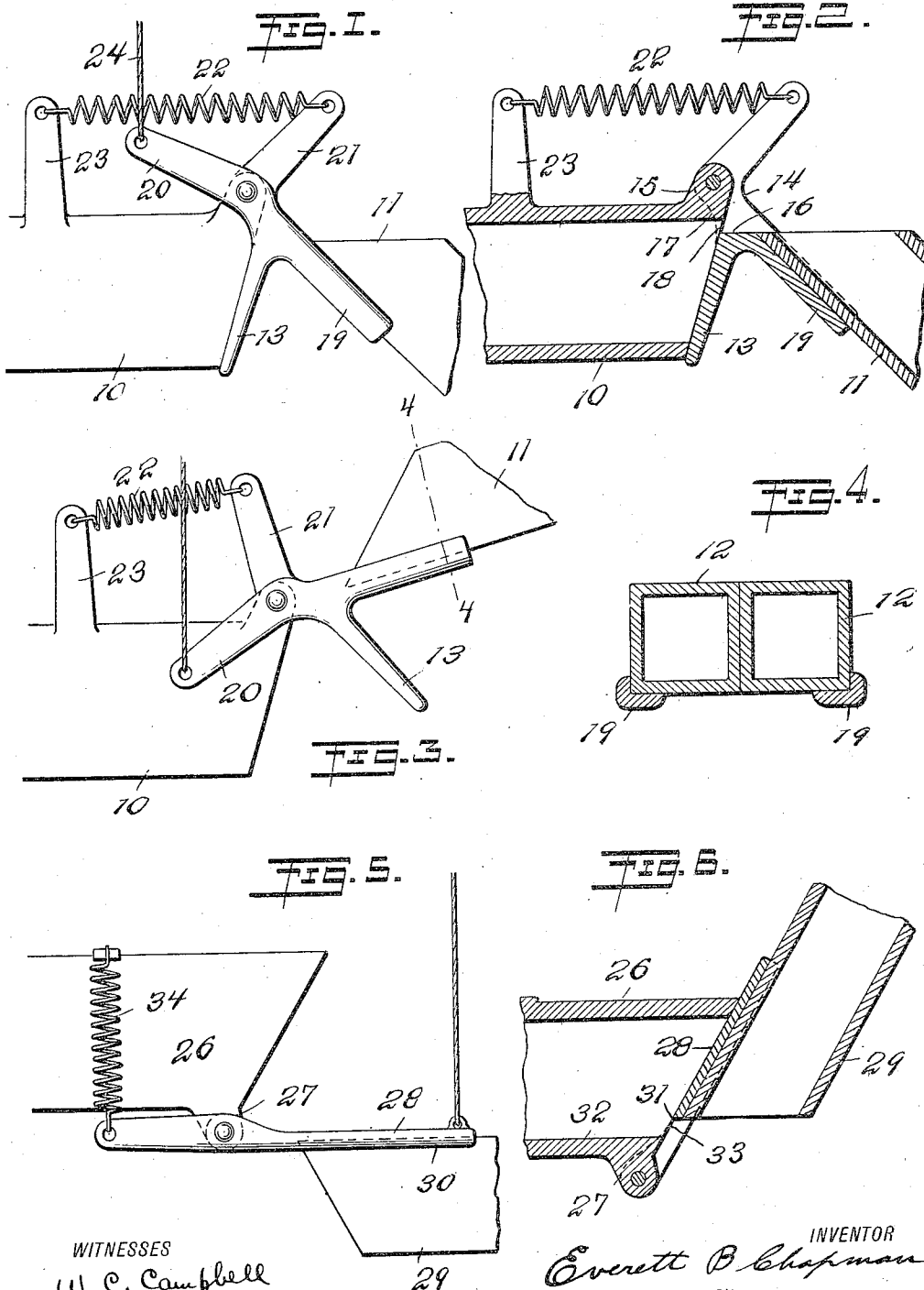


E. B. CHAPMAN.
HORN OR WHISTLE.
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WITNESSES
W. C. Campbell
J. Williams

INVENTOR
Everett B. Chapman
BY
Owens & Furbank
ATTORNEYS

UNITED STATES PATENT OFFICE.

EVERETT B. CHAPMAN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO SOLOMON A. CAMPBELL, OF NEWTON, MASSACHUSETTS.

HORN OR WHISTLE.

1,052,886.

