

J. PENNY.
Evaporating Pan.

No. 405.

Patented Sept. 25, 1837.

Fig. 1.

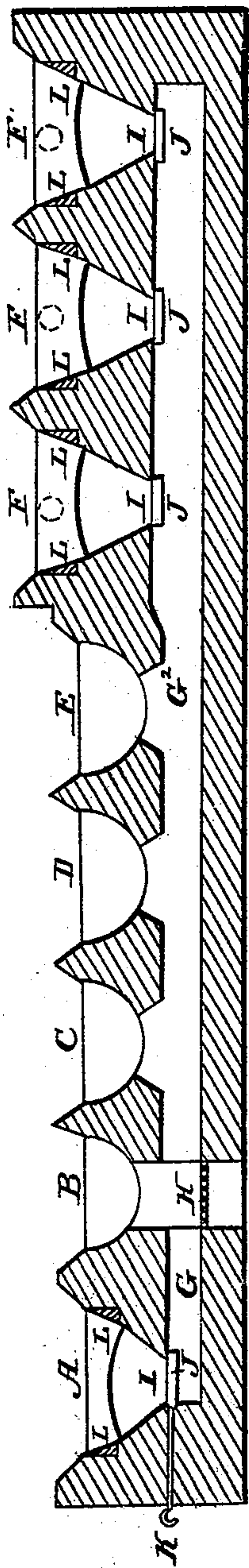


Fig. 3.

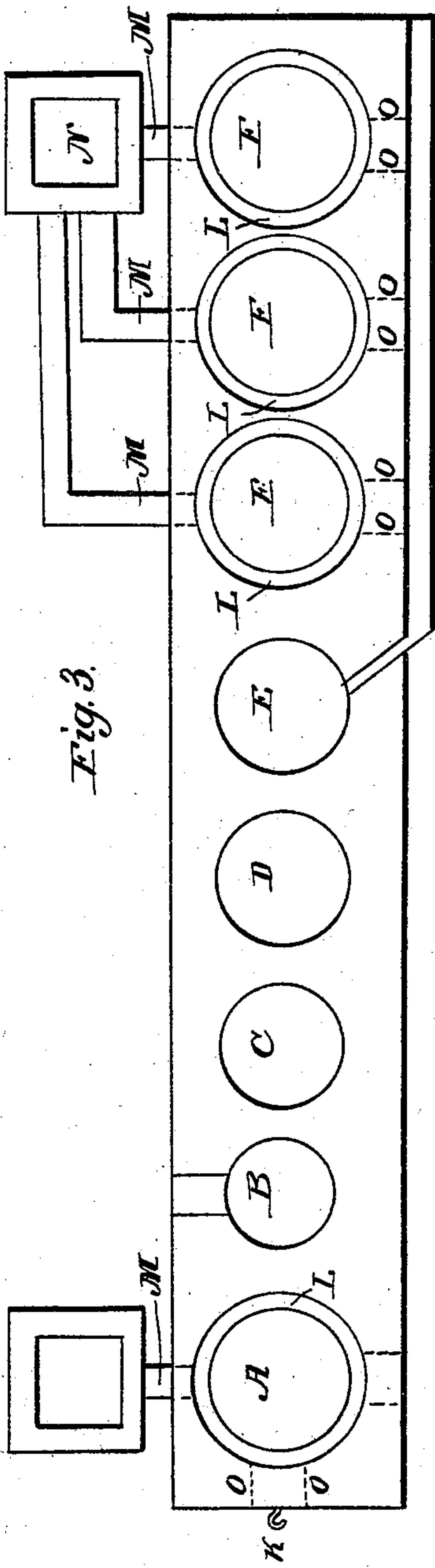
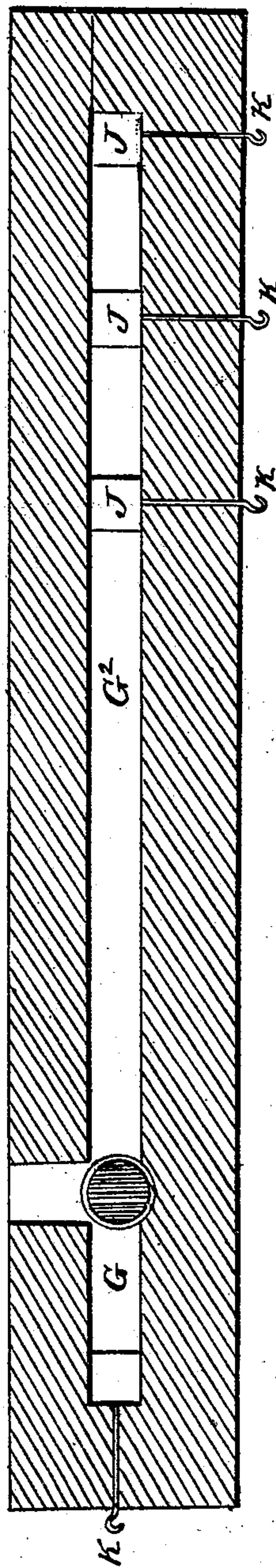


