

No. 673,497.

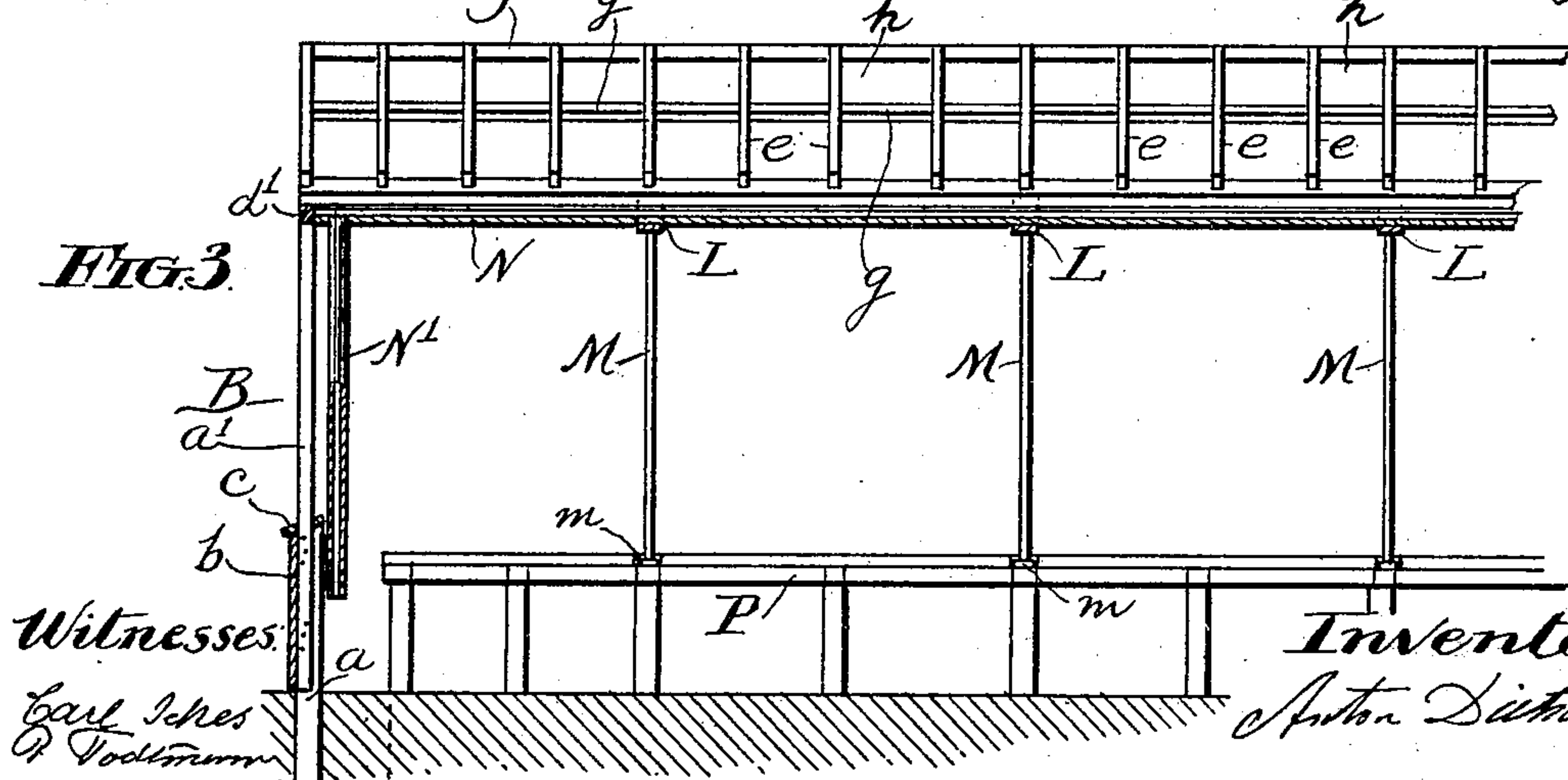
