

No. 679,816.

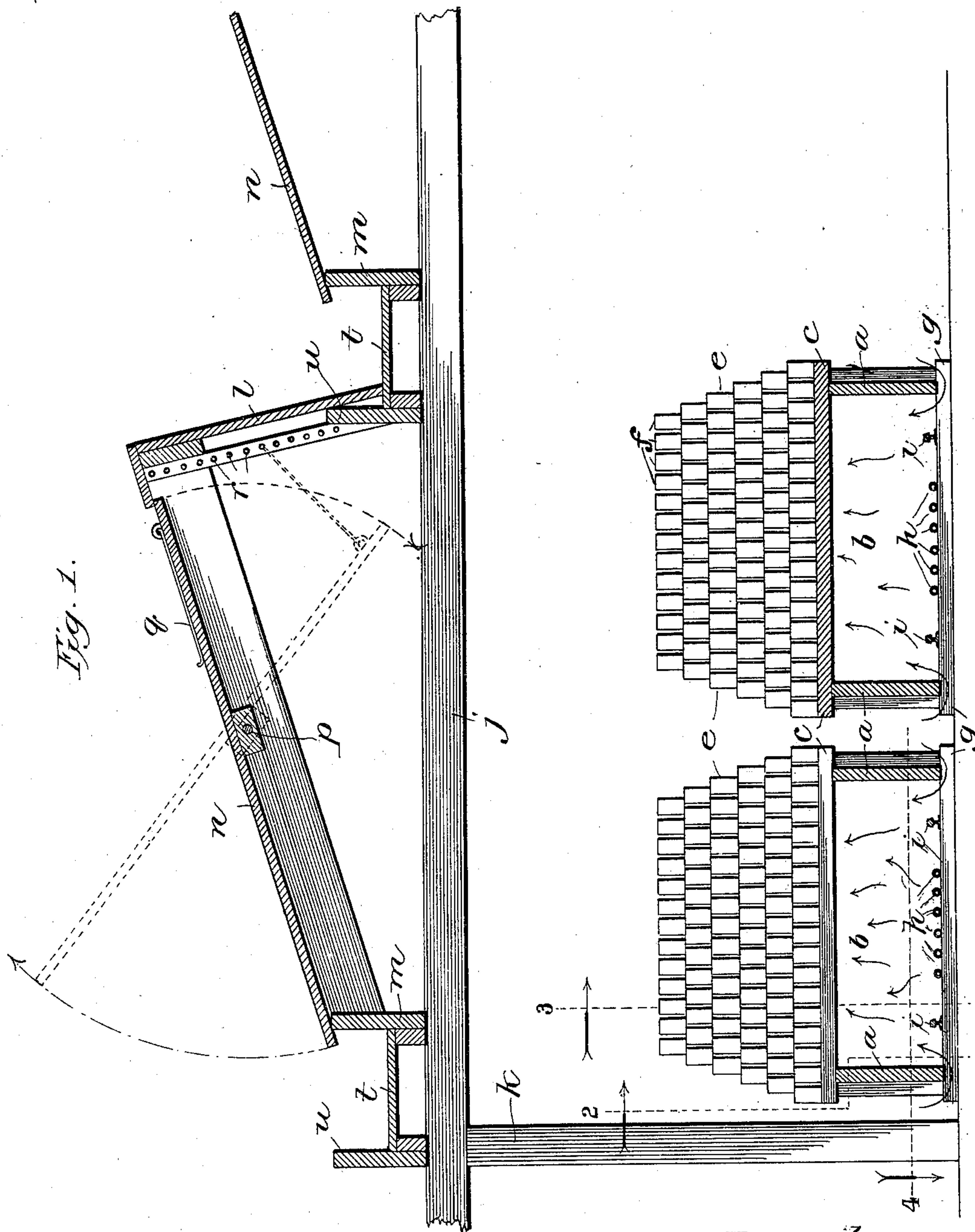
Patented Aug. 6, 1901.

F. ALSIP.
BRICK DRIER.

(Application filed Dec. 28, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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Fig. 4.

