

970,136.

E. TESTE.  
HORN.  
APPLICATION FILED DEC. 2, 1908.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

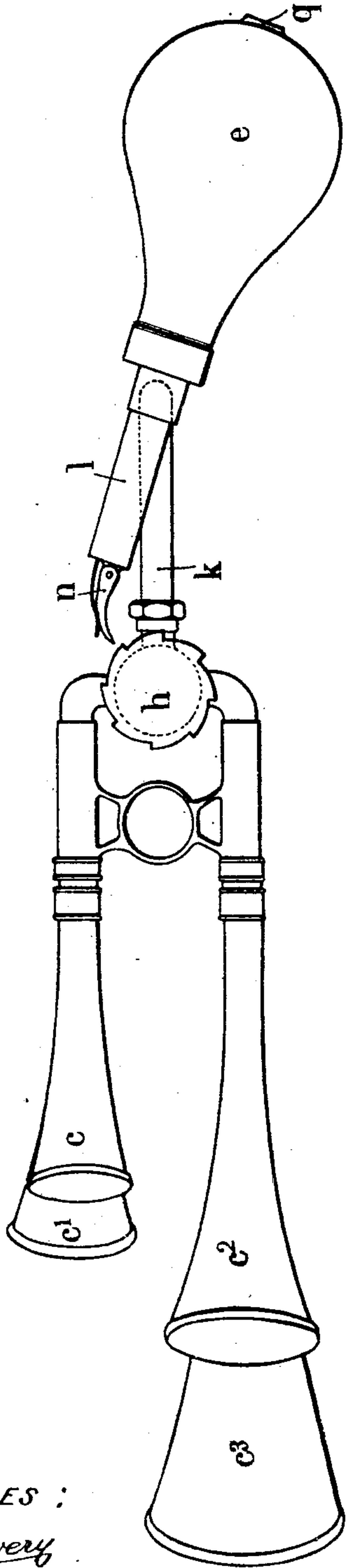
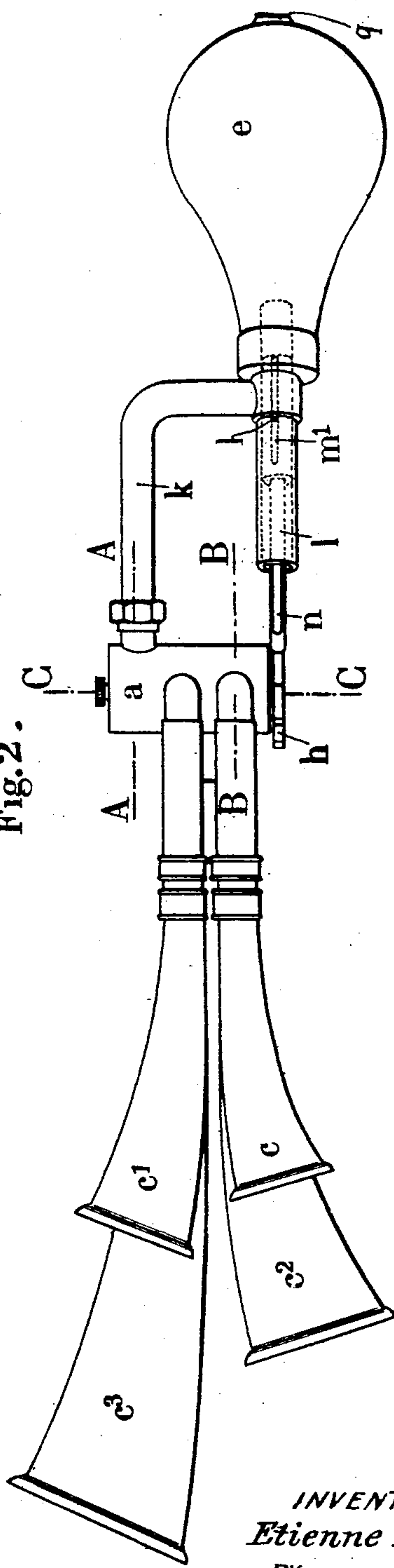


Fig. 2.



