No. 804,016. PATENTED NOV. 7, 1905.

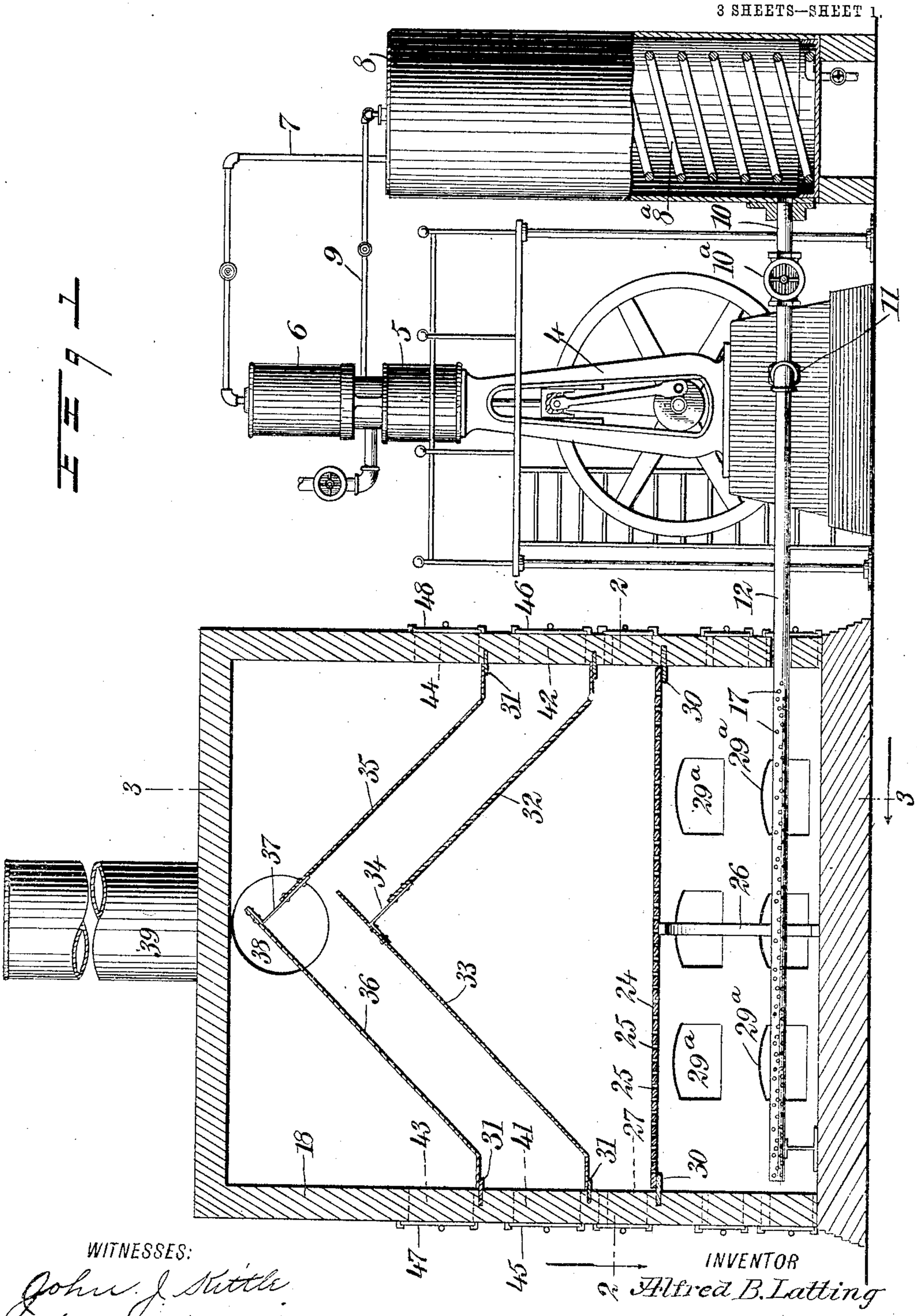
A. B. LATTING.

METHOD OF REVIVIFYING SPENT CLAYS.

APPLICATION FILED OCT. 14, 1904.

3 SHEETS—SHEET 1.

FIG. 1.



