

W. H. OBITTS.
Cheese-Vats.

No. 149,511.

Patented April 7, 1874.

fig. 1.

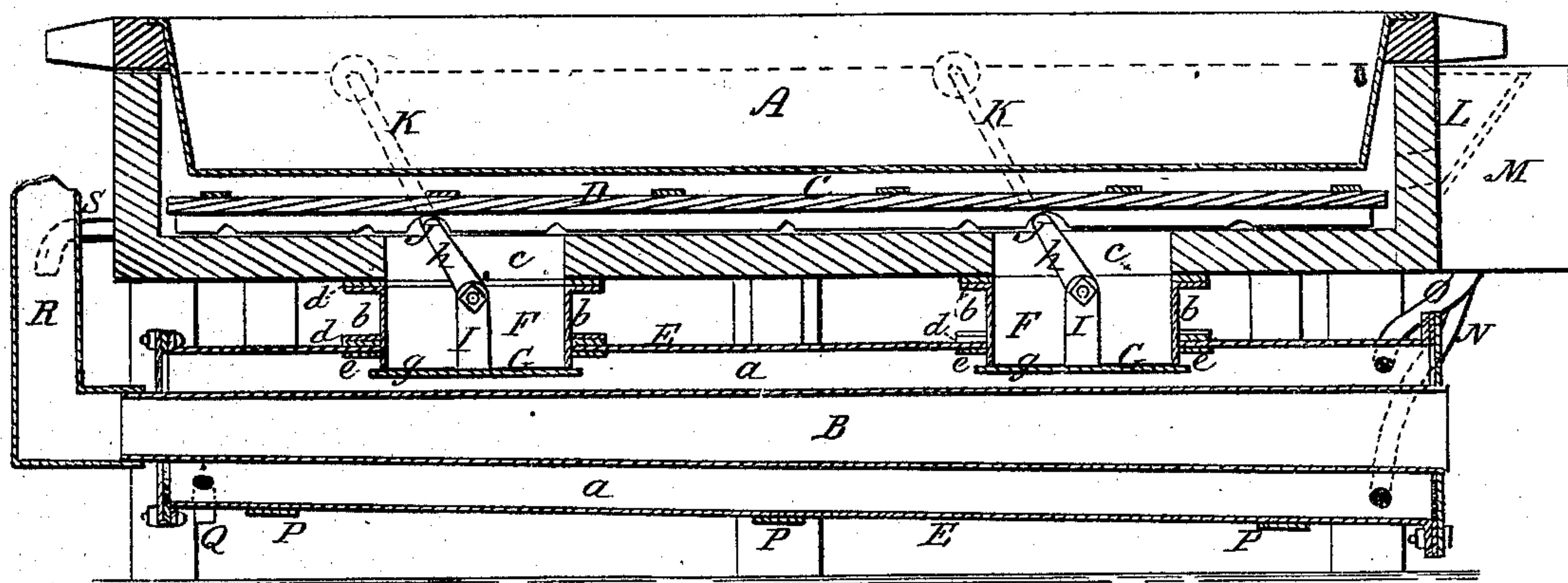


fig. 2.

