A. M. Shiller,

Evaporating Pan.

No. 94249. Patented Aug 31. 1869.

Fig: 1.

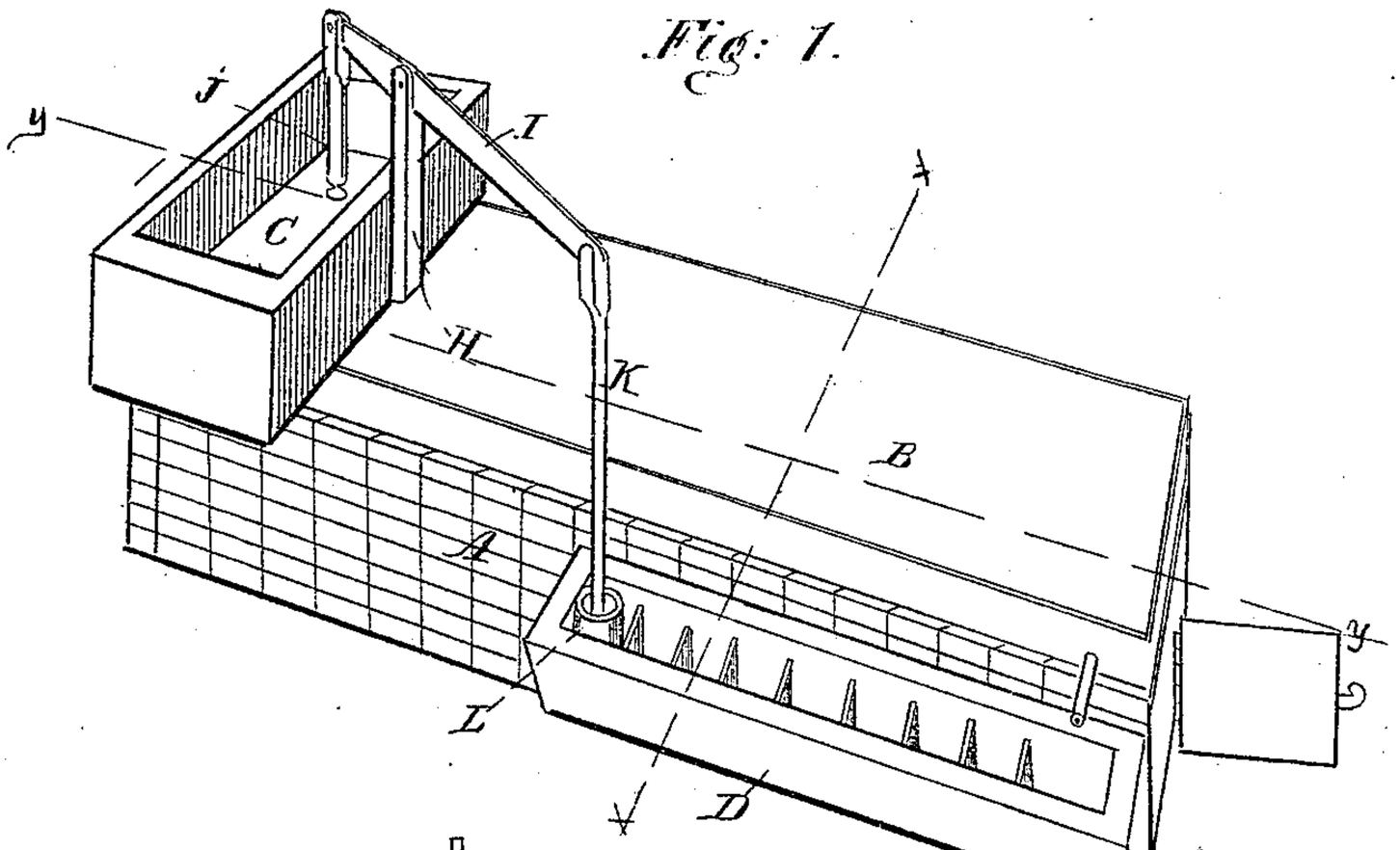


