

(No Model.)

E. KÖRTING.

APPARATUS FOR MIXING GASES.

No. 354,835.

Patented Dec. 21, 1886.

Fig. 1

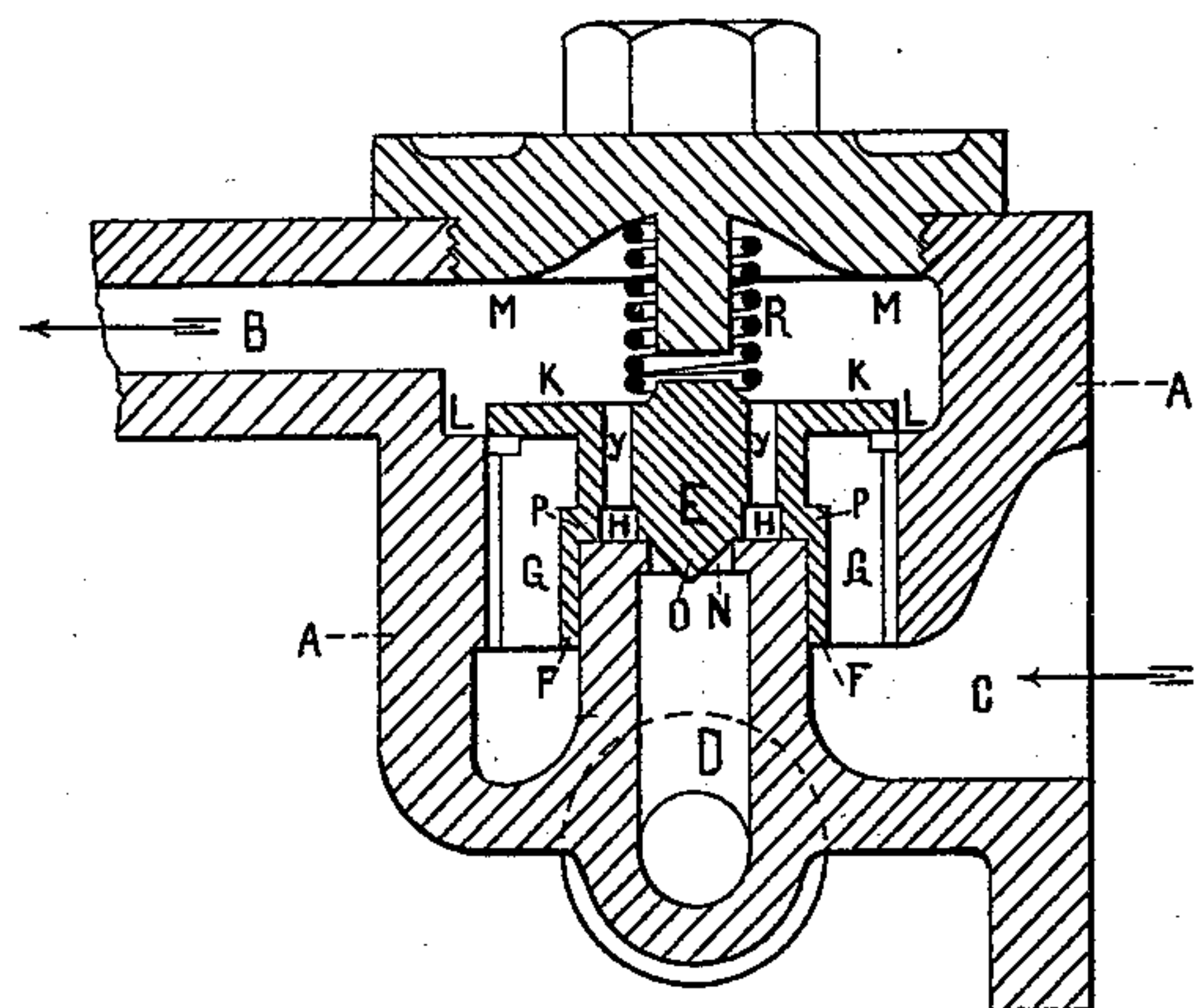


Fig. 2

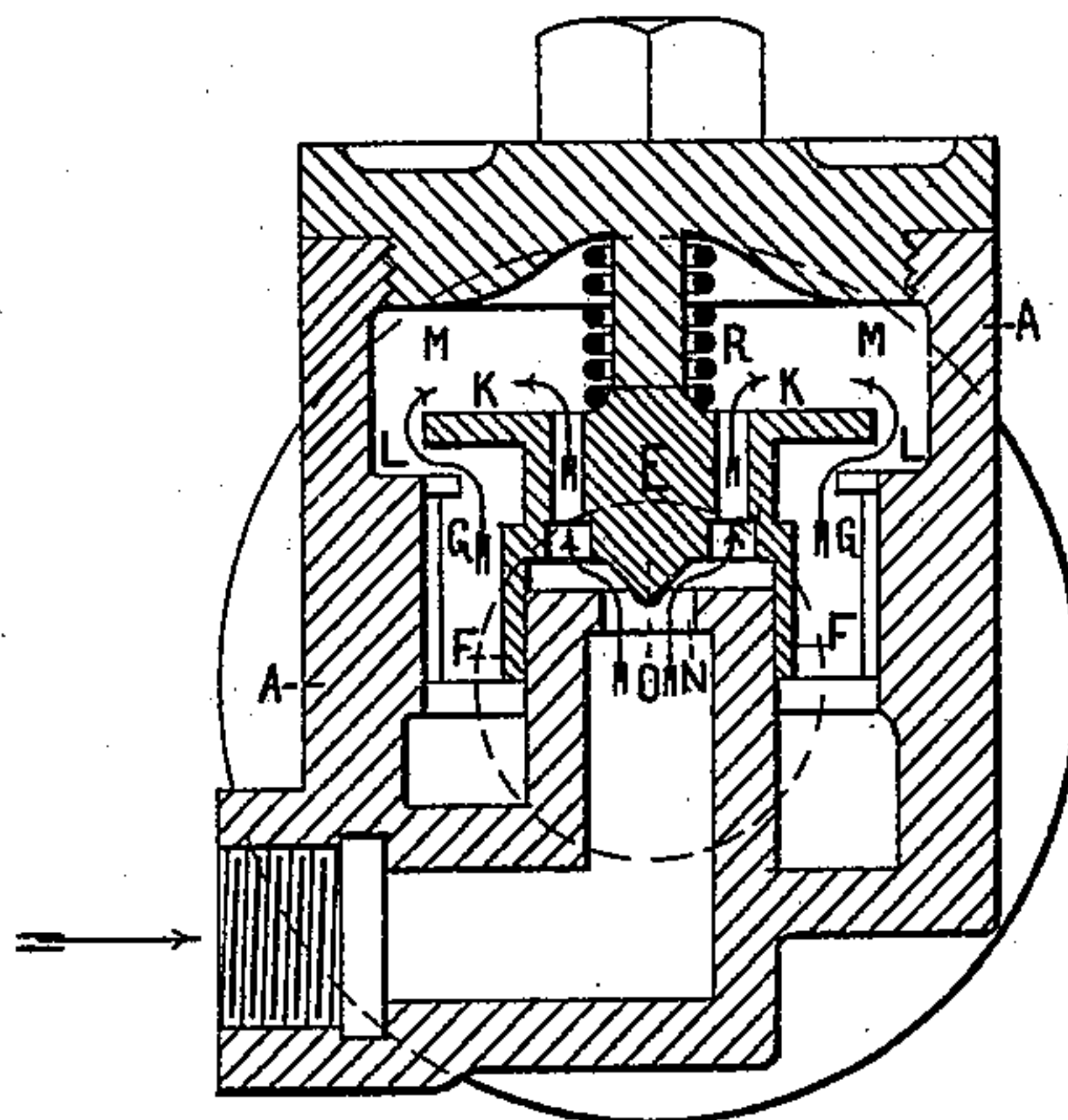


