

S. A. POCHE.
Evaporating Pan.

No. 84,134.

Patented Nov. 17, 1868.

Fig. 1.

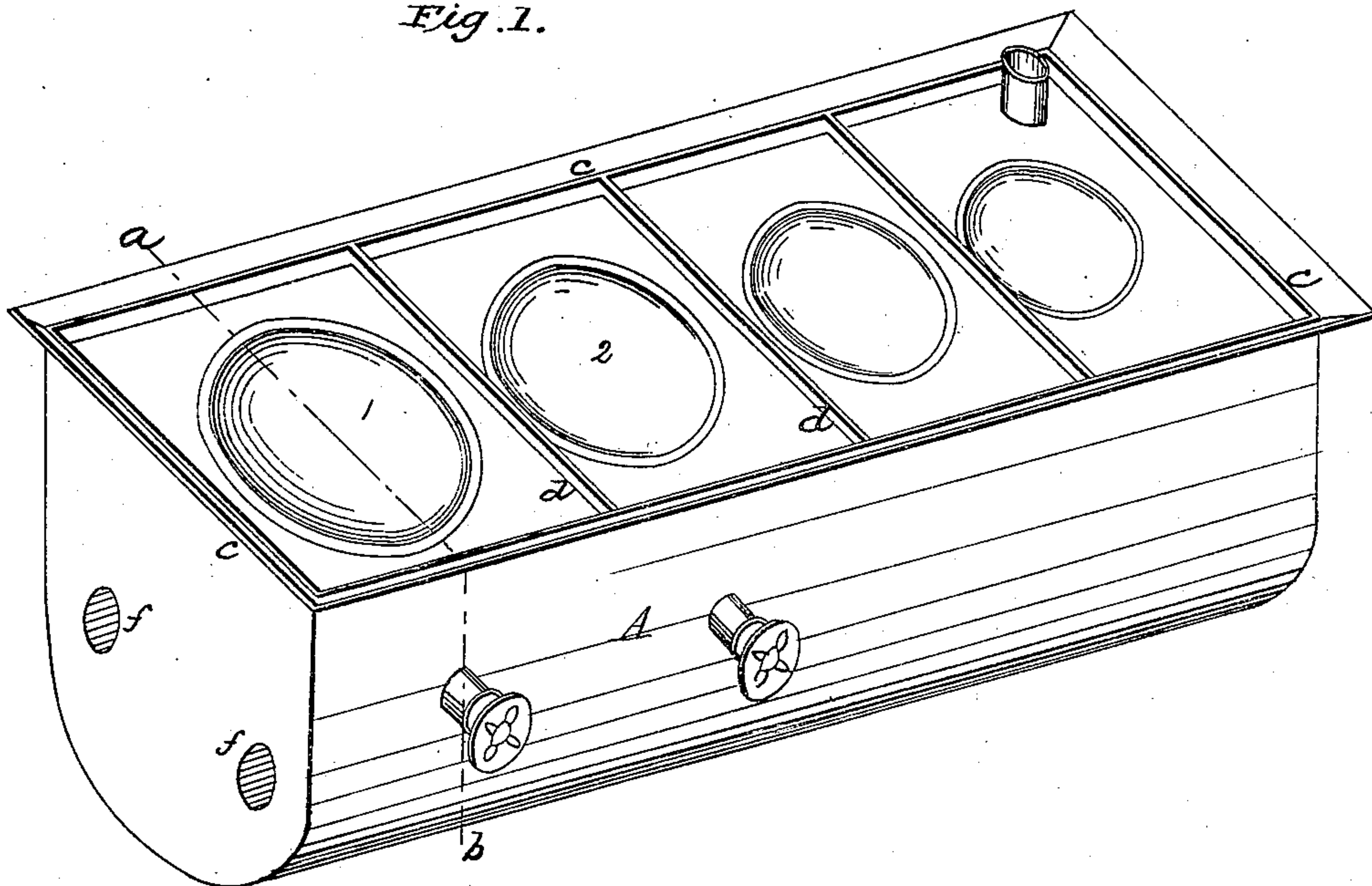
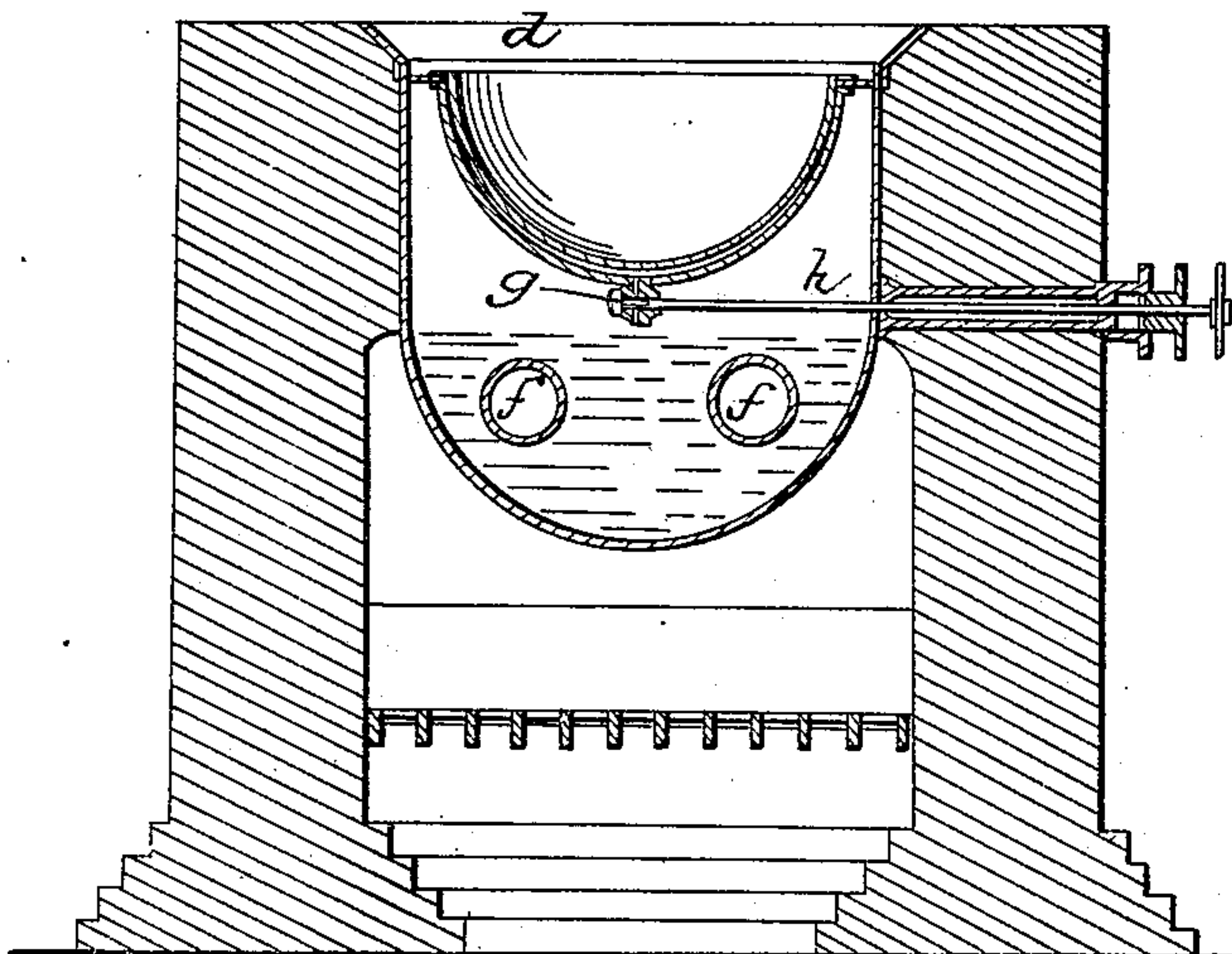


Fig. 2.



Witnesses.

