

E. TESTE.
 HORN FOR MOTOR CARS, MOTOR CYCLES, AND CYCLES.
 APPLICATION FILED JUNE 22, 1910.

1,062,518.

Patented May 20, 1913.

Fig.1.

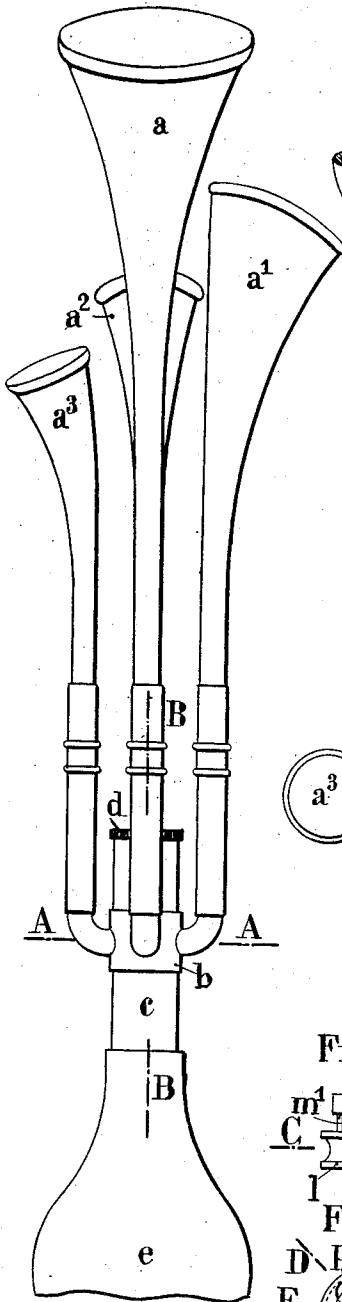


Fig.3.

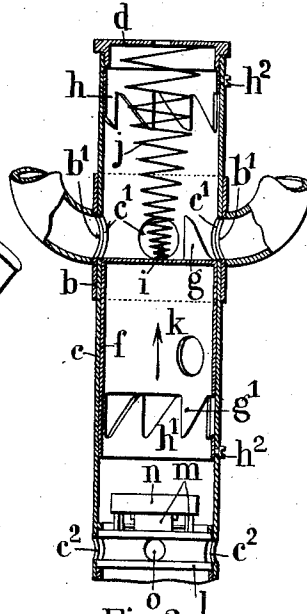


Fig.4.

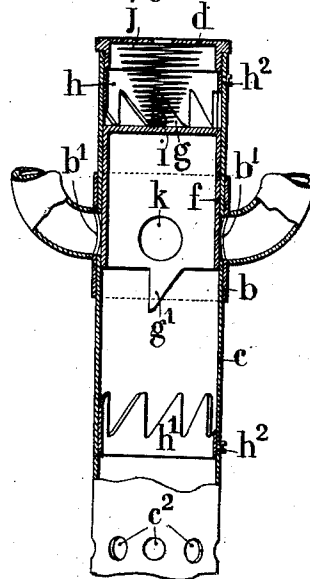


Fig.2.

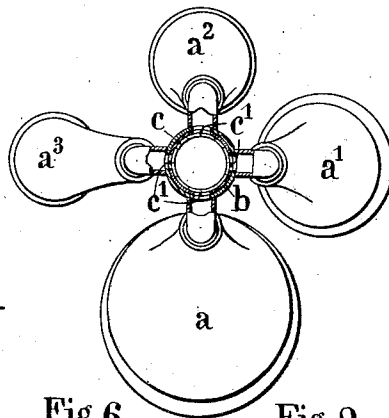


Fig.5.

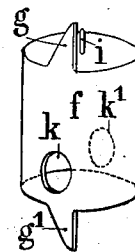


Fig.6.

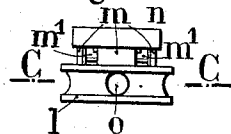


Fig.9.

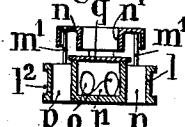


Fig.10.

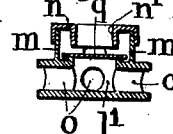
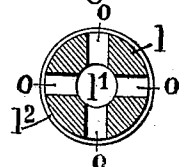


Fig.7.