WITNESSES:

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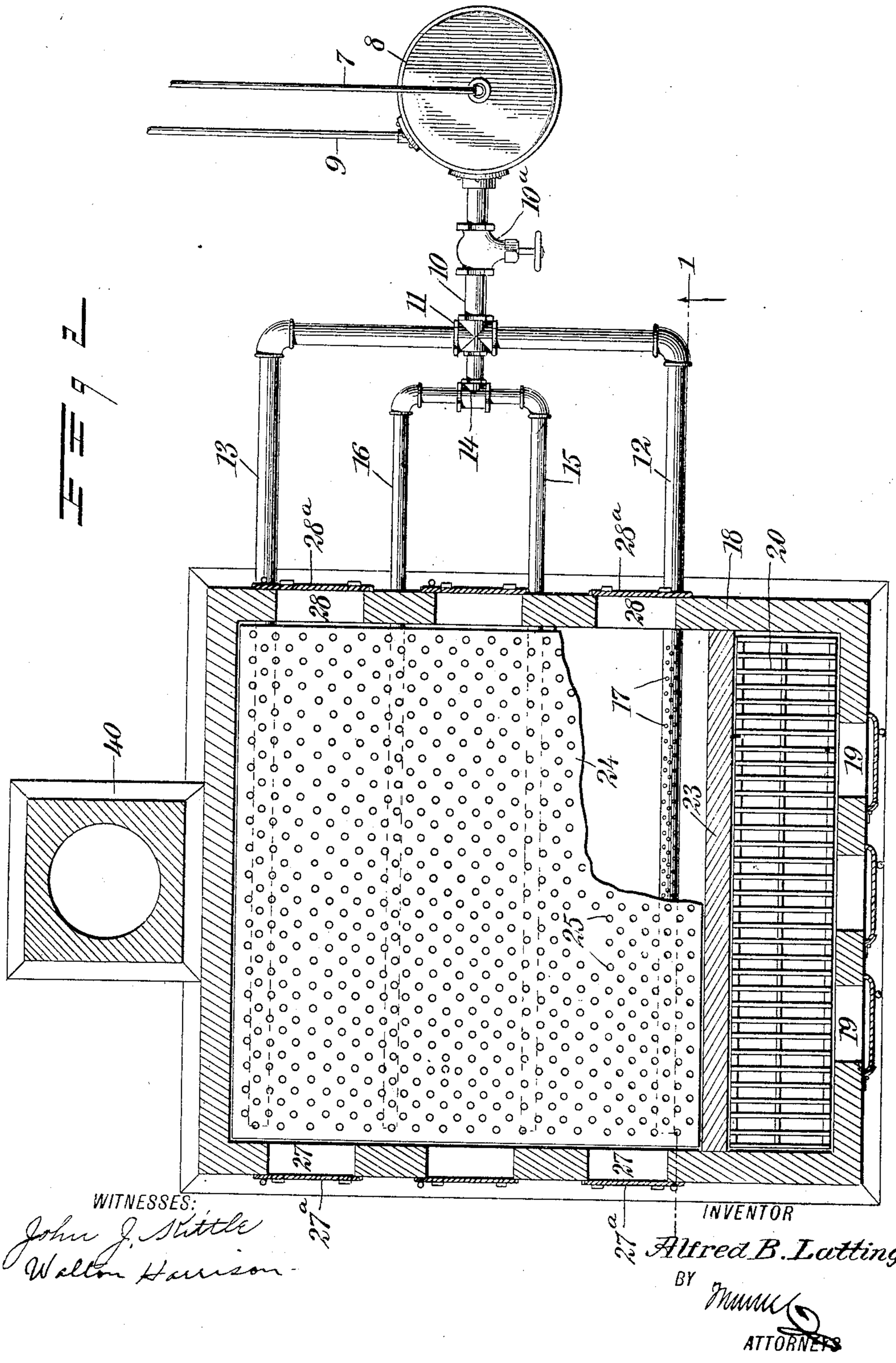
3 SHEETS—SHEET 2.

