June 10, 1924. 1,496,915

E. G. WEIR ET AL

EXHAUST CUT-OUT

Filed March 19, 1920

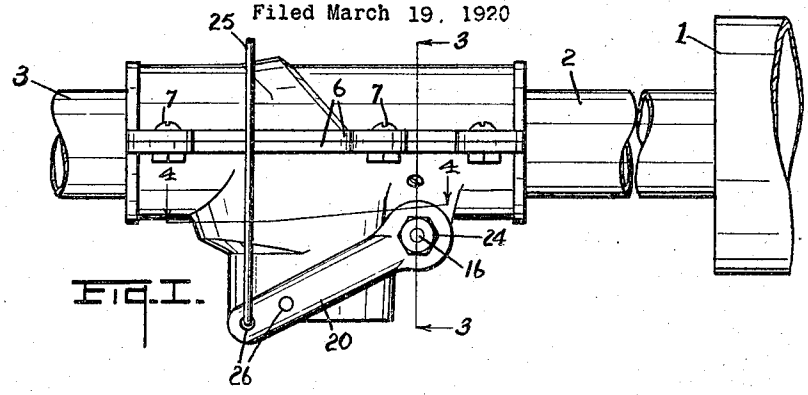


FIG. I.

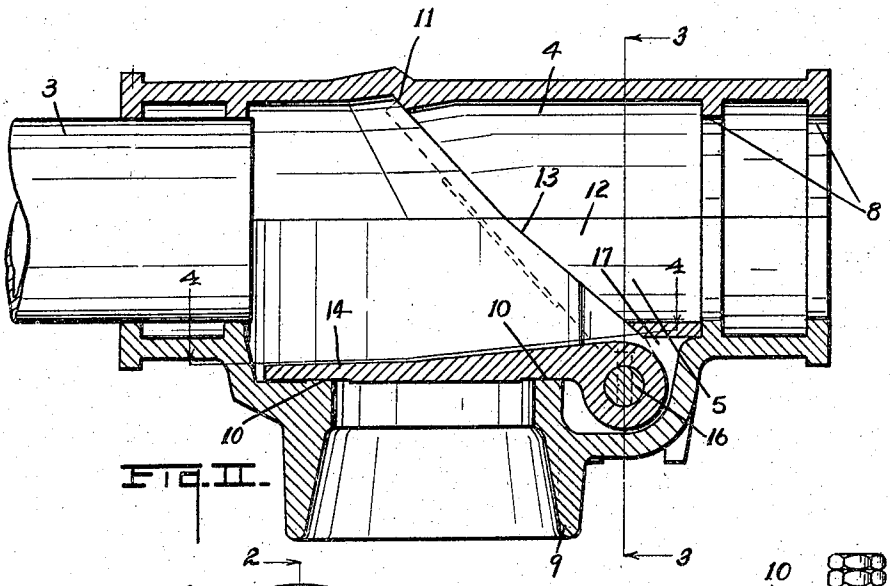


FIG. II.

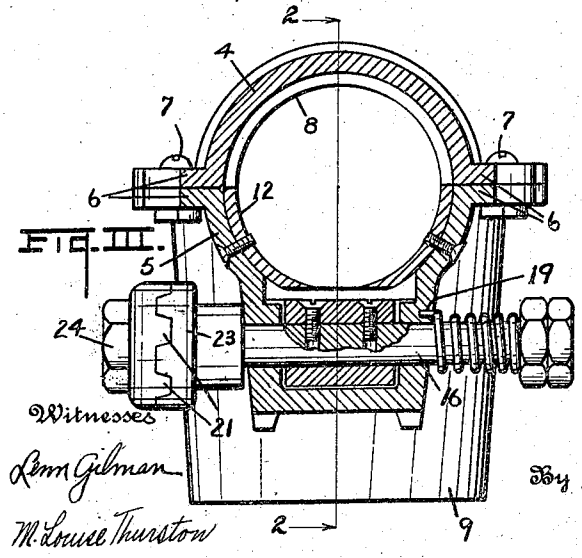


FIG. III.