WITNESSES :  
*W. M. Avery*  
*J. P. Davis*

INVENTOR  
*Etienne Teste*  
BY *M. M. M. Co.*  
ATTORNEYS

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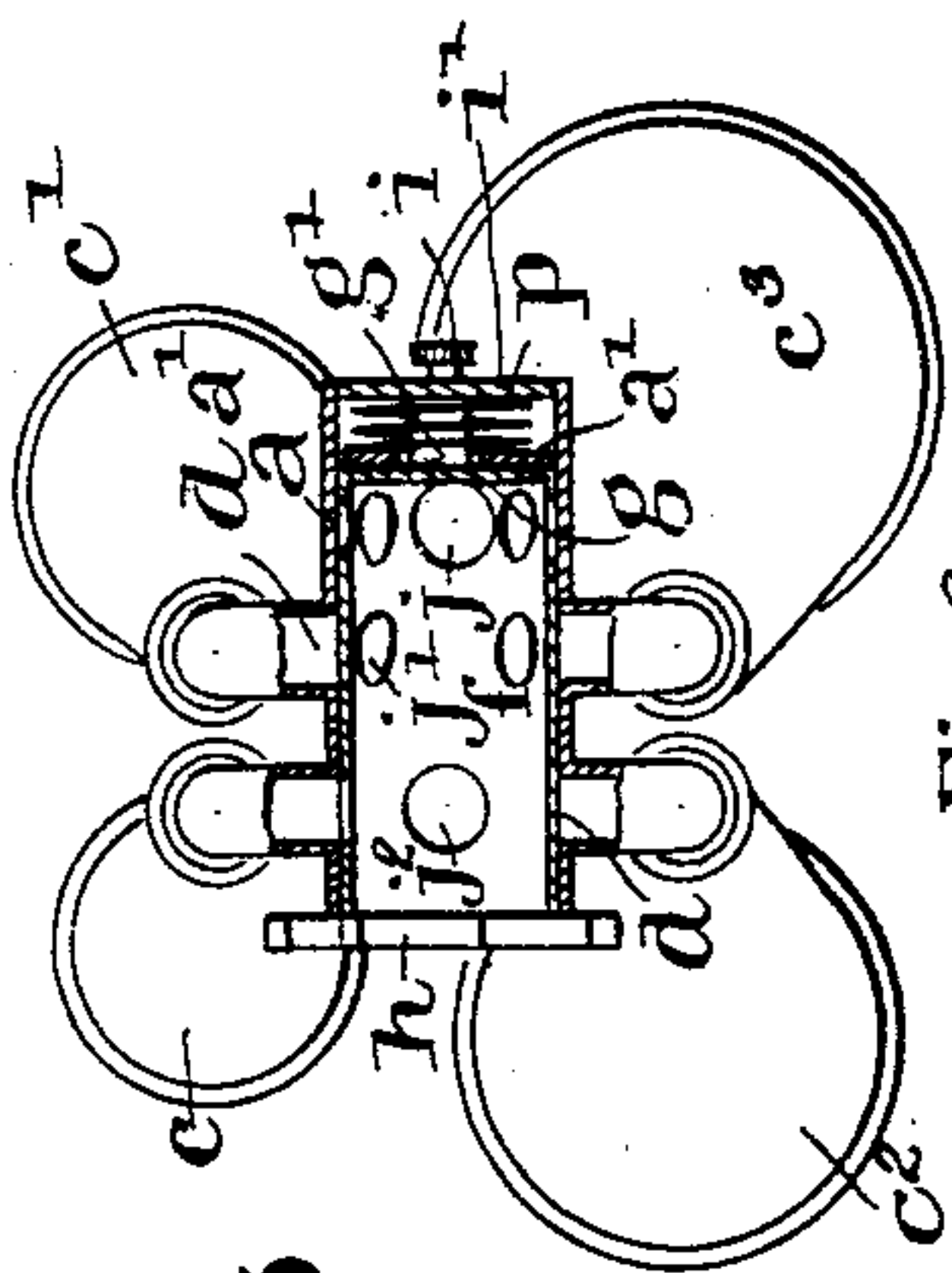


Fig. 5.

