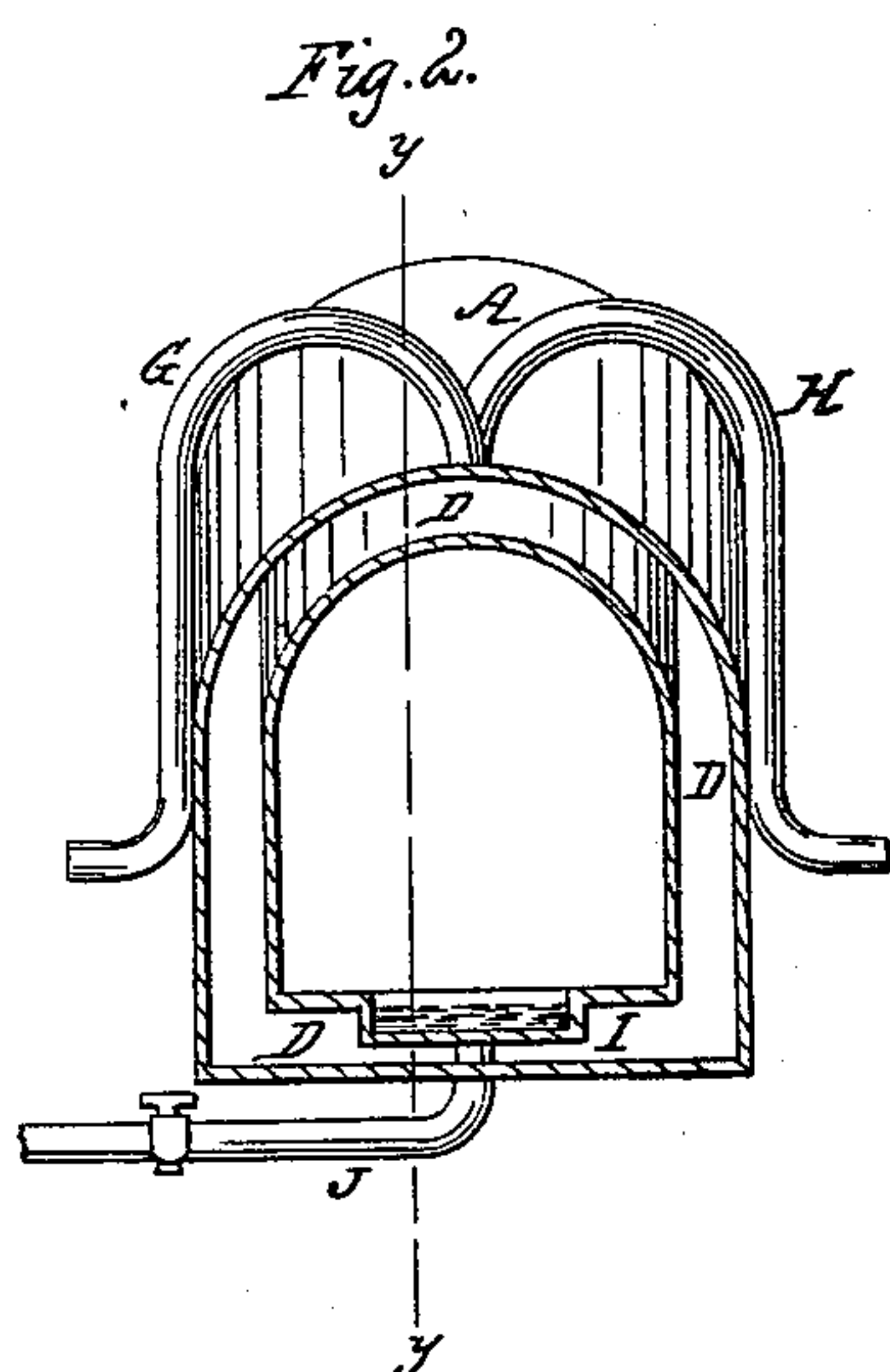
