

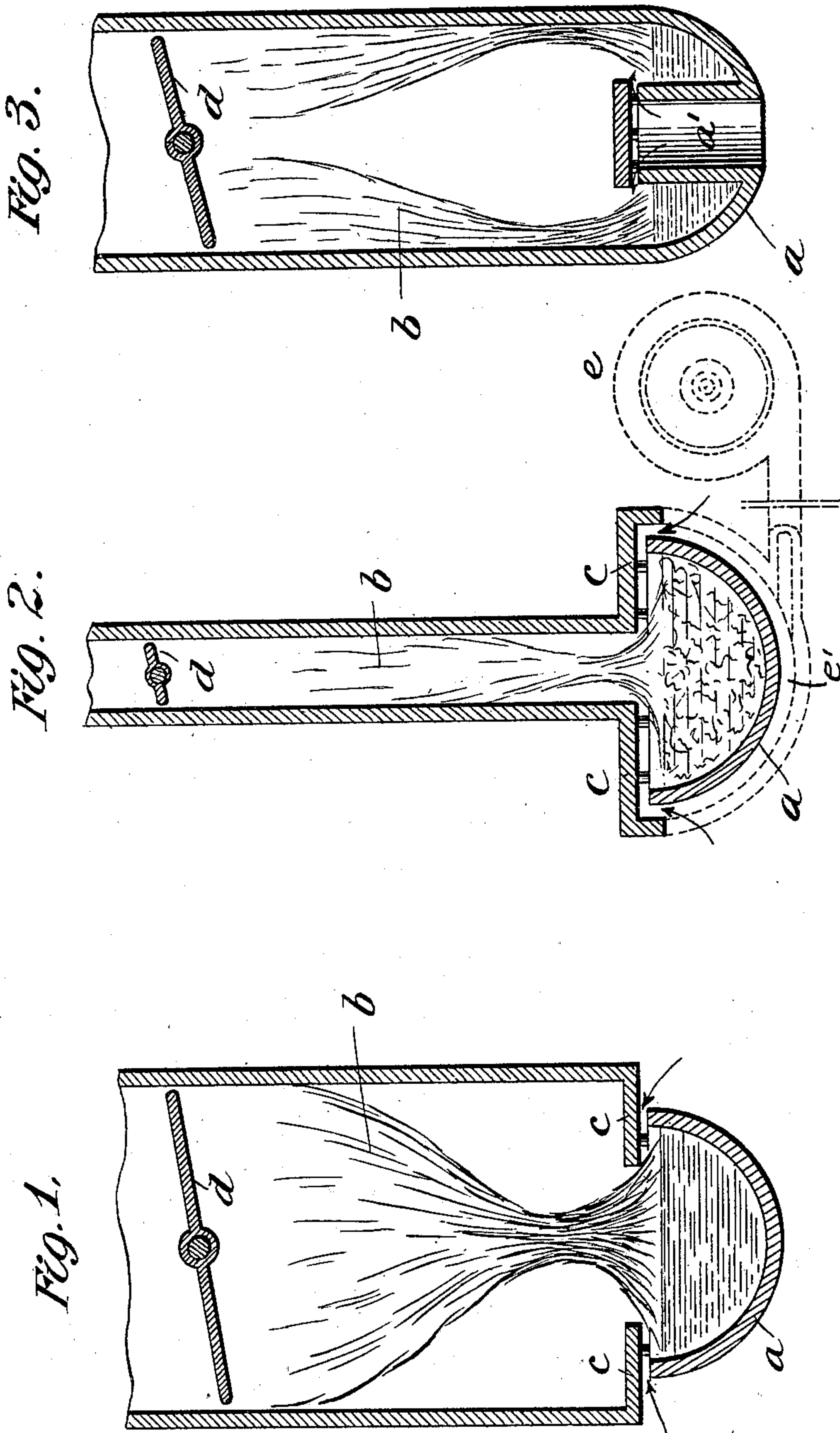
No. 673,185.

Patented Apr. 30, 1901.

G. WEGELIN.  
PROCESS OF MAKING LAMPBLACK.

(Application filed July 5, 1898.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GOTTFRIED WEGELIN, OF RONDORF, NEAR COLOGNE, GERMANY.

## PROCESS OF MAKING LAMPBLACK.

SPECIFICATION forming part of Letters Patent No. 673,185, dated April 30, 1901.