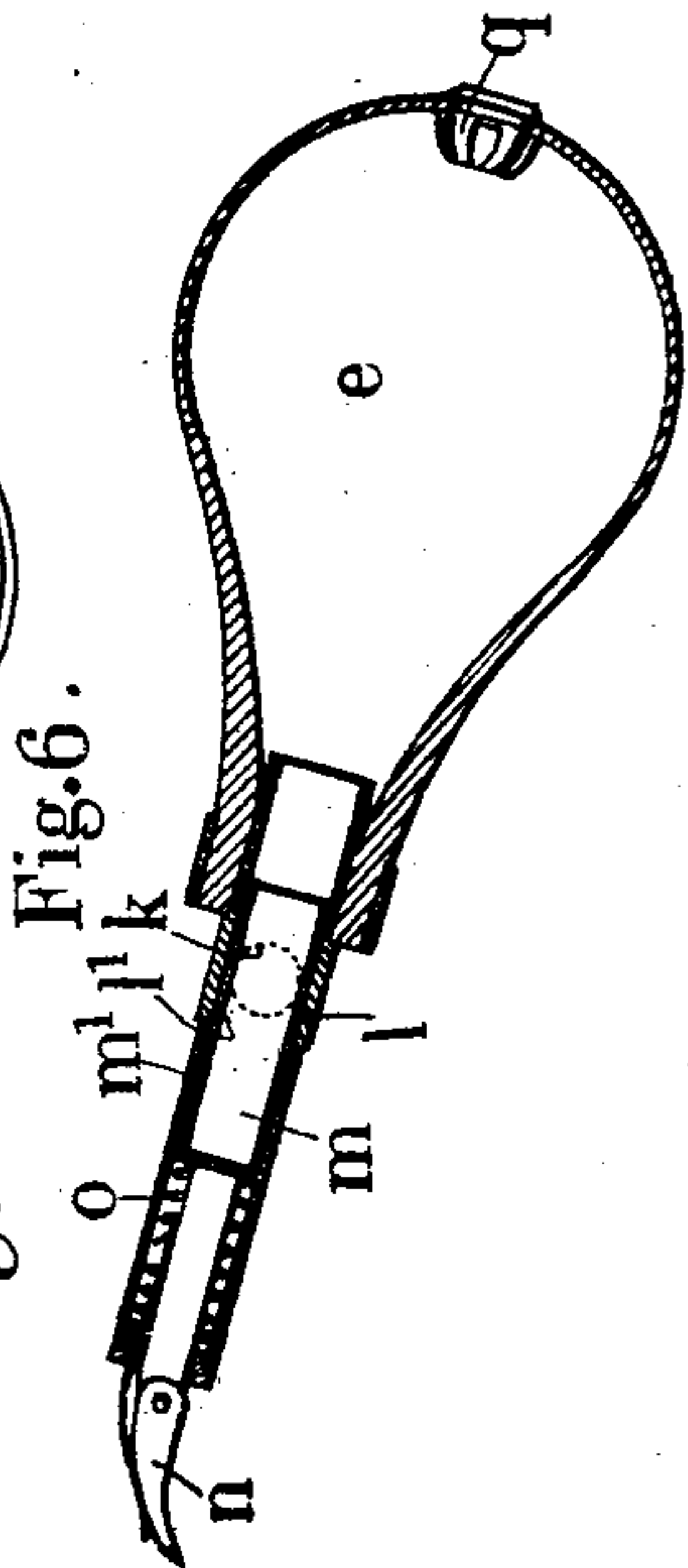


Fig. 6.

Fig. 9.