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To all whom it may concern:

Be it known that I, EVERETT B. CHAPMAN, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Horns or Whistles, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in horns or whistles of that type particularly designed for use on motor vehicles and to be operated by the exhaust gas from the engine. In this type of horn or whistle, it is common to provide a sound chamber and a coupling having connections for supporting the same from the end of the exhaust pipe. Upon the movement of the controlling part or parts by pressing a pedal or in any other suitable manner, the gas from the exhaust pipe is caused to flow through a comparatively narrow slit across the opening in the sound chamber, so as to produce the desired sound.

In my improved horn I so mount the sound chamber that it may be moved in respect to the gas delivery conduit, and the main object of my invention is to not only utilize this sound chamber or parts rigid therewith as a closure for the outlet from the exhaust conduit, but to insure the proper positioning of the opening in the sound chamber in respect to the slit through which gas is delivered across said opening, so that a slight variation in the position of the sound chamber or a failure to move the sound chamber to its limiting position in the operation of the horn will not materially modify the character of the sound produced. I form the slit or opening adjacent to the hinge, and one edge of the slit is formed by a part rigid with the sound chamber. In swinging the sound chamber to operating position, the high pressure of the gas or dirt or other obstructions may prevent the proper contact of the parts, but this difference in position is reduced to a minimum adjacent the hinge, and the horn will operate properly in spite of these obstacles.

Reference is to be had to the accompanying drawings which form a part of this specification and in which similar reference characters indicate corresponding parts in the different views.

Figure 1 is a side elevation of the operating parts of a device constructed in accordance with my invention, the parts being in position for the production of the sound; Fig. 2 is a longitudinal section through the device shown in Fig. 1; Fig. 3 is a side elevation similar to Fig. 1, but showing the sound chamber in raised or inoperative position; Fig. 4 is a transverse section on the line 4—4 of Fig. 3; Fig. 5 is a side elevation of the operating parts of a second form which my invention may assume, parts being in inoperative position; and Fig. 6 is a longitudinal section through the device shown in Fig. 5, the parts being in operative position.

In both of the forms shown, I so mount the sound chamber that it may be moved out of the paths of the gas escaping from the conduit, or may be moved so that a closure rigid with the sound chamber will prevent the escape of the gas except through a narrow slot.

One of the important features of this construction is the forming of the slot adjacent to the hinged edge of the closure. Thus the slot and sound chamber will have substantially the same relative relationship throughout a short range of movement of the sound chamber and closure. Thus if the closure fails to exactly come to its seat by reason of the presence of obstructions or high gas pressure, the sound may still be properly produced.

In the forms shown in Figs. 1 to 4 inclusive, I employ a pipe section 10 which may be either directly attached to the tail pipe of the automobile or may be attached by suitable couplings. This pipe section 10 may be of any suitable construction and supported or secured in any suitable manner. Inasmuch as the details of its construction are not important and as it serves for the delivery of exhaust gas, I will hereinafter refer to it as the "exhaust pipe". In connection with this exhaust pipe, I employ a sound chamber 11, which also may be of any suitable construction. Preferably the sound chamber is made up of two tubes 12 arranged side by side and held rigid in respect to each other. The tubes are closed at one end, and at the opposite end are cut off at an angle, as is clearly indicated in Fig. 2.

For securing the tubes to the exhaust pipe, I provide a connecting member including a closure plate 13. This plate has upwardly extending arms 14 pivotally attached to lugs 15 upon the upper side of the pipe 10, adjacent to its free end. The pipe 10 is open so that there may be a straightaway escape of the exhaust gas when the closure is not in position. The closure has one edge 16 spaced a short distance from the side 17 of the pipe, which bears the lugs 15; that is, when the closure is in closed position, as indicated in Fig. 2, there will be formed a slot 18 at the hinged side of the closure. The closure has two depending arms 19, by means of which the sound chamber is rigidly secured to the closure. The sound chamber has its opening in a plane with the edge 16 of the closure, so that the exhaust gas escaping through the slot 18 will blow directly across the opening.

