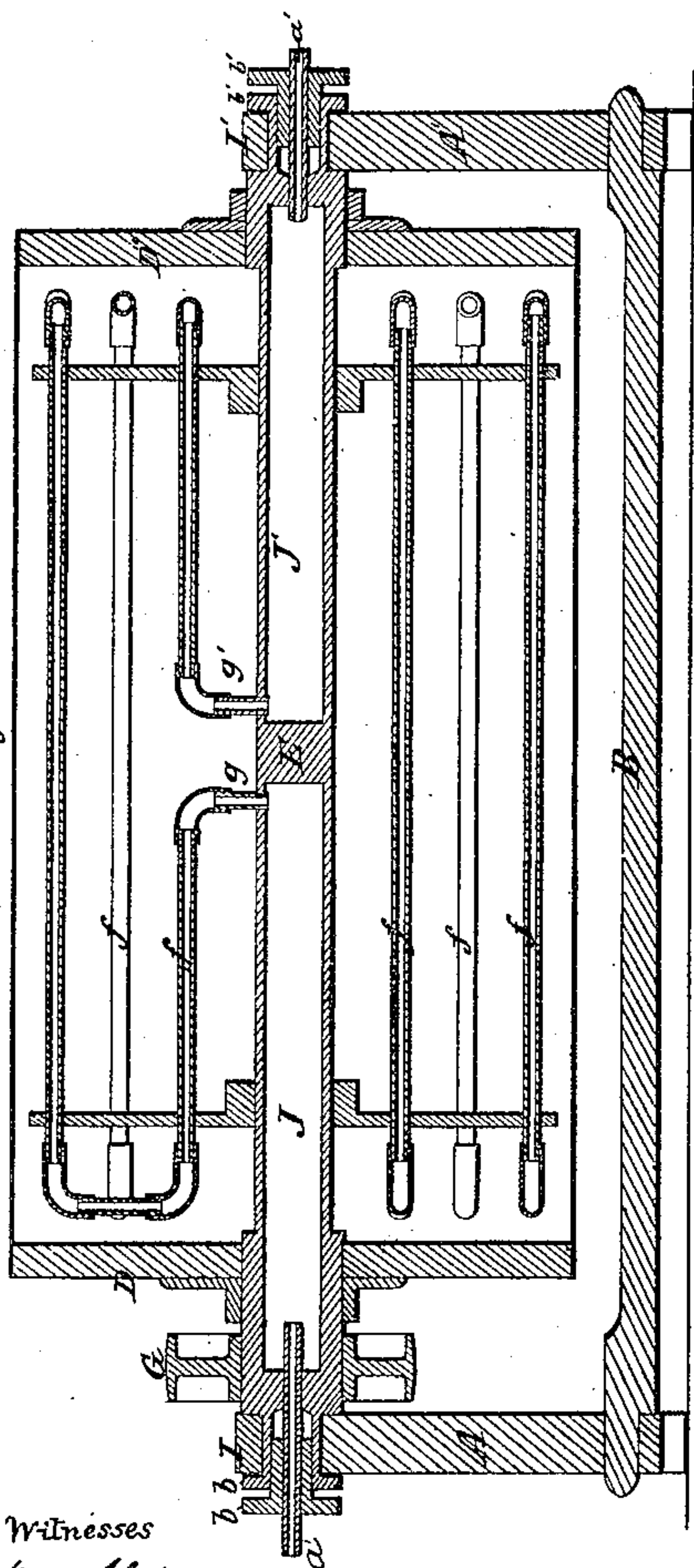


S. KIMBALL & W. SAWYER.
 DRYING SHOE PEGS AND GRAIN.

No. 23,689.