Fig. 2.



UNITED STATES PATENT OFFICE

JOHN PENNY, OF ASCENSION PARISH, LOUISIANA.

IMPROVEMENT IN MANUFACTURING SUGAR.

Specification forming part of Letters Patent No. 405, dated September 25, 1837.

To all whom it may concern:

Be it known that I, JOHN PENNY, of the parish of Ascension, in the State of Louisiana, have invented an improvement in the construction of the apparatus used for and the process of clarifying, evaporating, and granulating in the manufacture of sugar from the cane-juice or any other material, and which improvement is applicable also in the process of refining sugar; and I do declare that the following is a full and exact description thereof, reference being had to the drawings which accompany and make a part of this specification.

The object in view is to obtain a complete command of the necessary degrees of temperature, both in heating and cooling the pans, kettles, boilers, or clarifiers employed, which is effected by means of dampers and air-flues, the former shutting off the heat at pleasure, and the latter admitting a current of cold air to circulate round the vessels when the heat has been shut off and it becomes desirable to produce rapid cooling.

To exemplify the manner in which my improvements may be carried into effect, I have in the accompanying drawings represented the arrangements as made by me in my experimental apparatus on Willow Island Sugar Plantation, Louisiana.

Figure 1 is a vertical section along the range of boilers, &c., which is shown as containing one granulating-pan, four kettles, and three clarifiers. A is the granulating-pan; B, the battery; C, the sirup; D, the flambeau, and E the grand. F F F are three clarifiers. These are all to be set in masonry in the usual way. H is the furnace-grate, the heat from this furnace being conducted under all the vessels by means of proper flues. The flue G leads from the furnace under the battery directly into the space under the granulating-pan A, while the main flue extends, G², under the kettles and the clarifiers, as seen in the drawings. I I I I are openings from the flues through which the heat passes up to the granulating-pan and to the clarifiers, and to these openings valves or dampers are adapted, by which this communication of heat is completely intercepted.

Fig. 2 is a horizontal section through the range at or near the openings to which the dampers are applied. J J J J are the dampers, which may be made of iron or other metal, but which I prefer to make of fire-

brick or soapstone. There are of course proper recesses in the masonry to receive them when the passages are to be opened, and rods K K are attached to them, serving as handles with which to move them in or out.

Fig. 3 is a top view of the whole range, the same letters being used in this to designate the same parts which are exhibited in the other figures. The parts colored blue and marked L L are the spaces surrounding the granulating-pan and the clarifiers, and also the air-flues leading into and from them. These of course would not be seen in a top view without supposing a horizontal section to be made in the part of the range containing these vessels at such a level as to cut the flues. M M are flues leading into the chimneys N N, serving as a common outlet either of heated or of cold air, and the dotted lines O O are to mark the existence of flues for admitting cold air to pass in and surround the granulating-pan and clarifiers after the dampers J J J have been closed, these flues having close-fitting doors, stoppers, or registers, by which they may be closed perfectly, or opened in any degree that may be necessary to effect the cooling process. When opened, there will be a rapid rush of cold air consequent upon the previous heating of the chimneys, so as, if desired, to cool the vessels almost instantaneously. There may be such number of these air-flues as may be preferred, and they may be varied in their arrangement without altering the principle upon which they operate.

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

The application of the heat from one furnace to the evaporating-kettles, the granulating-pan, and the clarifiers in the manner above set forth, in combination with the means of managing that heat by the aid of dampers, and the introduction of cold air into the spaces surrounding the clarifiers and crystallizing-pan, the whole operating upon the principle and applied to the purpose herein fully described, and this I claim, whether the intended effects be attained exactly in the way pointed out or in any other which is substantially the same.

JNO. PENNY.

Witnesses:

CAMILLE L. LANDRY,
JOSEPH JULES LANDRY.