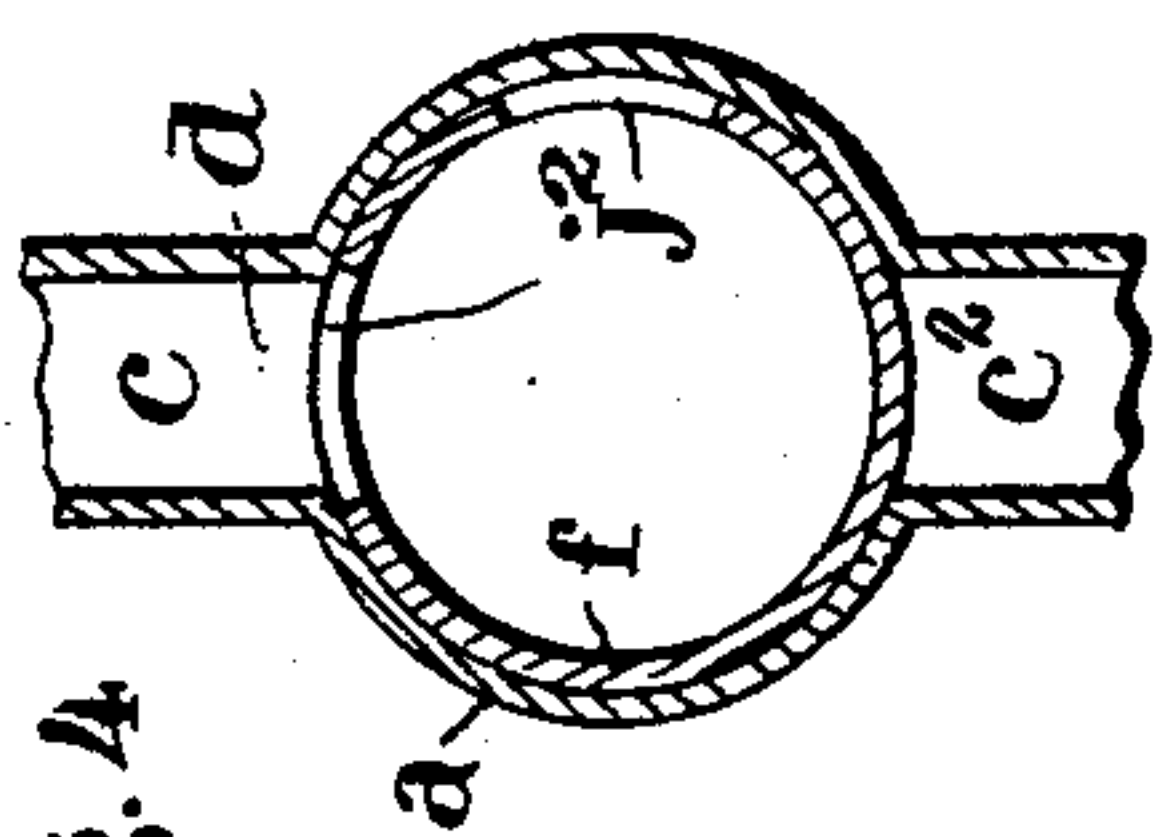
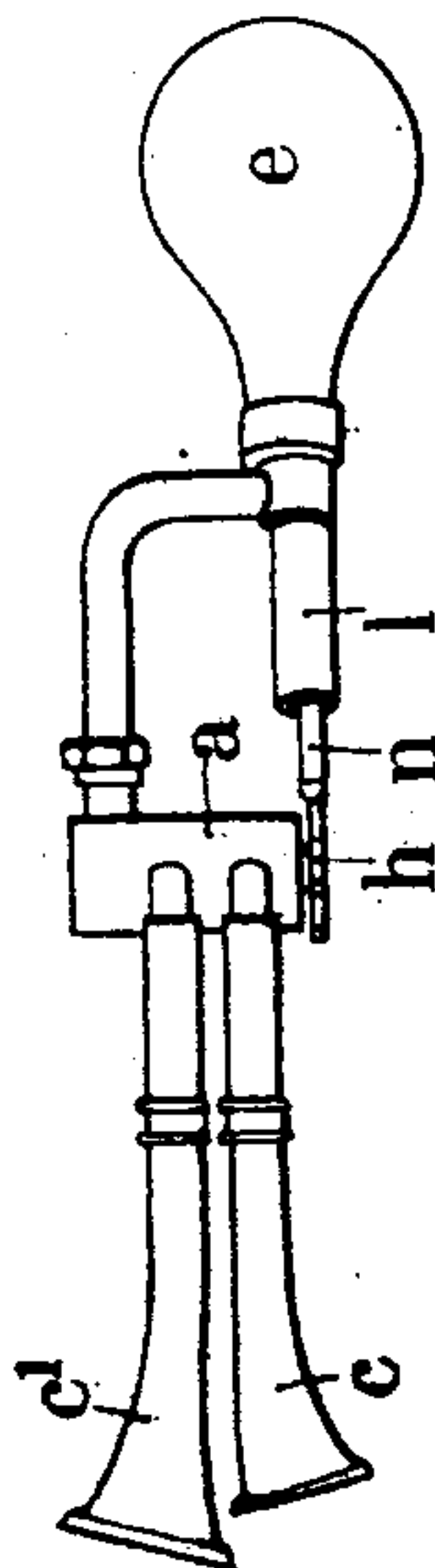


Fig. 4.