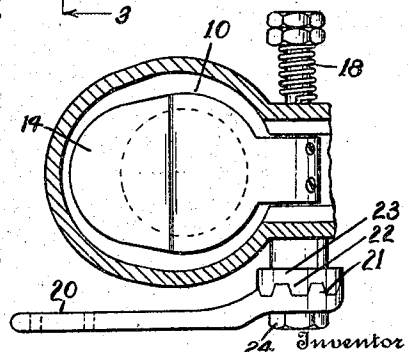


FIG. IV.

Witnesses
Lenn Gilman
M. Louise Thurston

Inventor
Edward G. Weir
Albert S. Hunt

By Chappell & Earl
Attorneys

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UNITED STATES PATENT OFFICE.

EDWARD G. WEIR AND ALBERT S. HUNT, OF DOWAGIAC, MICHIGAN.

EXHAUST CUT-OUT.

Application filed March 19, 1920. Serial No. 367,089.

To all whom it may concern:

Be it known that we, EDWARD G. WEIR and ALBERT S. HUNT, citizens of the United States, residing at Dowagiac, county of Cass, State of Michigan, 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.

The main objects of this invention are:

First, to provide an improved exhaust cut-out which may be readily mounted upon the pipe sections to be joined, such as the exhaust pipe of an engine and the inlet of a muffler, while the muffler and exhaust pipe are in position or assembled in a motor vehicle.

Second, to provide an improved exhaust cut-out having this advantage in which the joint or connection of the cut-out to the section joined is very secure.

Third, to provide an improved exhaust cut-out in which the parts are simple and economical to produce and easily assembled.

Fourth, to provide an improved exhaust cut-out which is adaptable to various makes of motor vehicles.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

We accomplish the objects of our invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of our invention is clearly illustrated in the accompanying drawing forming a part of this specification, in which:

Fig. I is a side view of our improved exhaust cut-out, portions of the exhaust pipe and muffler in connection with which the cut-out is shown, being broken away.

Fig. II is a central longitudinal section through our improved cut-out on a line corresponding to line 2—2 of Fig. III, a portion only of the exhaust pipe being shown.

Fig. III is a transverse section on a line corresponding to line 3—3 of Figs. I and II, the parts being shown in full lines for convenience in illustration.

Fig. IV is a horizontal section on a line corresponding to line 4—4 of Fig. II.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, 1 represents a muffler, 2 the inlet pipe thereof, and 3 the exhaust pipe of an engine.

The casing of our improved cut-out comprises complementary top and bottom sections 4 and 5 respectively. These sections have opposed flanges 6 on their longitudinal edges adapted to receive the clamping bolts 7. At their ends the casing sections are provided with internal annular spaced ribs 8 which are clamped upon the ends of the pipes 2 and 3. These ribs may be machined or ground so that when the sections are clamped upon the pipe sections, as shown, a very secure joint is provided and this notwithstanding that the pipe sections may be rough or more or less irregular.

The bottom section 5 is provided with a discharge extension 9 and with a valve seat 10 surrounding the discharge opening.

The top section is provided with a shoulder-like valve seat 11 above the discharge opening, the valve seat 11 being rearwardly and downwardly inclined.

A segmental valve seat member 12 having an inclined valve seat edge 13 is arranged in the bottom section with its valve seat edge in alignment with the shoulder-like valve seat of the top section.

A flap valve 14 is adapted to close against the valve seat 10 or against the valve seat 11 and 13, thus opening the cut off when the valve 14 is swung upwardly. The valve 14 is of the flap type and is mounted on the stem 16 disposed horizontally through the recess 17 formed in the rear bottom casing member at one side of the valve seat 10. The stem 16 is arranged through the walls of this recess and is provided with a coiled spring 18 at one end, one end of the spring being secured to the casing at 19 and the other end to the stem, so that the spring urges the valve to its seat 10.

A valve lever 20 has a series of teeth 21 coacting with the teeth 22 on the collar 23 fixed to the valve stem.

