No. 622,626. Patented Apr. 4, 1899.

O. HOWL.

BRICK DRIER.

(Application filed Nov. 1, 1898.)

(No Model.)

Fig. 2

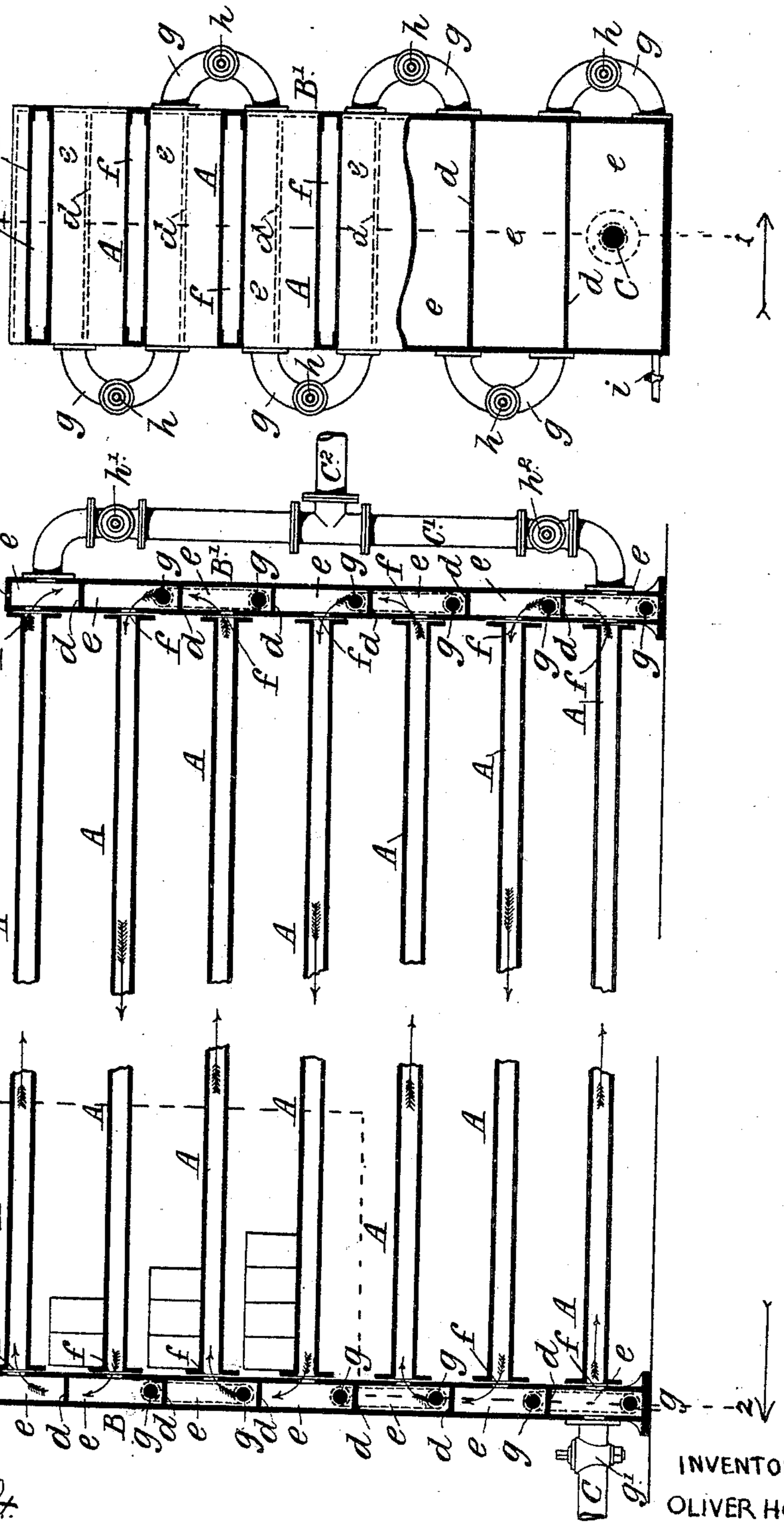

Fig. 1

WITNESSES:
F. W. Wright.
S. C. Connor

INVENTOR
OLIVER HOWL
BY
Howson and Howson
HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

OLIVER HOWL, OF TIPTON, ENGLAND.

BRICK-DRIER.

SPECIFICATION forming part of Letters Patent No. 622,626, dated April 4, 1899.

Application filed November 1, 1898. Serial No. 695,247. (No model.)

To all whom it may concern:

Be it known that I, OLIVER HOWL, a subject of the Queen of Great Britain and Ireland, and a resident of Princes End, Tipton, in the county of Stafford, England, have invented certain new and useful Improvements in Apparatus or Means for Drying Bricks and other Plastic Articles, of which the following is a specification.