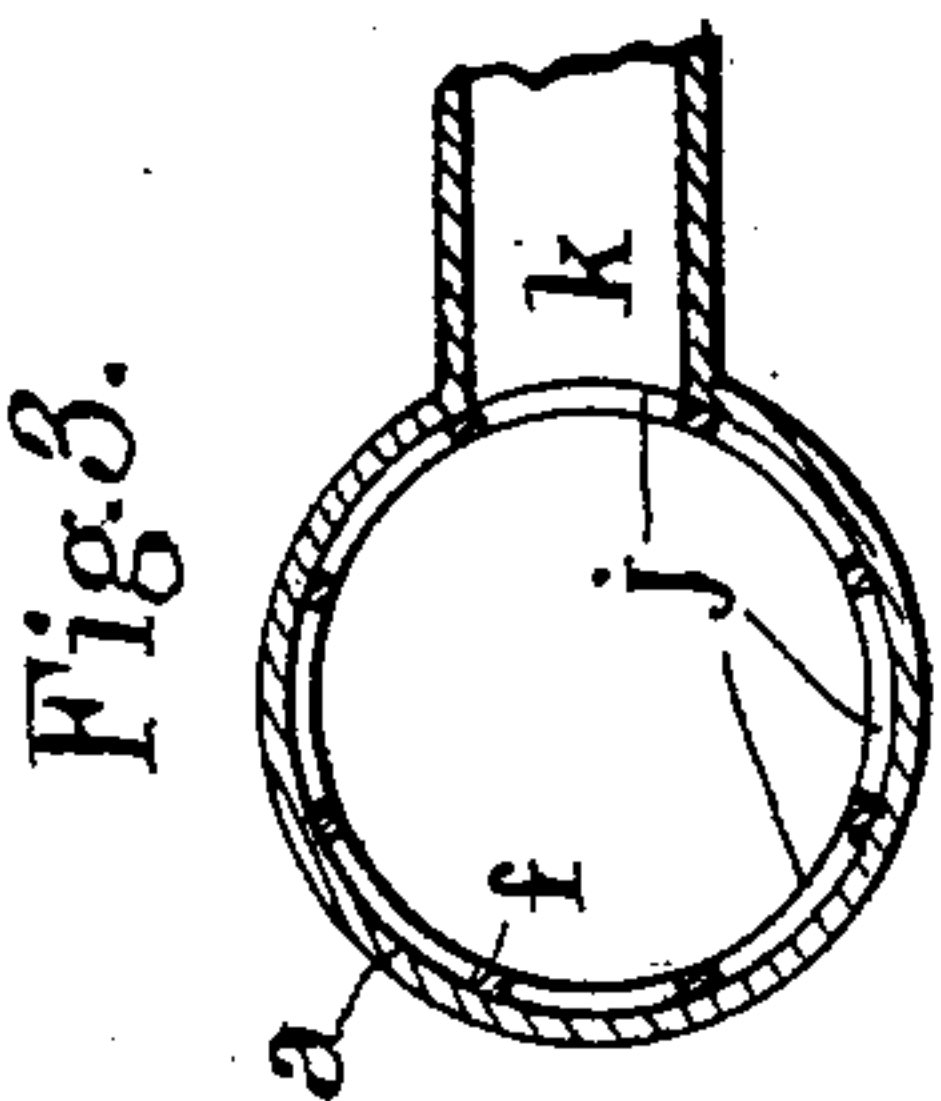


Fig. 3.

Fig. 7.

