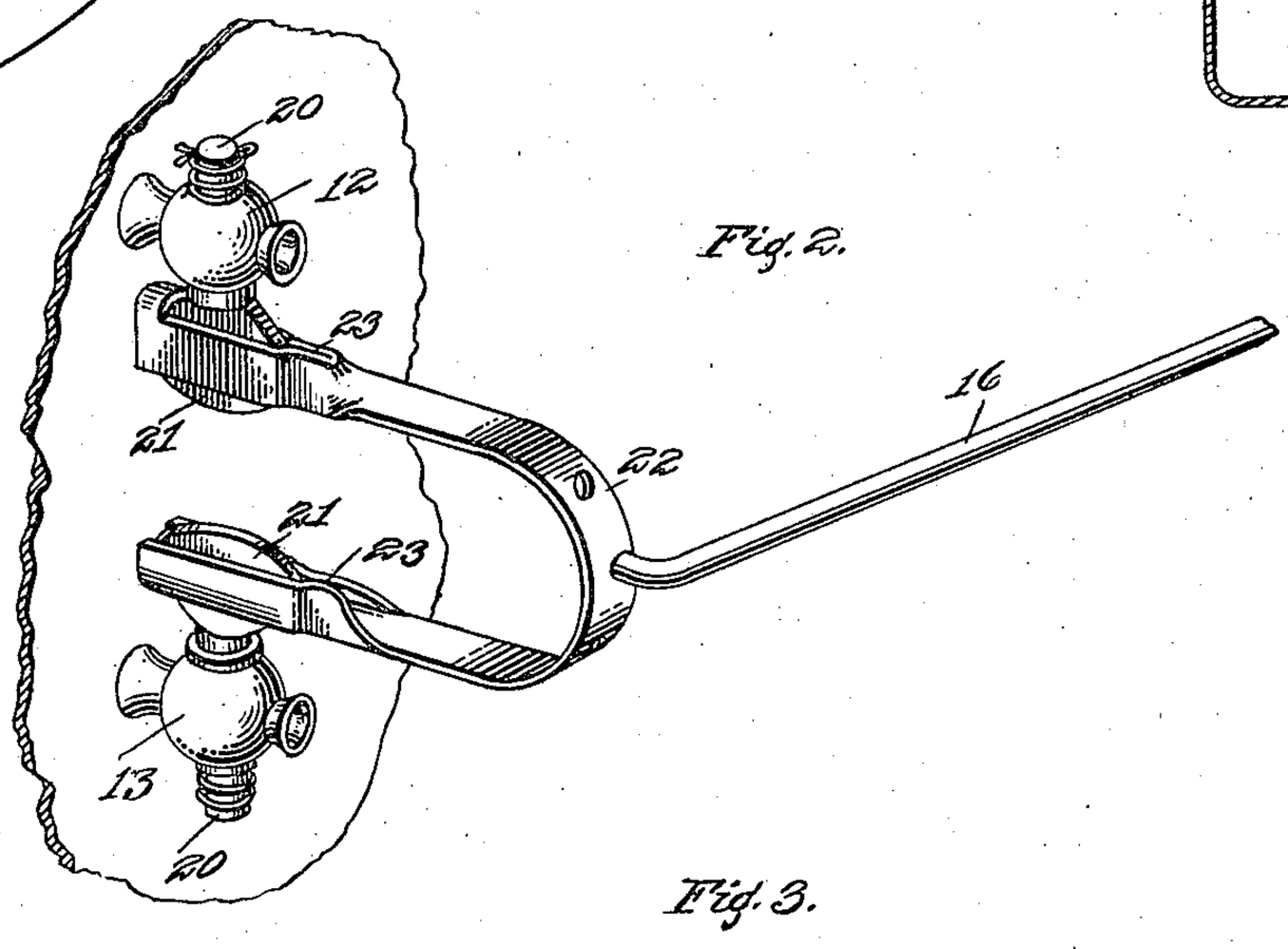
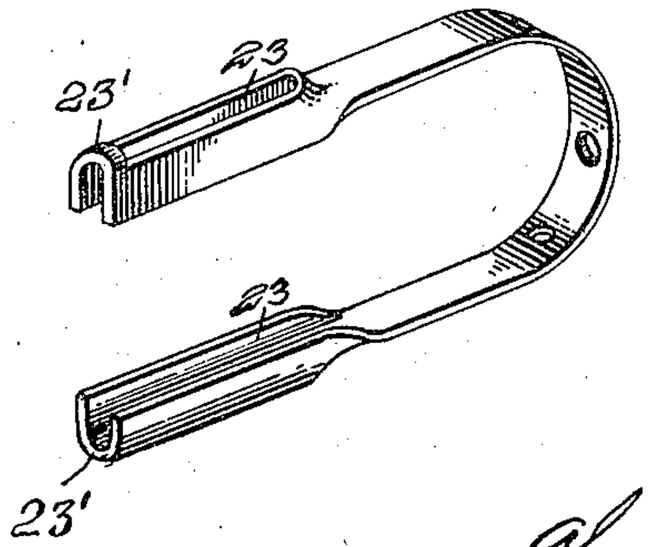


Fig. 2.

Fig. 3.



Inventor
Joseph W. Black.

By Grace C. Hamilton

Attorney

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UNITED STATES PATENT OFFICE.

JOSEPH W. BLACK, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO FLOYD DAVENPORT.

OIL GAUGE FOR CRANK CASES.

Application filed April 19, 1923, Serial No. 633,214. Renewed August 23, 1924.

To all whom it may concern:

Be it known that I, JOSEPH W. BLACK, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Oil Gauges for Crank Cases; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in gaging devices and particularly to devices for gaging the depth of the oil in an automobile crank-case.