Fig: 2

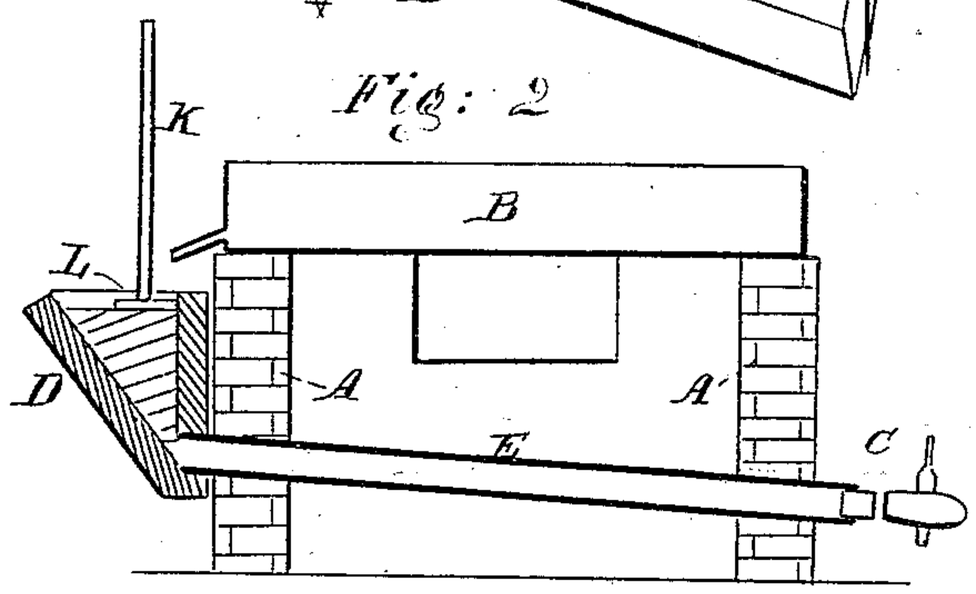
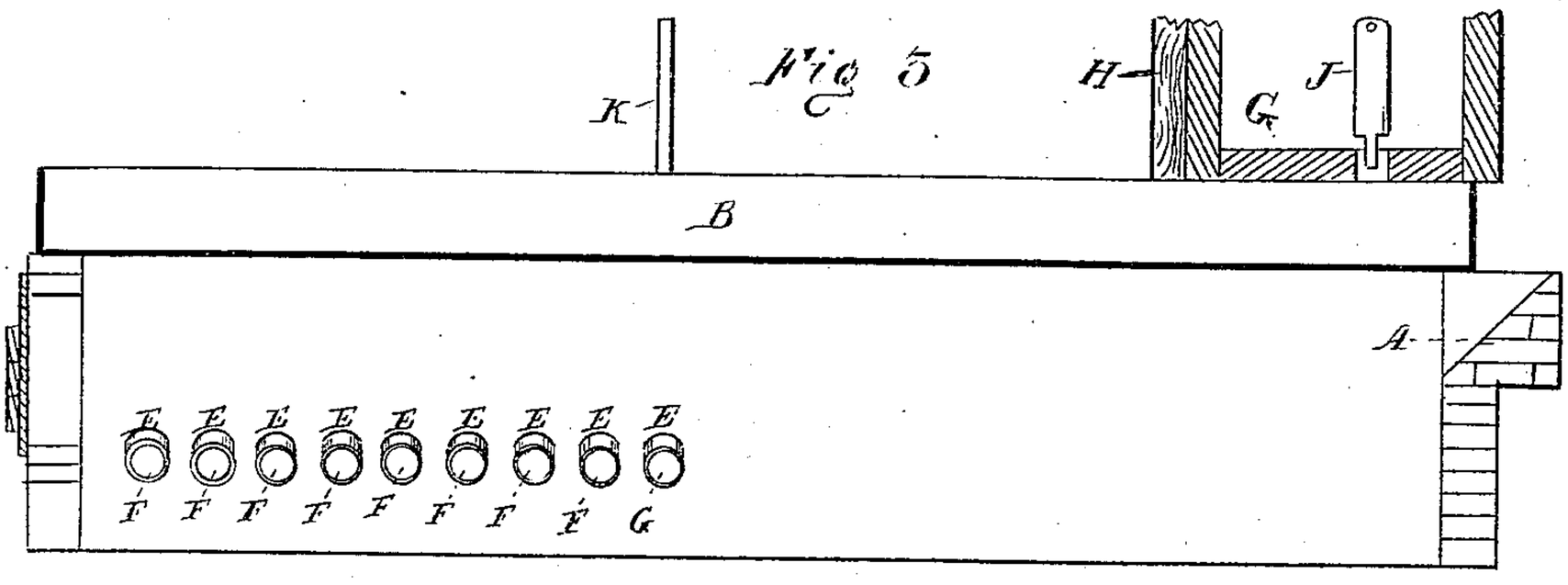


