J. W. HORINE.

MUFFLER CUT-OUT VALVE.

APPLICATION FILED DEC. 21, 1920.

1,384,893. Patented July 19, 1921.

Fig. 1.

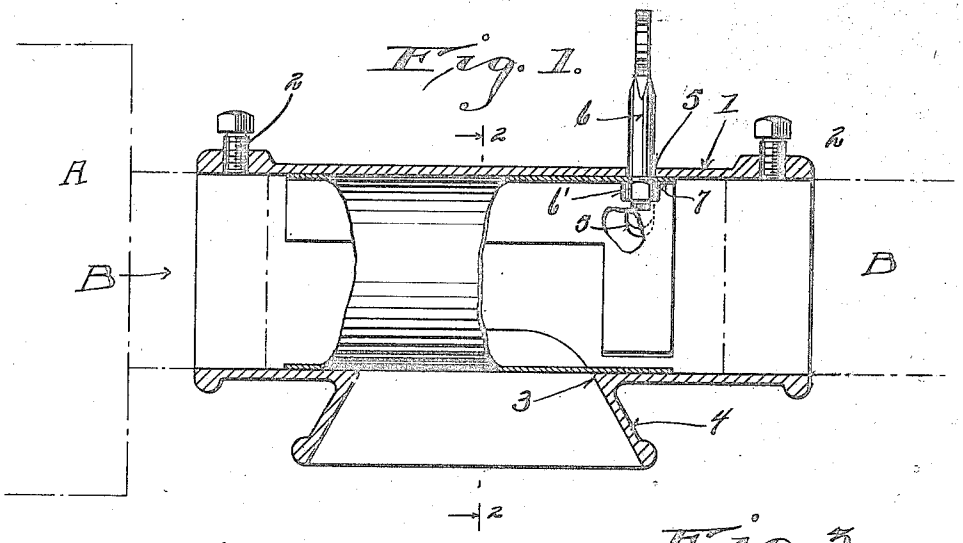


Fig. 2.

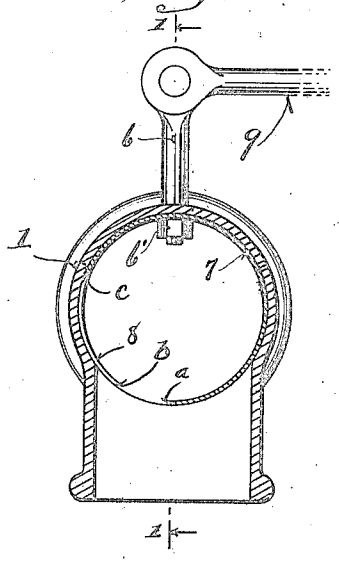
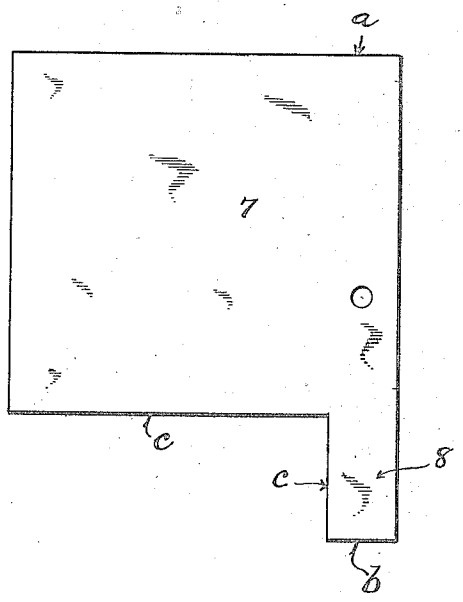


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

JARRETT W. HORINE, OF MILWAUKEE, WISCONSIN.

MUFFLER-CUT-OUT VALVE.

1,384,893. Specification of Letters Patent. Patented July 19, 1921.

Application filed December 21, 1920. Serial No. 432,258.

To all whom it may concern:

Be it known that I. JARRETT W. HORINE, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Muffler-Cut-Out Valves; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention refers to mufflers and has for its object to provide a simple, economical and effective cut-out valve adapted to be fitted into the inlet pipe of the muffler. Specific objects of my invention also provide a valve casing having a radial by-pass port and a valve shell of the sleeve type snugly fitted therein, having a port for controlling the by-pass, the edges of which port serve as shearing blades to effectually remove carbon deposits about the by-pass port, whereby the same can be snugly closed.

