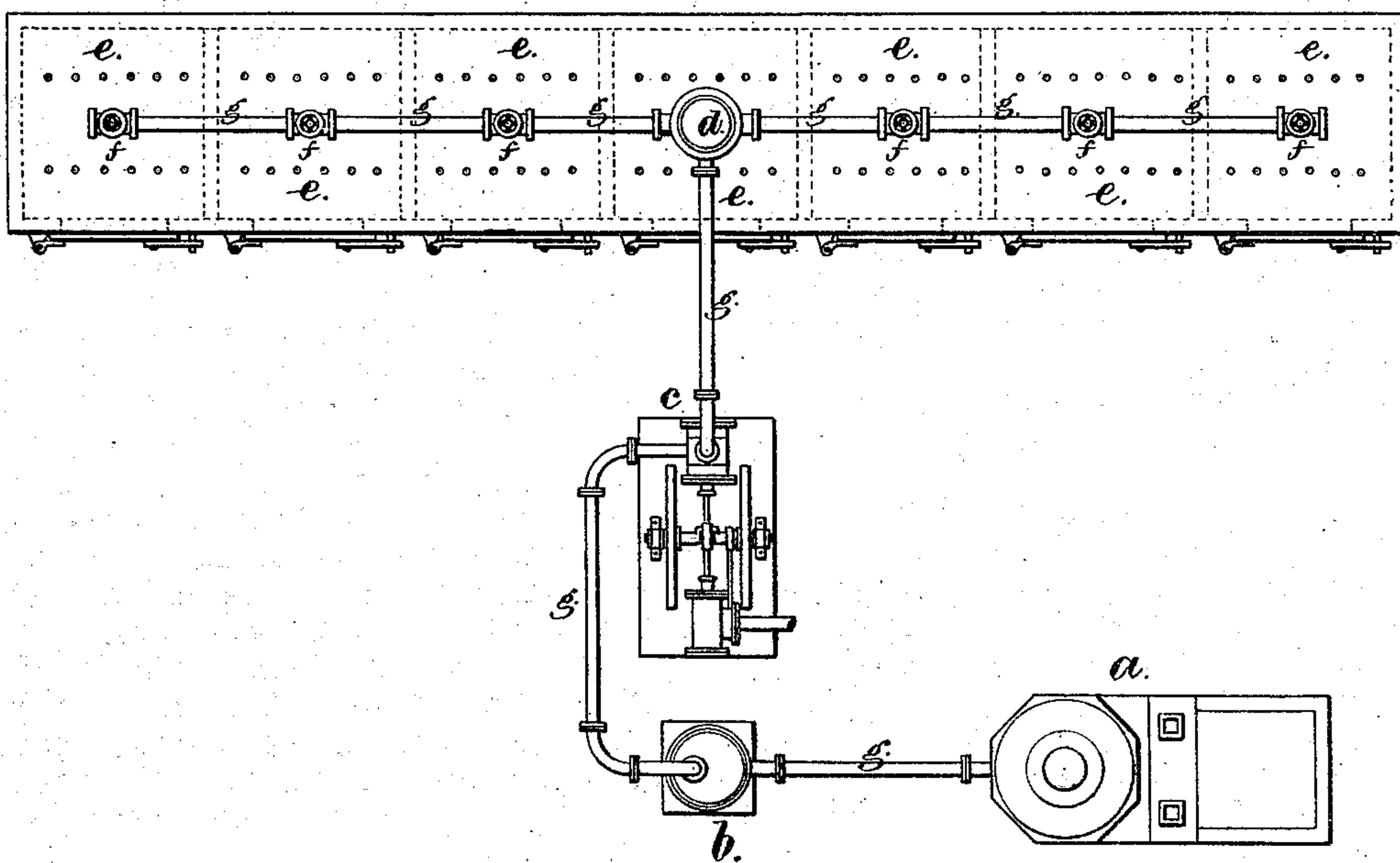


F. PREUSSER.

Apparatus for Hardening Artificial Stone.