Fig.8.



WITNESSES
A. C. Davis
G. S. Bellhaus

INVENTOR
Etienne Teste
 BY
Wm. C. Co.
 ATTORNEYS.

UNITED STATES PATENT OFFICE.

ETIENNE TESTE, OF PARIS, FRANCE.

HORN FOR MOTOR-CARS, MOTOR-CYCLES, AND CYCLES.

1,062,518.

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To all whom it may concern:

Be it known that I, ETIENNE TESTE, a citizen of the French Republic, and a resident of 18 Rue des Bois, in the city of Paris, Republic of France, machine-maker, have invented a Horn for Motor-Cars, Motor-Cycles, and Cycles, of which the following is a full, clear, and exact description.

This invention has for its object to provide a hooter (such as is used on motor cars and other vehicles) capable of being caused to emit a number of different notes or sounds and wherein the change from one note or sound to another is produced automatically by successive pressures on air bulb.

This apparatus comprises a certain number of trumpets in the reeds of which the air enters successively by reason of the displacement of a small hollow piston, provided with suitably arranged openings, which is pushed back each time a pressure is exerted on the bulb. This piston receives a movement of rotation by reason of the engagement of prongs, carried by said piston, with the teeth of two crowns suitably placed on each side of the piston, so as to bring successively its openings opposite the mouth-piece of one of the trumpets.

The invention is illustrated in the accompanying drawings wherein:

Figure 1 is an elevation of the present hooter. Fig. 2 is a cross vertical section made according to line A—A of Fig. 1. Fig. 3 is a longitudinal vertical section made according to line B—B of Fig. 1 showing the apparatus at rest. Fig. 4 is a similar section to Fig. 3 showing the hooter actuated. Fig. 5 shows apart the distributing piston. Fig. 6 shows in elevation the valve permitting the issue and the reëtrance of the air in the bulb. Fig. 7 is a corresponding plan view. Figs. 8 to 10 are sections made respectively according to lines C—C, D—D and E—E in Figs. 6 and 7.

As shown in the drawing, the present apparatus comprises trumpets a a^1 a^2 a^3 of different sizes fixed in any suitable manner on a metal ring b provided with openings b^1 communicating with the said trumpets. In this ring is engaged a metal cylinder c closed at one of its ends by a plug d , the other end receiving the bulb e . The cylinder c is provided with openings c^1 arranged so as to come opposite the openings b^1 of the ring b . In the cylinder c can move a hollow piston f provided laterally at its two ends with a

prong g or g^1 . These prongs can engage successively in the teeth of two crowns h and h^1 placed at each side of the piston f . These crowns which are sufficiently spaced apart in order to permit the movement of the piston f (Fig. 3) are fixed in the cylinder c by means of screws h^2 . On the top of the piston f and at its center is arranged a stud i on which is engaged the end of a conical spring j taking on the other end a bearing on the bottom of the plug d . This spring j is intended to draw back the piston f when the latter has been pushed forward by the air coming from the bulb e . On the periphery of the piston f are formed two openings k and k^1 which, when the piston is pushed back, can come opposite the mouth-piece of one of the trumpets a a^1 a^2 and a^3 .

The operation is as follows: When no pressure is exerted on the bulb e and the apparatus is at rest, the various organs of this apparatus are in the position shown in Fig. 1. In this position the piston f is pushed back toward the bulb e by the spring j and the prong g^1 of this piston is engaged between two of the teeth of the crown h^1 . If pressure is exerted on the bulb e , the air forced out by the latter pushes the piston f in the direction of the arrow in Fig. 3. The piston f moves in the cylinder c and compresses the spring j up to the moment the prong g encounters one of the teeth of the crown h . The piston f continuing its forward movement under the action of the air, the prong g slips on the inclined edge of this tooth, thus communicating to the said piston a partial movement of rotation. When the prong g has come to the bottom of the tooth of the crown h , the opening k of the piston f comes opposite one of the openings c^1 of the cylinder c . The air passing by this opening actuates then one of the trumpets a a^1 a^2 or a^3 which sounds until the air stored in the bulb e is exhausted. At this moment, the bulb e is released and the piston f under the action of the spring j is brought back. During this movement of the piston the prong g^1 of the latter encounters one of the inclined edges of a tooth of the crown h^1 . This crown being slightly unwedged relatively to the crown h , the prong g^1 slips along the edge of this tooth, communicating to the piston f a new movement of rotation. The piston f being thus brought back to its initial position, if the bulb e is again pressed, this piston will be again moved by the air and will