Fig. 3

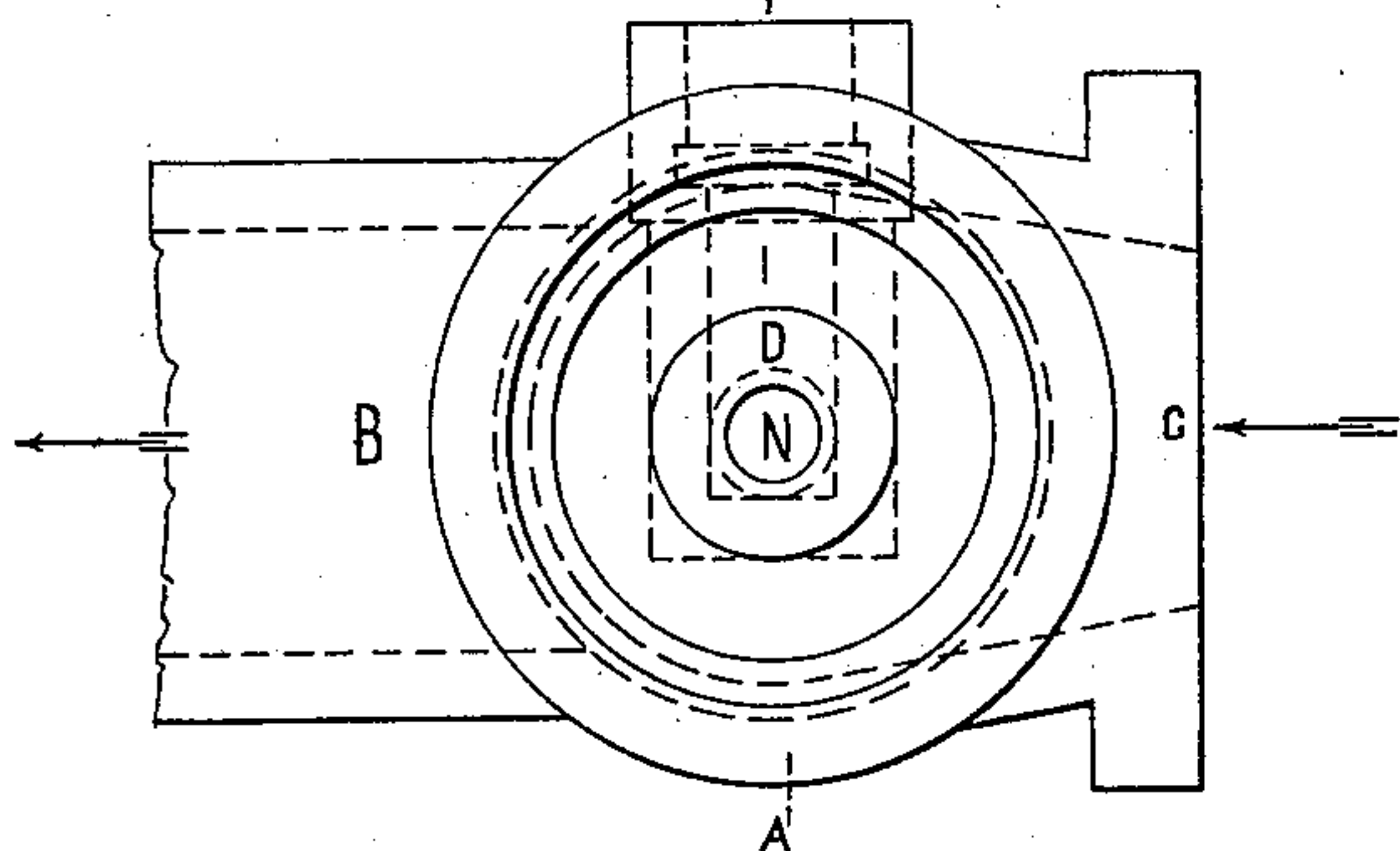
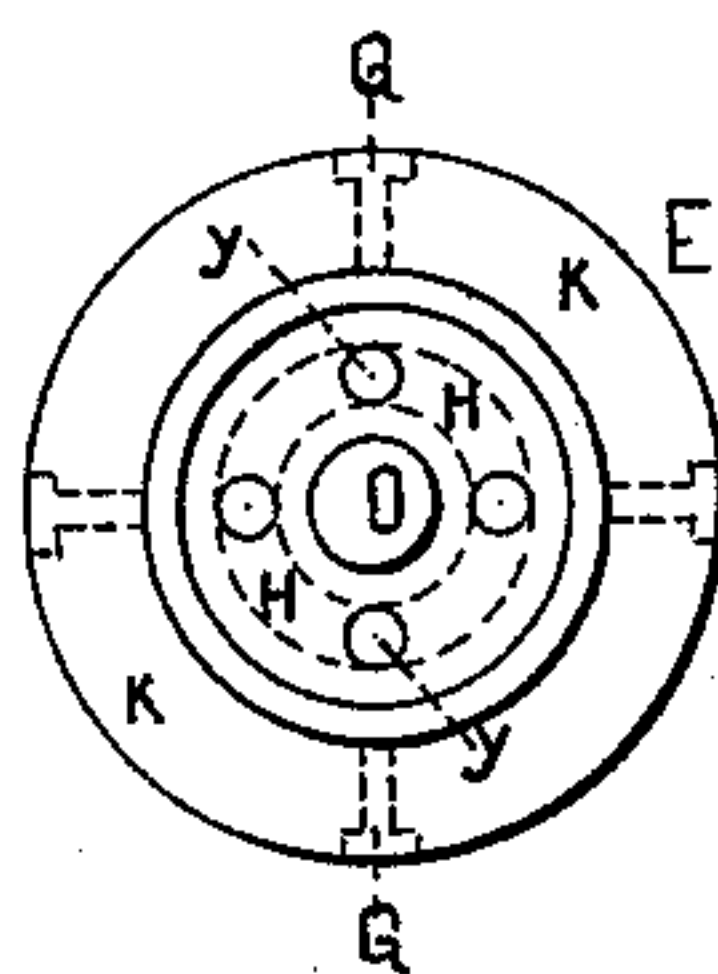


