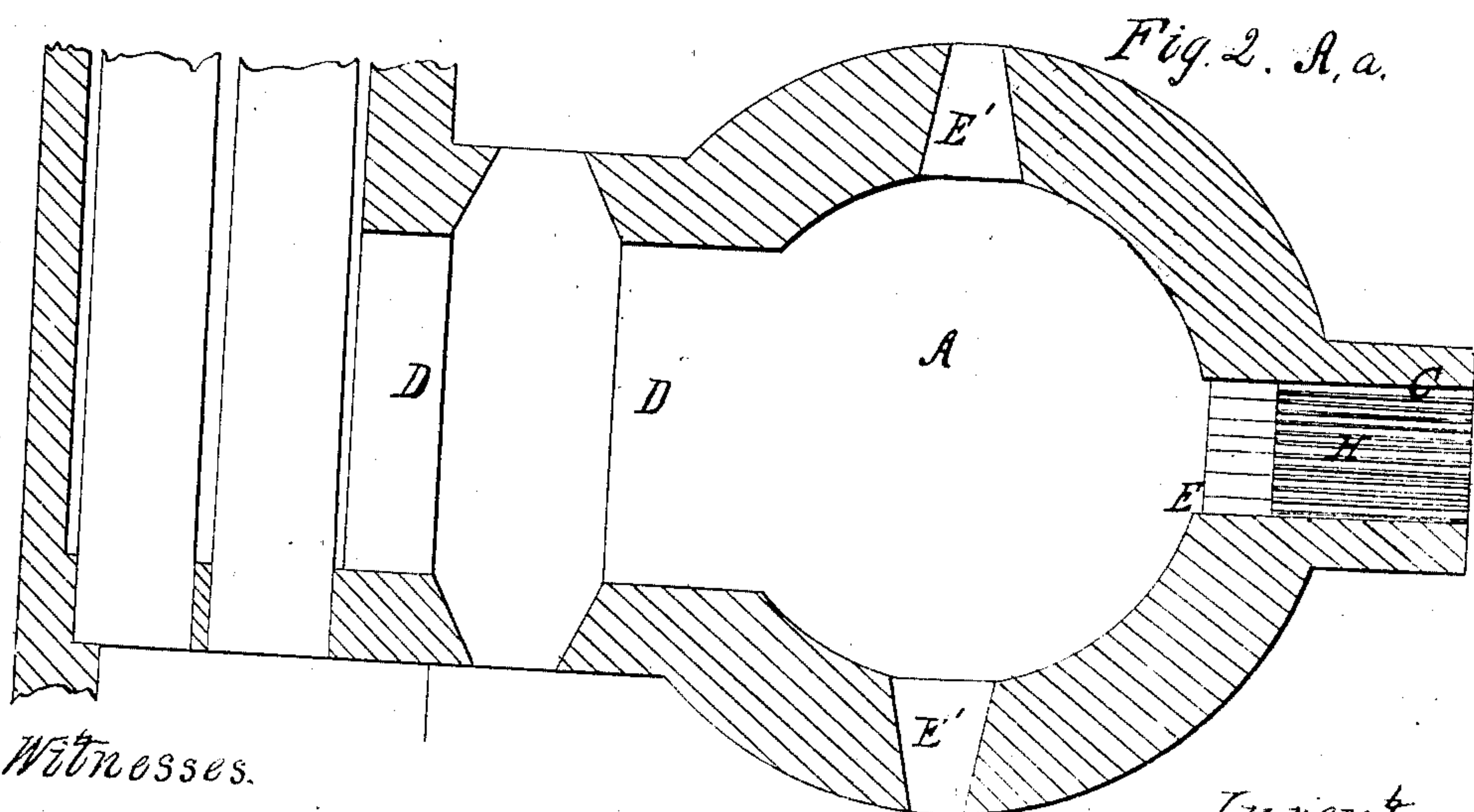