A nut 24 clamps the lever to the stem with its teeth in engagement with the teeth of the collar. Thus the lever may be adjustably secured to any position and is effectively retained in its adjusted positions on the stem. The operating rod 25 may be engaged in either of the holes 26 provided in the lever.

Thus arranged, the cut-out is readily attached to different makes of automobiles and to the various cut-out operating means usually provided.

We have illustrated our improvements in the form in which we have embodied the same for the market. We have not attempted to illustrate or describe certain adaptations which may be desirable in embodying our improvements for particular makes of automobiles as we believe, that with this disclosure, our improvements would be readily adapted as may be desired.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. In an exhaust cut-out, the combination of complementary top and bottom casing sections having opposed facing coupling flanges on their longitudinal edges, the bottom section being provided with a discharge opening surrounded by an internal valve seat and with a recess at one side of said valve seat, the top section having an inclined shoulder-like valve seat above said discharge opening, clamping bolts for said sections, a separately formed segmental valve seat member arranged in said bottom section above said recess and having an inclined valve seat edge aligned with and complementing the said valve seat of said top section, a valve stem disposed through the walls of the said recess, a flap valve mounted on said stem so that the valve may close against either of the valve seats, a spring arranged on one end of said valve stem and connected thereto and to said casing so that the valve is normally held on said discharge opening seat, and an arm adjustably mounted on the other end of said stem.

2. In an exhaust cut-out, the combination of complementary top and bottom casing sections having opposed facing coupling flanges on their longitudinal edges, the bottom section being provided with a discharge opening surrounded by an internal valve seat and with a recess at one side of said valve seat, the top section having an inclined shoulder-like valve seat above said discharge opening, clamping bolts for said sections, a separately formed segmental valve seat member arranged in said bottom section above said recess and having an inclined valve seat edge aligned with and complementing the said valve seat of said top section, a valve stem disposed through the walls of the said recess, and a flap valve mounted on said stem so that the valve may close against either of the valve seats.

3. In an exhaust cut-out the combination of complementary top and bottom casing sections having opposed facing coupling flanges on their longitudinal edges and internal annular complementary spaced ribs at each end engaging the pipe sections upon which the casing is mounted, the bottom section being provided with a discharge opening surrounded by an internal valve seat and with a recess at one side of said valve seat, the top section having an inclined shoulder-like valve seat above said discharge opening, clamping bolts for said sections, a separately formed segmental valve seat member arranged in said bottom section above said recess and having an inclined valve seat edge aligned with and complementing the said valve seat of said top section, a valve stem disposed through the walls of the said recess, and a flap valve mounted on said stem so that the valve may close against either of the valve seats.

4. In an exhaust cut-out, the combination of complementary top and bottom casing sections, the bottom section being provided with a discharge opening surrounded by an internal valve seat and with a recess at one side of said valve seat, the top section having an inclined shoulder-like valve seat above said discharge opening, a separately formed segmental valve seat member arranged in said bottom section above said recess and having an inclined valve seat edge aligned with and complementing the said valve seat of said top section, a valve stem disposed through the walls of the said recess, a flap valve mounted on said stem so that the valve may close against either of the valve seats, a spring arranged on one end of said valve stem and connected thereto and to said casing so that the valve is normally held on said discharge opening seat, and an arm adjustably mounted on the other end of said stem.

5. In an exhaust cut-out, the combination of complementary top and bottom casing sections, the bottom section being provided with a discharge opening surrounded by an internal valve seat and with a recess at one side of said valve seat, the top section having an inclined shoulder-like valve seat above said discharge opening, a separately formed segmental valve seat member arranged in said bottom section above said recess and having an inclined valve seat edge aligned with and complementing the valve seat of said top section, a valve stem disposed through the walls of the said recess, and a flap valve mounted on said stem so that the valve may close against either of the valve seats.

In witness whereof, we have hereunto set our hands and seals in the presence of two witnesses.

EDWARD G. WEIR. [L. S.]
ALBERT S. HUNT. [L. S.]

Witnesses:
CLAYTON TORREY,
HERBERT F. ARNOLD.