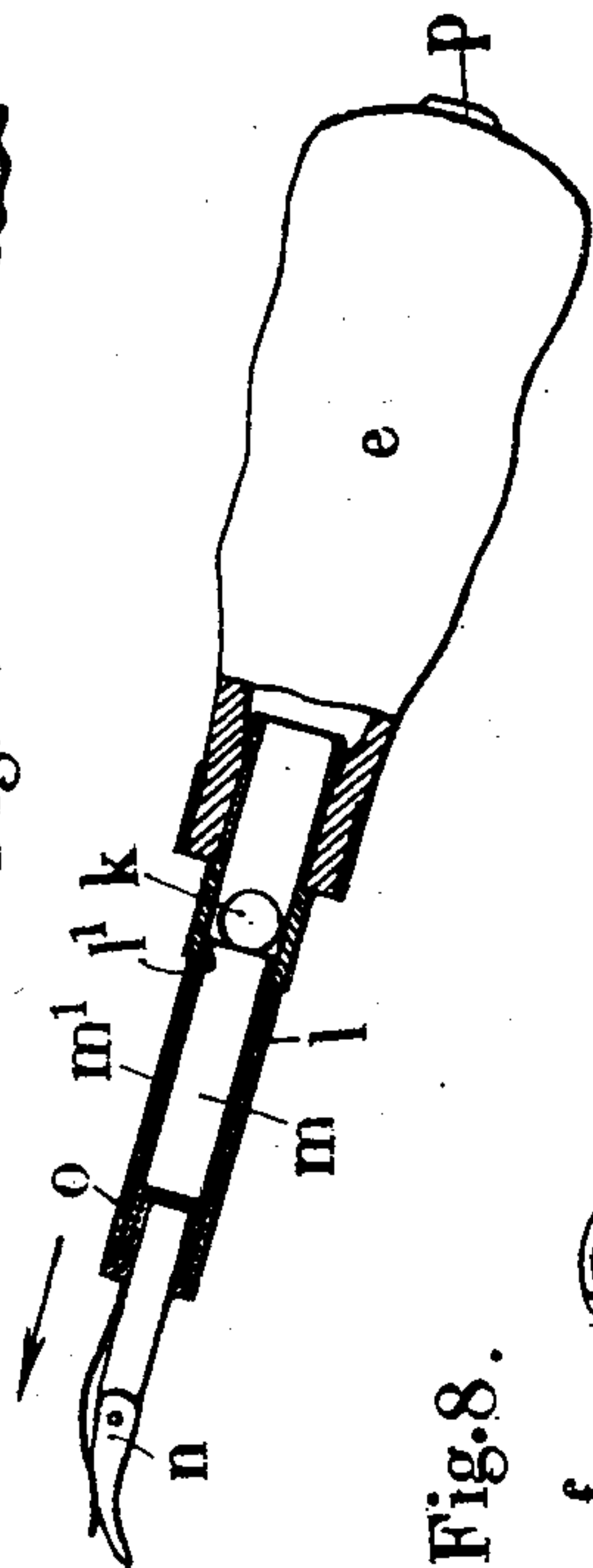
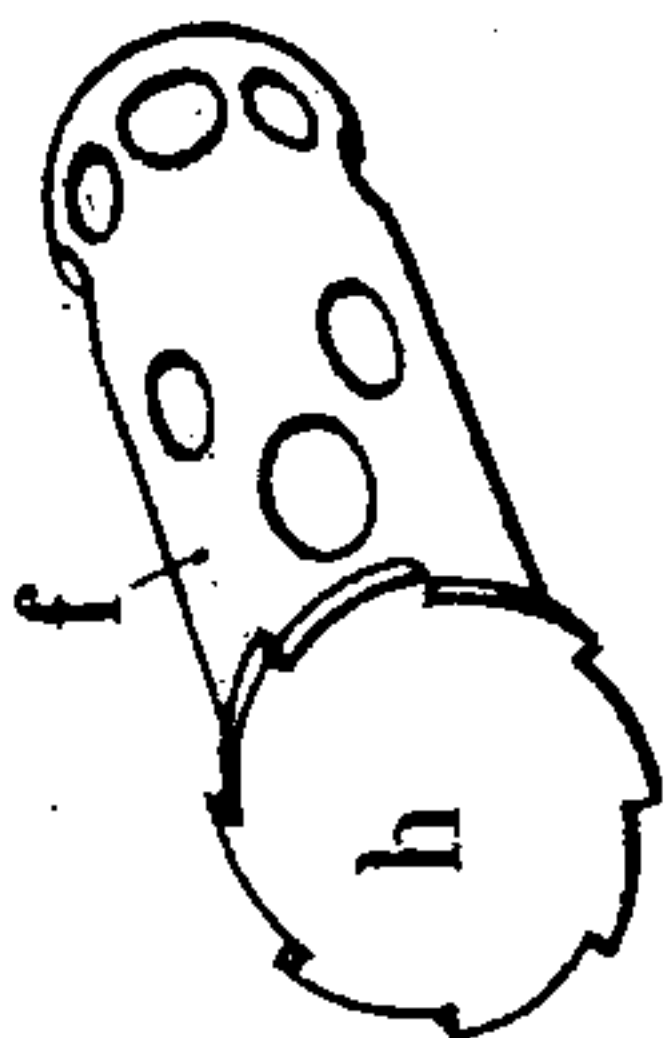


Fig. 8.



WITNESSES :

*W. M. Avery*  
*J. P. Davis*

INVENTOR  
*Etienne Teste*

BY *Mummales*

ATTORNEYS



# UNITED STATES PATENT OFFICE.

ETIENNE TESTE, OF PARIS, FRANCE.

HORN.

970,136.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed December 2, 1908. Serial No. 465,661.

*To all whom it may concern:*

Be it known that I, ETIENNE TESTE, of 16 Rue des Bois, in the city of Paris, Republic of France, machine-maker, have invented a  
5 Horn, of which the following is a full, clear, and exact description.

This invention has for its object to provide a horn (such as is used on motor cars and other vehicles) capable of being caused  
10 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 an air bulb.