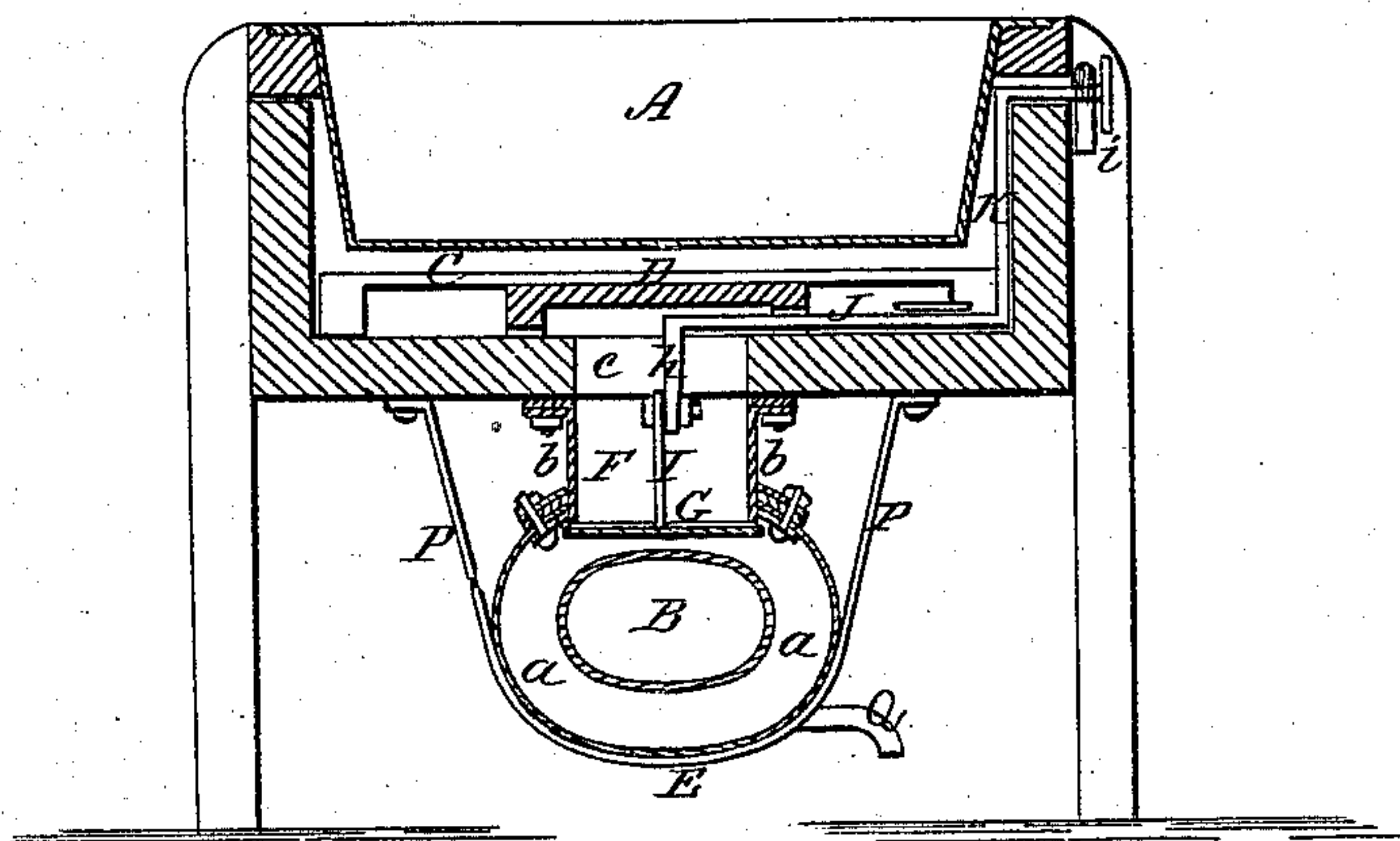


fig. 3.