Fig. 4



Witnesses:
H. S. Knight
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UNITED STATES PATENT OFFICE.

ERNST KÖRTING, OF HANOVER, PRUSSIA, GERMANY.

APPARATUS FOR MIXING GASES.

SPECIFICATION forming part of Letters Patent No. 354,835, dated December 21, 1886.

Application filed August 25, 1886. Serial No. 211,823. (No model.)

To all whom it may concern:

Be it known that I, ERNST KÖRTING, a subject of the King of Prussia, and residing in Hanover, Prussia, Germany, have invented a new and useful Improvement in Apparatus for Mixing Gases, whereof the following is a specification.

My invention relates to devices for mixing two different gases; and the improvement consists in the particular means employed for so controlling the passages for the gases that the free areas thereof will always be in the same proportion to each other whichsoever may be the variation in size of the said passages.

An apparatus constructed according to my invention is shown on the annexed sheet of drawings by Figure 1 in vertical section with the passages for the gases closed. Fig. 2 is a vertical section at right angle to Fig. 1, and with the passages open. Fig. 3 is a top view of the box A without cover, and Fig. 4 a bottom view of the part E, by which the passages are controlled.

The apparatus is composed of the shell or box A and the valve E. Into the former one gas is admitted through the aperture C, while the other gas enters through the tube D, projecting centrally from below into the box. The mixture of the two gases issues through the aperture B. (The gas introduced at C, I shall in the following suppose to be atmospheric air.) The valve E is guided in the box A by means of ribs G, and it slides upon the tube D with a sleeve, F, and, when being in its lowest position, it closes the passage through the said box by its top disk, K, and the passage through the tube D by means of the obturating-surface P.

The disk K is preferably made of such diameter as that, when being in closing position, its outer edge meets the edge L of the box A; but it may slightly overlap the same. Into the valve-surface P, or into the seat formed by the end of the tube D, is turned a groove, H, from which several holes, γ , pass upward through the valve. In the center of the surface P the valve has a tapering projection, O, preferably of parabolical form, extending into the mouth N of the tube D. A spring, which

tends to keep the valve closed. When, by a sucking action, the pressure in the space M above the valve is reduced, the valve is lifted. The disk K allows an influx of air, and the surface P an influx of gas, to take place into the said space, the gas passing from the groove H upward through the holes γ , while the sleeve F prevents air from taking the same course. The gas and the air thus become mixed in the space M; but to whatever extent the valve may be raised the proportion between the quantity of air and the quantity of gas flowing into M will always be the same, because the free area of the air-passage between the disk K and the edge L is proportionate to the amount by which the valve is lifted, and as the same proportion is maintained in respect to the free area of the gas-passage between the inner edge of the mouth N and the projection O on account of the tapering or parabolic form of the latter. By an alteration of the form of the projection O the proportion between the quantity of air and that of gas may be varied. With valves having but a small lift the projection O may be dispensed with.

I claim as my invention—

1. In an apparatus for mixing gases, the combination, with the shell A, having the induction-aperture C, the eduction-aperture B, and the induction-tube D, of the valve E, with disk K, obturating-surface P, holes γ , and sleeve F, and the groove H, substantially as and for the purpose specified.

2. In an apparatus for mixing gases, the combination, with the shell A, having the induction-aperture C, the eduction-aperture B, and the induction-tube D, of the valve E, with disk K, obturating-surface P, holes γ , sleeve F, and tapering projection O, and the groove H, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ERNST KÖRTING.

Witnesses:

HERMANN KLÛSSY,
C. LUTTGE.