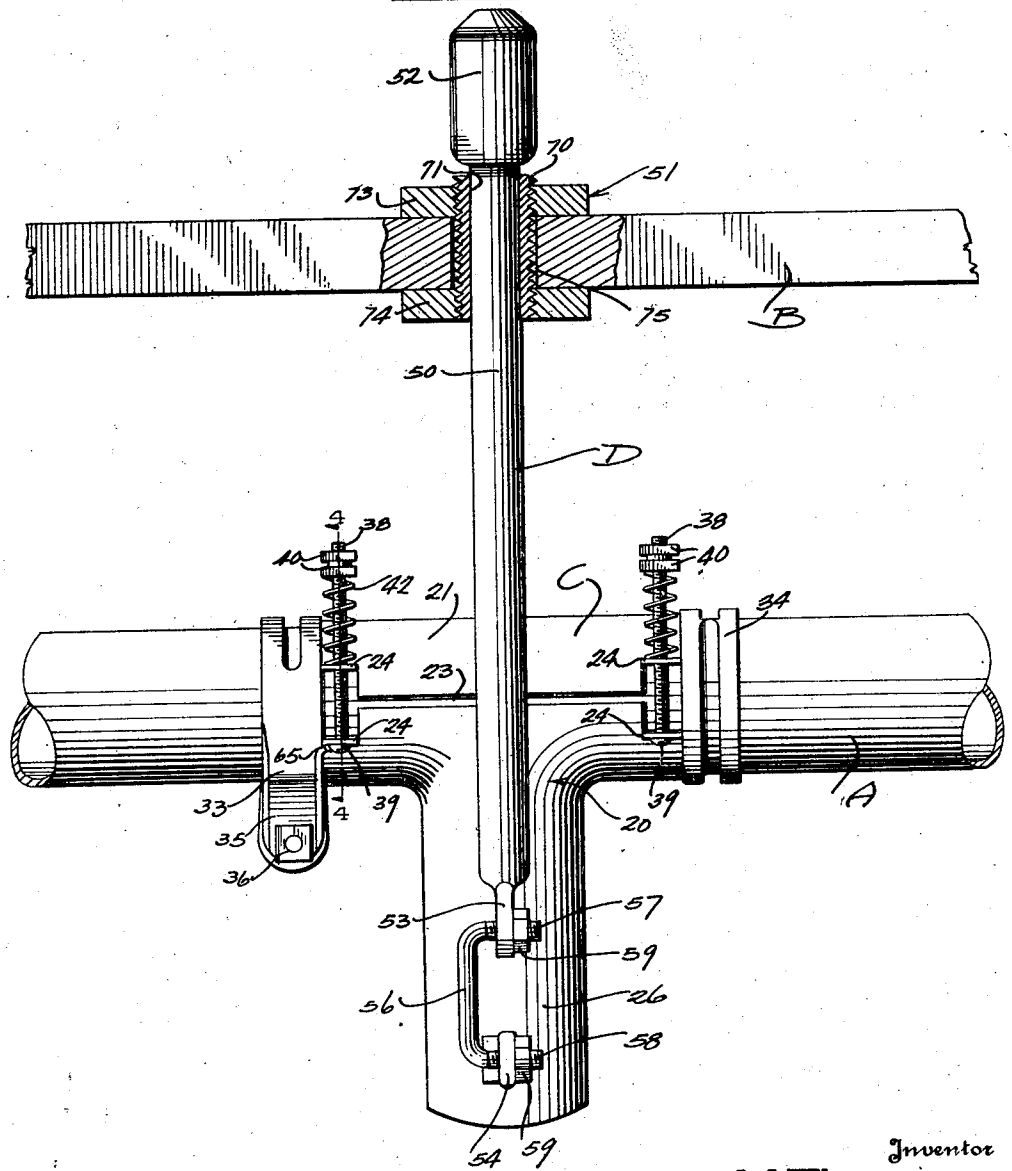
April 1, 1924. 1,488,568

L. M. THOMPSON

EXHAUST CUT-OUT

Filed June 4, 1923 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

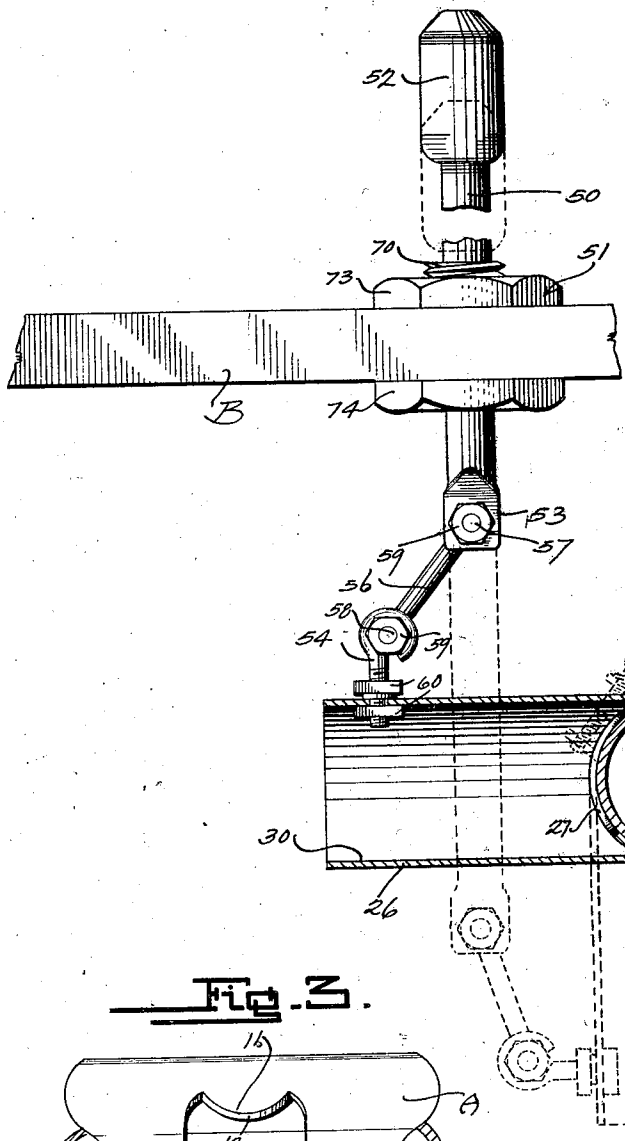


Fig. 4.

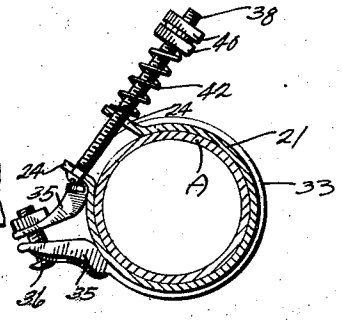
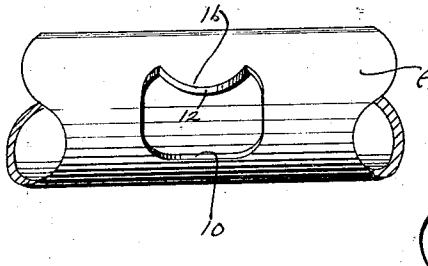


Fig. 3.



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Patented Apr. 1, 1924. 1,488,568

UNITED STATES PATENT OFFICE.

LUCIUS MELL THOMPSON, OF MIAMI, FLORIDA.

EXHAUST CUT-OUT.

Application filed June 4, 1923. Serial No. 643,341.

To all whom it may concern:

Be it known that I, LUCIUS M. THOMPSON, a citizen of the United States, residing at Miami, in the county of Dade and State of Florida, have invented certain new and useful Improvements in Exhaust Cut-Outs, of which the following is a specification.

This invention relates to improvements in exhaust cut-outs or release valves for internal combustion engines.

The primary object of this invention is the provision of a relatively simple and economical type of cut-out valve, which may be used as an accessory upon various parts of exhaust pipes, and may find ready application upon any type of automotive vehicle.

A further object of this invention is the provision of an effective type of cut-out which can be conveniently operated, and the parts of which are durably associated so that once placed the same will require practically no attention and will operate effectively over a long period of time.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the drawings, wherein similar reference characters designate corresponding parts throughout the several views:

Figure 1 is a side elevation showing the improved cut out valve in open position to permit escape of exhaust gases from an exhaust pipe therethrough.

Figure 2 is a transverse cross sectional view, taken substantially at right angles to the view illustrated in Figure 1, although showing in full lines the closed position of the cut out valve, and in dotted lines the open position.

Figure 3 is a fragmentary bottom view of an exhaust pipe of an internal combustion engine, showing the character of opening which should be provided therein for cooperation with the exhaust cut-out valve construction.

Figure 4 is a transverse cross sectional view, taken substantially on the line 4—4 of Figure 1.

In the drawings, wherein for the purpose of illustration is shown but the preferred embodiment of this invention, the letter A may designate an exhaust pipe, and B the floor board construction of any type of automotive vehicle. A novel cut-out or release valve construction C, may be provided for the exhaust pipe A, including novel operating means D for cooperation therewith and extending upwardly through the floor board construction B so that a vehicle driver may conveniently operate the cut-out valve construction.