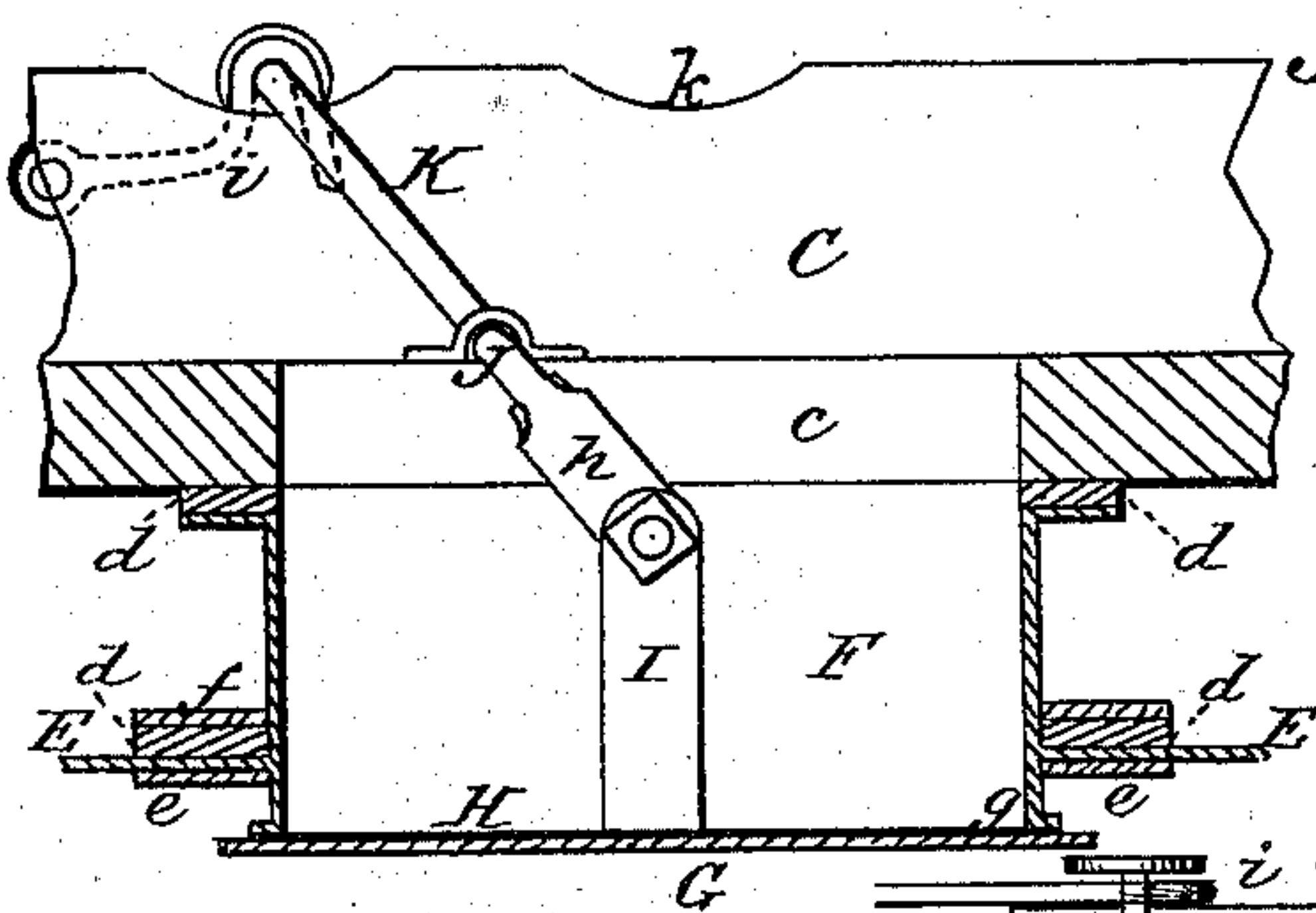
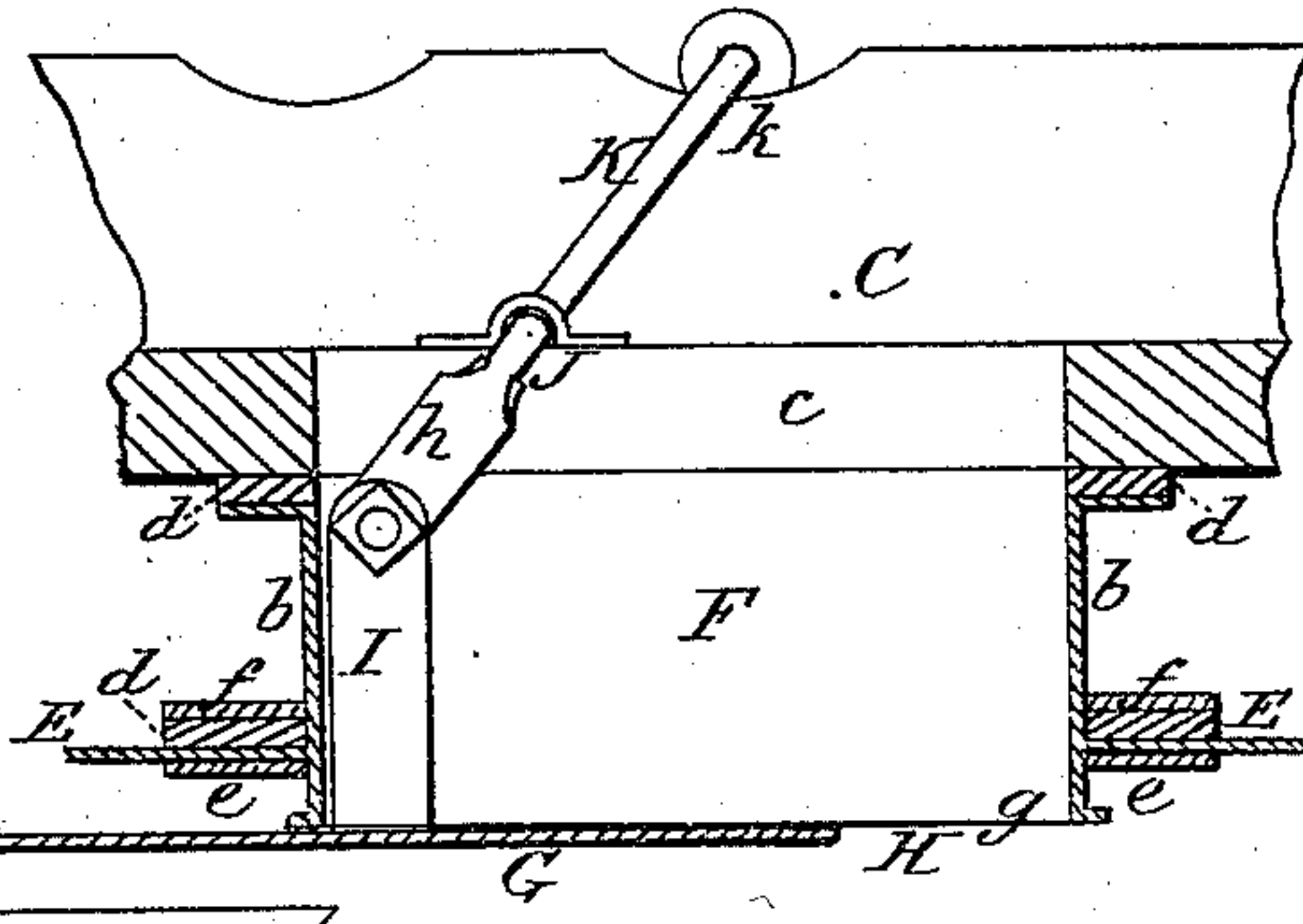


fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM H. OBITTS, OF ELYRIA, OHIO.

IMPROVEMENT IN CHEESE-VATS.

Specification forming part of Letters Patent No. **149,511**, dated April 7, 1874; application filed January 8, 1874.

To all whom it may concern:

Be it known that I, WILLIAM H. OBITTS, of Elyria, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Cheese-Vats, of which the following is a specification:

The invention claimed under this patent is an improvement upon a patent granted to me April 30, 1872, for a cheese-vat. In that patent the water-heater is joined to the water-chamber by hollow screw-necks provided with stop-cocks, the operating-stems of which pass through the connecting-necks, and are thereby liable to leak at the stop-cock joints, and also at the neck-joints of the bottom of the water-chamber. The flow of the water through the communicating necks was also not sufficient for the purpose designed. It is one of the objects of my invention to overcome these objections. In cheese-vats it is of vital importance to control the heat, and a particular feature of my invention is to obtain this control by shutting off or letting onto the curd-vessel any variable amount of heat by means of pendent valves opening and closing, by a compound vertical and horizontal movement, the communications between the water-chamber and the heater, the said valves being operated by interior levers, so as to avoid any outside joints to these parts, and the compound movement of the valves leaving them perfectly free from all binding action, such as would result if fitted to move in guideways; also, in combining, with the supply-tank and the heater, a supply and an exhaust pipe, the latter being, in connection with the top of the heating-jacket, for the purpose of allowing the free escape of the hot water and steam from the heater into the supply-tank when the valves are closed, while the supply-pipe avoids all danger of the heater becoming dry by the evaporation of the water, as the supply and outlet of the steam take place at the same time, and from and into the same reservoir.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of a cheese-vat embracing my invention; Fig. 2, a transverse section thereof; Fig. 3, enlarged sectional views, showing the valve both open and closed; and Fig. 4, a top view of the valve-lever and the valve-compartment.