The invention consists essentially in the  
15 employment of a distributor adapted to direct the blasts of air, successively expelled from the bulb, through the reeds of two or more horns, said distributor being actuated by means of a pawl operated by the bulb  
20 itself and acting upon a ratchet wheel attached to the distributor.

The invention is illustrated in the accompanying drawings wherein—

Figures 1 and 2 show the horn in elevation  
25 and plan respectively. Figs. 3 and 4 are two vertical longitudinal sections made on lines A—A and B—B, Fig. 2. Fig. 5 is a transverse vertical section on line C—C of Fig. 2. Figs. 6 and 7 are two longitudinal  
30 vertical sections of the bulb showing the pawl which actuates the air distributor in two positions. Fig. 8 shows the distributor separately in perspective. Fig. 9 shows a modification of the apparatus adapted for  
35 use on a bicycle.

As will be seen from the drawings, the apparatus comprises a hollow metal cylinder *a* to which are fixed in any suitable manner  
40 trumpets *c*, *c*<sup>1</sup>, *c*<sup>2</sup>, *c*<sup>3</sup> which communicate with said cylinder by the openings *d* provided in the periphery of the latter. The distributor, which permits of expelling the air successively into the trumpets *c*, *c*<sup>1</sup>, *c*<sup>2</sup>, *c*<sup>3</sup>, is mounted in the cylinder *a*, and is constituted by a  
45 metallic tube *f* which is closed at one of its extremities by a disk *g* provided centrally with an external stud *g*<sup>1</sup> and carries at its other extremity a ratchet wheel *h*. The tube *f* abuts against a shoulder *a*<sup>1</sup> suitably placed  
50 in the cylinder, wherein it is held by a screw *i* extending through a washer *i*<sup>1</sup>, placed at the extremity of the cylinder, and engaging in a screw-threaded opening in the center of the stud *g*<sup>1</sup>. The periphery of the tube *f* is  
55 pierced with three sets of openings *j*, *j*<sup>1</sup>, *j*<sup>2</sup>, which serve to open communication on the

one hand between the bulb *e* and the interior of the said tube, and on the other hand between the latter and the trumpets *c*, *c*<sup>1</sup>, *c*<sup>2</sup>, *c*<sup>3</sup>. The openings *j*, which serve for putting the  
60 bulb *e* into communication with the tube *f*, are placed close to one another, the openings *j*<sup>1</sup> and *j*<sup>2</sup> being of any convenient number for each set. The distributor thus arranged is adapted to receive partial rotary movement  
65 each time pressure is exerted on the bulb *e*. To this end the bulb *e* communicates with the distributor by a tube *k* branched on to a metal cylinder *l* which is secured to the bulb and extends in alinement with the axis of  
70 the latter.

The cylinder *l* is fitted with a hollow piston *m* carrying at one of its extremities a spring-pressed pawl *n*. This piston *m* is provided with a coiled spring *o* which tends  
75 constantly to force the piston toward the interior of the bulb, the spring abutting on the one hand against a washer fixed to the extremity of the cylinder *l* and on the other hand against the extremity of the piston  
80 (see Figs. 6 and 7). The piston *m* is guided in the cylinder *l* by a stud *l*<sup>1</sup> attached to the cylinder and engaging in a longitudinal groove *m*<sup>1</sup> in the piston. The piston is arranged so that, when the bulb *e* is at rest,  
85 its inner extremity closes the opening of the tube *k*, and so that, when pressure is brought to bear on the bulb, the air expelled forces out the piston *m* and uncovers the opening  
90 of the tube *k*.

The horn thus constructed is operated in the following manner: When the bulb is at rest the parts are in the position shown in Figs. 1 and 6. If pressure is exerted upon the bulb, air is forced out by the latter and,  
95 finding no means of escape, forces the piston *m* in the direction of the arrow in Fig. 7, carrying with it the pawl *n* which is mounted on the piston. In this movement the point of the pawl engages with one of the  
100 teeth of the ratchet wheel *h* and partially turns the latter. The ratchet wheel *h* being fixed upon the tube *f* rotates the latter, while one of its openings *j* or *j*<sup>1</sup> comes opposite one of the trumpets *c*, *c*<sup>1</sup>, *c*<sup>2</sup>, or *c*<sup>3</sup>. At  
105 this moment the piston *s* has moved in the cylinder sufficiently to open the orifice to the tube *k*, so that the air forced out of the bulb *e* passes into the tube *f* and reaches the distributor through one of the openings *j* and  
110 passes thence to one of the trumpets *c*, *c*<sup>1</sup>, *c*<sup>2</sup>, *c*<sup>3</sup> by way of that opening in the distributor