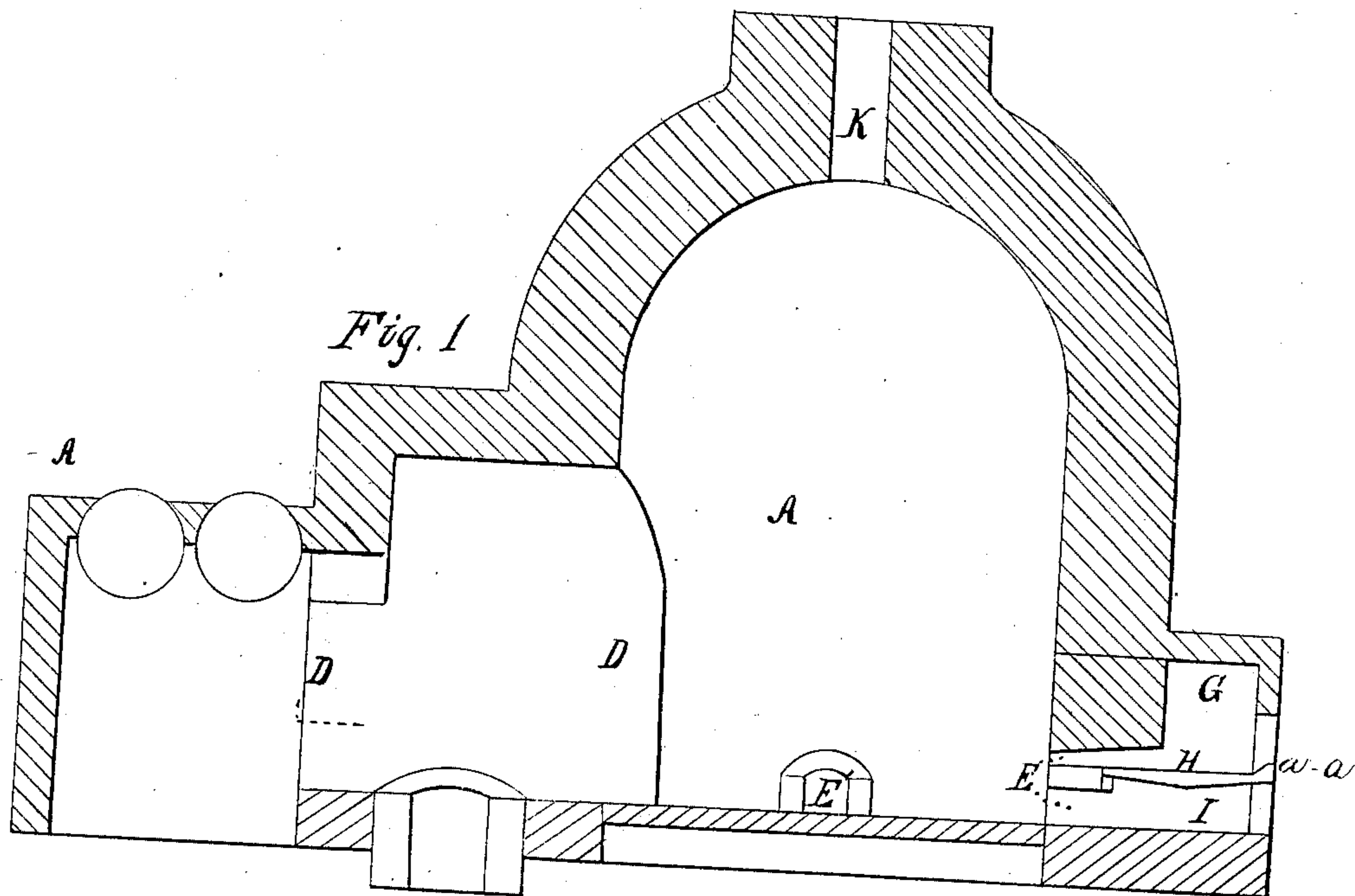


