

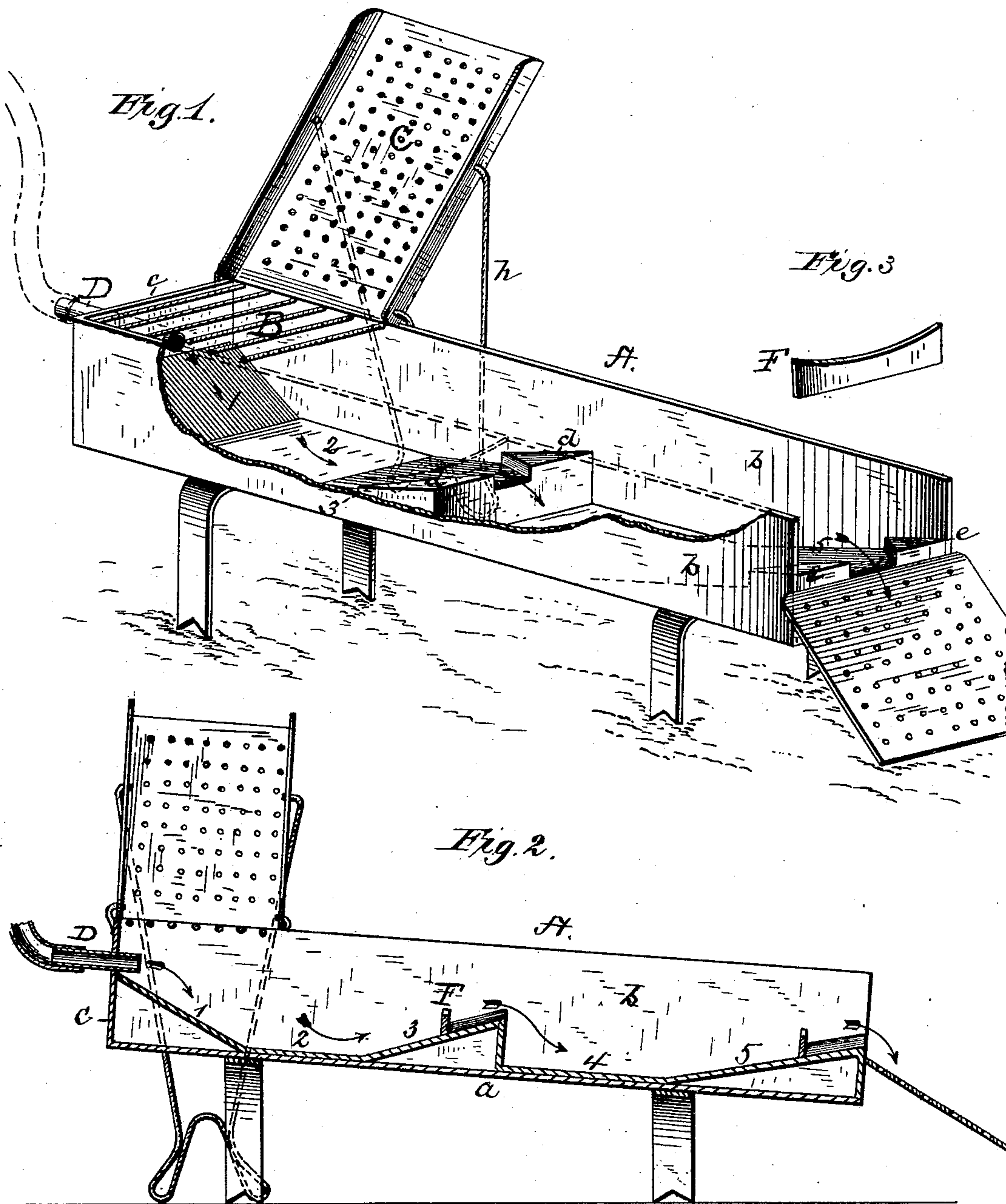
(No Model.)

O. A. LODWICK.

APPARATUS FOR SEPARATING COKE FROM ASHES AND CINDERS.

No. 247,077.

Patented Sept. 13, 1881.



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APPARATUS FOR SEPARATING COKE FROM ASHES AND CINDERS.

SPECIFICATION forming part of Letters Patent No. 247,077, dated September 13, 1881.

Application filed July 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, OLIVER ALDRED LODWICK, a citizen of the United States of America, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Apparatus for Separating Coke from Ashes and Cinders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The object of this invention is to expedite and simplify the separation of the small pieces of coke and unconsumed pieces of coal from the cinders and ashes of furnaces in which coal is the fuel. This small coke, when freed from the ashes and cinders, is the best possible fuel for certain kinds of smith-work, but the common method of separation and preparation, by picking it out with the hand, is too tedious and uncertain in results to make it of much practical value.