Application filed July 5, 1898. Serial No. 685,133. (No specimens.)

*To all whom it may concern:*

Be it known that I, GOTTFRIED WEGELIN, a subject of the King of Prussia, German Emperor, residing at Rondorf, near Cologne, in the Kingdom of Prussia and Empire of Germany, have invented certain new and useful Improvements in Methods of Manufacturing Lampblack and other Carbon of Great Density, (for which I have applied for patents in England, dated May 28, 1898, No. 12,184; in Germany, dated May 14, 1898, and in Austria, dated May 26, 1898,) of which the following is a specification.

In the manufacture of the lampblack or other carbon used for arc-lamp carbons, battery-plates, &c., as carried on at present there are a great many disadvantages, and an excessive amount of material is required for combustion, because the peculiar dense form of lampblack or carbon which is absolutely necessary for the above purposes can only be obtained by forced feeding of the furnace with materials of combustion. It very often happens that heavy flames and gases of combustion rich in oil cannot pass quickly enough into the rear chamber, which is generally made of brickwork or masonry, on account of the narrow section of the furnace and exit-flue. In consequence the flames and gases are liable to rush outward through the feed-orifice with great force, and thus endanger the attendants.

This invention is designed to remedy the above disadvantages, and relates to the manufacture of lampblack and other carbon of great density in such a manner that the object in view is obtained with greater certainty and with less consumption of material for combustion than hitherto.

The essence of the invention is that a uniform pressure is exerted on all parts of the flame by a suitable annular feed of air, the effect of which is the narrowing or compression of the flame and consequent compression of the light atoms of carbon into the dense form, so that the dense carbon is easily and quickly separated in the depositing-chambers.

In order that this invention may be the better understood, I now proceed to describe the same, reference being had to the accompa-

nying drawings and to the letters marked thereon.

The drawings show three different forms of construction as examples as to how the invention may be carried into effect.

The material for combustion to be used is fed continuously or intermittently into a receiver *a* if it be solid or liquid or to a suitable burner if it be gaseous.

In order to exert pressure on the flame of combustion by a suitable feed of air, a narrow annular space for the admission of air is provided immediately above the receiver *a* and between the latter and the combustion-chamber *b* in immediate proximity to the base of the flame. Air enters through the annular space with great rapidity and strikes the flame in a nearly-horizontal direction, compressing the latter, so that a double conical formation is produced, as shown in Figs. 1 and 2. This air-opening may also be utilized to ignite the fuel by passing a match through it. The section of the flame may be narrowed by the extension of the wall *c* of the furnace directly over the air-space, as shown in Fig. 1, or by the reduced cross-section of the furnace *b*, as shown in Fig. 2. In a similar manner the pressure on the flame of combustion may be effected from the center, as shown in Fig. 3, instead of from the circumference, as shown in Figs. 1 and 2. This is conveniently effected by an air-admission tube *a'*, extending centrally upward into the receiver for the material to be burned and which may be connected or not with the blower or other source of air-pressure, and from which tube the air passes crater-like into the interior of the flame through the air-space.

By the use of compressed air, which may be obtained from a blower *e*, delivering air to a chamber *e'*, (shown in dotted lines in Fig. 2,) the described effects may be considerably increased, and the regulation of the draft can be easily effected by regulating devices, such as flaps or valves *d*.

The compression of the flame to a small cross-section by the annular air-current results in an increase of heat at that point and a consequent more perfect formation of and a more dense carbon. The annular opening

for air, as shown, is intended for atmospheric pressure only; but it is obvious that any suitable means for introducing a greater pressure of air annularly around the base of the flame  
5 may be adopted.

It will be understood that the pockets in which the soot is deposited are located beyond the furnace *b* at a suitable point; but as they are not affected by my invention they  
10 are not illustrated.

What I claim, and desire to secure by Letters Patent of the United States, is—

A process for the manufacture of lamp-black or other carbon of great density from

any suitable combustible material, which consists in compressing a column of flame to a smaller cross-section than the normal, by means of an annular radial current of air applied against the flame and then depositing the carbon so produced, as and for the purpose set forth. 15 20

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

GOTTFRIED WEGELIN.

Witnesses:

NIKOLAUS MEURER,  
WILLIAM H. MADDEN.