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S. A. POCHE, OF ST. JAMES PARISH, LOUISIANA.

Letters Patent No. 84,134, dated November 17, 1868.

IMPROVEMENT IN APPARATUS FOR EVAPORATING CANE-JUICE.

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, S. A. POCHE, of the parish of St. James, and State of Louisiana, have invented a certain new, useful, and improved Arrangement for Evaporating Cane-Juice, without the use of wood as fuel; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification.

The importance and value of my invention will be more readily and clearly understood if, before entering upon its description, I point attention to the fact that in the evaporation of cane-juice, to reduce it to sugar, by existing methods, in sets of kettles, coal cannot be used, in consequence of the want of sufficient flame in its combustion to establish a uniform heat underneath all the kettles that make up a set, and that hence wood has been hitherto employed exclusively as fuel in the process of reducing cane-juice to the point of granulation by the application of heat. But wood is far more costly than coal, and it is becoming more and more expensive and difficult to procure, because of the increasing distance over which it must be transported, and the soft and yielding nature of the soil in all the sugar-regions of Louisiana, which, it is well known, consists wholly of alluvial deposits. Nor is the time distant when the culture of sugar can no longer be profitably pursued, unless the use of wood can be dispensed with.

My invention at once opens the way for remedying this difficulty, for it provides for an immediate substitution of coal in lieu of wood, and, at the same time, for an immense saving of fuel, in that it secures the evaporation of the cane-juice by the heat of the same fire or furnace that generates the steam that operates the sugar or grinding-mill.

But my invention will be better understood by referring to the drawings, on which, at—

Figure 1, is exhibited a perspective view of the same.

Figure 2 is a cross-section through the line *a b* of fig. 1.

A is a steam-boiler, into which is inserted the usual number of kettles that constitute what is usually called "a set."

The boiler A has a flat top, as shown, in order that the insertion of the kettles may be more easily effected, around which there is an upwardly-projecting rim, *c*, to prevent waste of the juice in case it should rise above the tops of the kettles, by too active an ebullition, or, in ordinary language, "boil over."

The transverse projections *d*, on the occurrence of such an accident, guard against the overflowing of one kettle into another.

In all other respects the boiler may be of any ap-

proved form, and be provided, or not, with fire-flues, according to circumstances.

The tubes *f* are shown in order to illustrate one form in which fire-flues may advantageously be put into the boiler.

Any usual appliance or method of supplying the boiler with water may be employed, and a safety-valve may be applied by means of a pipe, *e*, or in any other suitable way.

The "grand," or the clarifying-kettle, which is the first and largest of the set, and the next one to it, respectively marked 1 and 2, are provided with false bottoms, or "jackets," as they are technically called, as shown in the case of the first named, at fig. 2. The object of this provision is to secure a means of regulating the temperature of these two kettles by opening or closing communication between the space between the jackets and the walls of the kettles, and the boiler-space proper outside said jackets. This communication is established by means of a valve, *g*, and a stem, *h*, extending outside the shell of the boiler, so that the sugar-maker may at any time bring the steam into direct contact with the bottom of the kettles in question, or prevent such contact, at his pleasure.

The other kettles of the set do not need a jacket, and hence none is provided for them.

The boiler is placed in a proper furnace, as shown at fig. 2, and by any usual or suitable means is connected with the sugar-mill it is designed to supply with motive-power.

The juice is put into the kettles, and treated precisely in the manner as if evaporated by an independent furnace, in a separate set of kettles, as is now universally practised.

My invention does not refer to the manner of treating the juice in the process of evaporation, but to the mechanical arrangement I have described, by which I make one furnace do the work of two, and, by using the heat of steam in the evaporation of the juice, I am enabled to secure a uniform effect throughout the whole set of the kettles, and thus to substitute coal for wood in the manufacture of sugar.

Having thus described my invention,

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

The boiler A, when constructed substantially as described, and combined with a set of sugar-kettles, as and for the purpose set forth.

S. A. POCHE.

Witnesses:

H. N. JENKINS,
H. S. BLOOD.