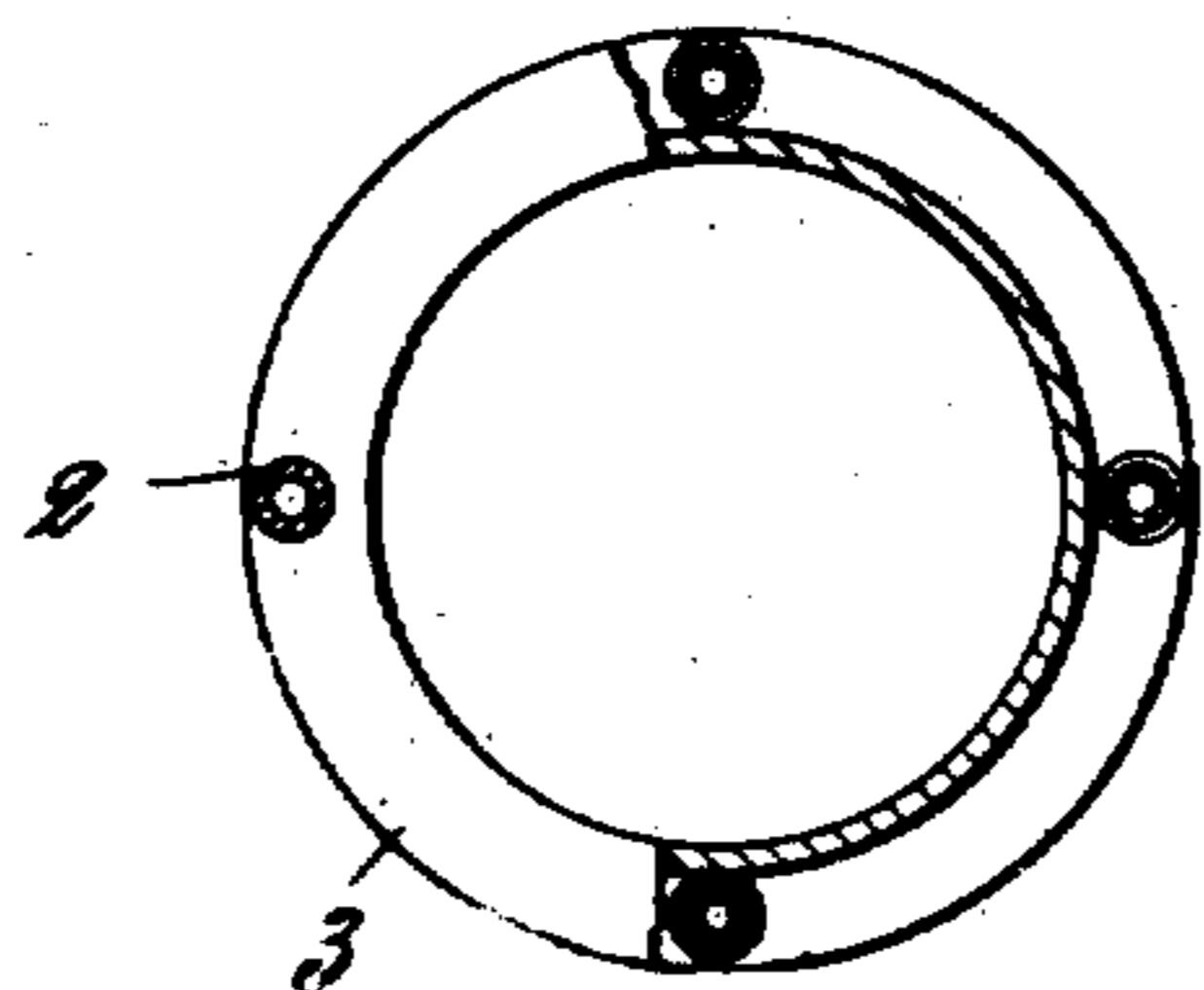
