

V. HAEFFNER.
Refrigerator Building.

No. 37,095.

Patented Dec. 9, 1862.

Fig. 2

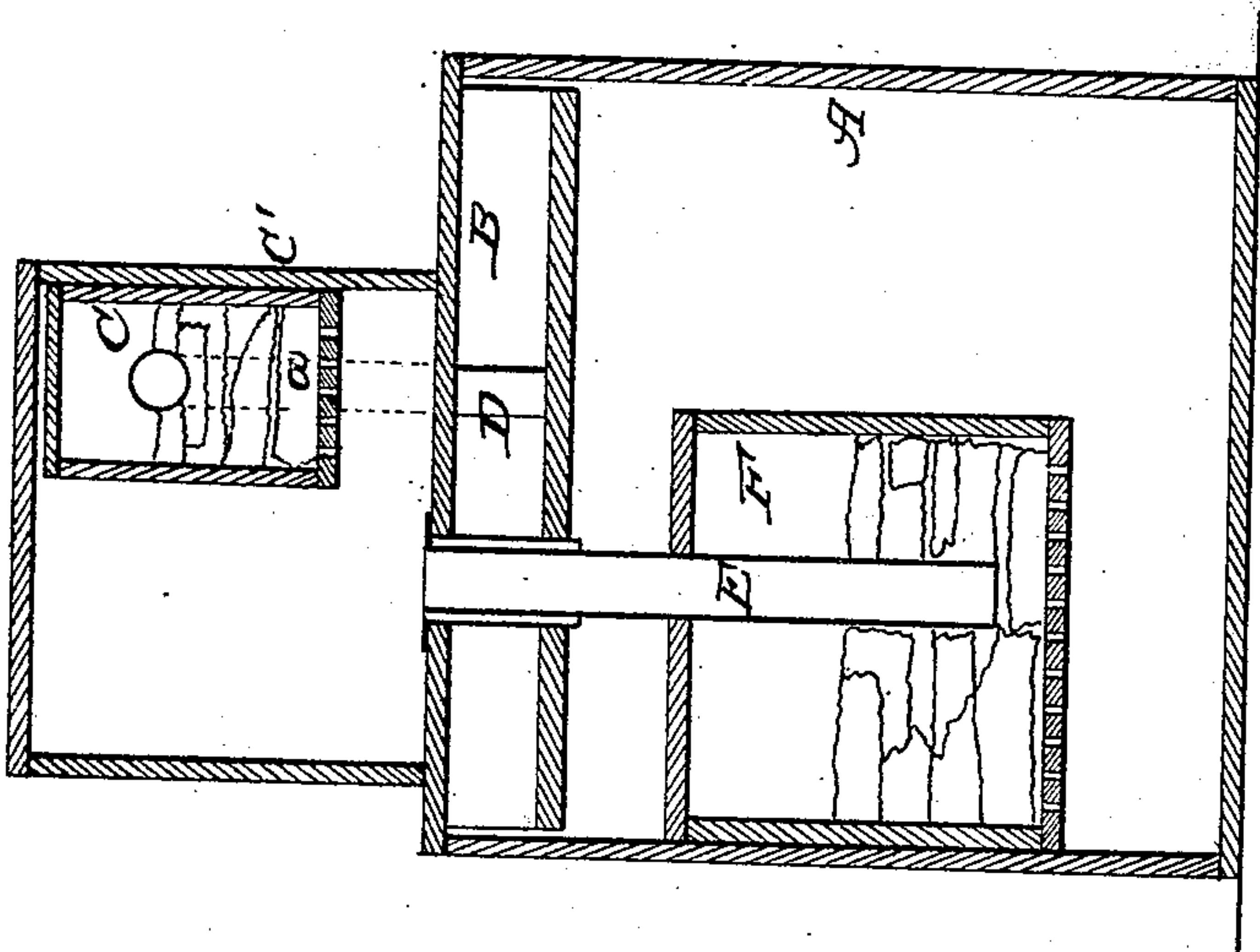
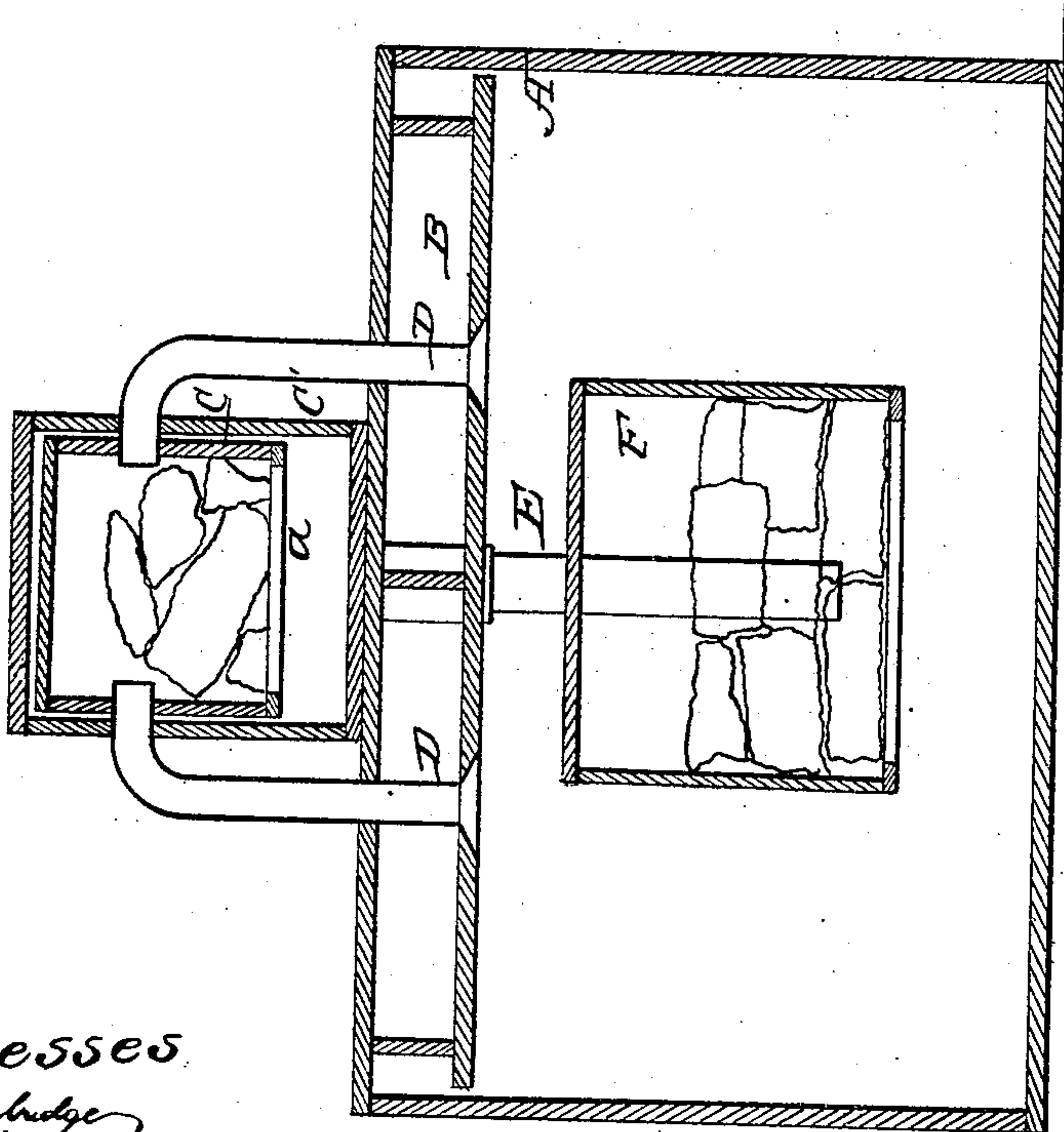