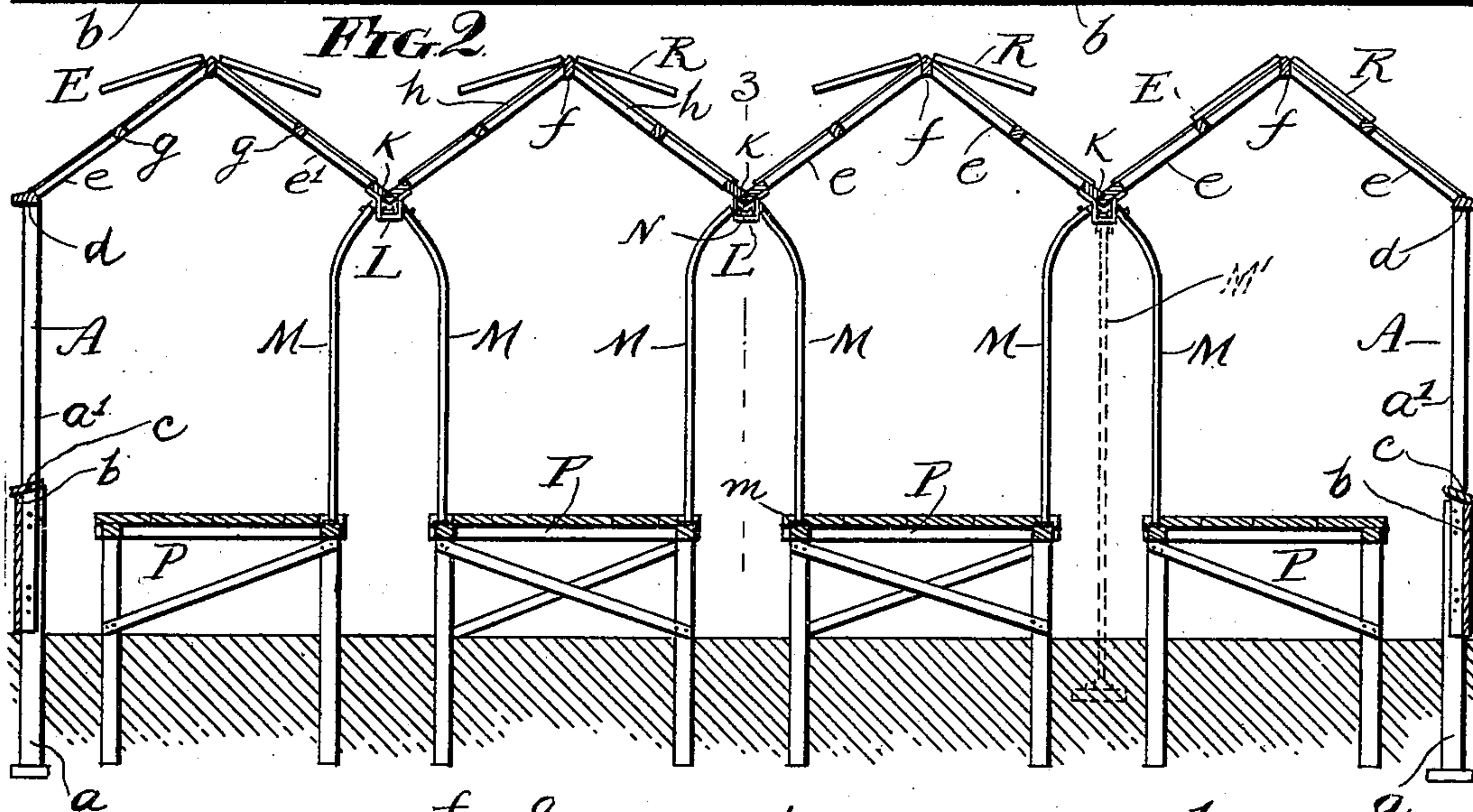
