(No Model.)

3 Sheets—Sheet 1.

W. W. BIERCE.

WAREHOUSE.

No. 486,367. Patented Nov. 15, 1892.

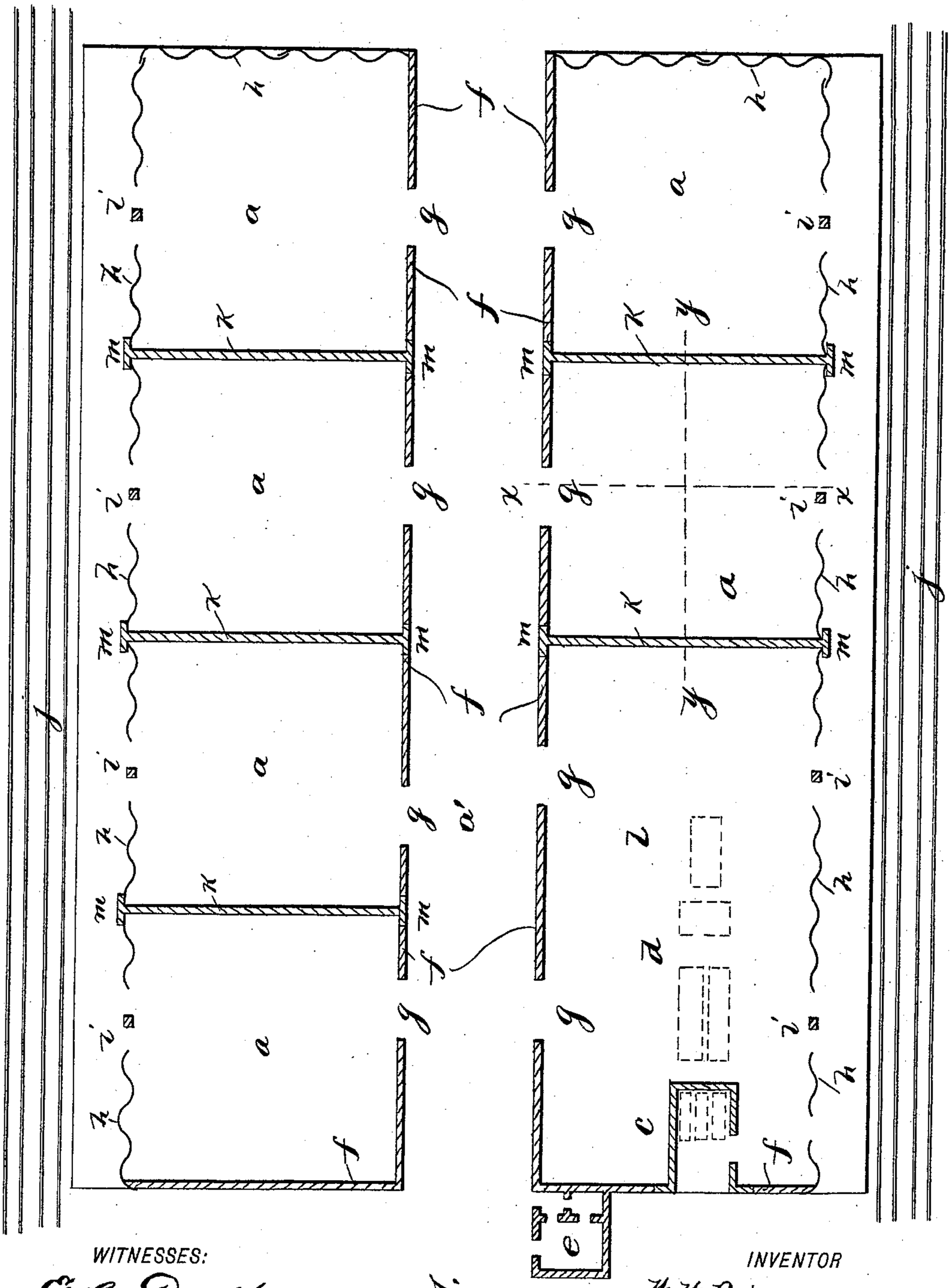

Fig. 1.

