T. H. Quick's Imp^{t} in Purifying Bone Black.

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Fig. 1

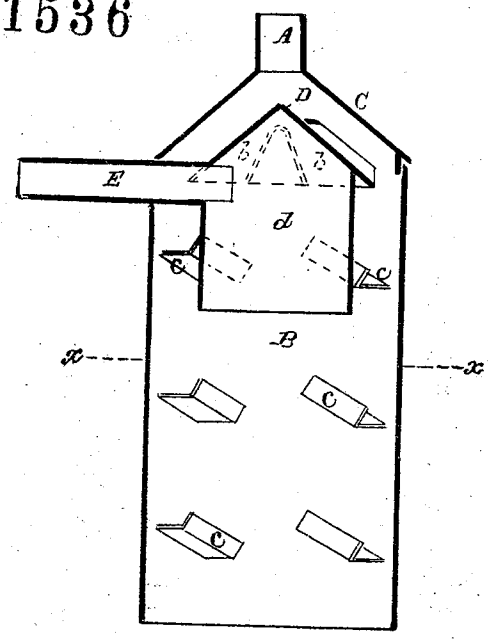


Fig. 2.

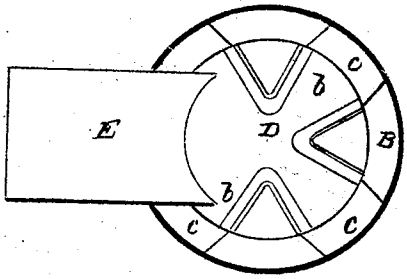
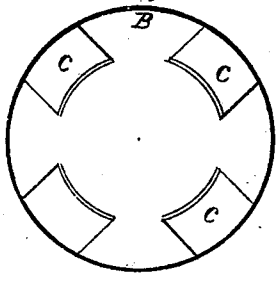


Fig. 3



Witnesses.
J. M. Connely
A Kellers

Thos H. Quick

United States Patent Office.

THOMAS H. QUICK, OF NEW YORK, N. Y.

Letters Patent No. 71,536, *dated November* 26, 1867.

IMPROVEMENT IN PURIFYING BONE-BLACK.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, THOMAS H. QUICK, of the city, county, and State of New York, have invented a new and useful Improvement in Purifying Bone-Black, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, and in which—

Figure 1 represents a vertical section of an apparatus or apparatus in part in illustration of my invention.

Figure 2, a plan of the same with the top or cover removed; and

Figure 3 a horizontal section thereof through the line *x x* in fig. 1.

Similar letters of reference indicate corresponding parts.

This, my invention, is designed as an improvement upon apparatus for the like purpose for which Letters Patent of the United States were issued to me on the 15th day of May, 1866, and in which the animal-coal or bone-black, after it has been used in refining sugar, and reburnt to utilize it over again, has the dust and other impurities incident to combustion removed from it in a close manner, so as to prevent the diffusion of dust, by passing the coal from a feed-pipe on to an inclined diaphragm of an upright flue, and from thence on to a shelf, which shoots it across the flue in an opposite direction, and causes its descent within the flue by crossing or recrossing the same, while the Hancock steam-blower serves to establish an upward current of air for removal of the dust and other impurities.

The present improvement has, for one of its objects, avoiding in the descent of the coal within the flue, the crossing of the air-blast or current by the coal, which is apt to break the current unless made strong enough to endanger blowing out of coal with the dust; and this my invention overcomes by passing the coal, in its descent within the flue, round the current by a circular or spiral arrangement of short or detached shelves or spouts, that also serve, as the coal drops from one to another in succession, to free it by impact or percussion from adhering dust.

And the invention further consists in a combination, with such or other similar circular arrangement, of a peculiarly-constructed distributing-cap, whereby the coal, as it is fed into the flue, is divided and spread so as to be delivered in a uniform manner on to a series or several of such shelves, that effectually prevent choking by lodgment of coal at the inlet, lying immediately over the shelves, and which choking, where a single conducting-diaphragm, or diaphragm leading to a single side passage or contracted opening is used, as in my previous improvement, is liable to occur.

Referring to the drawing, A represents the feed-pipe for the coal to the flue B, to which latter C is the top or cover. Immediately or at a suitable distance below the top or cover, is a distributing conical or sloping-shaped cap, D, cut up or divided on its exterior by a series of channel-ways, *b*, that serve to spread and conduct the coal, as it is fed on to the cap, to and over separate shelves or spouts, *c*, inclining or running in a spiral direction round the interior of the flue B, the channel-ways *b* being relatively disposed to the shelves *c* to insure the coal falling on the latter, or several of a series, as it escapes from the lower ends of the channel-ways. In this way a more perfect distribution of the coal is effected, choking prevented at the inlet or inlets round the interior of the flue, at its upper end or feed-space lying between the outer edge of the cap and interior surface of the flue, and a proper direction given to the distributed coal for its reception by a number of the shelves *c*. These shelves *c*, in being spirally arranged or set inclining in the same direction round the interior surface of the flue B, cause the coal to be passed round the current in its descent through the flue, which prevents that breaking of the current that is liable to be produced by the coal shooting across it, while the dropping of the coal from the distributing-cap D on to the shelves or spouts, and from one to the other of the latter in its progress downwards, detaches by impact or percussion all adhering dust. By the circular or spiral course round the interior of the flue given to the coal in its descent, a free escape is established up the centre of the flue B for all floating dust, which, being caught within a body, *d*, to the distributing-cap, is drawn or passed off along a discharge or dust-pipe, E, to which may be attached a Hancock steam-blower, or the draught up the flue and along the pipe E may be otherwise effected.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The flue B, provided with separate shelves or spouts *c*, arranged spirally round the interior thereof, for operation in connection with a suitable feed or distributor, and escape or dust-pipe, substantially as specified.

2. The combination of the cap D, having channel-ways *b*, with the shelves *c* of the flue B, arranged relatively to each other for operation together, as herein set forth.

THOS. H. QUICK.

Witnesses:

A. LE CLERC,

JAMES L. KINNIER.