With the parts in operative position, as shown in Figs. 1 and 2, the gas can only escape from the exhaust pipe through the slot 18 and across the opening in the sound chamber to produce the sound. By swinging the closure outwardly and upwardly, the sound chamber comes to the position shown in Fig. 3, so that the gas may freely escape below the edge of the closure and the entire sound chamber will be above and out of the path of the gas escaping from the pipe. Any suitable mechanism may be provided for moving the sound chamber and the closure to or from operative position. As shown, the closure has two arms 20 and 21 rigid therewith, extending upwardly from the pivotal center. A spring 22 connects the arm 21 and a lug 23 on the pipe and normally tends to pull the closure and sound chamber to inoperative position. A cord 24 is connected to the arm 20, so that by pulling upwardly on the cord, the parts may be forced to operative position.

It is, of course, understood that other forms of operating mechanism might be employed.

The forms shown in Figs. 5 and 6 are similar in many respects to that shown in Figs. 1 to 4 inclusive. An exhaust pipe 26 is provided with depending lugs 27, to which is hinged a closure 28. Instead of employing separate arms 19 for supporting the sound chamber, I secure the sound chamber 29 directly to the closure, the latter having side flanges 30, if desired, to insure the proper positioning of the sound chamber in the assembling of the parts and to aid in holding the parts in proper position. The hinged edge 31 of the closure is spaced a short distance from the lower side 32 of the pipe, so as to form a slot 33 through which the gas may escape across an opening to the sound chamber. A suitable spring 34 tends to pull the sound chamber and closure down-

wardly out of alinement with the pipe, and any suitable mechanism may be employed for moving the parts to the position shown in Fig. 5 and against the tension of the spring when it is desired to sound the signal.

Various other forms of my invention may be employed within the scope of the appended claims without departing from the spirit of my invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A signal including an exhaust pipe having an opening, a closure hinged to said pipe at one side of said opening to leave a narrow blast-directing slot between said last-mentioned side of said pipe and the adjacent side of said closure when the latter is in closed position and a sound chamber carried by said closure.

2. A signal including an exhaust pipe having an opening, a closure hinged to said pipe at one side of said opening to leave a narrow blast-directing slot between said last-mentioned side of said pipe and the adjacent side of said closure when the latter is in closed position and a sound chamber carried by said closure, and having an opening adjacent to said last-mentioned edge and across which gas emerging from said slot may pass.

3. A signal including an exhaust pipe having an opening, a closure comprising a plate portion with projecting lugs pivoted to said pipe at one side of said opening, the said closure between said lugs presenting an edge spaced from the adjacent side of the pipe to leave a blast-directing slot when said closure is in closed position and a sound chamber carried by said closure.

4. A signal including an exhaust pipe having an opening, a sound chamber having an opening, pivotal connections extending beyond the plane of said last mentioned opening and connecting said chamber to said pipe with one edge of said last mentioned opening spaced from one edge of the opening of said pipe to leave a blast-directing slot, means for moving said chamber bodily in respect to said pipe and a closure rigid with said sound chamber and movable therewith.

5. A signal including an exhaust pipe, a sound chamber having an opening, arms carried by said chamber adjacent one side thereof and extending outwardly from said sound chamber beyond the plane of said opening, and pivotal connections between said arms and said exhaust pipe, said sound chamber having the edge of said opening between said arms cooperating with one edge of the outlet from said exhaust pipe to form a slot through which gas may escape from said conduit across said opening when said sound chamber is in operative position.

6. A signal including an exhaust pipe having an outlet, a closure having arms pivotally connected to said exhaust pipe adjacent one side of said closure to leave a narrow blast-directing slot between said arms and between the adjacent edges of said outlet and said closure, and a sound chamber carried by said closure and having an opening adjacent to said slot.

10 7. A signal, including an exhaust pipe having an opening, a closure hinged to said pipe at one side of said opening, and having a blast-directing opening, and a sound chamber carried by said closure at an angle to the general direction of said exhaust pipe

15 when in operative position and having an opening across which gas may escape when said chamber is in operative position, said chamber opening being adjacent to the hinged edge of said closure and said chamber hav-

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ing a closed end projecting beyond the free edge of said closure.

8. A signal, including an exhaust pipe having an opening, a movable sound chamber having an open end and arms projecting beyond the plane of said open end, said arms being pivotally connected to said pipe, adjacent to one side of said opening and said sound chamber being disposed across said opening at an angle to the general direction of said exhaust pipe to substantially close the latter and leave a narrow blast-directing slot when in operative position.

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In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

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EVERETT B. CHAPMAN.

Witnesses:

HARRY H. OLCOTT,

JOHN J. RICHARDS, Jr.

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