My invention consists in an inclined trough having its bottom divided into a number of sections inclined at different angles, and triangular-shaped contracting blocks arranged in pairs at the highest ends of the sections, with a water-supply.

My invention further consists in the novel construction and combination of parts, as will be hereinafter more fully described and specifically claimed.

In the annexed drawings, Figure 1 is a perspective view of my apparatus, with one of the side walls broken away to show the details of construction in the bottom of the trough. Fig. 2 is a longitudinal section of the apparatus, and Fig. 3 is a detail view.

The letter A represents the trough or chute, mounted on suitable supports to give the proper inclination in feeding and separating the material. This trough consists of the bottom *a*, sides *b*, and ends *c*, and has its bottom divided into a series of sections, (preferably four,) inclined at different angles. The upper section consists of the incline 1, which descends at a sharp angle. The surface 2 is set with the same inclination as the bottom of the trough,

and may form a part thereof. The incline section 3 rises at an angle similar to that of 1, but in a contrary direction, and terminates in a perpendicular step extending to the bottom of the trough. The top surface of the rear end of incline 3 is diminished or contracted by means of two triangular-shaped blocks, *d d*, substantially fixed as shown in Fig. 1 of the drawings, and the office of which is to concentrate the material and discharge it to the lower or succeeding section at the middle of the trough. The next section consists of the flat surface 4, inclined with the trough, and the incline 5, with the triangular-shaped blocks *e e*, as seen in Fig. 1 of the drawings. These blocks direct the flow of material to the center and secure a better distribution over the apron-sieve at the end.

If desired, other sections may be added in the same order of construction specified.

The upper end of the trough is provided with a grate, B, and over this grate, to one side of the trough, is hinged a sieve, C, provided with a pivoted leg or support, *h*, and the lower end of the trough is provided with an inclined screen or sieve.

Immediately above the incline 1, and below the screen or bars B, is a pipe, D, communicating with a water-supply, and through which the water is supplied to the trough.

The operation is substantially as follows: The water enters at the inlet-pipe and courses through the trough, and the mass of cinders and ashes is thrown on the screen, whence the material not passing through screen rolls down on the grate-bars B. This grate arrests the larger lumps of useless slag and admits the smaller pieces, whence they pass to the current below. The refuse sinks to the bottom at 2, and the coke is carried by the force of the current up over 3 into the succeeding section. The perpendicular causes the slags that may have been carried this far to fall to the bottom of the section, where they remain, while the coke is carried up the next incline and discharged through the contracted chute on the apron-screen, well cleaned. The water escapes through the meshes or perforations of the screen, carrying with it any remaining ashes, and is led off through gutters or pipes. The beds of the trough may be cleaned by shoveling it out.

When inferior coal is used in the furnaces

the resulting coke requires a slightly different treatment, and to meet the exigency the triangular blocks are removed and bars F are placed across the trough at the ends of the several sections. The operation may then be proceeded with as hereinbefore described. In this case the coke is carried over the bars and discharged on the apron-screen at the lower end of the trough, as in the other washings.

It is obvious that this apparatus may be used for household purposes. I reserve the right to vary the construction herein stated without departing from the spirit of the invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In an apparatus for separating coke and similar material, the combination of a series of inclined surface-plates and triangular-shaped blocks arranged in pairs at the highest ends of the inclined plates, substantially as shown and described.

2. In an apparatus for separating particles of coke and unconsumed coal from ashes and cinders, the combination, with a trough divided into sections at different relative inclinations and triangular-shaped blocks arranged at the ends of the sections, of a supply-pipe for conducting water into the trough for causing

the separation of the material, substantially as described.

3. In an apparatus for separating particles of coke and unconsumed coal from ashes and cinders, the combination of a trough divided into sections at different relative inclinations, and triangular-shaped blocks arranged at the ends of the sections, grate-bars at the upper end of the triangle, and a supply-pipe for conducting water into the trough, substantially as described.

4. The apparatus for separating particles of coke and similar material, consisting of an inclined trough with its bottom divided into a number of sections of different relative inclinations, and provided with triangular-shaped blocks arranged opposite each other at certain intervals to diminish the width of the trough-passage, the water-supply pipe D, coarse screen B, the adjustable hinged screen C, and an inclined screen at the lower end of the trough, substantially as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

OLIVER ALDRED LODWICK.

Witnesses:

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