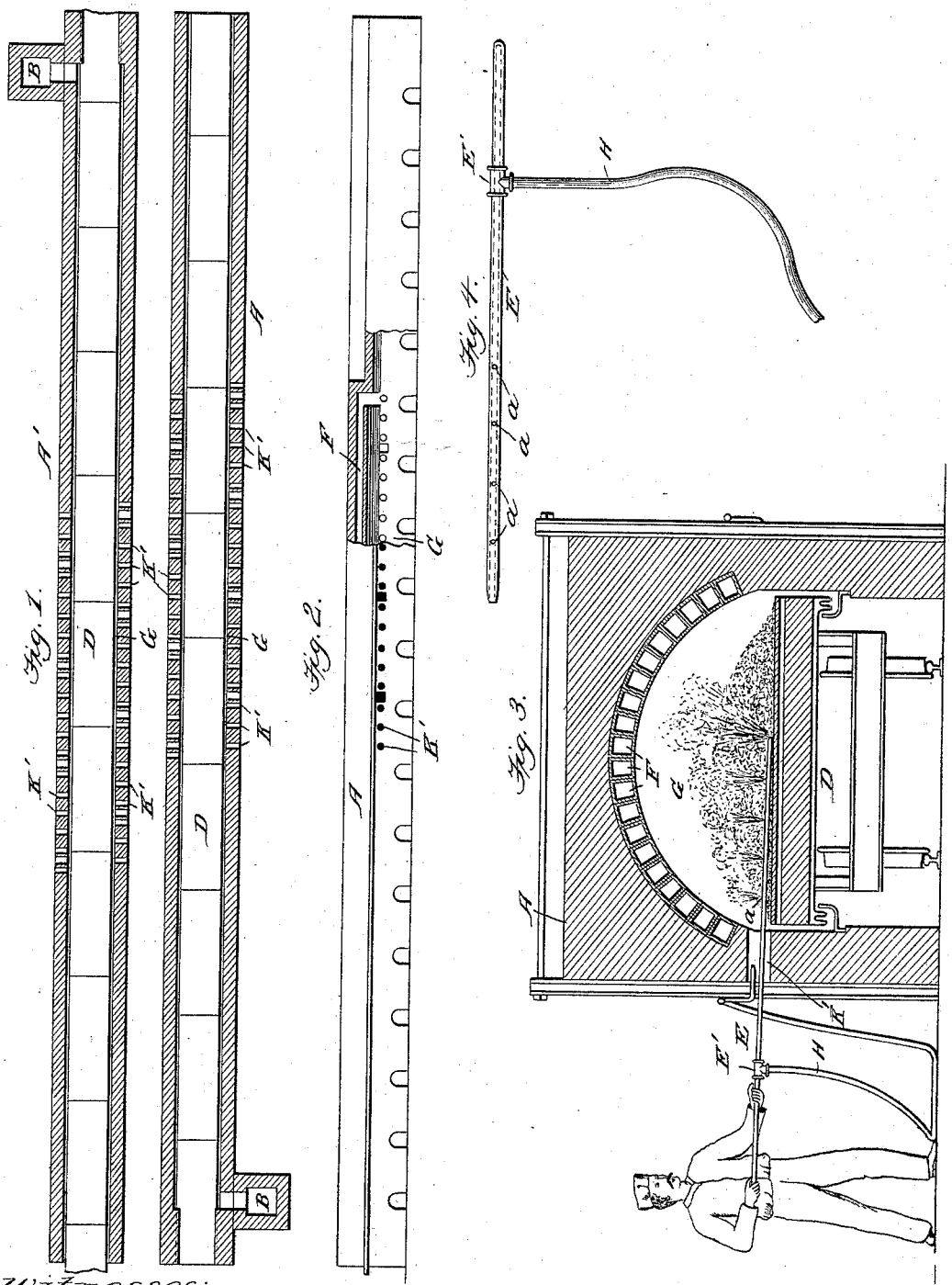
(No Model.)

J. C. ANDERSON.

APPARATUS FOR BURNING GARBAGE OR OTHER REFUSE MATERIAL.

No. 526,284. Patented Sept. 18, 1894.



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UNITED STATES PATENT OFFICE.

JAMES C. ANDERSON, OF CHICAGO, ILLINOIS.

APPARATUS FOR BURNING GARBAGE OR OTHER REFUSE MATERIAL.

SPECIFICATION forming part of Letters Patent No. 526,284, dated September 18, 1894.

Application filed March 13, 1894. Serial No. 503,439. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. ANDERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for Burning Garbage or other Refuse Material; 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.