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(No Model.) 3 Sheets—Sheet 2.

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WAREHOUSE.

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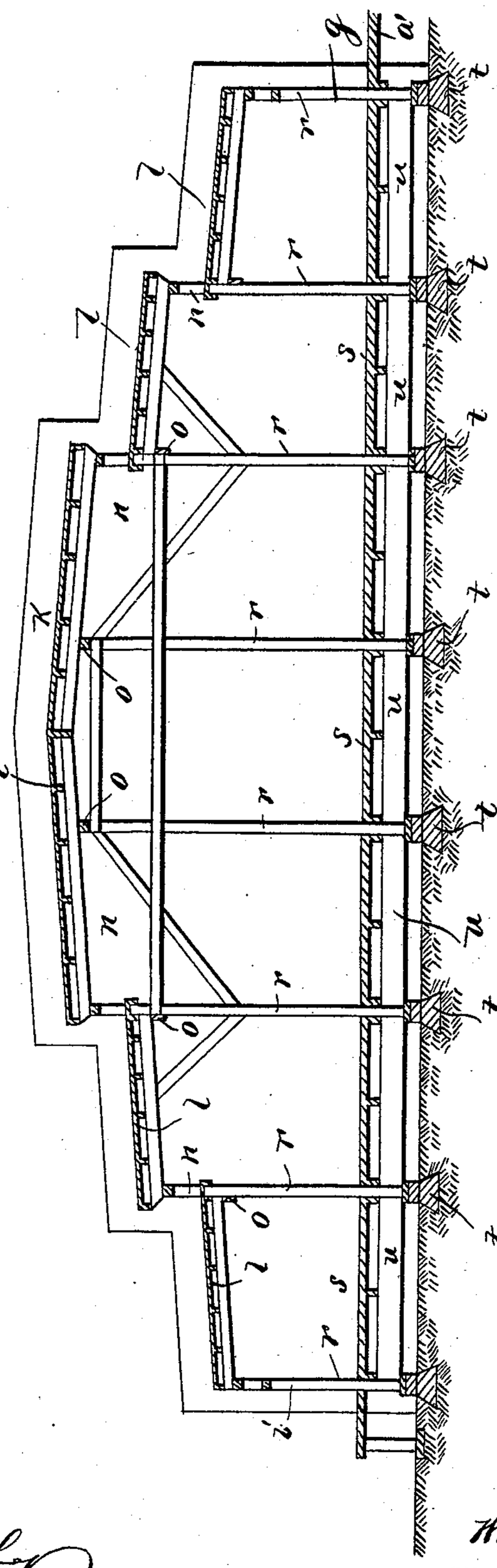

Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

W. W. BIERCE.

WAREHOUSE.