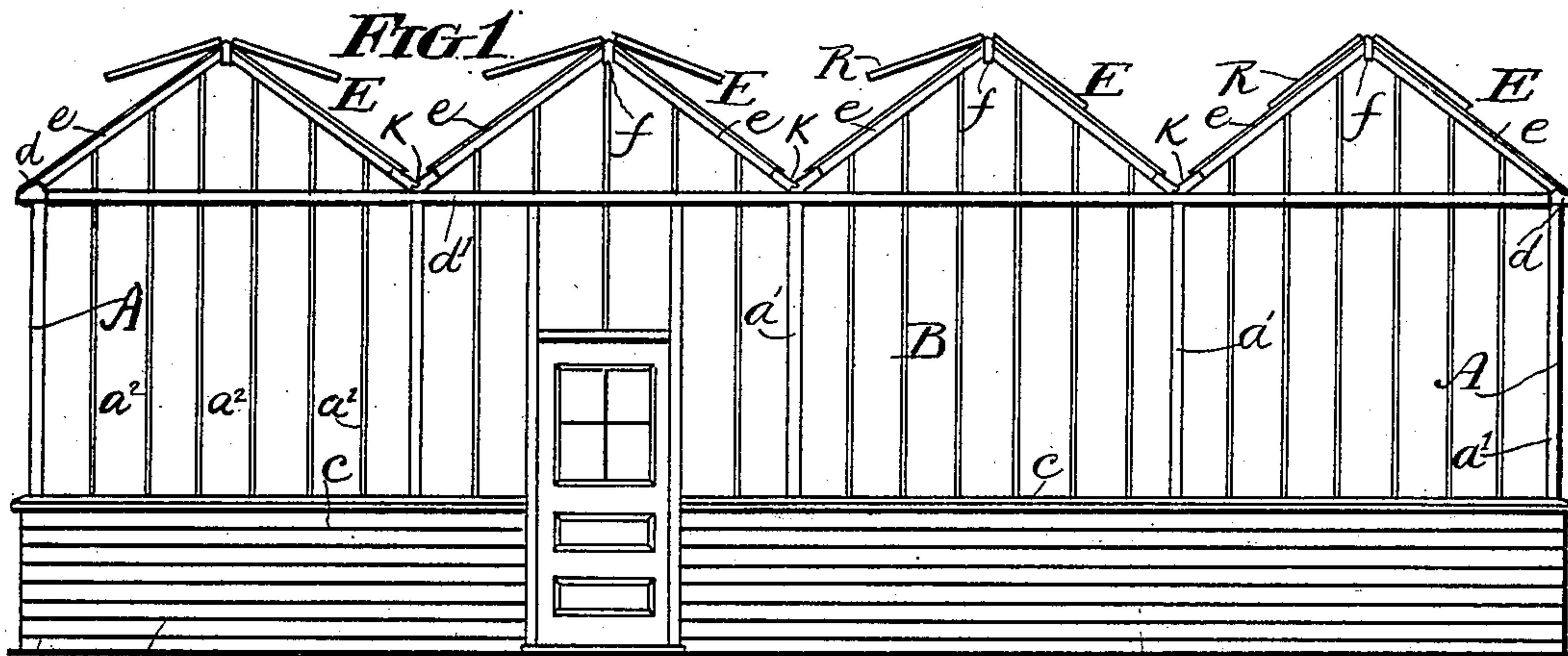
Patented May 7, 1901.