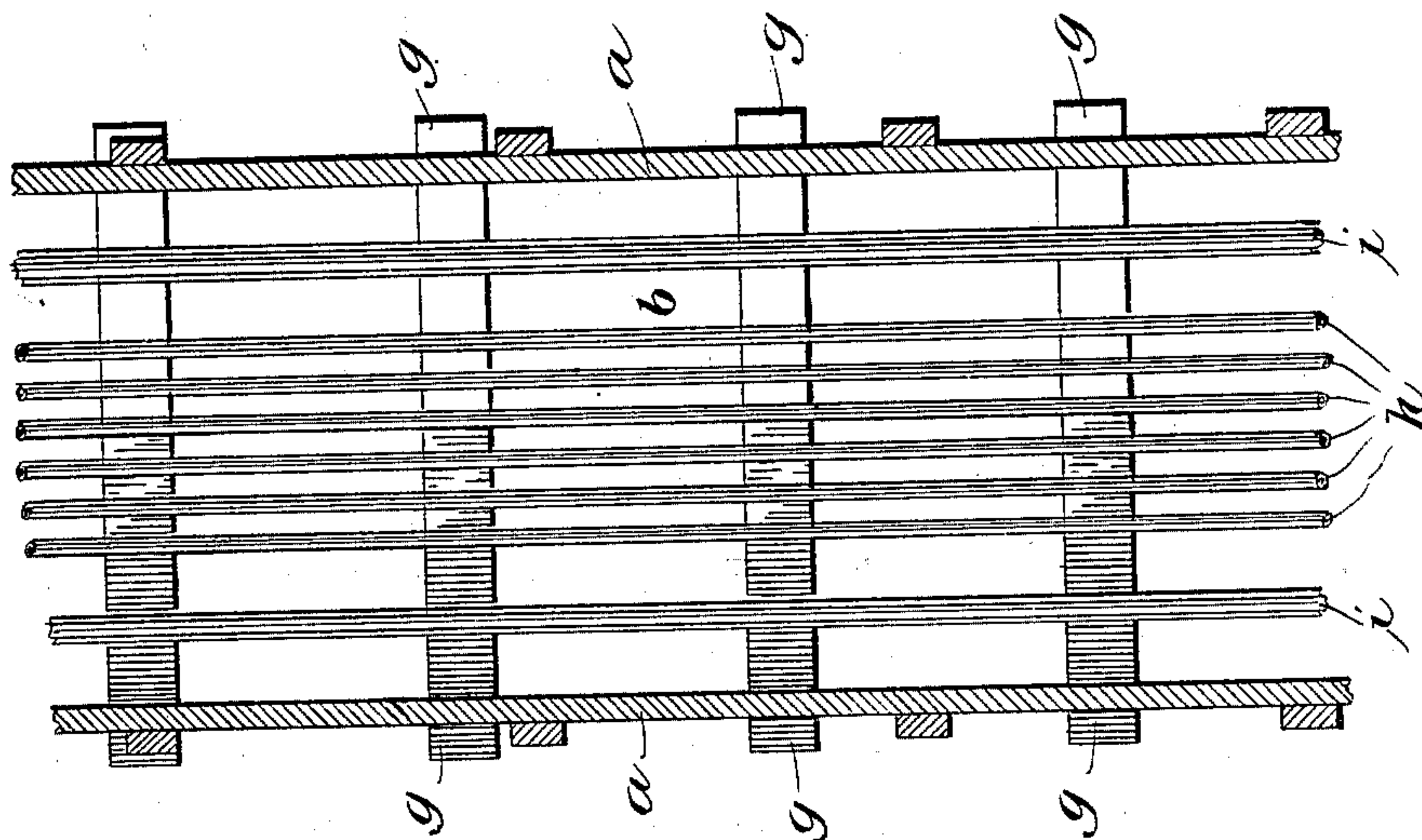


Fig. 2.