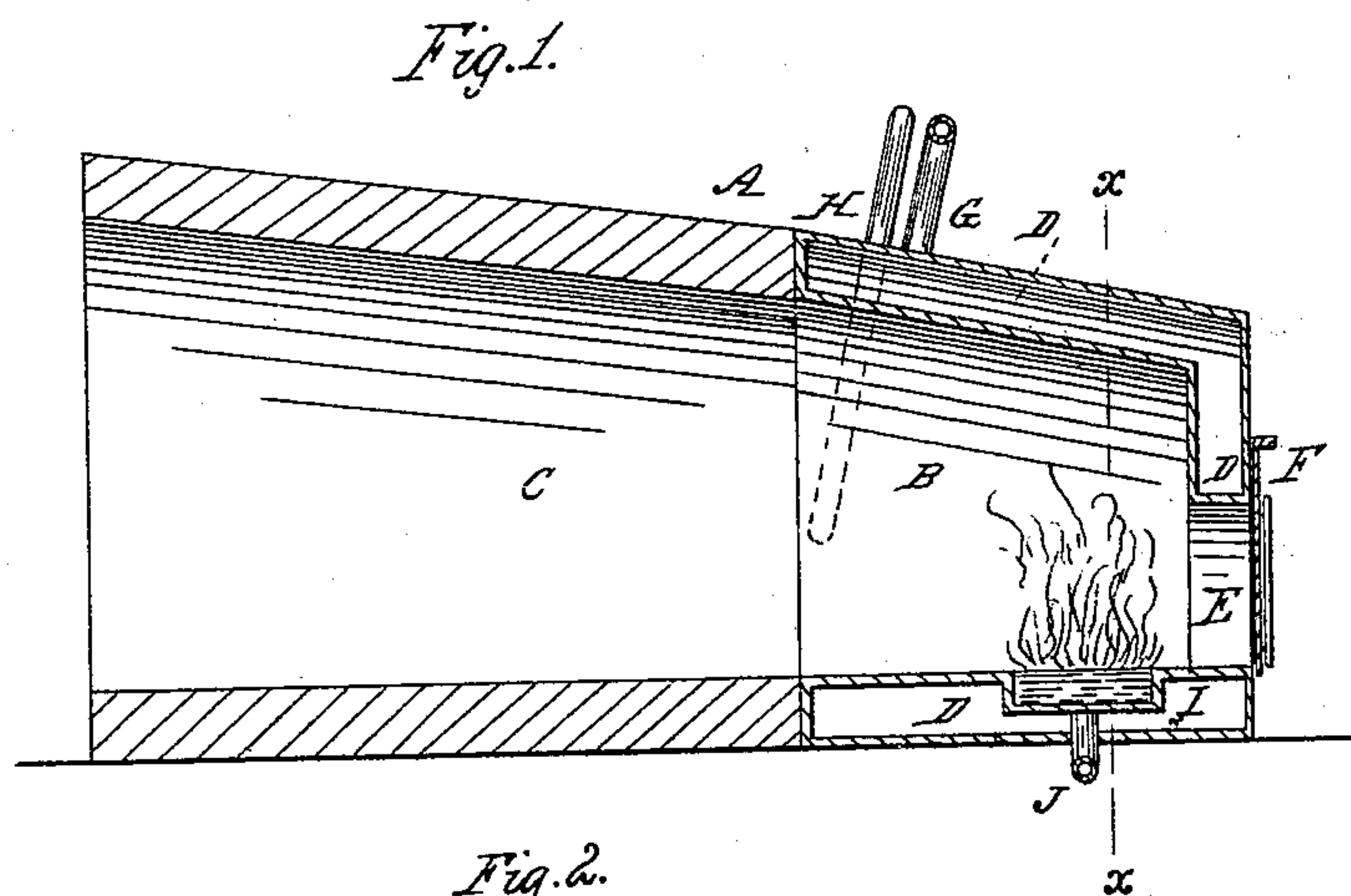