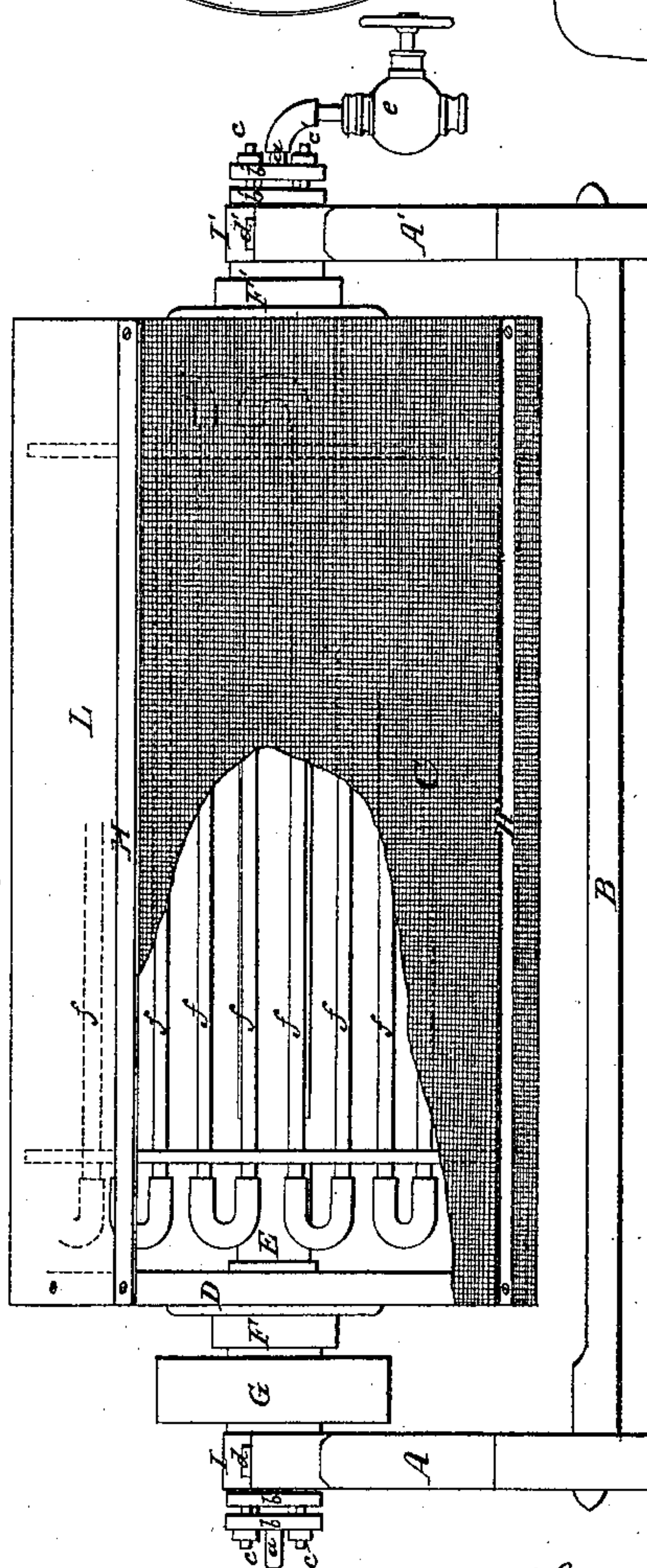
Patented Apr 19, 1859.

Fig. 2.



