

(No Model.)

I. A. HEDGES.
BAGASSE FURNACE.

No. 278,547.

Patented May 29, 1883.

Fig. 1.

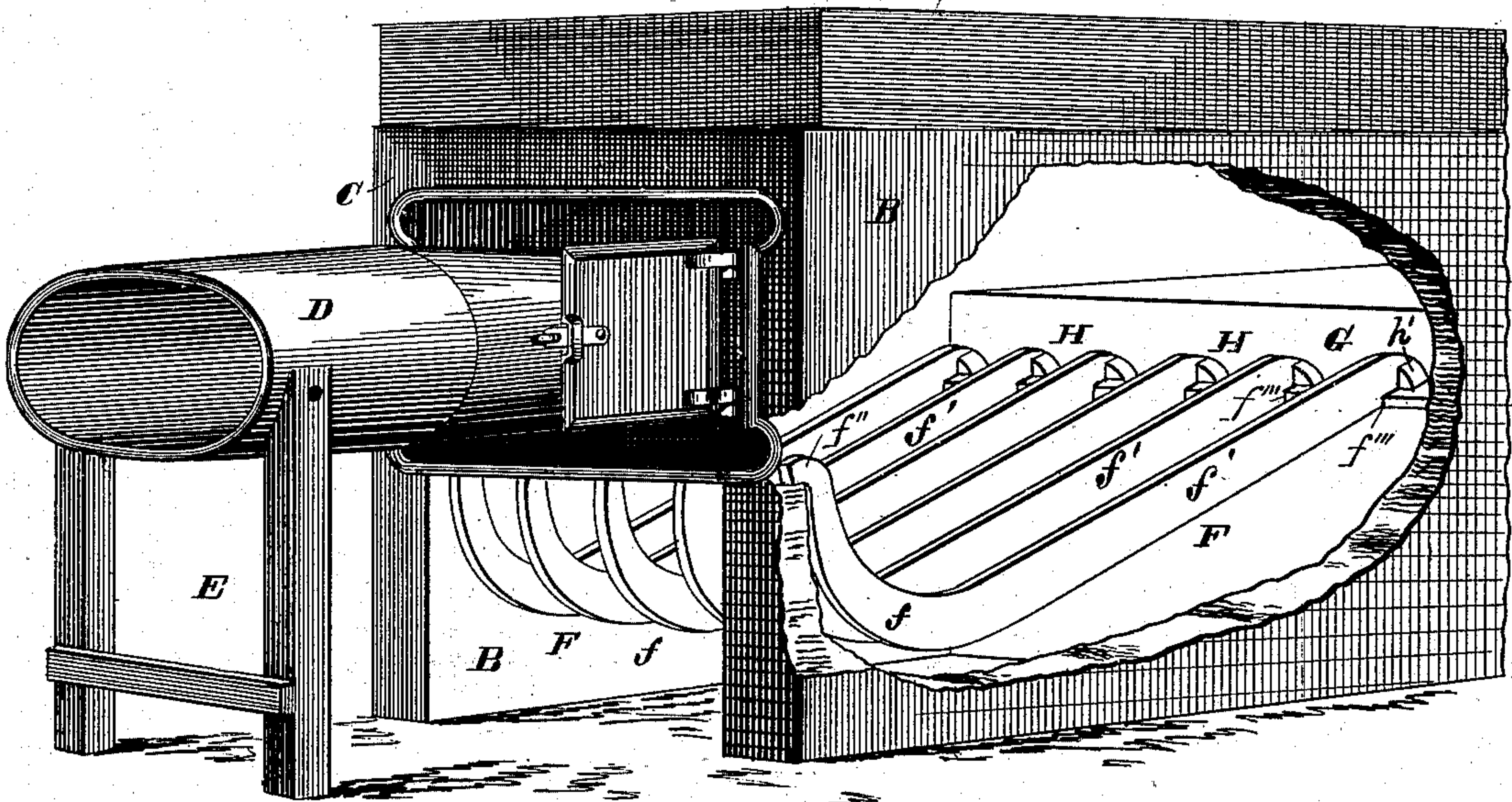
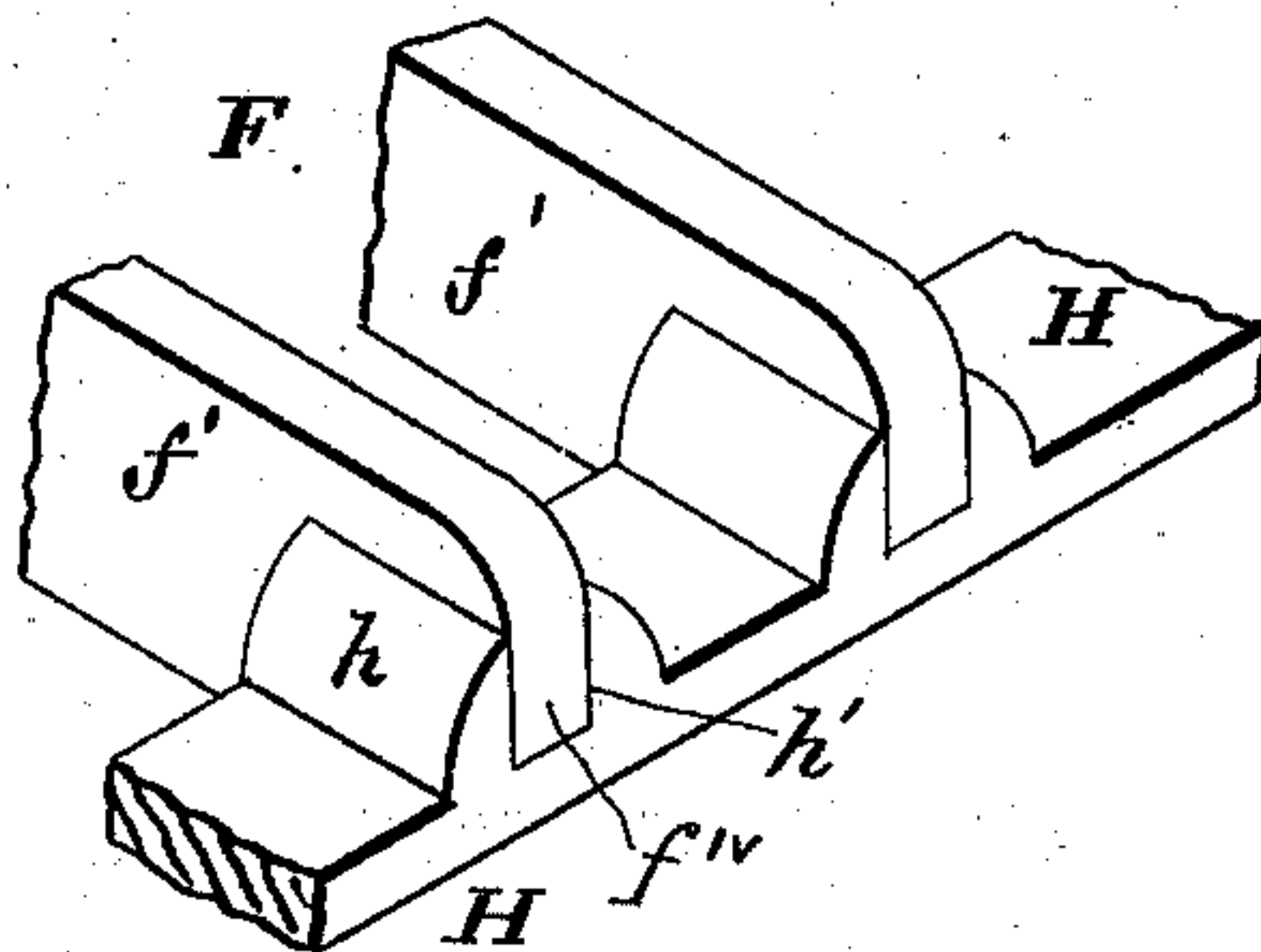