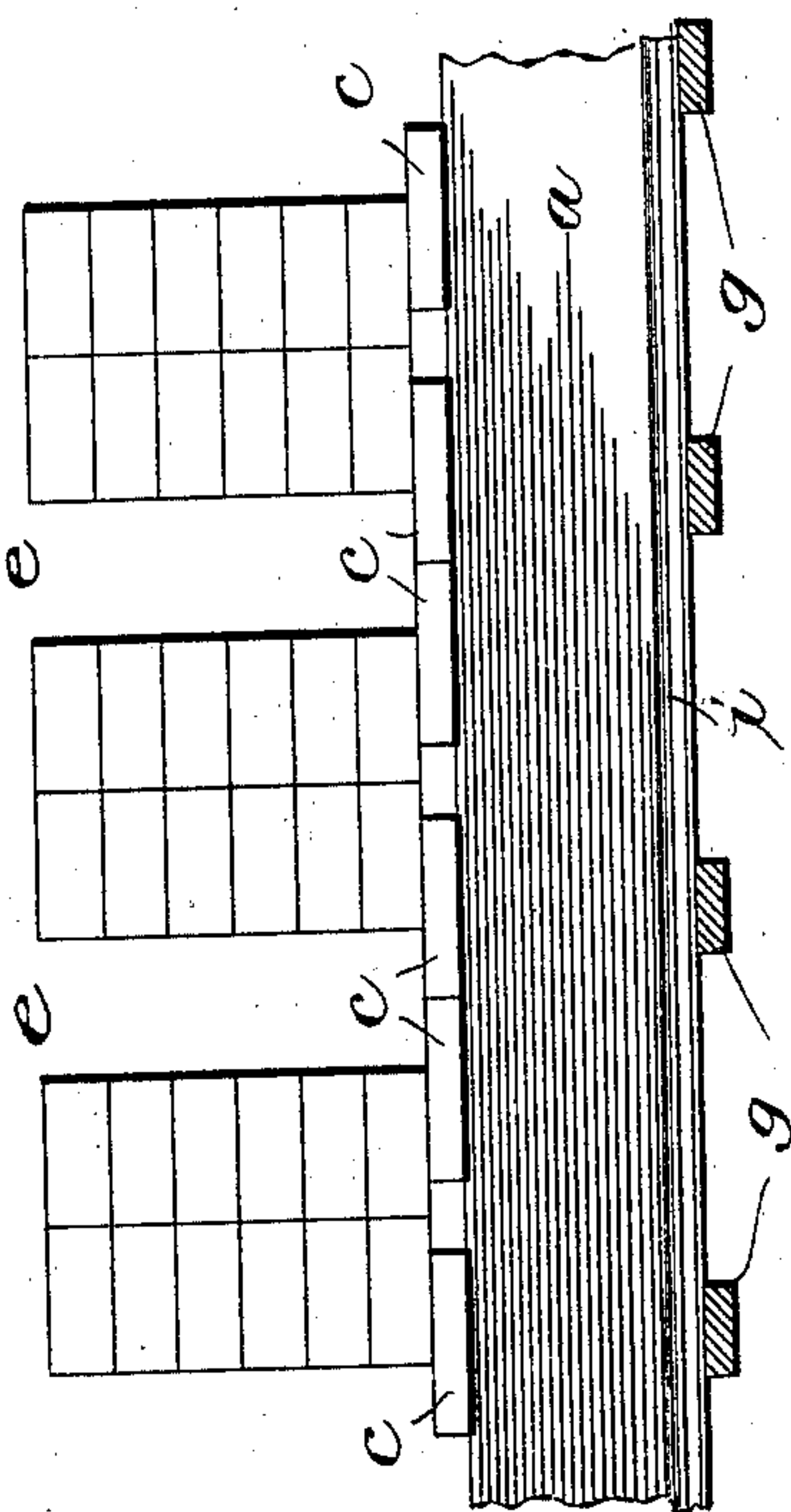