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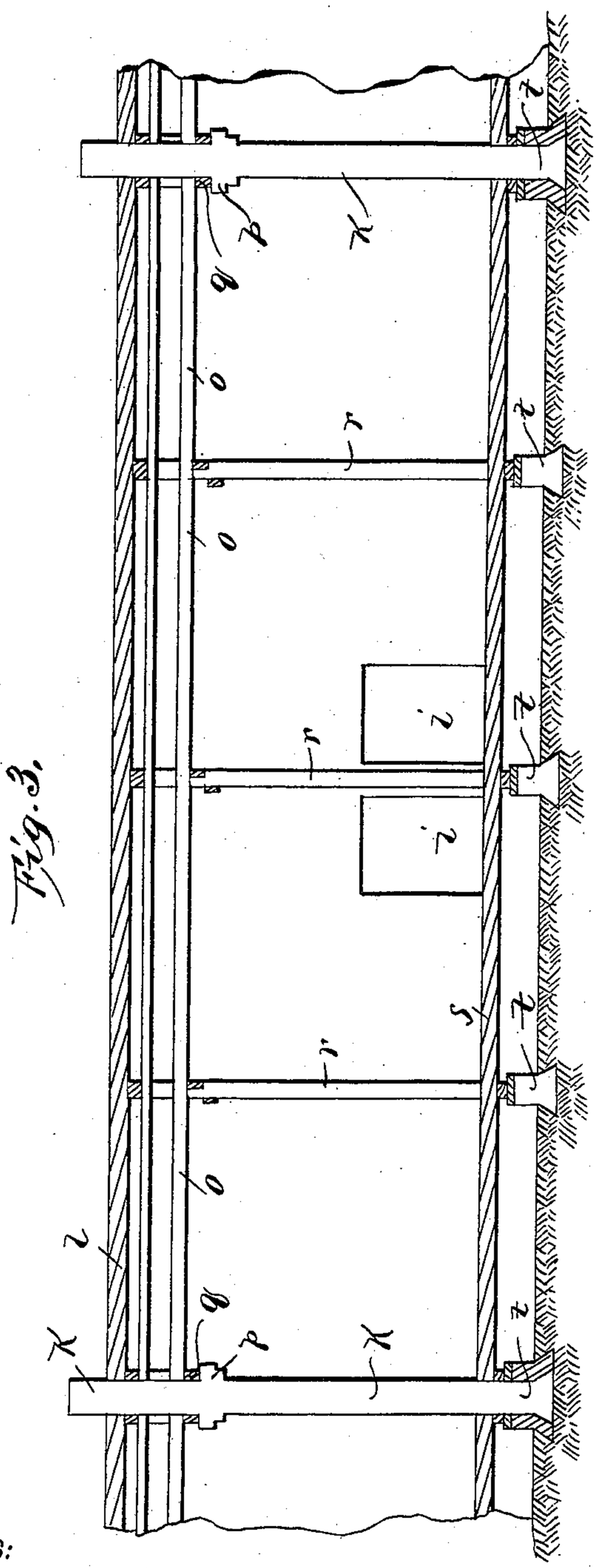

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILL W. BIERCE, OF MONTGOMERY, ALABAMA.

WAREHOUSE.

SPECIFICATION forming part of Letters Patent No. 486,367, dated November 15, 1892.

Application filed May 19, 1892. Serial No. 433,604. (No model.)

To all whom it may concern:

Be it known that I, WILL W. BIERCE, of Montgomery, in the county of Montgomery and State of Alabama, have invented certain new and useful Improvements in Warehouses for Storing Cotton; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in construction of warehouses, and more particularly for buildings for the storage of cotton.

The highly-inflammable nature of baled cotton and the many disastrous fires caused thereby are well-known facts. Heretofore cotton-warehouses have been constructed divided into compartments and surrounded by solid dead-walls; but in the case of fire in any compartment the firemen could not easily obtain access thereto either to fight the fire or remove the uninjured cotton because of the thick walls. Furthermore, the constructions of such warehouses have been such that the fire communicated from one compartment to the adjoining compartment either by means of the roof covering all the compartments or by lapping around or through the fire-walls. Furthermore, in these old constructions of warehouses the girders, &c., supporting the roof or roofs have been usually set into the fire-wall, so that the fire-walls are used as party walls. Hence in case of fire in one compartment it sometimes happened that the roof of that compartment in falling in would drag down the fire-walls with it, and hence open communication for the fire to adjoining compartments.

The object of this invention is to provide an improved fireproof warehouse strong and durable in construction and simple in arrangement and by which the liability of disastrous fires is greatly reduced and whereby the disadvantages before stated are overcome.

The invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly set forth in the claims.