My invention has for its object to provide improved apparatus or means for drying bricks and other plastic articles; and it consists in constructing and arranging on fixed or stationary supports hollow shelves, surfaces, or supports for the bricks or articles to be dried, so that hot water, steam, or other suitable heating medium can be caused to circulate in or be passed through such shelves or supports and transmit heat through the substance of the shelves or supports to the articles placed thereon, so as to dry the said articles. The shelves are arranged one above another and connected to vertical, fixed, or stationary hollow columns provided with passages communicating with the interior of the shelves and with cocks or valves in such a manner that the heating agent admitted to one of the columns may be caused to traverse in a circuitous direction through the several shelves, or the said heating agent may be admitted simultaneously, or approximately so, into all or any desired number of the said shelves, and the said heating agent may be caused to pass from one set or series of shelves to other sets or series of shelves in succession before being allowed to flow away or return to the source of supply.

Figure 1 represents in longitudinal vertical section on the line 1 1, Fig. 2, apparatus constructed according to my invention; and Fig. 2 is a transverse section of the same on the line 2 2, Fig. 1.

A are the hollow shelves on which the articles to be dried are placed. These shelves can be made of any suitable length and breadth and can be constructed of metal plates connected together in any suitable manner—for instance, by channel-irons, as shown in Fig. 2. Each hollow column or standard B B′, to which the shelves A are connected, is divided vertically by horizontal partitions *d* into separate spaces *e*, corresponding in number to the number of shelves A, arranged one above another. Each shelf communicates with the corresponding spaces *e* in the two end standards B B′ by passages *f*, and each space *e* communicates with the next space above by connecting-pipes *g*, fitted with stop-cocks *h*. Opening into the lowermost space *e* in the standard B is a pipe C, communicating with the source of supply of the heating medium, which I will refer to as "steam," the said pipe C being provided with a cock or valve *g′* to govern the admission of the steam to the interior of the standard B. The top and bottom spaces *e* of the standard B′ are connected together by a pipe C′, fitted with two cocks or valves *h′* h^2, between which valves is a branch pipe C^2 for conducting the steam away.

The bricks or other plastic articles to be dried may be placed on the shelves A, in direct contact therewith, or for convenience of carrying the articles plates or pallets may be interposed between the articles and the surfaces of the shelves. The shelves being charged with the articles to be dried, the cock or valve *g′* in the steam-pipe C is opened to admit steam to the lowermost space *e* in the standard B. If the cocks or valves *h* in the connecting-pipes *g* and also the cocks or valves *h′* h^2 in the pipe C′ be all open, the steam will pass into and fill all of the spaces *e* in the standard B and pass therefrom through all the hollow shelves A into the spaces *e* in the standard B′, and thence into the pipe C′ and away by the branch C^2 back to the source of supply or to a condenser or other desired place. The heat imparted to the shelves by the steam passing therethrough is conducted to the goods placed on the said shelves, whereby the said goods are dried. If desired, the steam may be caused to pass through the lowermost shelf only or through the said lowermost shelf and any desired number of shelves above it by simply closing the cocks or valves *h* in the connecting-pipes *g* of those spaces *e* connected with the shelves not required to be heated and closing also the cock *h′* in the pipe C′, the cock h^2 being open, so that the steam admitted to the said lower shelf or lower shelves will escape through the valve h^2 and pass away by the pipe C^2.

Instead of causing the steam to pass from the spaces in the standard B through the

shelves in the same direction and at the same time, as before described, the said steam may be caused to take a circuitous course through the said shelves from the lowermost shelf to the top shelf of the series, in which case the steam admitted to the lowermost space *e* of the standard B is by closing the cock or valve in the pipe connecting the said lowermost space in this standard with the next space above caused to pass through the lowermost shelf A into the lowermost space *e* in the standard B′, and thence through the connecting-pipe *g* (the cock in the said tube being open) into the next space *e* above, and the cock in the pipe connecting this space with the next space above the said standard B′ being closed the steam is caused to pass into and through the second shelf from the bottom into the second space from the bottom in the standard B, and so on through all the shelves, as indicated by arrows in Fig. 1, to the top shelf of the series, it passing thence into the pipe C′ and away by the branch pipe C^2, the lower cock or valve h^2 in the pipe C′ being closed. In the lower part of each hollow column or standard B B′ is a discharge pipe or passage *i* for water of condensation. In the top of the standards B B′ vent-holes *d′* are provided for the escape of air.

By this invention a great economy of fuel is effected as compared with the old system of drying bricks and other plastic articles on stove-floors heated by fuel from beneath, as by my invention the temperature can be regulated as required by governing the admission of the heating medium and the supply of heat can be discontinued at any time, while the necessity for the workmen to stand on heated surfaces to stack and remove the goods is dispensed with and a greatly-increased drying area is provided in a minimum space.

I claim as my invention—

1. The herein-described drying apparatus provided with hollow shelves, one above another, and pipes or passages connecting said superposed shelves together and provided with cocks or valves for directing steam or hot water through all or any number of the hollow shelves either in a circuitous direction or simultaneously through all or any number of the shelves, in the same direction as desired, substantially as described.

2. The herein-described drying apparatus comprising upright hollow columns having passages, hollow shelves one above another and communicating with said passages and valved pipes connecting said passages together, whereby steam or hot water may be directed through all or any number of the hollow shelves in a circuitous direction or simultaneously through all or any number of the shelves in the same direction, as and for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

OLIVER HOWL.

Witnesses:

FREDERICK JOHN EDWARDS,

JOHN HERBERT CHANDLER.