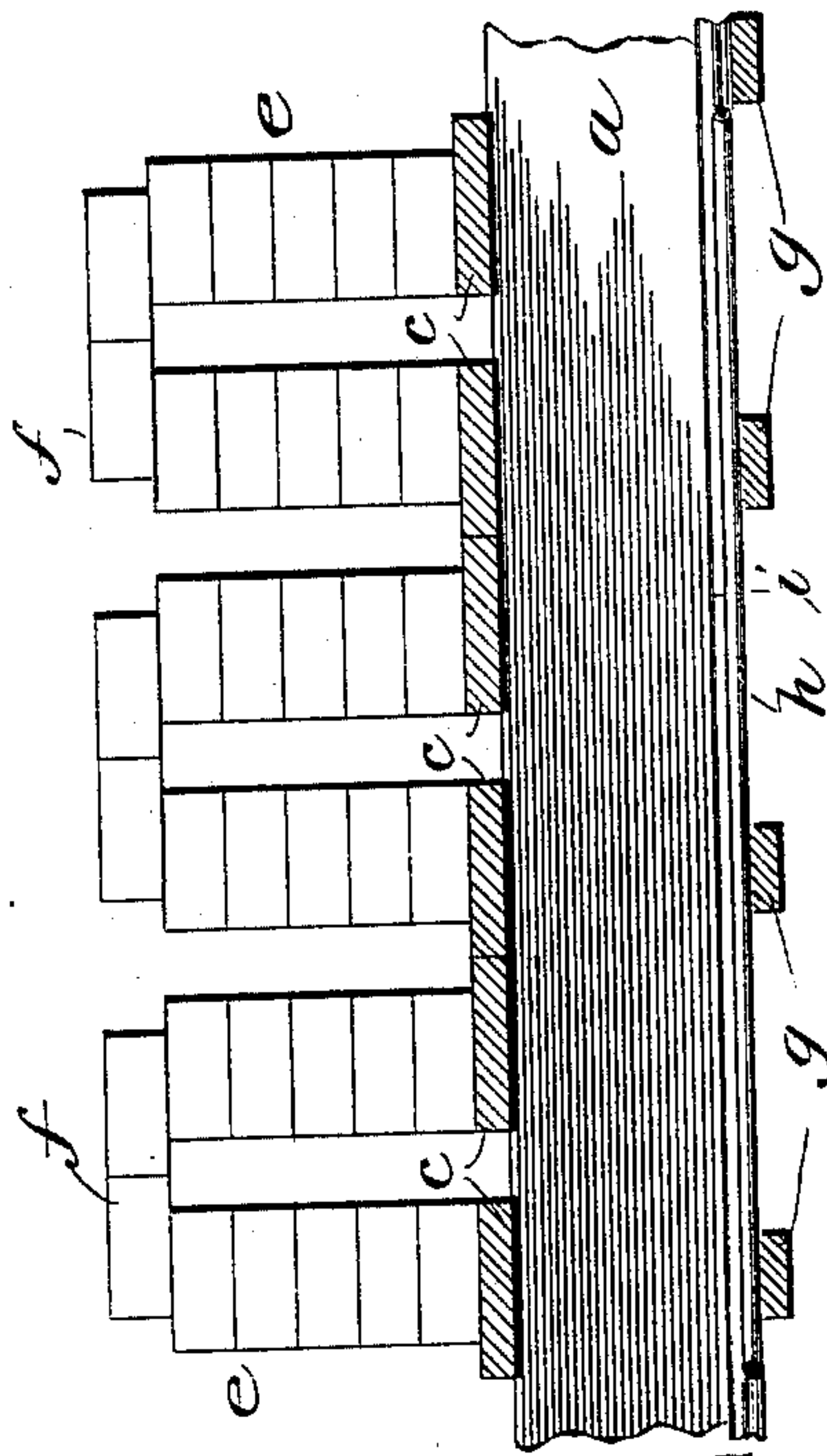