A. DIETSCH.  
GREENHOUSE.

(Application filed Apr. 18, 1900.)

(No Model.)

2 Sheets—Sheet 1.







# UNITED STATES PATENT OFFICE.

ANTON DIETSCH, OF CHICAGO, ILLINOIS.

## GREENHOUSE.

SPECIFICATION forming part of Letters Patent No. 673,497, dated May 7, 1901.

Application filed April 18, 1900. Serial No. 13,390. (No model.)

*To all whom it may concern:*

Be it known that I, ANTON DIETSCH, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Greenhouses, of which the following is a specification.

The present invention relates to the construction of greenhouses, in which I have embodied some novel features relating more particularly to the roof and means for supporting same. These features of construction are illustrated in the accompanying drawings and will hereinafter be fully described.

In the drawings, Figure 1 is an end view of  
15 my improved greenhouse. Fig. 2 is a vertical cross-section of the structure. Fig. 3 is a longitudinal section of same. Fig. 4 is a detail, enlarged, being a cross-section of a portion of roof, showing the construction of  
20 intermediate supports for rafters and means for draining same. Fig. 5 is a longitudinal central section of Fig. 4, taken on line 5 5. Fig. 6 is a cross-section of one of the rafters. Fig. 7 is a modification of one of the roof-  
25 brackets. Fig. 8 is a longitudinal section of Fig. 7, taken on line 8 8; and Fig. 9 is a detail of rafters and sash.

Heretofore greenhouses have commonly been constructed with comparatively low side  
30 walls about four or five feet high and with a roof-span sometimes from sixteen to twenty-five feet wide between rafter-plates, and each house usually consists of only one span, while the height of the structure would be about  
35 eleven or twelve feet from ground to the ridge-beam. In the present invention it is my purpose to provide a greenhouse with a roof structure consisting of a series of short transverse roof-sections each of gable or A shape,  
40 the spans being comparatively narrow—for instance, about eight feet—and with side walls from eight to ten feet high, or considerably higher than those of greenhouses as commonly constructed. The object to be attained  
45 in making the side walls higher is that tall plants may be more readily grown on the side benches, while by making the roof in a series of small sections or short spans I attain several advantages, among which are that the  
50 roof is stronger, lighter, easily framed or put

up, and provisions for ventilation may be carried out better than in old style of greenhouses. Again, a small greenhouse may be built by my construction, for instance, with  
55 two or more roof-sections in short spans—say of eight feet each—and according to the requirements or growth of business the greenhouse may be gradually enlarged laterally in small additions by moving one of the side  
60 walls and adding one or more roof-sections, as the case may demand, thus enlarging the greenhouse without entailing great expense or extensive additions to the heating apparatus.

In carrying out the above objects I employ  
65 some novel features to be found in the details of construction, which will now be described.

A A are the side walls of the greenhouse, and B B are the end walls. The walls may  
70 be constructed in any well-known manner, preferably with a wooden framework, for instance, as shown.

a a are foundation-posts, to which are spiked or bolted the uprights a' for side and  
75 end walls.

b is the siding, and c represents sills below the sash-openings a<sup>2</sup>, the sashes not being shown.

d d are the side-wall plates, and d' represents end beams or plates which support the  
80 end rafters and other framing.

E E are a series of short-span roof-sections, each section or portion consisting of a gable or A shaped roof structure.  
85

e e are the rafters.

f represents the ridge-beams, and g represents cross-pieces or headers.

h represents ventilator-openings, and R represents the ventilator-sashes, which are  
90 hinged or attached in any well-known manner.

The outside rows of rafters rest or are supported by the plates d, and the intermediate rafters are supported by angular wooden gutters K. Each of the rafters has lips or projections e<sup>2</sup>, which rest on the plates d. The  
95 rafters have each a central rib e', seats e<sup>3</sup> for sashes or glass, and drip-conduits e<sup>4</sup>.

The gutters K are arranged longitudinally  
100



and supported by the end walls and by a series of brackets L, mounted on posts M. Each gutter combines the services of a drainway for exterior slopes of roof-sections and also a support for intermediate rafters, and each gutter K consists of two plates  $k k'$ , arranged so as to form a beveled or sloping drainway.  $k^2$  represents rabbets or seats for glass. The plates  $k k'$  are joined together at  $k^3$  by providing the upper face of plate  $k$  with a longitudinal groove  $k^4$  and the narrow side of opposite plate with a longitudinal tongue  $k^5$ , which engages the first-named plate. The plates may be further secured by nails or screws. Brackets L are placed below each gutter K about six feet apart, and besides supporting the gutter serve to keep it from spreading at its joints. Each bracket L, which is made of cast-iron or other metal, is provided with projecting and sloping arms  $l$ , upon which the gutter rests.  $l'$  represents holes for screws. Each bracket L has a central channel or opening  $l^2$ , somewhat U-shaped, so as to provide means for supporting a small trough or gutter N for collecting the interior drip of roof formed usually by the condensation of moisture on the glass. The brackets L are provided with suitable means for attaching same to posts M, and these means consist, preferably, of projections or studs  $l^3$ , which are inserted into the upper ends of the metal pipes or posts M, a screw  $l^4$  securing each pipe in place.

