W. H. EYNON.

VALVE AND HORN.

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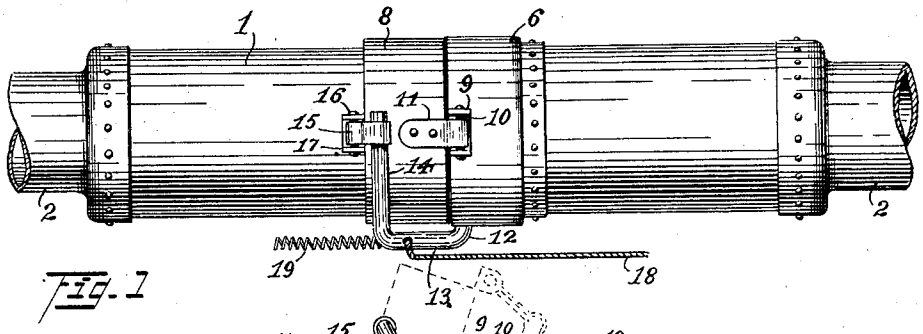

Fig. 1

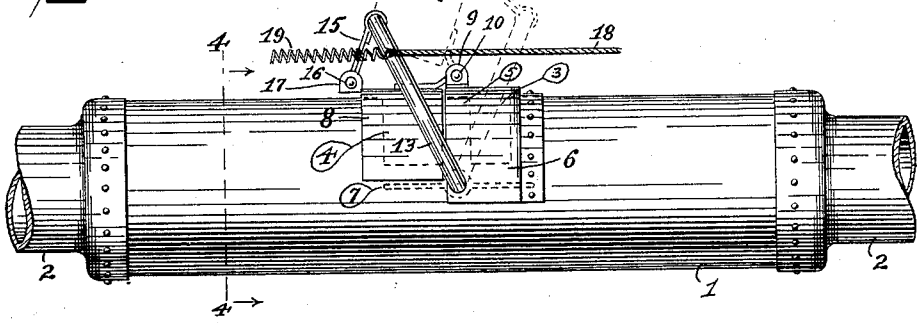

Fig. 2

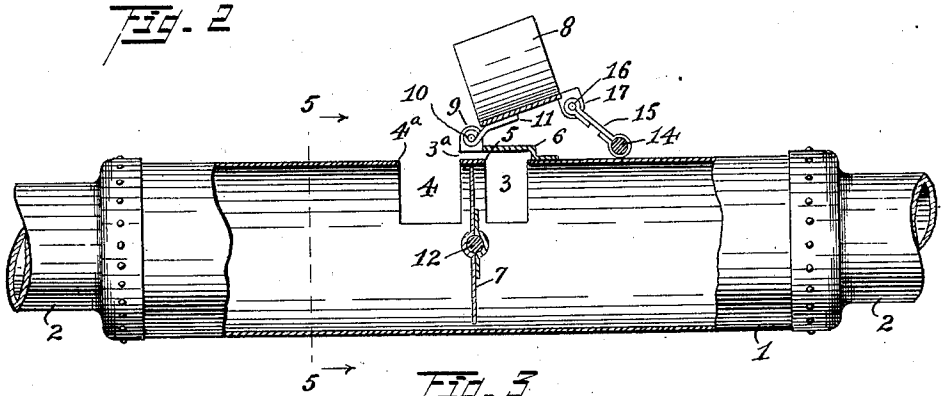

Fig. 3

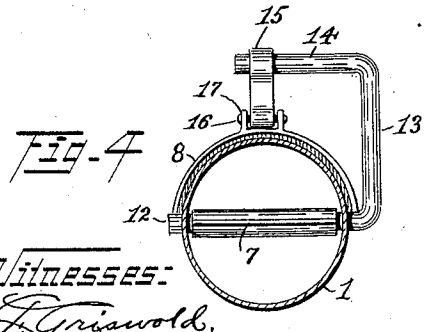

Fig. 4

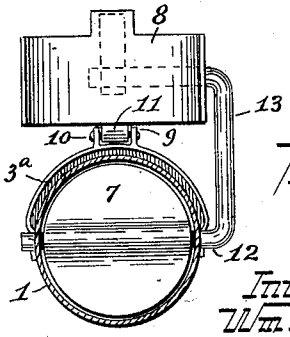

Fig. 5

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VALVE AND HORN.