FIG 2



WITNESSES:
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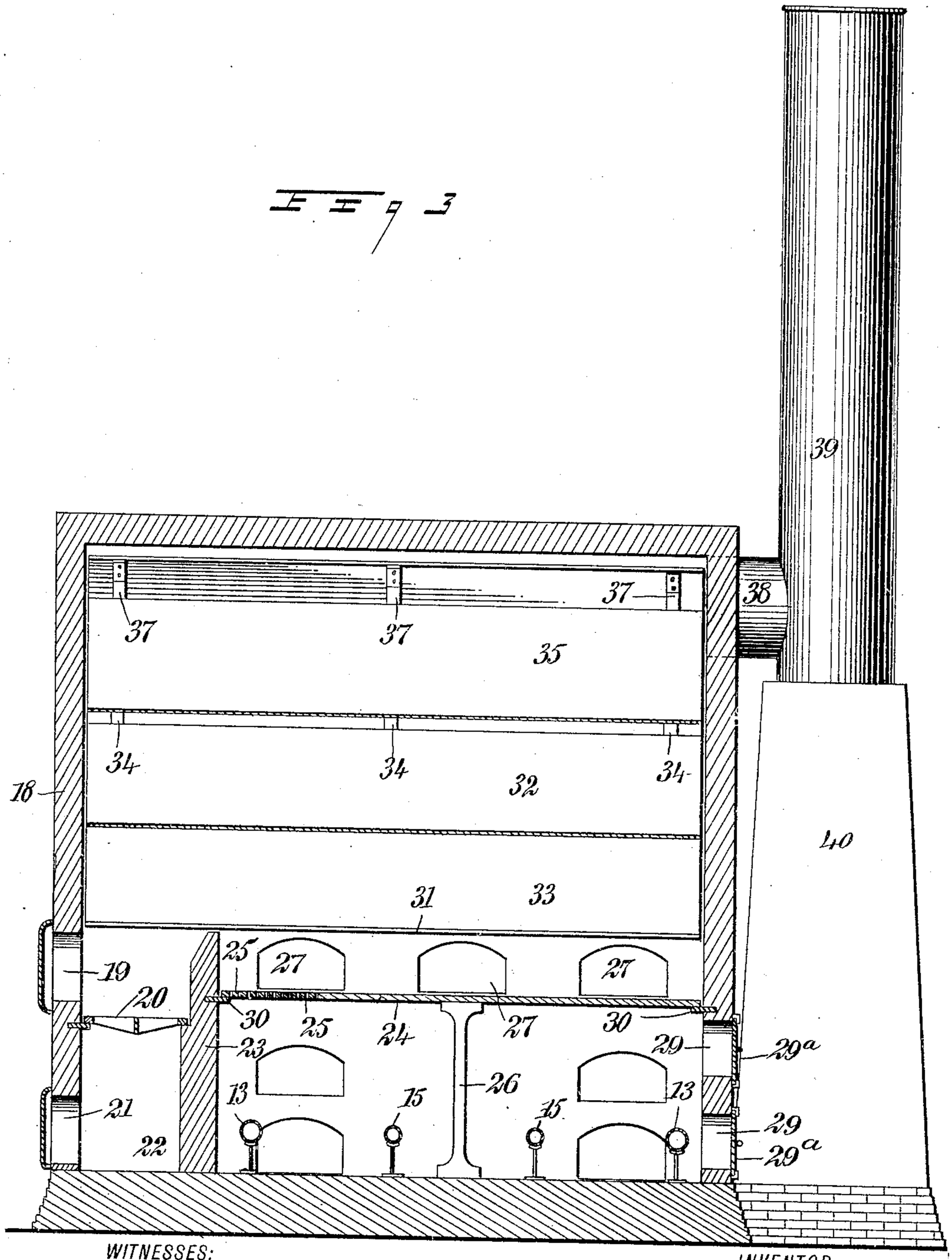
3 SHEETS—SHEET 3.

Fig 3



WITNESSES:

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Walton Harrison

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UNITED STATES PATENT OFFICE.

ALFRED B. LATTING, OF MEMPHIS, TENNESSEE.

METHOD OF REVIVIFYING SPENT CLAYS.

No. 804,016. Specification of Letters Patent. Patented Nov. 7, 1905.

Application filed October 14, 1904. Serial No. 228,449.

To all whom it may concern:

Be it known that I, ALFRED B. LATTING, a citizen of the United States, and a resident of Memphis, in the county of Shelby and State of Tennessee, have invented a new and Improved Method of Revivifying Spent Clays, of which the following is a full, clear, and exact description.

My invention relates to a method for revivifying spent clays—such, for instance, as fullers' earth and other mineral substances used for purposes of absorbing grease, cleansing garments, and the like.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation, partly in section, showing a form of apparatus used in connection with my method. Fig. 2 is a vertical section upon the line 2 2 of Fig. 1 looking in the direction of the arrow, and Fig. 3 is a vertical cross-section upon the line 3 3 of Fig. 1 looking in the direction of the arrow.