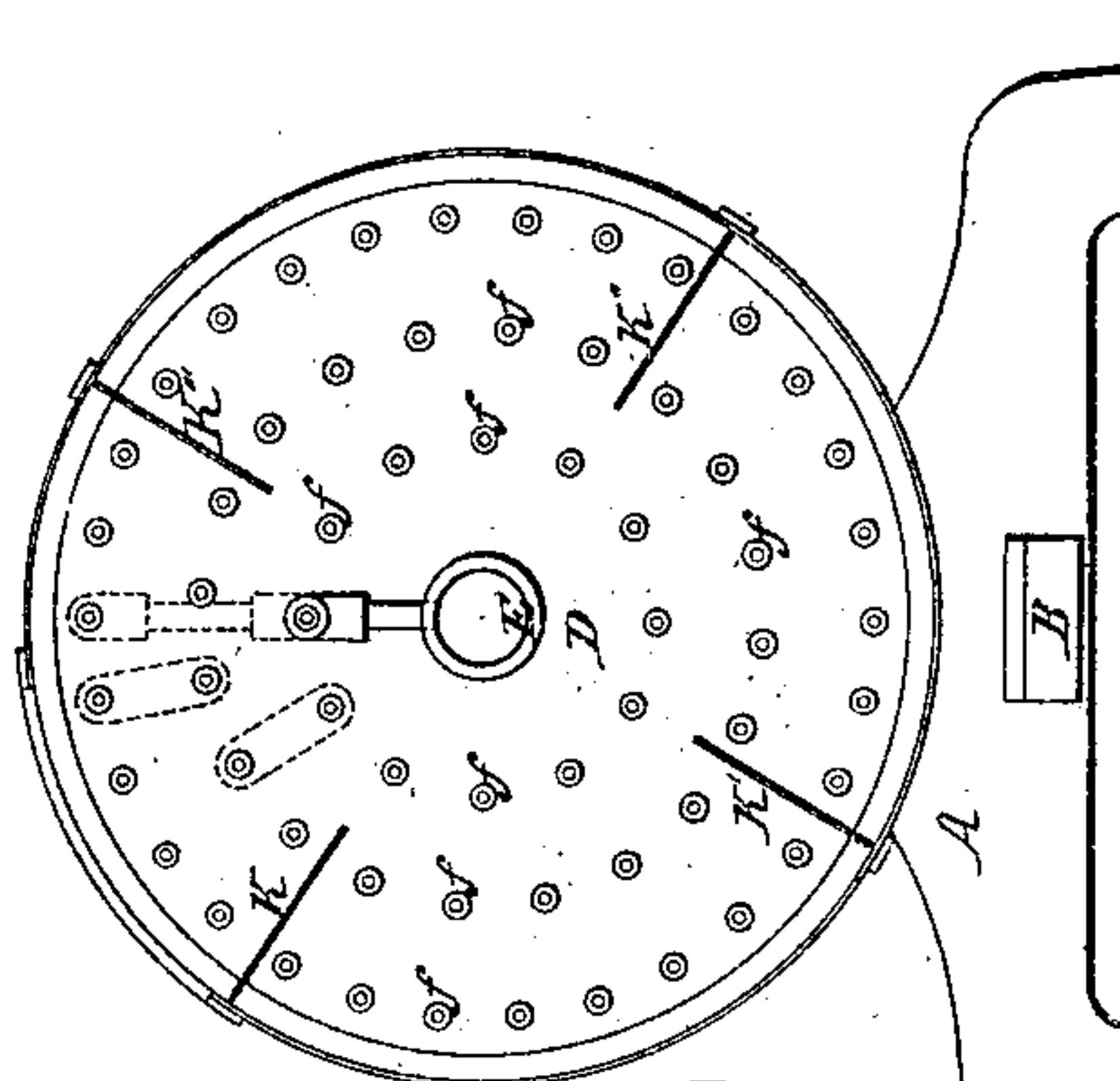
Witnesses
 Mary A. Kimball
 Daniel Houston

Fig. 1.



Inventors
 Samuel Kimball.
 William Sawyer.

Fig. 3.



UNITED STATES PATENT OFFICE.

SAMUEL KIMBALL AND WILLIAM SAWYER, OF BOXFORD, MASSACHUSETTS.

APPARATUS FOR DRYING SHOE-PEGS AND GRAIN.

Specification of Letters Patent No. 23,689, dated April 19, 1859.

To all whom it may concern:

Be it known that we, SAMUEL KIMBALL and WILLIAM SAWYER, both of Boxford, in the county of Essex and State of Massachusetts, have invented a new and improved apparatus for drying and polishing shoe pegs, grain, and other materials requiring to undergo the process of drying, which we denominate "Kimball and Sawyer's improved shoe-peg and grain drier;" and we hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1. is a side view, with a portion of the wire gauze or perforated metal covering of the main cylinders removed, in order to show the internal arrangement of the steam pipes. Fig. 2. is a longitudinal sectional view exhibiting more fully the arrangement of the steam pipes, and the axle with its hollow chambers for the reception and emission of the steam. Fig. 3. is a view of one end of the main cylinder, showing also a transverse section of the steam pipes, floats, and axle.

The same letters in the various figures represent corresponding parts of the machine.

A, A', are the upright standards or supports of the hollow axle E, upon which the main cylinder C revolves.