which comes opposite to the particular trumpet. The latter consequently sounds until the whole of the air contained by the bulb is expelled. At this moment, the bulb 5 being released, the piston *m* returns under the action of the spring *o* to its initial position, that is to say, descends in the cylinder *l* and closes the orifice to the tube *h*. If the bulb *e* is again pressed the piston is again 10 moved and the pawl *n* again takes into one of the teeth of the ratchet wheel *h* and rotates the latter for a portion of a revolution, which has for effect to bring opposite to one the trumpets *c*, *c*<sup>1</sup>, *c*<sup>2</sup>, *c*<sup>3</sup> another opening 15 of the distributor, and so on.

In order to prevent the tube *f* under the action of the pawl *n* turning beyond the position it should occupy, there is interposed between the said tube and the washer *i*<sup>1</sup> a 20 coiled spring *p* which serves as a brake; or in lieu of this a flat spring acting directly on the ratchet wheel may be used.

To facilitate the entry of the air to the bulb *e*, the latter is furnished with a valve *g* 25 arranged in a convenient manner.

The apparatus may be provided with any convenient number of trumpets.

The drawing shows an apparatus suitable for automobiles and provided with four 30 trumpets, and in Fig. 9 shows an apparatus suitable for bicycles having two trumpets, but it will be understood that the drawings are only intended to serve as an illustration of the invention.

35 By suitably combining the number of teeth of the ratchet wheel *h* and the number of the openings *j*<sup>1</sup>, *j*<sup>2</sup>, etc., as well as the position of the latter, a vertical fanfare of a very artistic character may be produced. 40 To obtain another series of sounds, or new fanfares, it is only necessary to replace the distributor *f* by another furnished with orifices *j*, *j*<sup>1</sup>, *j*<sup>2</sup>, etc., arranged at different points, and a ratchet wheel *h* having a suitable number of teeth. 45

Instead of employing a bulb for actuating the trumpets *c*, *c*<sup>1</sup>, *c*<sup>2</sup>, *c*<sup>3</sup>, any other apparatus may be used which permits of intermittently introducing air below the piston 50 *m*. When a bulb is used it may be either connected directly to the cylinder *l*, as shown in the drawings, or connection may be made by means of a flexible tube.

Claims:

55 1. A horn, comprising a plurality of trumpets, a cylinder with which the trumpets are connected, a movably mounted distributor in the cylinder, an air forcing de-

vice connected with the cylinder, and means for intermittently operating the distributor 60 from the air forcing device and simultaneously therewith admitting air from the said air forcing device to the cylinder.

2. A horn, comprising a plurality of trumpets, a cylinder with which the trumpets 65 are connected, a revoluble distributor in the cylinder, an air forcing device connected with the cylinder, and means for intermittently operating the distributor from the air forcing device, said means controlling 70 the admission of air from the air forcing device to the said cylinder.

3. A horn, comprising a plurality of trumpets, a cylinder with which the trumpets 75 are connected, a hollow perforated distributor revolubly mounted in the cylinder, an air bulb, a connection between the air bulb and the cylinder, a piston operated by the air bulb and controlling the connection 80 between the bulb and cylinder, and means for operating the distributor from the piston.

4. A horn, comprising a plurality of trumpets, a cylinder with which the trumpets 85 are connected, a distributor revolubly mounted in the cylinder, a ratchet wheel on one end of the distributor, an air bulb provided with a tube projecting therefrom, a connection between the tube and cylinder, a spring pressed piston in the tube and controlling the connection between the tube and 90 cylinder, and a pawl carried by the piston and adapted to engage the ratchet wheel of the cylinder.

5. A horn, comprising a plurality of 95 trumpets, a cylinder to which the trumpets are secured, a hollow perforated distributor revolubly mounted in the cylinder, a ratchet wheel on one end of the cylinder, an air bulb provided with a tube projecting there- 100 from, a pipe connecting the tube with the cylinder, a hollow spring pressed piston in the tube and controlling the communication from the tube to the pipe, and a spring pressed pawl carried by the piston and 105 adapted to engage the ratchet wheel of the cylinder.

The foregoing specification of my hooter for motor cars, bicycles and other vehicles, signed by me this 20th day of November 110 1908.

ETIENNE TESTE.

Witnesses:

DEAN B. MASON,  
MAURICE H. PIQUET.