A steam-engine is shown at 4 and is provided with a steam-piston in a cylinder 5, which operates an air-compressor 6, connected by a pipe 7 with a reservoir 8 for holding compressed air. This reservoir is provided with a heating-coil 8^a, supplied by steam from the pipe 9 for the purpose of raising the temperature of the air within the reservoir 8. A pipe 10 is connected with the reservoir 8, and a valve 10^a is used for opening and closing this pipe. A cross 11 is also connected with this pipe and communicates with the distributing-pipes 12 and 13. A T 14 is in communication with the pipe 10 and communicates with the distributing-pipes 15 and 16. All of the distributing-pipes are provided with holes 17 to permit the escape of air therethrough. A furnace 18 is provided with fuel-doors 19, with grate-bars 20, with an ash-pit 22, and with ash-doors 21. A pan 24, made of cast-iron, is provided with perforations 25 of suitable size for allowing the air to escape upwardly through the same with comparative freedom. An I-beam 26 supports the center of the pan, its edges resting upon shelves 30. The furnace is provided on each side of the pan 24 at points immediately above the same with ports 27 28, provided with doors 27^a 28^a. At the back of the furnace—that is, upon the side thereof adjacent to the chimney 39—are ports 29, provided with closure members 29^a, these doors and closure members being below the level of the pan 24. Shelves 31 are mounted within the walls of the furnace and support the several baffle-plates 32, 33, 35, and 36, the baffle-plates 32 and 33 being connected by stays 34 and the baffle-plates 35 and 36 being similarly connected by stays 37. A conductor-passage 38 connects the body of the furnace 18 with the chimney 39. This chimney rests upon a hollow pedestal 40, which virtually forms a continuation thereof, as will be understood from Fig. 3. Just above the shelves 31, supporting the baffle-plates 32, 33, 35, and 36, are ports 41, 42, 43, and 44, provided with closure members 45, 46, 47, and 48. These doors and closure members are for the purpose of removing any fullers' earth, cinders, or other material substances which may be arrested by the baffle-plates and fall thereupon.

The operation of my device is as follows: Fullers' earth or other clay to be rejuvenated having been exhausted by use upon clothing or having become saturated with grease or other impurities is spread upon the pan 24. The engine 4 now being started up and the exhaust-steam allowed to escape from the heating-coil 8^a raises the temperature of the air contained within the reservoir 8. The compressor then being actuated by the engine 4 is filled with air under pressure through the pipe 7. The valve 10^a being now opened, the compressed air proceeds from the reservoir through the pipes 10, 12, 13, 15, and 16 and makes its escape through the holes 17. It thence passes upwardly through the holes 25 and through the fullers' earth resting upon the pan 24. Meanwhile the fire being started upon the grate-bars 20 the flames therefrom roll over the bridge-wall 23, so as to come into contact with the upper portion of the clays to be operated upon. In case the clay is very light or in case the air-pressure happens to be real strong, so that there is more or less tendency for any fine particles of clay to be passed upward, the baffle-plates 23 prevent the removal of the fine particles from the furnace, and they are thus saved. I have made the discovery that exhausted clays, and particularly exhausted fullers' earth, may be rejuvenated and rendered even better than when originally prepared by heating the clays, so as to burn out all organic impurities and at the same time supply oxygen in large quantities through

the pores of the clays. In burning out the grease and other impurities I find it advisable not only to heat the clays to a high temperature, but to bring the same into physical contact with the flame. This is best done while the air is circulating freely through the pores of the clay. The process having been finished, the clays may be removed, by means of the several doors, from the pan 24. As this requires only a few moments and as the clays may be shoveled in and removed with little or no interruption, the process is rendered virtually continuous. The closure members above the level of the shelves 31 are used for the purpose of removing the particles of clay arrested by the baffle-plates.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The method herein described of revivifying spent clays, which consists in pulverizing the same, heating the clays thus pulverized in contact with a flame, and forcing hot air through the substance of said clays while thus exposed to said flame.

2. The method herein described of revivifying spent clays, which consists in burning out therefrom the organic impurities contained therein, and forcing oxygen through said clays for the purpose of restoring the active qualities thereof.

3. The method herein described of revivifying spent clays, which consists in supplying to said clays from independent sources flames engaging said clays, and hot-air currents permeating said clays.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALFRED B. LATTING.

Witnesses:

H. P. JOHNSON,

L. CHAPPELL.