1,047,019. Specification of Letters Patent. Patented Dec. 10, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM H. EYNON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Valves and Horns, of which the following is a specification.

My invention relates to improvements in valves and horns, and is particularly designed and adapted for use as a combined "cut-out" valve and exhaust blown signal horn for use in connection with the exhaust pipe leading from a hydro-carbon engine to the muffler commonly employed in connection with automobiles, motor trucks, motor boats, and the like. Under ordinary circumstances when the exhaust is forced directly to the muffler there is considerable back pressure resulting in a certain loss of power by impeding the action of the motor, consequently, what are known as "cut-out" valves are frequently provided whereby the exhaust may be permitted to escape directly through the valve and into the air instead of through the muffler. In exhaust valves and horns of this class, there is a tendency of the parts and ports to become covered and clogged with carbon in the form of soot by the action of the exhaust gases, and the primary object of this invention is to provide a generally improved combined "cut-out" valve and signal horn of simple, cheap and efficient construction, in which the several parts are so disposed, constructed and arranged as to reduce the above mentioned tendency to a minimum.

When used as an exhaust blown signal horn in connection with automobiles the same is adapted to provide a combined cut-out valve and signal horn, the rotary valve being adapted to be moved from its normal or non-diverting position to either a fluid diverting cut-out position or fluid diverting whistle sounding position as desired.

With the above mentioned and other objects in view the invention consists in the novel construction, arrangement and combination of parts, hereinafter described, illustrated in one of its embodiments in the accompanying drawings, and particularly pointed out in the appended claims.

Referring to the drawings forming a part of this specification, Figure 1, is a top plan view of the improved cut-out valve and signal horn, the parts being shown in position to conduct the exhaust gases directly to the muffler. Fig. 2, a side elevation of the same, Fig. 3, a view, partly in longitudinal section, showing the parts in a fluid diverting whistle sounding position. Fig. 4, a cross sectional view, taken on line 4—4 of Fig. 2. Fig. 5, a cross sectional view taken on line 5—5 of Fig. 3.

Similar numerals of reference designate like parts throughout all the figures of the drawings.

The improved valve and horn comprises a valve or horn body 1, adapted to be connected to the exhaust pipe 2, leading to the muffler in the usual manner when the exhaust is from a hydro-carbon engine.

The valve or horn body 1, is provided at one side with a segmental whistle slot 3, for utilizing the operating fluid or gases in sounding the horn, as hereinafter described, and as a means for discharging the exhaust gases directly into the atmosphere through the cut-out valve, the valve or horn body is provided with a segmental cut-out slot 4, in coöperative relation to the whistle slot 3, and rotary valve, as hereinafter described.

A segmental bridge member 5, is arranged between the ports or slots 3 and 4, and as a means for directing the operating fluid from the whistle slot 3, to the lip 4^a, of the cut-out slot 4, in sounding the horn, a segmental hood or shield 6, is mounted on the horn body 1, immediately above the whistle slot 3, said hood having an offset portion extending over the bridge member 5, and forming conjointly therewith, a peripheral inlet slot or passage 3^a, for directing the operating fluid against the lip or edge 4^a, of the cut-out slot in sounding the horn, when the parts are moved to a fluid diverting whistle sounding position as shown in Fig. 3, of the drawings.

As a means for diverting the operating fluid to the whistle slot for sounding the horn as well as diverting the same from the muffler, a rotary valve 7, of disk shape, is rotatably mounted in the valve or horn body 1, said valve being adapted to be moved to an open position for permitting the exhaust gases to pass directly to the muffler as in-

dicated in Fig. 2, of the drawings, or to be moved to a fluid diverting cut-out position, whereby the exhaust fluid may pass out to the atmosphere through the cut-out slot 4, without any back pressure, or to a transverse fluid diverting whistle sounding position as shown in full lines in Fig. 3, of the drawings, whereby the operating fluid or exhaust gases are passed out through the whistle slots or passages 3, and 3^a, to the lip 4^a, of the cut-out slot 4, for sounding the horn.