Fig. 2.



Attest:

Charles Pickles
E. M. Hopkins

Inventor:

Isaac A. Hedges
By I. Knight Bro.
Atty.

UNITED STATES PATENT OFFICE.

ISAAC A. HEDGES, OF ST. LOUIS, MISSOURI; DOROTHEA HEDGES ADMINIS-
TRATRIX OF SAID HEDGES, DECEASED, ASSIGNOR TO J. A. FIELD & CO.,
OF SAME PLACE.

BAGASSE-FURNACE.

SPECIFICATION forming part of Letters Patent No. 278,547, dated May 29, 1883.

Application filed May 31, 1882. (No model.)

To all whom it may concern:

Be it known that I, ISAAC A. HEDGES, of the city of St. Louis, in the state of Missouri, have invented certain new and useful Improvements in Bagasse-Furnaces, of which the following is a specification, reference being had to the accompanying drawings, forming part of the same.

My furnace is constructed with grate-bars inclined from the front of the furnace to the bridge-wall, their front ends being nearly vertical and formed with out-turned ends resting on the furnace-front, while their rear ends are recessed to form shoulders which fit against a bearing-bar which has vertical lugs forming sockets to receive the rear ends. The bagasse is fed through a tube which supports the fuel above the fire until dried over the depressed front part of the bars, thus preventing the wet bagasse from smothering the fire. The furnace-front is open at bottom to permit the fuel to be pushed up the inclined bars as required.

In the drawings, Figure 1 is a perspective view with part of the furnace-wall broken out to show the bars within, &c. Fig. 2 is a detail perspective view, showing an end bearing of the grate-bars.

A is an evaporating-pan.

The walls of the furnace are shown at B.

C is the furnace-front.

D is the elongated mouth or feed-tube, whose inner end is made to fit the ordinary mouth of the furnace. The feed tube or mouth may be made of sheet or cast iron or of tile, and its outer end may even be made of wood. Its inner end is secured in the ordinary mouth of the furnace and its outer end supported on legs E. The feed-mouth D is kept full of bagasse to prevent the entrance of air through the mouth, the bagasse being pushed forward in the mouth, from whose inner end it projects and is supported above the fire, while the latter acts upon it to expel any moisture that may be present and to render it freely combustible by the time a further advance of the bagasse in the mouth causes it to drop onto the blazing fuel beneath.

The grate-bars are shown at F. These are formed with out-turned ends f'' at the front,

and are curved downward at the front part, f , and from this part ascend or incline upwardly to the bridge-wall G. The objects for giving this form to the bars are, first, to give vertical space for the fire between the bars and the feed-mouth, while at the same time the air is freely admitted at the front of the bars; second, to allow the easy manipulation of the burning fuel by means of the furnace-poker. The upwardly-inclined part f' of the bars forms a gradually-inclined track, on which the burning fuel ascends as it is pushed back with the poker, so that as the vigor of the flame decreases the fuel approaches the bottom of the evaporating-pan, causing the heat to be more equally distributed over the pan-bottom. The equal distribution of heat and absence of fluctuation are important in the evaporation of sirup, for any fluctuation causes the impurities to settle, while a steady and regular heat causes them to remain in suspension, so that they can be skimmed off as they collect at top. The settling of the impurities causes a scale to form on the bottom of the pan and is liable to result in the scorching of the sirup.

To prevent lateral sway or rocking of the bars upon their bearings, I make the rear bearing-bar, H, with notches or sockets h' , formed between lugs h , into which the rear recessed ends, f'' , of the bars fit tightly, shoulders f''' on the bars pressing against the bar H. The front ends may also be similarly supported, though this is not essential, one end being sufficient to be locked in the bearing-bar.

The operation is as follows: The bagasse is pushed back through the mouth D into the furnace as fast as may be required, and the burning bagasse in the furnace is pushed back along the bars by the ordinary angular-ended poker, or by one forked at the end. The same instrument may be used to push back the bagasse in the mouth D.

I claim as my invention—

1. The improved furnace, which consists of side walls, B, front wall, C, having fuel and grate openings, an evaporating-pan at top, a feeding-tube to the fuel-opening, a bridge-wall, G, and a grate bulging downwardly at front and gradually inclined upward toward the

bridge-wall, the said tube adapted to support the bagasse within the furnace until dried, the bagasse thereby shielding the front end of the pan from the fire, as set forth.

- 5 2. In a bagasse-furnace, the combination of front wall, C, having fuel and grate openings, a feeding-tube to the fuel-opening, side walls, B, bridge-wall G, and a grate consisting of

continuous bars F, projecting downward at front and gradually inclined upwardly toward the rear of the fire-chamber, as set forth.

ISAAC A. HEDGES.

Witnesses:

SAML. KNIGHT,
GEO. H. KNIGHT.