turn for a portion of a revolution when the prong g will take into the teeth of the crown h . When the piston f will arrive to the end of its stroke, the opening h^1 will come opposite one of the openings c^1 of the cylinder c , a new trumpet will sound and so on. From the preceding it will be seen that the piston f receives at each of its movements, in one direction or the other, a partial movement of rotation permitting to bring successively one of the openings h or h^1 made in this piston, opposite one of the mouth-pieces of the trumpets a a^1 a^2 or a^3 . The reëntrance of the air in the bulb e is obtained by means of a suitably arranged valve.

The air is admitted into and expelled from the bulb e by passing through a valve of special construction, illustrated in detail in Figs. 6 to 10. This valve is constituted by a metal disk l inserted in the cylinder c between the bulb e and the crown h^1 . The disk l has on one of its faces four prongs m leaving between them intervals or openings m^1 . The upper part of these prongs is covered by a cap n provided with a central opening n^1 . Opposite this opening n^1 is provided a chamber l^1 formed in the disk l . This chamber communicates, by means of four horizontal passage-ways o , with a circular groove l^2 on the periphery of the disk. When the valve is in position this groove is placed opposite openings c^2 circularly formed in the cylinder c . On the other hand, opposite the openings or intervals m the disk l is perforated with four vertical passage-ways p placed between the passage-ways o and opening on the one hand in the bulb e and on the other hand in the cylinder c (Fig. 3). Finally between the cap n and the chamber l^1 is arranged a rubber washer q lying on a small shoulder on the periphery of the said chamber. The valve thus arranged operates as follows: The bulb e being full of air, if a pressure is exerted on said bulb, the air presses the washer q upon the opening of the chamber l^1 , thus cutting out all communication between the bulb and said chamber. Then the air passes through the openings m^1 and the passage-ways o and enters in the cylinder c where it actuates the piston f as mentioned above. When the totality of the air contained in the bulb e has been expelled the pressure on the latter is released. Said bulb by returning to its initial shape produces a suction. The air from the exterior passing through the openings c^2 of the cylinder c , enters into the groove l^2 ; then passing through the passage-ways o ,

comes into the chamber l^1 , lifts the washer q and enters into the bulb by passing through the openings m^1 .

The valve which has just been described permits to obtain a great regularity in the admission and the expulsion of the air.

It is to be understood that the apparatus described may comprise any number of trumpets and that the latter may be replaced by whistles, and the bulb e instead of being secured directly on the cylinder may be placed at the end of a flexible pipe.

Claims:

1. In an apparatus of the kind described, a cylinder, a plurality of trumpets communicating with the cylinder, a piston slidably mounted within said cylinder, an air bulb at one end of the cylinder to develop pressure for moving said piston in one direction, a spring for moving said piston in the opposite direction, and means whereby to give the said piston a step by step rotation during its sliding movement.

2. In an apparatus of the kind described, a cylinder, a plurality of trumpets communicating with the cylinder, an air bulb placed at the end of the cylinder, a hollow piston arranged in the cylinder and apertured to communicate with the trumpets, said piston being movable in one direction by the pressure developed by the air bulb, a pair of prongs projecting longitudinally from each of the ends of said piston, a pair of toothed crowns placed in the cylinder in the path of movement of said prongs, and a spring for moving the piston in the opposite direction.

3. In an apparatus of the kind described, a cylinder, a plurality of trumpets communicating with the cylinder in a circular series, a hollow piston slidably mounted within the cylinder, said piston being closed at one end and provided with side openings to communicate with certain of the trumpets during its sliding movement, an air bulb at one end of the cylinder to develop pressure for moving said piston in one direction, a spring for moving the piston in the opposite direction, and means whereby to give said piston a step by step rotation, said means being operative at the limits of movement of said piston in opposite directions.

The foregoing specification of my hooter for motor cars, motor cycles and cycles, signed by me this tenth day of June, 1910.

ETIENNE TESTE.

Witnesses:

DEAN B. MASON,
R. EHRIOT.