Referring to the accompanying drawings, Figure 1 is a horizontal section taken through a warehouse constructed in accordance with my invention. Fig. 2 is a vertical part section on the lines *x x*, Fig. 1. Fig. 3 is a vertical sectional view taken through a portion of the warehouse on the line *y y*, Fig. 1.

In the drawings, the reference-letter *a* indicates separate and distinct compartments in the warehouse. *b* also indicates a separate and distinct compartment, in the present instance provided with the engine and boiler room *c*, separated from the interior of the compartment *b*, and the cotton-compressors *d*, located in said compartment. It should be observed that the boilers are entirely cut off from the main buildings by heavy fire-walls, which prevents danger of fire from the furnace and also keeps the heat from the men working at the press, thereby enabling them to work more rapidly.

Figure 1 shows the warehouse built in two sections separated by the gangway *a'*. The teams bringing in and delivering the cotton drive in at this gangway and deposit the cotton in the various compartments. The cotton is delivered at the outer sides of the two sections of the warehouse to the railroads *j j*, the tracks of which are preferably located on opposite sides of the warehouse. This is a matter of great convenience, as the cotton can thus be very readily handled and received and shipped in large quantities. This gangway is open—that is, it is not covered by a roof, but is left entirely open. This is a great protection against fire, as it prevents the fire communicating from one side of the gangway to the other along the roof, and the sections of the warehouse are separated.

Of course my present invention includes a warehouse formed of one or more compartments. In very small warehouses possibly but one compartment *b* would be employed, in which the cotton could be both compressed and stored.

e indicates the office, building, or rooms, here shown as annexed to compartments *b*.

f indicates a heavy wall forming one or more sides of the warehouse and of the various compartments thereof. This heavy fireproof wall is pierced by the openings *g*, through which the wagons carrying the cot-

ton can drive into the various compartments. Usually one door *g* only is provided for each compartment, and in the present case the doors *g* form the receiving-doors, through which the cotton is received into the ware-house. These openings *g* are provided with heavy steel-plated doors. (Not here shown.) The remaining sides of the warehouse are preferably inclosed by removable fireproof walls, preferably composed of strong sheets of iron *h*, usually corrugated iron, as shown. These iron plates or sheets are suitably secured, so as to inclose the warehouse and form a fireproof wall. In case of fire in any compartment the firemen can force off these plates and thereby obtain access to the fire, so that it can be more readily extinguished, and, furthermore, the cotton can be easily rolled out and saved and thereby create a large salvage account. Usually in warehouses as heretofore constructed there has been a heavy dead-wall at this place, where I put corrugated iron, which made it utterly impossible for the firemen to get at the fire. The compartments are provided with the exit-doors *i*, opening onto the platforms beside the railroad-tracks *j*. The cotton bales can be trucked through these doors to the cars on the railroad-track. These doors are usually made double, as shown, so that the truckman can pass in one door and out the other door, thereby facilitating work. These doors or openings are provided with heavy fireproof doors. (Not here shown.)

k indicates the fire-walls separating the compartments. The walls are imperforate and are heavily constructed from the distance below the surface of the ground to a point a distance above the roof *l* of the warehouse. This upward extension of each fire wall or partition is a point of great advantage, as it prevents the fire lapping over the fire-wall from one compartment to the roof of the next. The vertical outer edges of the fire-walls are formed T-shaped, as shown—that is, are extended laterally (see *m*) in the direction of the walls of the compartments—so that the fire from one compartment cannot lap around the outer edges of the fire-wall to the adjoining compartment. This feature of having the vertical edges of the dividing fire-walls extended laterally to form portions of the side walls is a point of great advantage. It will thus be observed that the various compartments are entirely separate and distinct and the fire cannot communicate through the walls because they are imperforate or under the walls, because they extend from or beneath the surface of the ground or above or around the walls for reasons above stated.