F, F', are flanges which confine the ends or heads D, D', of the main cylinder C, firmly upon the axle E, thus securing its rotation.

G, is a pulley upon the axle E, by which the motive power is applied.

I, I', are coverings of the journals of axle E.

J, is a hollow space or chamber in axle E, for the reception and transmission of steam through the connection pipe *g* into the steam pipes *f, f, f, &c.*, through which it passes and enters, through the connection pipe *g'* into the space or chamber J' in the axle E.

a is the pipe through which the steam passes from the boilers into the chamber J. *a'* is another pipe through which the steam passes from the chamber J', out of the machine. At the end of pipe *a'*, is a stop cock *e*, which serves to retard or accelerate the passage of the steam through the pipes *f, f, f, &c.* as occasion may require.

b, b, and *b', b'*, are packing boxes for the

reception of india rubber, or other suitable material for steam packing.

c, c and *c', c'*, are the nuts and screws by which the packing boxes are loosened or tightened.

d, d', are the nuts and screws by which the coverings I, I', of the journals are confined.

K, K', K'', K''', are floats which lift the pegs, grain or other materials to be dried, and prevent them from clogging the machine as it rotates, and causing them to circulate freely among the pipes *f, f, f, &c.*, thereby securing an equal application of heat to all portions of the mass to be dried.

H, H', are braces or shafts which serve to strengthen the main cylinder C.

L, is the covering of an aperture in the main cylinder C, extending nearly or quite its whole length, for receiving and discharging the materials to be dried. Covering L, may be secured with screws or hinges as convenience may require. The main cylinder C, with the exception of the covering L, which may be of wood or thin metal, should be covered with wire gauze or perforated sheet metal, the interstices of which, should be sufficient to allow the free passage of the steam and dust generated and none from the pegs or grain while undergoing the operation of drying.

The operation of the machine is as follows, viz: the steam used for drying, which may be generated in any kind of a boiler, is introduced into the machine through the pipe *a* which conveys it into chamber J, in the axle E, whence it passes through the connection pipe *g*, into the pipes *f, f, f, &c.*, through the entire length of which it traverses, and thence passes through the connection pipe *g'* into the chamber J', and thence out of the machine through the emission pipe *a'*, being retarded or hastened in its passage by the stop cock *e*. When the pipes *f, f, f, &c.*, are heated to a proper temperature, the pegs, grain, or other material to be dried, are introduced through the aperture covered by L, which being securely closed, the machine is then put in motion, and should be made to rotate slowly, but with sufficient rapidity to agitate thoroughly the material to be dried, and to cause it to move freely among the pipes *f, f, f, &c.*, and to throw out the steam and dust generated by the operation, through the interstices of the covering of the cylinder.

der C, the floats K, K', K'', K''', aiding in the equal diffusion of the material to be dried among the pipes f, f, f, &c., and the application of heat thereto. As the pipes
5 f, f, f, &c., will tend to intercept and distribute the pegs, grain, or other material to be dried, among them, securing thereby an equal application of heat, the floats K, K', K'', K''', may or may not be used in the
10 operation of the machine, as experience may dictate. The effect of this operation is not only to thoroughly dry the materials operated upon, but by their attrition with the pipes f, f, f, &c., and the gauze—or perforated metallic—surface of the cylinder C, to
15 remove the dust and excrescences from and to thoroughly cleanse and polish the surfaces of the pegs, kernels of grain, and other materials which are made to undergo the
20 action of the machine.

Having fully described our improved dry-

ing apparatus, what we claim and desire to secure by Letters Patent, is:

1. The arrangement of the steam pipes f, f, f, &c., with the main cylinder C, covered with wire gauze,—or perforated sheet metal,—in whatever manner the steam may be introduced into said pipes, in combination with the floats K, K', K'', K''', constructed and operating in the manner above set forth. 25 30

2. Also, the arrangement of the steam pipes f, f, f, &c., with the main cylinder C, covered with wire gauze, or perforated sheet metal, without the floats K, K', K'', K''', constructed and operating substantially in the manner above set forth. 35

SAMUEL KIMBALL.
WILLIAM SAWYER.

Witnesses:

MARY A. KIMBALL,
DAVID HOUSTON.