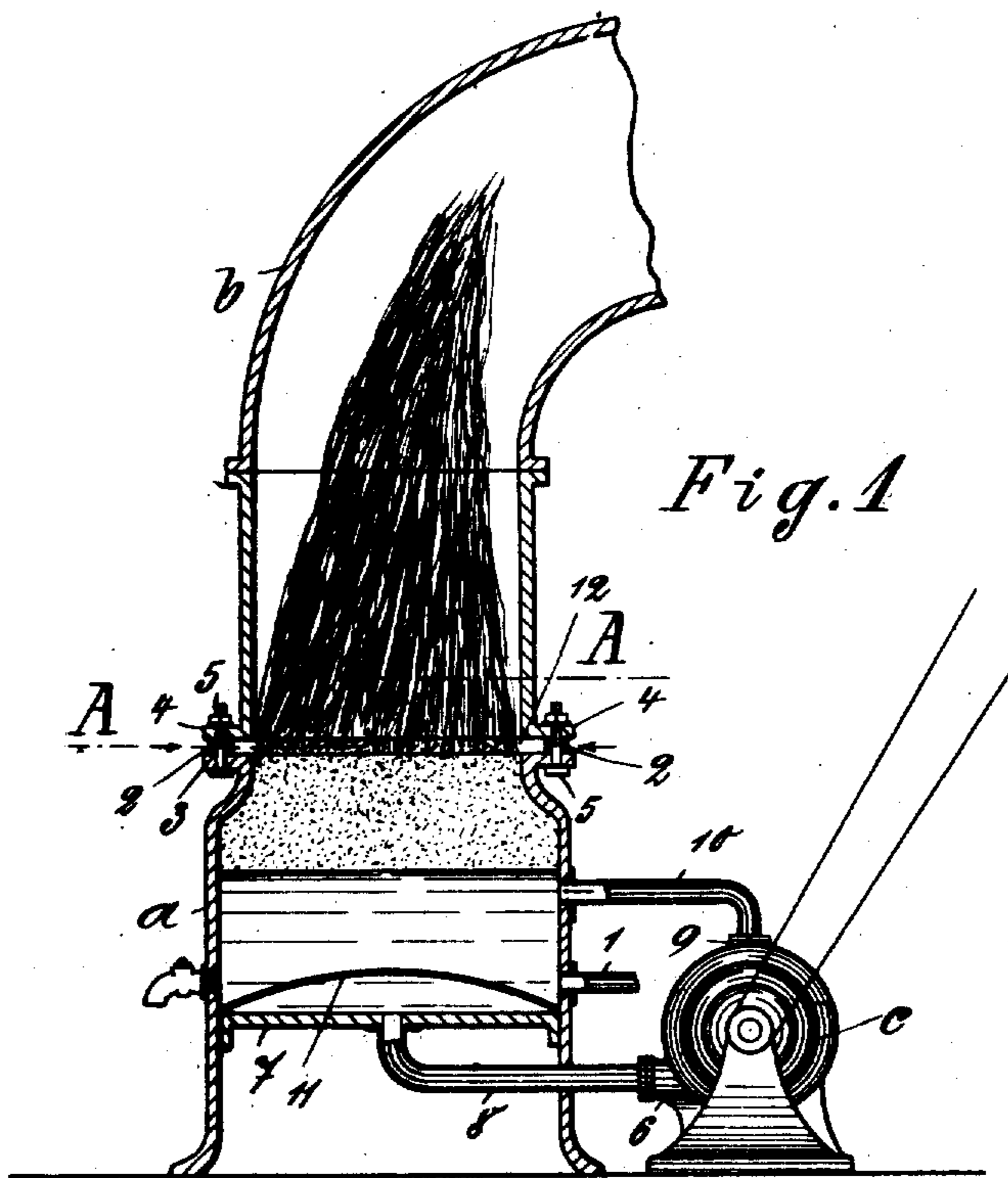