Fig 3



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ADAM W. SHIDLER, OF SOUTH BEND, INDIANA.

Letters Patent No. 94,249; *dated August* 31, 1869.

IMPROVED EVAPORATOR.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that I, ADAM W. SHIDLER, of South Bend, in the county of St. Joseph, and State of Indiana, have invented a new and useful Improvement in Evaporators; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is a perspective view of my evaporator and arch;

Figure 2 is a cross-section of the same through the line *x–x*, fig. 1; and

Figure 3 is a longitudinal section through the line *y–y*, fig. 1.

Like letters indicate like parts in each figure.

The nature of this invention relates to an improvement in the construction of pans and their attachments, for evaporating and reducing by heat saccharine and other fluids, and consists in an arrangement for automatically delivering the fluid taken from the receiving-tank into the evaporating-pan, and from thence into a cellular trough from which drip-tubes, which pass through the furnace to form a fire-grate, utilizing the greatest possible amount of heat from the fuel consumed; also, in providing the last drip-pipe with a cock, for increasing or diminishing the discharge of the fluid, as circumstances may require.

A, in the drawings, represents an arch, which may be constructed of brick or metal.

Upon this arch I place a sheet-metal evaporating-pan, B, surmounted at the rear end by a receiving-tank, C.

D is a trough, placed on the side of the arch, at its front end.

This trough is divided into a number of cells, by transverse partitions *d*, which do not extend quite to its bottom, but there leave all the cells in communication with each other.

When the fluid in the pan rises above a given point, it flows through a pipe, *b*, properly placed in the front end of the pan, into the trough D.

From each of the cells an inclined pipe, E, extends through and across the fire-chamber of the arch, terminating outside of its opposite wall, and has its end stopped with a loose plug or spile, F, from which the fluid is allowed to drip as evaporation proceeds.

The rearmost pipe is provided with a cock or faucet, G, for increasing or diminishing the flow of the fluid through the pan, as circumstances may require.

Secured to the front of the tank C is a standard, H, pivoted to which is a lever, I, from the rear end of which is suspended the plug J, for covering the hole *c* in the bottom of the tank C.

To the other end of said lever is suspended a rod, K, terminating in a float, L, in the rearmost cell of the trough D.

The office of the lever and float is to maintain a constant supply and circulation of the fluid which it is designed to evaporate, in the pan and trough.

When the depth of the fluid in the trough is lowered a little, the float drops with it, and raises the plug, which permits the liquid in the tank to flow into the pan, whence it passes into the trough, and from thence into the pipes, from whose ends it drips into proper receptacles, when sufficiently reduced.

A similar trough and its attachments may be arranged on the opposite side of the arch, if desired, and thus utilize the greatest amount of heat from the fuel consumed.

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

1. The cellular trough D, tubes E, provided with the plugs F and cock G, substantially as described, and operating for the purpose specified.

2. In combination with the above, the tank C, pan B, and arch A, when constructed, arranged, and operating substantially as and for the purposes herein set forth.

ADAM W. SHIDLER.

Witnesses:
J. HENDERSON,
JOHN RITTLE.