A. PRENATT.
Making Lamp Black.

No. 50,493.

Patented Oct. 17, 1865.



Witnesses:
F. H. Lusch
J. M. Corrington

Inventor:
Augustus Prenatt

UNITED STATES PATENT OFFICE.

AUGUSTUS PRENATT, OF ELIZABETH, NEW JERSEY.

IMPROVEMENT IN THE MANUFACTURE OF LAMP-BLACK.

Specification forming part of Letters Patent No. **50,493**, dated October 17, 1865.

To all whom it may concern:

Be it known that I, AUGUSTUS PRENATT, of Elizabeth, in the county of Union and State of New Jersey, have invented a new and useful Improvement in the Manufacture of Lamp-Black; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of a longitudinal vertical section of an apparatus made according to my invention, the line of section being seen at *y*, Fig. 2. Fig. 2 is a cross-section of the apparatus, taken on the line *x* of Fig. 1.

Similar letters of reference indicate like parts.

This invention relates to the process of manufacturing lamp-black, and consists partly in surrounding the fire-chamber of the flue with a water-jacket, and partly in a novel mode of supplying fuel to the furnace.

A designates the "flue" of an apparatus for manufacturing lamp-black. Its left-hand end, C, is left open, so as to communicate with the chamber (not shown) in which the lamp-black produced in the combustion of the fuel is deposited. Its right-hand end, which is smallest in diameter, contains the furnace B, which is provided with double walls throughout its bottom, end, sides, and roof, the inclosed space D being supplied with water through a pipe, G.

The pipe H is for carrying off the heated water from the water-space D, so as to allow cold water from the supply-pipe to be admitted in a continuous current. The latter pipe is here shown as terminating just within the outer shell of the water-space; but it may, if desired, be continued downward toward the lower parts of said space.

E designates a doorway formed through the front of the flue, governed by a door, F. The fuel from the combustion of which the lamp-black is produced is supplied to a pan, I, sunk in the bottom of the furnace, as is seen in the drawings. The pan is shallow, and does not reach across the water-space, and its bottom is penetrated by a supply-pipe, J, which passes down through the water-space and through the outer shell of the flue or furnace, and is thence continued to any suitable reservoir of oil or

other fuel which is to be burned. The reservoir should of course stand at a greater elevation than the pan, and the flow of the oil may be regulated by valves or stop-cocks, so as to maintain it at a proper height in the pan.

According to the ordinary mode of constructing flues for the manufacture of lamp-black the walls thereof are solid, and when they become highly heated some of the products of combustion become burned and changed in character by contact with them, and the production of lamp-black is lessened in a corresponding degree. The quality of the lamp-black produced is, moreover, injured by such heat from the walls.

By means of my invention the walls of that part of the flue in which the combustion of the fuel takes place are kept at a comparatively low temperature by the water introduced into the water-space D, so that the combustion of the carbonaceous matter of the fuel is checked before it is changed into carbonic acid. Moreover, since the water in the water-space D speedily becomes hot and a portion of it becomes changed into steam, it follows that a constant supply of hot water or steam, or both, may be obtained from the water-space D, the condition of the contents of the said water-space being determined by the length of time during which they are retained therein by causing the current to move sluggishly through said space. When the fuel is supplied from time to time through the door of the flue, as is usually the mode practiced, the quantity of fuel present is constantly varying as the combustion proceeds, and from this cause, also, the quality of the product is constantly varying, and the production is also lessened, because during a part of the time the mass of the oil in the furnace has become reduced in burning, and has become highly heated.

It will be observed that by means of my invention the fuel is supplied from beneath through the bottom of the pan, and the lower part of the mass is therefore always at a comparatively low temperature, and that the door F need not be opened farther than is necessary for the supply of air to the fire, whereby an uniform draft can be maintained through the flue, which is highly important in the process of this manufacture.

The whole extent of the flue may be inclosed

by a water-space, if desired; but I have shown that part only inclosed which immediately surrounds the fuel.

I claim as new and desire to secure by Letters Patent—

1. In flues for making lamp-black, surrounding them by a water-space, substantially as and for the purpose above described.

2. In the manufacture of lamp-black, supplying the fuel to the flues from beneath, substantially as above described.

AUGUSTUS PRENATT.

Witnesses:

M. M. LIVINGSTON;

C. L. TOPLIFF.