My invention relates to certain new and useful improvements in method of, and apparatus for, burning garbage and other refuse materials, and has for its object the perfecting of the method and apparatus illustrated and described in an application for Letters Patent filed by me in the United States Patent Office on the 30th day of January, 1894, bearing Serial No. 498,526.

In describing my present invention I will refer to the general features of invention covered in the application above referred to, which illustrates what may properly be designated the "tunnel system," in which the material to be incinerated is loaded upon fireproof cars and passed through a heated tunnel, and wherein the heat generated in the fire zones is utilized at the initial end of the tunnel to evaporate the moisture and to extract the gases from the garbage, which moisture and gases is so controlled by drafts that delivery thereof is made within the fire zone and therein mixed with oxygen to constitute auxiliary fuel.

In practicing the method and using the apparatus referred to I have found by experience that the use of the column of fire as described in my pending application, for boring into and stirring the load upon the cars, being emitted just within the side walls of the tunnel, is apt to lose its power, and does not as effectually bore and stir the load as may be desirable under some circumstances, and I have devised the change which forms the subject matter of my present invention, and which consists in providing what I denominate an air poker connected with a supply of air under pressure by a suitable flexible connection, said air poker being hollow and provided with suitable air exits, and employing said poker in stirring up the burning load upon the cars, as will be hereinafter and in detail explained.

In the accompanying drawings—Figure 1 represents a horizontal section of a pair of burning tunnels. Fig. 2 is a side elevation, partly broken away to expose the loaded cars within. Fig. 3 is a vertical cross section on an enlarged scale of one of the tunnels; and Fig. 4 is a plan view on enlarged scale of the air poker and its flexible connection.

Similar letters denote like parts in the several figures of the drawings.

A and A′ represent the burning tunnels arranged adjacent and parallel to each other.

B is a smoke or draft stack connected with each tunnel at opposite ends. The tunnels are arched and provided with draft flues F, and each tunnel is formed with a fire zone G, at which point fuel consisting of oil and air is introduced through openings K′ in the side walls of the tunnel.

D are a series of fire-proof cars which are loaded with the garbage to be incinerated and are forced successively through the tunnels and subjected to the action of heat, all as fully explained in my pending application hereinbefore referred to.

E is what I denominate an air poker which consists of a hollow iron tube about one and a quarter inches in diameter and having its forward end contracted or pointed as shown to facilitate its introduction into the load carried upon the cars. This iron tube is perforated axially at its point and laterally with small holes about five sixteenths or three eighths of an inch in diameter, as shown at *a*.

Near the rear end of the poker is provided a T-connection E′ to which is connected one end of a flexible hose or tube H, the opposite end of which connects with a supply of air under pressure. In rear of the hose connection E the poker is fashioned into any desirable form to constitute a handle by which the poker may be manipulated. The air delivered through the poker may be subjected to any desired degree of pressure, but I have found that a pressure of about sixty pounds is well adapted for the results to be obtained.

As described in my pending application the fuel composed of oil and air under pressure is introduced through openings K′, in the walls of the kiln, and in carrying out my present

invention I prefer to so proportion these openings that there shall be space sufficient below the fuel nozzles to introduce the air poker E. As described in my application referred to, the effect of the fire upon the material to be incinerated is augmented by the supply of oxygen admitted to the fire zone and forced into the core or interior of the material, and I have found by the use of my improved poker, which is forced directly into the material, as illustrated at Fig. 3, that I am not only enabled to deliver the oxygen directly at the locality where it is most effective in augmenting the heat, but that the blast also serves to shake, tumble or turn over the load upon the floor of the car, as clearly shown at Fig. 3. This tumbling action is facilitated by rotating the poker upon its axis, which action causes the air escaping through the side perforation to be projected at varying angles and effectually accomplishes the desired result.

I have found from experience that the air passing through the hollow poker protects the latter from being burned and warped by the intense heat in the fire zone, and that at the same time the heat expands the air and intensifies its action.

I do not wish either to limit myself to any particular locality or time for introducing the poker into the load upon the cars, as it may be introduced through any suitable opening in the wall of the tunnel and at various localities, and hence the use of the flexible hose connection H through the medium of which the poker may be utilized at different localities.

In the drawings I have shown only one poker as being used at one side of the tunnel, but in the apparatus described in my pending application the fuel is injected from both sides, and the air poker may likewise be introduced through both sides.

If thought desirable it will be understood that in lieu of air under pressure I may inject steam through the perforated poker directly into the mass of material being incinerated, but I prefer to use the air.

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

The hollow air poker E having its end adapted to penetrate the mass upon the cars, and formed with suitable air exits, and adapted for connection with an air supply under pressure, as and for the purpose set forth.

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

JAMES C. ANDERSON.

Witnesses:
EDWIN L. BRADFORD,
N. CURTIS LAMMOND.