N' is a pipe for carrying off water from trough N.

The posts M are bent so as to form a slight arch, and their lower ends rest on small plates  $m$  on frames P of benches.

Instead of using two posts to each bracket a single one may be employed, as shown at M' in Fig. 8, in which case the bracket L is provided with a screw-socket for the reception of the metal post.

While any kind of a sash for the roof-ventilators may be used, I preferably employ the following:

R represents the sash, which has side rails  $r$  and is hinged to a portion of roof, as at  $r'$ .  $r^2$  is the lower end rail. The rails have a seat  $r^3$  for glass. The rail  $r^2$  is beveled at  $r^4$ , but does not rise to top of side rails  $r$ , so as to provide a drainway or channel  $r^5$  between side rails. Thus when the sash is in a slightly-inclined position, as shown in Fig. 9, it will drain itself, the beveled rail preventing the accumulation of water at lower end of sash, while the channel  $r^5$  permits same to be freely drained and does not let water run over sides of sash.

It will be seen, as shown in Fig. 2, that the benches for plants do not come under the lower angles of roof or gutters. Thus any leaks from same will not reach the benches, while all the benches can have tall plants and also be reached from all sides by the gardener.

It will also be observed that my invention

provides a greenhouse that can be ventilated effectively, the construction providing walls of a desirable height to permit the proper growing of plants. The plurality of roof-sections gives a low-roof structure, which does away with the excessive rise of roof as constructed heretofore. The old style of roof causes an amount of useless space, requiring a very strong framing and also more heating on account of air rising high centrally. The present invention does away with these defects and has also other advantages which have heretofore been mentioned.

What I claim is—

1. A greenhouse provided with a series of short roof-sections, each section being of gable or A shape, the outside rows of rafters being supported by the side walls of the building and the intermediate rafters by V-shaped gutters mounted on brackets, each bracket having bifurcated or double supports resting in bases placed laterally beneath the brackets, as set forth.

2. A greenhouse having a series of short-span roof-sections, the rafters of the intermediate sections being supported by plate-gutters and by brackets on posts, the said brackets being provided with small troughs for collecting inside drippings from roof, as set forth.

3. A greenhouse having a series of roof-sections, the outside rafters of same being supported by the walls and the intermediate rafters by longitudinal members mounted on inverted-U-shaped supports having their bases on the benches for plants so as to leave clear passages in the aisles between benches, as set forth.

4. A greenhouse having a plurality of roof spans or sections, the outside rafters being supported by the walls and the intermediate rafters being supported by longitudinal members which are mounted on inverted-U-shaped supports so as to leave a clear way beneath each longitudinal member, as set forth.

5. A greenhouse having between its walls intermediate supports for the roof, each of said supports consisting of a longitudinal member mounted on pairs of posts which have their tops convergent toward the longitudinal member and connected to the same by brackets, as set forth.

6. A greenhouse having two or more roof-spans, longitudinal members mounted on posts supporting the inner rows of rafters, and drip-troughs centrally beneath said longitudinal members, as set forth.

7. In a greenhouse, a roof provided at its apex with ventilator-openings  $h$ , each of said openings having a hinged ventilator R provided with a lower rail beveled or sloping at  $r^4$  and having a drainway  $r^5$  between the side rails, as set forth.

8. A greenhouse having a roof provided with ventilator-openings between the rafters,



the said openings being provided with hinged  
sashes which rest on top of the rafters and  
cross-framing, each of said sashes having a  
lower end rail sloping at  $r^4$  and a drainway  
5  $r^5$  between its side rails, as set forth.

9. A greenhouse having a plurality of roof-  
sections, the inner rows of rafters of same  
being provided with angular supporting mem-  
bers mounted on posts, the said members

having means for collecting drippings, as set 10  
forth.

In testimony whereof I have hereunto set  
my signature this 2d day of April, 1900.

ANTON DIETSCH.

In presence of—

PETER TODTMANN,  
CARL ICKES.