No. 897,439.

PATENTED SEPT. 1, 1908.

G. WEGELIN.
APPARATUS FOR MAKING LAMPBLACK.
APPLICATION FILED JAN. 2, 1908.



Witnesses:
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UNITED STATES PATENT OFFICE.

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APPARATUS FOR MAKING LAMPBLACK.

No. 897,439.

Specification of Letters Patent.

Patented Sept. 1, 1908.

Application filed January 2, 1908. Serial No. 408,906.

To all whom it may concern:

Be it known that I, GOTTFRIED WEGELIN, a citizen of the Empire of Germany, residing at Kalschreuthen, near Cologne-on-the-Rhine, in the Empire of Germany, have invented a new and useful Apparatus for Making Lampblack, of which the following is a specification.

In the apparatus for manufacturing lampblack described in my U. S. Patent No. 688,215, dated December 3, 1901, means are provided for disturbing the surface of the liquid tar or other hydrocarbon in the distillation-vessel, a continuous current of fresh liquid being supplied to this vessel at a point near the level and compressed air being passed upwards through the liquid in the said vessel. This apparatus required special means for producing compressed air, which may be inconvenient or expensive.

In the improved apparatus described in my subsequent U. S. Patent No. 807,646, dated December 19, 1905, other means are provided for stirring the liquid hydrocarbon contained in the distillation-vessel, an agitator being employed, so as to prevent the formation of coke in the upper strata of the liquid that are exposed to the radiant heat of the burning gases in the combustion-chamber above the vessel. This apparatus presents the defect, that both the cleaning of the agitator and the tightening of its shaft in the stuffing-boxes are difficult and tedious.

My invention relates to an improvement in the apparatus, whereby the latter is not only simplified, as in opposition to the first apparatus above mentioned, but also rendered more easy to operate than the second apparatus above mentioned.

The improvement consists in circulating the liquid hydrocarbon through the distillation-vessel by means of a pump.

I will now proceed to describe my invention with reference to the accompanying drawing, in which—

Figure 1 is a vertical longitudinal section through the improved apparatus, and Fig. 2 is a horizontal section through the same on the broken line A—A in Fig. 1.

Similar characters of reference refer to similar parts in both views.

The apparatus essentially comprises a distillation-vessel *a*, a combustion-chamber *b* and a pump *c*. The distillation-vessel *a*, which may be of any known construction, is partly filled with the liquid hydrocarbon,

that is introduced from the side through a supply tube 1. The combustion-chamber *b* of any suitable construction is located above the distillation-vessel *a* and is preferably kept at a distance therefrom, so as to form an annular opening 12, through which the air is permitted to enter from without in the direction of the arrows. In the drawing four rings 2, 2 are assumed to be inserted between the flange 3 of the distillation-vessel *a* and the flange 4 of the combustion-chamber *b* and four bolts 5 with nuts are passed through these rings and flanges for connecting together the parts *a* and *b*. Where so preferred, the distance between the two flanges 3 and 4 may be varied for regulating the supply of the air as is required for the combustion. In this case the four bolts 5 and four rings 2 may be replaced by known means which I need not describe here. Or the annular air-inlet 12 may be replaced by the lateral door *g* described in the second patent mentioned above. The pump *c* may be of any known construction, for example it may be a centrifugal pump or a similar pump. Its suction-connection 6 is connected with the bottom 7 of the vessel *a* by means of a suction pipe 8, while the delivery connection 9 of the pump *c* is connected with the side of the vessel *a* at a point a little beneath the level of the liquid by means of a pipe 10. Preferably a sieve 11 is provided in the vessel *a* above its bottom 7 for the separation of foreign matters, such as small coke pieces or the like.

During the operation of the apparatus the gases arising from the liquid hydrocarbon during the distillation collect in the chamber *b* and when they meet the air entering through the annular inlet 12 they burn to form soot or lampblack, which will be deposited in chambers (not shown) provided for that purpose. The radiant heat from the combustion effects a heating of the liquid in the vessel *a*. The pump *c* sucks in liquid from the bottom 7 of the vessel *a* and delivers it to the latter near the level through the pipe 10, so that the liquid constantly circulating is uniformly heated and the formation of coke at the upper surface of the liquid is thoroughly prevented.

It will be seen, that the method of stirring the liquid hydrocarbon is simplified and that the apparatus is quite safe and does not require any attention.

The apparatus may be varied in many re-

spects without departing from the spirit of my invention. The circulation of the liquid may take the reverse path.

I claim:

- 5 1. In an apparatus for producing lamp-black from tar or other carbonaceous substances, the combination with a distillation-vessel adapted to receive liquid hydrocarbon, of a combustion-chamber above said distilla-
10 tion-vessel and communicating therewith, it being adapted to distil the liquid exclusively by the radiant heat of the flame and to produce the lampblack, inlets in said combustion-chamber for admitting air, and a pump
15 connected by pipes with said distillation-vessel for constantly circulating the liquid through same, so as to prevent the formation of coke at the upper surface of the liquid.
2. In an apparatus for producing lamp-

black from tar or other carbonaceous sub- 20
stances, the combination with a distillation-
vessel adapted to receive liquid hydrocarbon,
of a combustion-chamber above said distilla-
tion-vessel and communicating therewith, it
being adapted to distil the liquid exclusively 25
by the radiant heat of the flame and to produce the lampblack, inlets in said combustion-chamber for admitting air, a pump connected by pipes with said distillation-vessel
30 for constantly circulating the liquid through same, so as to prevent the formation of coke at the upper surface of the liquid, and a sieve in said distillation-vessel for separating any foreign matters from the liquid.

GOTTFRIED WEGELIN.

Witnesses:

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