Fig. 3.



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FRANK ALSIP, OF CHICAGO, ILLINOIS.

BRICK-DRIER.

SPECIFICATION forming part of Letters Patent No. 679,816, dated August 6, 1901.

Application filed December 28, 1900. Serial No. 41,370. (No model.)

To all whom it may concern:

Be it known that I, FRANK ALSIP, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Brick-Driers, of which the following is a specification.

My invention relates to that class of apparatus in which the ordinary brick may be
10 baked or dried and which is adapted for use either with artificial heat, such as generated by condensed steam, alone or by the assistance of the sun's heat, all of which will be more fully hereinafter set forth.

15 The principal object of my invention is to provide a simple, economical, and efficient brick-drier of such a construction and arrangement that the brick may be dried by the use of artificial heat alone or in combination with heat generated by the sun's rays.
20

The invention consists in the features, combinations, and details of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is
25 a cross-sectional view of a drier constructed in accordance with my improvements; Fig. 2, an enlarged sectional detail taken on line 2 of Fig. 1 looking in the direction of the arrow; Fig. 3, an enlarged vertical sectional
30 elevation of a portion of the drier, taken on line 3 of Fig. 1; and Fig. 4, a plan sectional detail taken on line 4 of Fig. 1.

In the art to which this invention relates it is well known that it is desirable to provide a drier which can be operated with the
35 least possible expense and in which the brick may be dried by the use of artificial heat in cloudy, rainy, or stormy weather and with the assistance of the sun's rays in fair weather. The reasons why such a drier
40 as this is desirable are: First, it is well known that in those sections of the country where brick-clay is most readily accessible there is at least one-third of the time when the
45 weather is cloudy, rainy, or stormy, and that if the drier was dependent entirely upon the heat generated by the sun's rays for evaporating or drying purposes there would be a great loss in time without considering the
50 fact that the brick would be in an exposed condition and subjected to the elements, all of which would tend to greatly deteriorate

the same, and, second, more or less machinery is used at the brick-yard, which necessitates the use of a steam-generating
55 plant, and it is economical to condense this steam and use the water of condensation over again, so that if the heat in this condensing steam could be used to assist in drying or to aid the drying at certain times
60 there would be just so much gain, all of which will be appreciated by those skilled in the art.

The principal object of my invention is to provide a brick-drier which can be used the
65 year round and in which artificial heat alone can be used during cloudy, stormy, or rainy weather, and which can be used in combination with the sun's rays at other times.

In constructing a drier in accordance with
70 my improvements I provide a pair of standards *a*, which extend longitudinally along the ground parallel with each other and are used for the purpose of forming side closures and to provide an artificial-heating chamber *b*
75 and also as standards for the support of the bricks while being dried. These standards are supported upon cross-ties *g*, which raise them a short way from the ground and permit the air to pass under the same and between the cross-ties or sleepers, this arrangement being preferred for the reason that the
80 cold air always seeks the lowest level and will pass into the heating-chamber to force the hot air upwardly, as indicated by the arrows.
85

To form a removable cover for the heating-chamber and at the same time furnish the immediate means for supporting the bricks while they are damp, being dried, and taken away, a number of pallets *c* are provided and
90 arranged transversely across the heating-chamber, with their ends resting upon the standards, as shown particularly in Figs. 1, 2, and 3. As shown in Figs. 2 and 3, it will be seen that each pallet supports a row of
95 bricks *e* and that such bricks are arranged near the lateral edges of the pallets, the pallets being arranged in pairs, with their adjacent edges contacting each other and each pair separated, so as to form a small space
100 up through which the heated air may pass. The top of each brick-pile is closed by a set of bricks *f*, so as to force the air or heated air out through the spaces or interstices in

each row, as shown in the front elevation of Fig. 1.

In order to supply artificial heat to the bricks, the heating-chamber is provided with a series of pipes *h*, arranged, preferably, at the lower portion of the chamber, longitudinal thereof and on the cross-ties, as shown particularly in Figs. 1 and 4. These heating-pipes may be used for the conduction of any kind of heat, either in the shape of fluid heat or a resistance-coil for the generation of electric heat, and which may be inclosed within the pipe for the purpose of safety. I prefer, however, to use these pipes as shown and connect them with a source of exhaust-steam, for the reason that nearly every brick-yard is supplied with a boiler plant to supply energy to run the machinery, and by this means I am enabled to use such steam as would otherwise be wasted. By connecting these pipes, therefore, with an exhaust-pipe of the steam-engine they can be used to conduct the steam through the heating-chamber of the drier, so that the radiation which is giving off therefrom while the steam is condensing may be used very economically to dry the bricks and at the same time the steam is condensing and may be used over and over again, provided suitable apparatus, as is well understood by those skilled in the art, be connected with the pipes to catch and return the same to the boiler.

It is well known that the bricks are molded or formed from wet clay in another part of the yard and that it is desirable after the formation thereof that they be placed upon pallets, which may be laid upon a truck and some means provided by which this truck or car can be pushed or run directly into the drier and the pallets laid without rehandling upon the supporting-standards. To accomplish this result, each heating-chamber is provided with a pair of tracks *i* of any desired gage, which extend longitudinally thereof, so that the truck or car, which may be of any usual construction, may be run directly into the drier and the pallets which are supported thereon lowered into the desired position upon the supporting-standards. This can be accomplished in many ways; but I prefer to use a truck of such nature that its side walls will be higher than the side walls of the drier and which may be collapsed to bring the upper portion thereof lower than the upper edges of the supporting-standards and place the pallets thereon, as shown in the accompanying drawings.