The exhaust pipe A may be of any approved type, and is preferably provided with a novel type of opening 10 therein, thru which the exhaust gases may escape to the cut-out valve C. This opening 10 may be of polygonal or substantially circular formation, although it is preferred to provide a lip or extension 11 which projects into the area of the opening, providing a convex arcuate edge 12 facing said opening 10; this lip 11 being provided so that the release or cut out valve C may only be required to move through a limited arc to open or close the same, although a large effective escape opening is provided in the exhaust A.

Referring to the cut out valve construction C, the same preferably includes a casing 20, which includes a pipe portion 21 adapted for exterior positioning upon and about the exhaust pipe A, the same being longitudinally split, as at 23, to permit of adaption to various sized exhaust pipes, so that the same may be snugly contracted about the exhaust pipe, as will be subsequently described. At the ends of the portion 21 radial flanges 24 are struck outwardly upon opposite sides of the split 23, for reception of means whereby the portion 21 may be contracted about the exhaust pipe A. An outlet pipe extension portion 26 extends radially from the split portion 21, intermediate its ends, the same preferably being either integral with the split portion 21, or welded or otherwise secured thereto. The split portion 21 is preferably provided with an opening 27 therein opening into the passageway 30 of the outlet pipe extension 26 and through which exhaust gases, of course, escape, as will be subsequently described.

It is preferred to provide clamping collars or members 33 and 34 upon the exhaust pipe A at both sides of the opening 10 therein, the same preferably being of the split ring construction, having the radial clamping extension 35 thereon, which may be drawn together by means of an adjustable bolt construction 36, so that said collars 33 and 34 may be effectively clamped

in a rigid position upon the exhaust pipe and in exact spaced relation.

The casing 20 is assembled upon the exhaust pipe A as above mentioned, and the end margins of the split portion 21 are in sliding abutment with the facing collars or clamps 33 and 34, so that it is impossible to move the casing 20 longitudinally of the exhaust pipe A, although an oscillatory movement of the casing 20 upon said exhaust pipe may be effected.

Referring to the means by which the split pipe portion 21 will normally be contracted about the exhaust pipe A, the same preferably includes bolts 38 at each end of the pipe portion 21, tangentially arranged with respect to said pipe portion 21, through suitable openings provided in the radial flanges 24 of said pipe portion 21. The heads 39 of said bolts 38 may rest against one of the flanges 24 at each end of the pipe portion 21, while a relatively long screw threaded portion of each bolt extends through the opposite cooperating flange 24. Lock nuts 40 are provided upon the screw threaded shanks of the bolts 38, intermediate which, and the nearest radial flange 24, spiral springs 42, under compression, are provided about the screw threaded shank of the bolts. It is thus apparent that the springs 42 normally urge the split pipe portion 21 into contraction about the exhaust pipe upon which it is positioned, thus tending to provide a seal of the pipe portion 21 about the exhaust pipe A, to prevent leak of exhaust gases. This resilient contracting means also enables the provision of a casing 20, the split portion 21 of which may be applied to exhaust pipes of various diameters, which of course, is a necessity, as the cut out valve construction is primarily adapted for accessory use.

Referring to the operating means D, the purpose of which is, of course, to open or close the port 10 in the exhaust pipe A, the same includes an operating rod or plunger 50, vertically reciprocable in a support construction 51 attached to the floor board B. At its upper end, above the floor board B, the plunger 50 is preferably provided with an enlarged foot engaging head 52. The rod 50 is preferably uniform in diameter from the head 52, extending below the floor board B, and at its lower end being flattened, as at 53, and connected to a detachable staple 54, carried at the outer end of the pipe portion 26, as by means of a substantially U-shaped link 56. The link 56 has the outturned ends 57 and 58 thereof screw threaded and disposed in suitable apertures in the lower end 53 of the rod 50 and the staple 54; nuts 59 being attached to the outer ends of the screw threaded portions 57 and 58 to prevent accidental disconnection of the link 56, and can be readily understood. The staple 54 may be detachably connected, as by check nuts 60, to the free end of the pipe portion 26.