The curd-vessel A is arranged within and the heater B beneath the water-chamber C, as shown and described in my said patent, and the water-chamber is provided with a distributor, D, to effect the proper circulation of the hot water beneath the curd-vat from the jacket-space *a* of the heater, which extends the length of the vat, and consists of an inner tube, B, for the fire, and an outer jacket, E, to form an annular water-space, *a*, which has a direct communication with the water-chamber through compartments F, which join the water-space *a* and the water-chamber C by openings *c* in the bottom of said chamber. The junction of these compartments F with the under side of the water-chamber and the heater is made by flanged plates *b*, with intervening rubber or other packing, *d*, to render the joints water-tight, the connection with the heater being made by a plate, *e*, placed on the inner side of the jacket E, and the packing *d* on the outer side, with compartment-flange *f* screwed firmly upon said packing. The lower edge *g* of the compartment projects below the packing-plate *e* and into the jacket water-space *a*, in which space a valve-plate, G, is arranged to be opened and closed against the compartment terminus *g*, the area of the valve-plate G being greater than the opening H of the joining compartment. The valve G is suspended directly beneath the opening H by means of a vertical central stem, I, joined to a double crank-lever secured by its horizontal branch J to the bottom of the water-chamber C in a manner to bring its inner crank *h* within the compartment F to connect with the valve-stem, and its outer crank-handle K at the side of the chamber C, and just above and outside of it, whereby to open and close the valve. The crank branches *h* K of the lever J are so arranged with respect to the valve G and the top of the chamber C that the top will act as a stop, *k*, to limit the opening of the valve, and when the latter is closed it is maintained in such position by a catch, *i*, so as to firmly hold the valve up against the terminus *g* and cut off the flow of the hot water from the jacket into the water-chamber. The suspension of the valve from a crank-lever causes the valve to open and close with a vertical and horizontal movement as the crank-arms

are moved back and forth, the vertical movement being to free the valve by the act of opening it, and the horizontal movement being to open it by sliding it endwise beneath the compartment, so as to uncover the communication with the heater and let the water flow freely into the water-chamber. By this arrangement the valve is moved freely without guides and within the jacket-space *a*, while the operating-lever lies within the bottom and side of the water-chamber out of the way, and requiring no openings outside of either of the parts for regulating the valve. The construction of these parts is also convenient and easily made and adjusted for operation, and there is nothing in them in the least liable to get out of working condition. The valve can also be opened more or less, as may be required for the proper cooking of the curd. The water is supplied to the chamber C by the trough L, and the opening of the valves supplies the heater. When, however, the valves are closed, the heater is supplied by a reservoir, M, connected by a pipe, N, with the bottom of the jacket, so as to prevent the latter from becoming dry at any time. To let off the steam and hot water from the jacketed water-space *a*, I connect it by a pipe, O, from the top to the supply-reservoir M, into which the steam escapes as fast as it is formed in the heater, and the reservoir in this way forms both the water-supply and the escape for the steam when the heater is closed with the vat. The jacketed heater is constructed with end packing-

collars in any suitable manner, and it is secured by straps P to the under side of the vat. It is removable by removing these straps and the bolts which confine the communicating compartments to the vat. It has a waste-pipe, Q, for letting out the water when not in use, and a stove-pipe, R, for conducting off the smoke. The water from the vat-chamber is let out by a pipe, S, and the vat may have any number of valves, according to its length, and to insure the proper supply of heat beneath the curd-vat.

I claim—

1. In a cheese-vat, the combination of the valve or valves G, having a compound vertical and horizontal movement, with the open compartment F, which unites the water-heating space *a* with the water-chamber C, substantially as and for the purpose described.

2. The valve G and open compartment F, in combination with the stem I and crank-lever J K, by which the valve is suspended and operated, substantially as described.

3. The valves G, arranged to be operated in the water-space *a* of the heater of a cheese-vat, as described, whereby they are opened and closed between the jacket E and the longitudinal heater B, as shown and set forth.

4. The combination of the pipe O with the reservoir M, the jacket E, and the supply-pipe N, as and for the purpose described.

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