The roof *l* of each compartment is preferably formed in steps, as shown, and is provided with longitudinal pairs of opposite openings *n*—that is, for every opening *n* on one side of the roof there is a corresponding opening *n* in the other side of the roof—hence the light in the interior of the warehouse is equally distributed and comes equally from opposite sides. This is a point of great importance as it enables inspectors and others to accurately judge the quality of the cotton. In grading cotton it is necessary in order to accurately inspect and determine the quality of the cotton to have a peculiar light equal in intensity and quantity on both sides. I attain this desired result, preferably, by arranging the openings in pairs oppositely, as above described.

Cotton warehouses as usually heretofore built had light openings on one side only, or else the openings were so arranged that more light would be admitted on one side than on the other. Hence it was a very difficult matter to accurately judge the quality of the cotton because of the unevenly-disposed light, a portion of the cotton being in the shade and the remainder of the cotton being in a better light, hence causing the cotton to appear as of different degrees of quality. This is a matter of great importance, for in warehouses of usual construction it prevents accurate inspection. By my invention the light comes in evenly from all sides, so that all parts of the bale are in equal light and can be seen and inspected correctly and equally.

The roof of each compartment is supported by suitable beams and girders *o*, preferably extending from one fire-wall to the next fire-wall and resting directly on the lateral projections or corbals *p* from the fire-wall, or these girders can rest on beams *q*, resting on said corbals. Of course the roof can be supported from the girders and fire-walls in any suitable manner and braced in any desirable way. By means of this construction the fire-walls remain intact, and are not socketed or cut into in any way, and the roofs are supported on said projections or corbals, and by means of the posts *r*, extending down through the floor *s*, and each resting on a pedestal *t*, preferably formed of masonry in a strong and substantial manner and usually buried a slight depth. These pedestals are ordinarily capped with stone or other material, and the girders *u* rest on said caps with their ends abutting against the sides of the post. The floor-joists are also laid on the girders *u* against these posts. By this means the posts are strongly and firmly secured and braced at their lower ends against lateral play and displacement. This is a point of importance.

The many great advantages of this invention are obvious. By its use disastrous and extensive cotton-fires will be avoided, insurance rates will be reduced, and in case of fire much cotton can be saved and the fire confined to one compartment.

It is evident that various slight changes might be made in the form, arrangement, and constructions of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the precise construction herein set forth, but consider myself entitled to all such changes

as fall within the spirit and scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A warehouse having one or more sides formed by heavy fireproof walls and the remaining sides inclosed by metal plates, such as corrugated metal sheets, which can be forced off in case of fire.

2. A warehouse divided into separate fireproof compartments by vertical fire-walls, the outer masonry wall inclosing one or more sides of the warehouse and the metallic plates inclosing the remaining sides, substantially as described.

3. A fireproof warehouse divided into separate compartments by fire-walls extended laterally at the ends along the sides of the compartments to prevent fire lapping around the vertical edges of the fire-wall into an adjoining compartment.

4. A warehouse divided into separate compartments by imperforate fire-walls extending above the roofs of the compartments and below the floors thereof and T-shaped at the ends, for the purposes set forth.

5. In a warehouse, the pedestals, the roof-supporting posts resting thereon, girders resting thereon and abutting against the post to prevent lateral movement thereof, and the floor also surrounding the post, substantially as set forth.

6. The cotton-warehouse divided into separate fireproof compartments by vertical imperforate fire-walls extending above the roof and projecting laterally at the outer edges, the outer heavy fire-wall inclosing one or more sides of the warehouse, the remaining sides of the house being inclosed by removable metal sheets overlapped by said edges of the fire-walls, substantially as described.

7. The warehouse divided into separate fireproof compartments by vertical fire-walls extending above the roof, said fire-walls having corbals, each compartment having a separate roof supported independently on the fire-wall corbals, a heavy fire-wall inclosing one or more sides of the building, and removable metal sheets inclosing the remaining sides of the building, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILL W. BIERCE.

Witnesses:
B. P. DEXTER,
SIMON HORTZ.