One object of the invention is to provide a simple and inexpensive device by means of which the pet-cocks of the crank-case of an automobile engine can be opened without the usual inconvenient practice of getting under the automobile.

Another object is to provide a device which will maintain the valve plugs of the pet-cocks against coming out of the valve bodies in the event that the springs and cotter pins are lost from the ends of the valve plugs.

A further object is to provide a device of this character which will not work loose, and which will not rattle or chatter, during the movement of the automobile over rough streets or roads.

Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawing.

In the drawing:

Figure 1 is a vertical transverse sectional view through a portion of the crank-case of an engine, showing the invention in elevation.

Figure 2 is an enlarged perspective view of the operating yoke and petcocks.

Figure 3 is an enlarged perspective view of the yoke removed from the pet-cocks, to show the openings which receive the handles of the valve plugs.

Referring particularly to the accompanying drawing, 10 represents a portion of the crank-case of an automobile engine, and 11 a portion of the running-board, while 12 and 13 represent the upper and lower pet-cocks of the crank-case.

Formed in the vertical metal shell 14, at the inner side of the running-board 11, is an opening 15, and disposed for slidable movement through this opening is an operating rod 16. Encircling the rod is a coil spring 17, one end of which bears against the inner face of the metal shell 14, and the other end against a collar 18 disposed around the rod. On the rod, outwardly of the shell 14, there is mounted a knob 19, which is arranged to be grasped by the operator to pull the rod outwardly, the spring 17 returning the rod to its inner position and disposing the knob against the outer face of the shell.

The valve plugs 20, of the pet-cocks 12 and 13, have their flat fingerpieces 21 disposed toward each other, as clearly seen in the drawing.

Disposed between the pet-cocks is a flexible yoke 22, the outer end of each arm of which is formed with a longitudinal slot 23 which receives a flat fingerpiece of a pet-cock. The portions of the arm, at opposite sides of the slot are bent to lie against the side faces of the fingerpiece, as clearly seen in Figures 2 and 3. The yoke is possessed of a large amount of flexibility, whereby the arms will be normally urged apart and into firm engagement with the valve plugs of the pet-cocks. Thus, should the spring and pin, at the other end of a plug be lost, the yoke would maintain the plug within the valve body. Furthermore, this flexibility of the yoke prevents rattling or chattering of the yoke, while the automobile is in motion.

It will also be noted that the coil spring 17 maintains the yoke in such position, normally, that the plugs of the pet-cocks are held in closed position. To ascertain the amount of oil in the crank-case, the operator simply raises the hood, and pulls the rod 16, outwardly, by grasping the knob thereof, with the result that both pet-cocks will be opened, by the outward swinging movement of the yoke 22, and the fact that oil runs out of either or both, or does not run out of either, of the pet-cocks will indicate that there is sufficient or insufficient oil in the crank-case.

It will be further noted that the outer end of each slot 23 is closed by a transverse web portion 23′, which serves to prevent any tendency of the yoke to slip from the fingerpieces of the valve plugs.

What is claimed is:

1. The combination with the fingerpieces of the pet-cocks of an engine crank case, of

a resilient yoke having its arms normally tending to spread apart and terminally formed for embracing engagement with the said fingerpieces, and means for moving the yoke to rotate the fingerpieces.

2. The combination with the pet-cocks of an engine crank-case and their valve plug fingerpieces, of a resilient spreading member disposed between and resiliently urged against said fingerpieces, the terminals of the arms of the spreading member being longitudinally channeled to receive and embrace the fingerpieces, and means for moving the spreading member to rotate the fingerpieces and thereby open and close the pet-cocks simultaneously.

3. The combination with the pet-cocks of an engine crank-case and their valve plug fingerpieces, of a spring yoke having the arms thereof normally tending to spread apart and slotted to receive the said fingerpieces therein, said yoke urging the valve plugs against their seats, and a manually operable means connected to the yoke for moving the same pivotally to open and close the pet-cocks.

4. The combination with the valve plug fingerpieces of the pet-cocks of an engine crank-case, which fingerpieces are directed toward each other, of a spring yoke having the extremities of its arms longitudinally slotted and receiving the said fingerpieces therein and being bent to embrace said fingerpieces, and an operating rod movably connected with the intermediate portion of the yoke for rocking the yoke and moving the valve plugs into and out of open position.

5. The combination with the flat fingerpieces of the pet-cocks of an engine crank-case, which fingerpieces are directed toward each other, of a spring yoke having the extremities of its arms longitudinally slotted and receiving the flat fingerpieces therein, said slotted extremities being bent to snugly engage the side faces of the fingerpieces, and a spring pressed operating rod pivotally engaged with the intermediate portion of the yoke for rocking movement thereof and the simultaneous opening and closing of the pet-cocks.

6. In a device for operating the pet-cocks of an engine crank-case, a resilient yoke having its arms terminally formed to receive the fingerpieces of the pet-cocks, said yoke being adapted to urge the valve plugs against their seats when said plugs extend in opposite directions from said yoke, and an operating rod movably connected to the intermediate portion of the yoke for rocking the yoke and moving the valve plugs into and out of open position.

7. In a device for operating the pet-cocks of an engine crankcase, a resilient yoke having its arms longitudinally slotted to receive the fingerpieces of the pet-cocks, said yoke being adapted to urge the valve plugs against their seats when said plugs extend in opposite directions from said yoke, and an operating rod movably connected to the intermediate portion of the yoke for rocking the yoke and moving the valve plugs into and out of open position.

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

JOSEPH W. BLACK.

Witnesses:
F. S. WOLVERTON,
C. H. DUKE.