As a means for opening and closing the cut-out slot or port opening 4, as well as for moving the valve disk 7, to and from a fluid diverting position, a cut-out valve 8, is rotatably connected to the horn body, in the present instance, by being pivotally or hingedly connected to the hood or shield 6, through the medium of lugs 9, provided with a pivot pin 10, passing through a hinge or bearing strap 11.

As a means for simultaneously actuating the rotary valve 7, and cut-out valve 8, whereby said cut-out valve is adapted to close said cut-out slot 4, when said rotary valve is in a non-diverting position, as shown in Figs. 1 and 2, of the drawings, and whereby said cut-out valve 8, is adapted to open said cut-out slot when said rotary valve is in a fluid diverting cut-out position, as shown by dotted lines in Fig. 2, of the drawings, or to a transverse fluid diverting whistle sounding position, as shown in Fig. 3, of the drawings, an axle or bearing shaft 12, is provided, said bearing shaft extending through the valve or horn body 1, and supporting and carrying the rotary valve 7, said bearing shaft being provided with a crank arm 13, terminating in a second arm or shaft 14, extending above the cut-out valve 8, and connected to the latter by means of a connecting link 15, said connecting link being connected to the free end of the cut-out valve 8, by means of a pivot-pin 16, carried in bearing lugs 17.

As a means for operating the valves 7, and 8, a connecting cord or cable 18, is provided, said cord or cable communicating with a suitable foot lever (not shown) or other suitable operating mechanism, whereby the crank arm 13, may be operated against the resistance of a coiled spring 19, adapted to return and maintain the parts in their normal or closed position.

From the foregoing description, taken in connection with the accompanying drawings, the operation and advantages of my invention will be readily understood.

Having thus described an embodiment of my invention, what I claim and desire to secure by Letters Patent is—

1. In a valve and horn, a valve body provided with whistle and cut-out slots, a rotary valve adapted when closed to assume a position between said whistle and cut-out slots, a fluid diverting hood arranged above said whistle slot, a cut-out valve adapted to open and close said cut-out slot, and means for connecting and simultaneously operating said rotary and cut-out valves.

2. In a valve and horn, a horn body provided with whistle and cut-out ports, a rotary valve in coöperative relation to said ports, and a cut-out valve normally closing said cut-out port and connected to and adapted to move said rotary valve to its whistle sounding and cut-out positions when such cut-out valve is moved to its extreme and intermediate positions, respectively.

3. In a valve and horn, a valve and horn body provided with whistle and cut-out ports, a fluid diverting member above said whistle port, a valve rotatably mounted in said valve and horn body and adapted to divert the operating fluid to either of said ports, a cut-out valve adapted to open and close said cut-out port and operatively connected to said rotary valve, and means for operating said rotary valve.

4. A valve and horn, comprising a valve body provided with whistle and cut-out slots, a hood extending above said whistle slot and adapted to direct the operating fluid to the lip of said cut-out slot, a rotary valve adapted when closed to divert the operating fluid through said whistle slot and when open to divert the same through said cut-out slot, a cut-out valve adapted to open and close said cut-out slot, and means for simultaneously operating said rotary and cut-out valves.

5. In a valve and horn, a valve or horn body provided with a whistle slot and a cut-out slot separated by a segmental bridge member, a segmental hood mounted above said whistle slot and bridge member and forming a peripheral inlet slot leading to said cut-out slot, a rotary valve mounted in said valve or horn body, means for moving said rotary valve to various positions relative to said slots, and means for closing said cut-out slot when said rotary valve has been moved to a non-diverting position.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM H. EYNON.

Witnesses:
M. C. Mason,
O. C. Billman.

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