To provide a resilient split sleeve valve shell having an elongated port therein, the edges of which port constitute scrapers whereby the by-pass is effectually cleansed from carbon deposits, and the shell, due to its resiliency will thereby automatically take up wear to insure tight closure of the by-pass.

To provide a split shell of the character mentioned above with a tongue portion which is adapted to close a radial slot in the valve casing, the tongue being associated with an actuating arm.

With the above and other minor objects in view, the invention consists in certain peculiarities of construction and combination of parts as are hereinafter set forth with reference to the accompanying drawings and subsequently claimed.

In the drawings,

Figure 1 represents a sectional elevation of a cut-out valve embodying the features of my invention, with parts in full, the valve being shown attached to the inlet pipe of a muffler of any type, the section being indicated by line 1—1 of Fig. 2.

Fig. 2 is a cross section of the valve, the section being indicated by line 2—2 of Fig. 1, and

Fig. 3 is a diagrammatic view of the valve sleeve blank.

Referring by characters to the drawings, A represents a muffler having the usual intake pipe B, through which the spent gases pass from the engine to said muffler. The pipe B in this instance is interrupted and has fitted thereto a cylindrical valve casing 1, which casing is secured to the pipe B by set bolts 2. The casing is provided with a by-pass port 3, which port communicates with a flared nozzle portion 4. The valve casing is also provided with a radial slot 5 through which is extended an actuating arm 6.

The actuating arm 6 is shouldered and threaded at its lower end for engagement with an aperture that is formed in a shell-like sleeve valve 7. The arm 6 is rigidly secured to the valve shell by means of a nut 6′, which is in threaded union with the shouldered end of said arm. The body of the valve shell is formed from a rectangular flat blank, as best shown in Fig. 3, and it is folded in cylindrical form to snugly fit the inner cylindrical walls of the valve casing. The juxtaposed folded edges *a* and *b* of the valve blank are brought together so as to constitute a split shell having certain resiliency, and the edge *b* is provided with a rectangular cut-away portion *c*, which extends longitudinally throughout the length of the blank at one end, but terminates in the opposite end a predetermined distance therefrom to form a tongue 8. This tongue portion constitutes a closure for the radially disposed casing slot, and the longitudinally disposed edges *a* and *c* forming the valve port, also constitute cutting blades which serve to shear across the oval edges of the port 3 to thus clear the same of any carbon deposits which may develop in use. Thus it will be seen that when the sleeve is formed into cylindrical shape and is fitted into the casing, it will expand so as to frictionally grip the companion walls of the casing to prevent rattling of the valve member, and to hold it in any predetermined set position with relation to the port 3. In cut off valve structures of the flap type, it frequently occurs that the valve member will not close snugly against its port, due to the fact that soot or carbon deposits fold thereabout, and hence, the result is a leaky connection.

With my structure, wherein the edges form shearing blades, the sleeve will effectually overcome this objectionable feature. The actuating arm 6 may be connected by a link 9 to any suitable foot or hand control lever within easy reach of the operator,

which mechanism forms no part of my invention. It will also be observed that owing to the nozzle 4 being flared outwardly, when the spent gases are discharged therethrough, they will thus be broken up or scattered, and thereby prevent liability of causing an accumulation of dust, due to their coming in forcible contact with the ground, which force will be considerable where the charge is expelled through a choked or straight bored nozzle.

I claim:

1. A muffler attachment comprising a cylindrical valve casing, having an oval by-pass port and a radial slot offset therefrom, a resilient split sleeve valve shell revolubly mounted therein adapted to control the by-pass port, and an actuating arm extending from the sleeve through the valve casing slot.

2. A muffler attachment comprising a cylindrical valve shell having a by-pass port and a radial slot offset therefrom, a split sleeve valve shell mounted in the casing, the sleeve being divided longitudinally to form an enlarged discharge port for controlling the by-pass port, and a tongue at one end thereof to form a closure for the valve casing slot, and an actuating arm extending from the valve shell through said slot.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

JARRETT W. HORINE.