As shown and described, it will be seen that heat in the nature of artificial heat can be forced through the heating-chamber to dry out the bricks at times when the sun is not shining, as in cloudy, rainy, or stormy weather. It is desirable, however, to provide means by which the sun's rays may be utilized for drying or to assist in drying the bricks in clear winter or summer weather. To accomplish this, the roof of the drier is pro-

vided with girders *j*, which extend transversely from the main walls *k* across the same, on which is longitudinally supported a series of ventilators formed, as shown in Fig. 1, by having side-supporting portions *l* and *m* and an inclined hinged portion *n*, which is pivoted at a point *p* to one side of the center, so that the tendency of the same is to keep closed, as shown in full lines in Fig. 1, but which may be opened by taking hold of the foldable handle *q* and affixing its free end in one of the perforations *r*, as shown also in Fig. 1. This action permits the rays from the sun, which is in the south, (and to the left preferably of Fig. 1,) to beat directly into the drier and be used either entirely for the purpose of drying the bricks or to assist the artificial heat generated in the heating-chamber in doing the work.

It is desirable that means be provided by which the operator may run along the roof of the drier to operate the ventilator, and for this purpose I provide gutters or runways, which are usually constructed as shown in Fig. 1 at *t* and which are formed of the base-board *t* and side supports *m* and *u*.

I claim—

1. In a drier of the class described, the combination of a pair of supporting-standards extending parallel with each other forming inclosing sides of a heating-chamber, cross-ties upon which they are arranged to provide an opening between the standards and the ground, a removable cover portion formed of the pallets *c*, and mechanism for heating the chamber, substantially as described.

2. In a drier of the class described, the combination of a pair of side-supporting standards extending parallel with each other forming inclosing sides of a heating-chamber, cross-ties upon which they are arranged to provide an opening between the standards and the ground, a removable cover portion formed of the pallets *c*, and heating mechanism arranged in the heating-chamber, substantially as described.

3. In a drier of the class described, the combination of a pair of side-supporting standards arranged parallel with each other so as to form inclosing sides of a heating-chamber, cross-ties arranged upon the floor to sustain the side-supporting standards and provide openings between them and the ground through which cold air may enter, a series of removable planks or boards to form a cover for the heating-chamber, and a pipe or pipes extending longitudinal of the heating-chamber and connected with a source of fluid-heat supply, substantially as described.

4. In a drier of the class described, the combination of a pair of side-supporting standards arranged parallel with each other and forming inclosing sides of a heating-chamber between them, a series of cross-ties to sustain the supporting-standards above the floor and provide an opening between them and the ground for the admission of cold air, a series

of removable planks forming a cover for the heating-chamber and resting upon the supporting-standards, a series of pipes arranged longitudinal of the heating-chamber upon the cross-ties and connected with a source of exhaust-steam for supplying artificial heat to the heating-chamber, and a pair of tracks arranged longitudinal of and in the heating-chamber by which a truck may be run into or out of the heating-chamber for the purpose of placing bricks on the supporting-standards or removing them therefrom, substantially as described.

5. In a drier of the class described, the combination of a pair of side-supporting standards arranged parallel with each other and forming inclosing sides of a heating-chamber between them, cross-ties upon which such supporting-standards are sustained to provide an opening between them and the floor for the admission of cold air, a set or series of removable planks arranged crosswise on the upper portion of the supporting-standards to form a cover for the heating-chamber, and a roof portion to the drier provided with a ventilator having a pivoted inclined cover ar-

ranged to be opened and closed, substantially as described.

6. In a drier of the class described, the combination of a pair of side-supporting standards arranged parallel with each other and forming a heating-chamber between them, cross-ties upon which such supporting-standards are sustained to provide an opening between them and the floor for the admission of cold air, a set or series of removable planks arranged crosswise on the upper portion of the supporting-standards to form a cover for the heating-chamber, a ventilator for the main portion of the drier provided with side supports of different heights which form a portion of a gutter at each side of the ventilator, a pivoted inclined cover portion on the ventilator having its pivot arranged at one side of the longitudinal center thereof to keep the same normally closed, and means for holding the cover in an open position, substantially as described.

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Witnesses:

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