S. H. Gilman,
Steam-Boiler Furnace,
No 26,759,
Patented Jan. 10, 1860.



Witnesses.

A. M. Carrin
J. M. Minkley

Inventor

S. H. Gilman

UNITED STATES PATENT OFFICE.

SAMUEL H. GILMAN, OF NEW ORLEANS, LOUISIANA.

FURNACE FOR BURNING BAGASSE.

Specification of Letters Patent No. 26,759, dated January 10, 1860.

To all whom it may concern:

Be it known that I, SAMUEL H. GILMAN, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a certain new and useful Improvement in Furnaces for Burning Bagasse; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a vertical section of my improvement as applied to a furnace; and Fig. 2, a horizontal section taken at the line A, a, of Fig. 1.

The same letters indicate like parts in both figures.

In the accompanying drawings my said improvement is represented as applied to the bagasse furnace described in, and secured by Letters Patent of the United States granted unto me and bearing date the 4th day of December 1855, although equally applicable to any other furnace adapted to the burning of bagasse.

It is well known that in burning bagasse as usually taken from the sugar mill in a wet state, it is necessary to use wood or coal or other dry and dense fuel for the purpose of igniting the bagasse, insuring its combustion and obtaining the requisite heat for evaporating the saccharine juices. And as applied prior to my said invention such dense fuel is put into the furnace with the bagasse. This I have observed is seriously objectionable for reason that the ashes and cinder produced accumulate and tend to choke the furnace, and the moisture contained in the bagasse checks the combustion of the wood, coal or other dense fuel and as the main object of using such dense fuel is to insure the effective combustion of the bagasse it must be obvious that such mode of charging is defective.

The object of my invention is to avoid this defect, and to this end my said invention consists in combining with a furnace, adapted to the burning of bagasse, an auxiliary furnace or fire chamber adapted to the burning of wood, coal or other suitable dense fuel and made to communicate with the bagasse furnace so that the products of combustion of the wood, coal or other dense fuel shall be made to pass through the furnace or chamber in which the bagasse is consumed.

In the accompanying drawings (A) represents the bagasse fire chamber of the furnace which is of a cylindrical form with a dome having a central aperture (K) for feeding in the bagasse. A square chamber (D) leading to the flues which direct the products of combustion to the boilers or pans, (E) the draft door through which the draft is admitted to the bagasse under combustion in the chamber (A). The lower edge of this draft door (E) I prefer to make on the same level with the bottom of the chamber (A) on which the bagasse rests. Cleaning out doors (E', E') are also provided on opposite sides.

The auxiliary fire chamber (G) is built of suitable material and outside of the bagasse chamber (A), and consists of the fire chamber adapted to the combustion of wood or coal, or other suitable dense fuel which in its active combustion will give an intense heat. The best mode of construction is to make it with a grated bottom (H) and an ash pit (I) below the grate. It is placed directly in front of, and inclosing the draft door (E) leading to the bagasse chamber (A) and with the grate (H) at such an elevation that a part of the draft door (E) will be above, and a part below the grate, so that atmospheric air will be supplied from the ash pit (I) to the fuel on the grates in the auxiliary furnace and to the bagasse in the chamber (A) and at the required level, while at the same time the products of combustion of the fuel in the auxiliary furnace will pass through the upper part of the draft door (E) to the inside of the bagasse chamber (A) to act on the bagasse.

The draft door and auxiliary furnace or fire chamber should be directly opposite to the opening in the bagasse chamber (A) which leads to the exit flues leading to the boilers or pans, or if otherwise located suitable means must be employed to insure the action of the products of combustion from the auxiliary fire chamber on the bagasse to keep the lower part of the charge in a proper condition for efficient combustion. And although I have described my said improvement as applied to a bagasse furnace such as will be found described in Letters Patent heretofore granted to me as before stated, I do not wish to be understood as limiting my claim of invention to the use specifically of such a furnace, as other and equivalent furnaces may be substituted for

this one element of the combination invented by me.

I am aware that it has long since been proposed to combine two fire places in one furnace by interposing one of them between the other and the flue leading to the boiler or other place where the heat is to be applied, but in such cases the object was to cause the smoke from the fuel in the first fire place together with a current of air to pass through, over, or among fuel which has already ceased to smoke, for the purpose of consuming in the second fire place the smoke given out by the fuel in the first fire place, but such furnaces were not intended for nor adapted to the preparation and combustion of bagasse, and the purpose was wholly different from that contemplated by me and not at all adapted to the use of bagasse as a fuel. I do not therefore wish to be understood as claiming broadly the use of two fire

places with one interposed between the other and the flue. But

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

1. The combination of an auxiliary fire chamber for burning wood, coal, or other suitable dense fuel, with the bagasse fire chamber substantially as and for the purpose specified.

2. And I also claim so combining the auxiliary furnace and its ash pit with the bagasse furnace, that both the fire chamber and the ash pit of the said auxiliary furnace shall communicate freely with the bagasse fire chamber, substantially as and for the purpose specified.

S. H. GILMAN.

Witnesses:

A. B. CARVER,
J. REINECKER.