Referring to the manner of operation of the improved cut-out, it is to be noted that the opening 10 in the exhaust pipe A faces downwardly. In order to align the passageway of the exhaust casing 20 with the port 10, it is necessary that the pipe outlet 26 depend in vertical manner, substantially as is illustrated by the dotted lines in Figure 2 of the drawings, and in which instance the exhaust gases from the pipe A may escape by way of the cut-out C. The normal position of the cut-out for rendering the same inoperative is illustrated in the full lines in Figure 2 of the drawings, and in which instance, the outlet pipe portion 26 is horizontally positioned, and the port 10 is closed. To throw the cut-out into position for release of exhaust gases therethrough it is merely necessary that the vehicle driver depress the plunger 50 and in which case the force of the same through the link connection 56 will throw the outlet portion 26 into the dotted position illustrated in Figure 2, oscillating the split pipe portion 21 upon the exhaust pipe A as an axis, as can readily be understood. In order that the outlet pipe portion 26 may have a definite downward limitation for its movement, it is preferred to provide a lateral extension 65 upon the spacing sleeve 33, against which the adjacent flange 24 of the split sleeve 21 may contact to limit the amplitude of downward movement when the cut out is opened. A similar limiting lug may be placed on the sleeve 34 to limit the upward movement of the outlet pipe portion 26, to denote the just-closed position of the cut out casing 20.

The means 51 for slidable mounting of the plunger 50 includes a cylindrical casing 70, exteriorly screw threaded and providing a passageway 71 for snug sliding fit of the plunger 50. Nuts 73 and 74 may be provided above and below the floor B to support the cylinder 70 in an opening 75 thereof whereby the plunger 50 is mounted for reciprocation on an exact axis.

Various changes in the shape, size and arrangement of parts may be made to the form of the invention herein shown and described, without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In a cut out structure, the combination with an exhaust pipe having an escape port therein, of a longitudinally split pipe oscillatively supported over the exhaust pipe having an outlet therein for registration with the exhaust pipe port.

2. In a cut out structure, the combination with an exhaust pipe having an escape port

therein, of a longitudinally split pipe oscillatively supported over the exhaust pipe having an outlet therein for registration with the exhaust pipe port, and means operating upon said longitudinally split pipe normally tending to contract the same about the exhaust pipe.

3. In a cut out structure, the combination with an exhaust pipe having an outlet port therein, of a substantially T-shaped cut-out casing including a longitudinally split pipe portion for oscillation over the exhaust pipe, and a laterally extending pipe portion providing an outlet for registration with the port of said exhaust pipe, the split portion having flanges bent thereon upon opposite sides of the split therein, a bolt extending through said flanges, and spring means upon said bolt operating upon one of said flanges to normally contract the same about the exhaust pipe.

4. In a cut-out structure, the combination with an exhaust pipe having an outlet port therein, of spacing collars upon said exhaust pipes upon both sides of the opening therein, and a movable control member oscillatively mounted upon the exhaust pipe between said collars having an outlet opening therein for registration with the port of said exhaust pipe.

5. In a cut-out construction, the combination with an exhaust pipe having an escape port therein, of spacing collars connected upon the exhaust pipe in a determined relation upon both sides of the port therein, a split pipe portion oscillatively mounted upon said exhaust pipe intermediate said spacing collars prevented thereby from longitudinal movement on the exhaust pipe, means normally tending to contract the pipe portion of the cut-out about said exhaust pipe, and means for oscillating the cut out portion upon said exhaust pipe to permit escape of the exhaust gases therethrough.

6. A cut-out construction for exhaust gas escape comprising in combination with an exhaust pipe having a port therein, of spacing collars carried upon the exhaust pipe at both sides of the port therein, a cut-out casing having an outlet opening therein oscillatively mounted upon the exhaust port intermediate the spacing collars thereon, and means carried by said spacing collars to limit the amplitude of open and closed positions of the cut-out casing upon said exhaust pipe.

7. In a cut-out construction for motor vehicles, the combination with a floor board construction having an exhaust pipe therebelow with a port therein, of a pipe oscillatively carried by the exhaust pipe having a port therein for regulation of escape of gases through the port of the exhaust pipe, a plunger reciprocably carried by the floor board construction, and a link pivotally connecting the plunger and the oscillatively mounted pipe laterally of its axis of oscillation.

8. In a cut-out construction, the combination of a floor construction and an exhaust pipe having an escape port therein, of spacing collars mounted in fixed relation upon the exhaust pipe upon both sides of the port therein, a substantially T-shaped cut-out casing including a longitudinally split pipe portion for oscillatively mounting exterior upon the exhaust pipe intermediate the spacing collars, and a radial outlet pipe extension providing a passageway adapted for communication with the port of said exhaust pipe to permit escape of exhaust gases, resilient means normally tending to contract the split portion of said cut-out casing upon said exhaust pipe, a plunger reciprocable through the floor board construction, and a substantially U-shaped link pivotally connected at the lower end of said plunger portion and adjacent the outer end of the cut-out casing outlet extension.

LUCIUS MELL THOMPSON.