Fig. 1



Witnesses

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UNITED STATES PATENT OFFICE.

VALENTINE HAEFFNER, OF DOBBS FERRY, NEW YORK.

IMPROVED ARTIFICIAL CELLAR.

Specification forming part of Letters Patent No. 37,095, dated December 9, 1862.

To all whom it may concern:

Be it known that I, VALENTINE HAEFFNER, of Dobbs Ferry, in the county of Westchester and State of New York, have invented a new and Improved Artificial Cellar; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a longitudinal vertical section of my invention. Fig. 2 is a transverse vertical section of the same.

Similar letters of reference in both views indicate corresponding parts.

The object of this invention is to lower by artificial means the temperature in a cellar or or other inclosed space to such a degree that beer and other fermented liquors can be preserved in the same with perfect safety, and also that the operation of brewing beer can be carried on throughout the whole year, in the hot as well as in the cold season.

The invention consists in the arrangement of two ice-boxes—one on the top and the other in the interior of the cellar or space to be cooled—in combination with tubes leading from the upper part of the cellar into the ice-box on top of the cellar, and with another tube leading from the upper down to the lower ice-box, in such a manner that the warm air emanating from the liquors that may be stored away in the cellar, or particularly from beer during the fermenting process, rises up and passes into the upper ice-box, where it cools off and sinks down, passing through the connecting-tube into the lower ice-box, whence it is distributed throughout the cellar or the space to be cooled, and thereby a continuous current of air is created without the use of a fan-blower or other mechanical means.

To enable those skilled in the art to make and use my invention, I will proceed to describe it with reference to the drawings.

A represents a cellar or other space inclosed by substantial walls or partitions of some material which is not a good conductor of heat, and sufficiently large to afford room for the fermenting-tub of a brewery and for the casks or barrels in which the beer is to be stored.

The top or cover B of the cellar or space A may be made with double walls, and it supports the ice-box C, which is fastened to and surrounded by an outer casing, C', to preserve it against the influence of the temperature of

the atmosphere. The warm air emanating from the fermenting-tub and from the casks that may be stored in the cellar rises up through bell-mouthed tubes D, which enter the ice-box C from opposite sides, as clearly shown in Fig. 1 of the drawings. In this ice-box the air is cooled off, so that it descends through the perforated bottom *a* and through the tube E, to the lower ice-box, F. This ice-box is inclosed in the cellar or space A, and it is attached to its side wall or otherwise arranged at such a height that casks or other articles can be conveniently placed under the same. The tube E descends to within a small distance from the bottom of the ice-box F, and the ice contained in said ice-box is packed around said tube, as clearly shown in the drawings in red outlines, so that the air descending through the same from the upper ice-box, C, is still further cooled before it reaches the perforated bottom of the ice-box F. Through this bottom the cold air descends into the lower part of the cellar A, where it comes in contact with the casks or other articles that may be stored in the same.

By the arrangement of the ice-box F, in combination with the ice-box C, the air emanating from the tube E is cooled to such a degree that it readily descends to the lower portion of the cellar or space A, and the warm air which accumulates in the upper part of said cellar or space ascends through the tubes D. By this arrangement a regular current of air is produced without the aid of a fan-blower or any other mechanical means to produce or assist in producing such current. Without the lower ice-box, F, the air descending from the upper ice-box would be liable in passing through the upper warm strata of air in the cellar to become warm before reaching the bottom or lower part of the cellar, and instead of descending through the tube E it would have a tendency to ascend, and thus the motion of the current of air through the ice-box and cellar would stop.

By the application of the ice-box F, the air descending through the tube E is cooled, so that it readily sinks down to the bottom of the cellar, while the warm air naturally ascends through the tubes D, and thus a strong current of air is created. Furthermore, by using the ice-box C on the top of the cellar or space A the air passing into the lower ice-box is cooled off to such a degree that the ice contained in said lower box will last a long time without

melting. The ice in the upper box can be renewed with little trouble and without opening the cellar A. By these means a comparatively small quantity of ice will be sufficient to reduce the temperature of the air in a large cellar or space to and retain it at the degree most favorable for the fermentation of beer or other fermentable liquors, and the brewing of beer can thus be carried on throughout the whole year, in the hot season as well as in the cold.

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

The arrangement of the ice-boxes C F—one on the top and one in the interior of a cellar or inclosed space, A—in combination with tubes D and E, all constructed and operating substantially as and for the purpose shown and described.

VALENTINE HAEFFNER.

Witnesses:

TIMOTHY SHINE,
M. S. PARTRIDGE.