No. 156,592.

Patented Nov. 3, 1874.



Inventor.

Witnesses,

Chas H. Smith  
Harold Serrell

Felix Preusser.

per L. M. Lowell

att'y.

# UNITED STATES PATENT OFFICE.

FELIX PREUSSER, OF LEIPSIC, SAXONY.

IMPROVEMENT IN APPARATUS FOR HARDENING ARTIFICIAL STONE.

Specification forming part of Letters Patent No. **156,592**, dated November 3, 1874; application filed August 8, 1874.

*To all whom it may concern:*

Be it known that I, FELIX PREUSSER, of the city of Leipsic, in the Kingdom of Saxony, have invented an Improvement in the Manufacture of Artificial Stone, of which the following is a specification:

This invention is made for facilitating the reconversion of hydrate of lime into carbonate of lime. The carbonic acid evolved in the burning of limestone is cooled and purified, and forced by a pump into a storage-tank, and then supplied into chambers in which articles are placed that are made of a mixture of hydrate of lime and sand, so as to facilitate the absorption of carbonic acid, and the reconversion of the hydrate of lime into limestone.

The limestone is burned in lime-kilns according to the best system. The volatile carbonic acid thereby produced is drawn off by means of pumps erected at the egress of the kiln, conducted through the so-called "laveurs" or washers, consisting of gravel filters and water, thence through pipes and the accumulator, tending to cool and purify the carbonic acid, and, lastly, to the chambers of impregnation.

The manipulation in the chamber of impregnation is as follows: The chamber into which the material is inserted is, when completely filled, closed by a door as hermetically as possible, whereupon the carbonic acid is introduced near the center of the ceiling by means of conduct of pipes with stop-cocks or faucets. As the carbonic acid is introduced the same will, by its specific weight, settle to the bottom, thus gradually filling the space from below upward, the atmospheric air escaping through numerous openings in the ceiling, the same being covered with layers of sand. Each of these openings is supplied with an ignited gas-flame, and as soon as the space is entirely filled with carbonic gas, and the same begins to escape through the said openings, such carbonic gas, by means of its well-known quality, will extinguish the flames, whereby is proved that the space is entirely filled with carbonic acid, and the openings are then tightly closed by layers of sand or

otherwise. The chamber is now left closed for twelve hours, whereupon the manipulation is repeated at intervals during about five days. At the end of this time the supply of carbonic acid is entirely cut off, the openings in the ceiling are uncovered, as well as the door of insertion opened, all being suffered to stand open until the carbonic acid present has entirely escaped.

In the drawing a plan is represented of the arrangement which I propose in order to carry out my invention.

*a* is the lime-kiln. The carbonic acid produced in this kiln is drawn off by the pump *c*. On the way to the pump *c* the carbonic acid passes the washing device *b*, in which the acid is cooled, purified, and moistened or dampened. The carbonic acid is conveyed by the pump *c* to the accumulator or reservoir *d*, from which reservoir the acid is distributed into the impregnation-chambers *e*. *g* are the pipes conducting the carbonic acid from the kiln *a* through the washing device *b*, pump *c*, reservoir *d* into the impregnation-chambers *e*. *f* are the valves to regulate the entrance of the carbonic acid into the respective chambers *e*.

I do not claim, broadly, a pump and cooler between a gas-generator and a gas-holder, as the same has been employed in the manufacture of illuminating-gas.

I am aware that carbonic-acid gas has been used in the manufacture of artificial stone, and that the gases escaping from a fire have been employed for this purpose.

I claim as my invention—

In combination with a kiln for burning limestone the purifier and cooler *b*, condensing-tank *c*, provided with a force-pump, and the impregnating-chambers *e e*, the whole being connected by the tubes *g g*, all as and for the purposes set forth.

This specification signed by me this 19th day of May, 1874.

FELIX PREUSSER.

Witnesses:

KARL KNOOP,  
ED. JUSTUS THODE.