

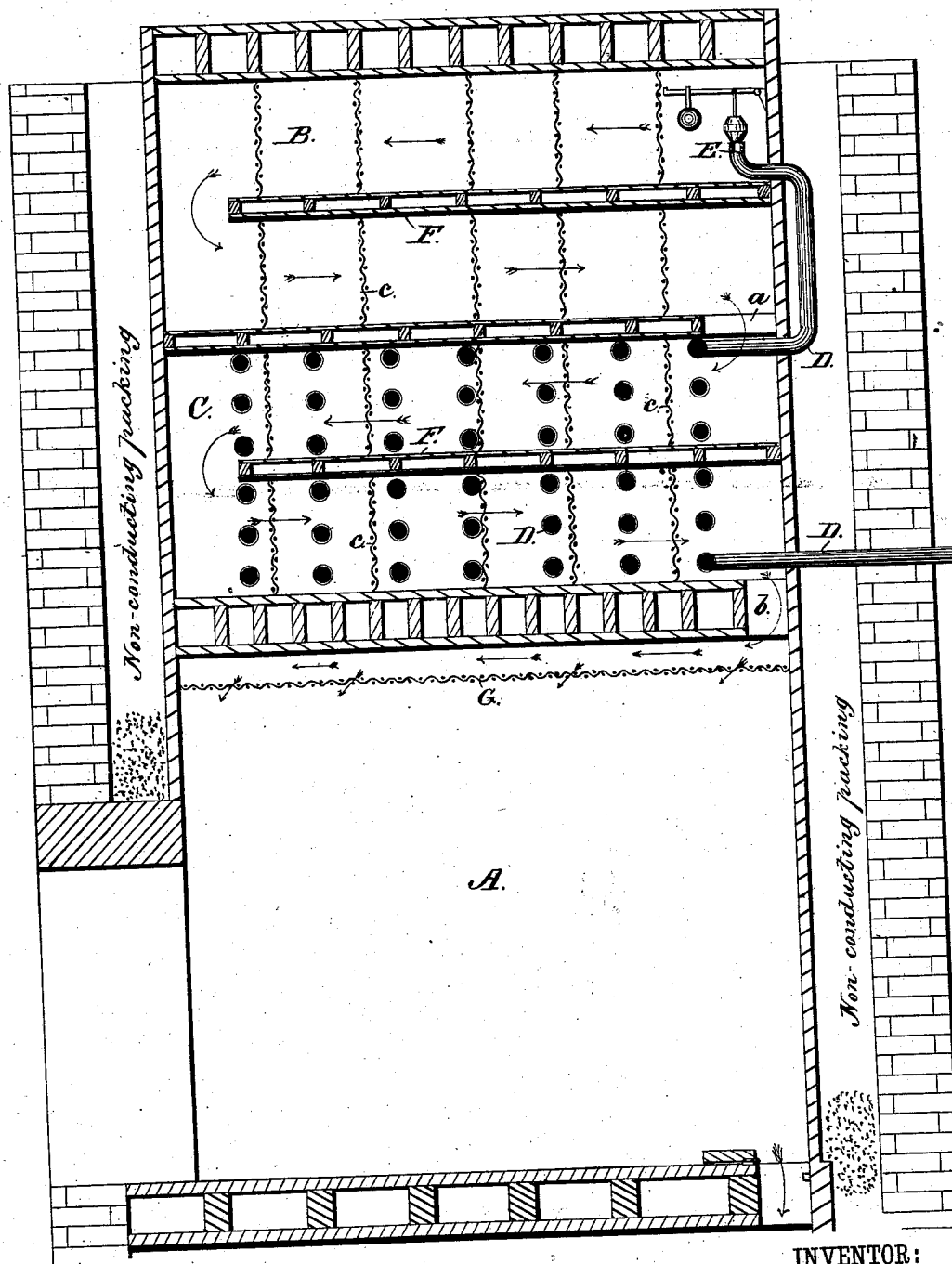
(No Model.)

O. PARKER.

PROCESS OF AND APPARATUS FOR PRESERVING FOOD.

No. 260,706.

Patented July 4, 1882.



WITNESSES:

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ORIN PARKER, OF WASHINGTON, DISTRICT OF COLUMBIA.

PROCESS OF AND APPARATUS FOR PRESERVING FOOD.

SPECIFICATION forming part of Letters Patent No. 260,706, dated July 4, 1882.

Application filed November 12, 1881. (No model.)

To all whom it may concern:

Be it known that I, ORIN PARKER, of Washington city, District of Columbia, have invented a new and Improved Process of Preserving Food; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which the figure is a vertical sectional elevation.

My invention relates to an improved process of preserving meats, vegetables, butter, and other food-stuffs or unstable organized compounds against decay. It is a well-recognized fact that under certain conditions of the atmosphere in some localities, where the air has little or no moisture and a reasonable degree of cold prevails, meats and other perishable articles will keep for a long time even in the open air.

My invention is based upon a recognition of the scientific principle underlying this fact, which is that it is the moisture in the air which acts as a vehicle for the germs of decay and is the principal cause of the latter.

With a view to obviating these conditions and securing a better preservation of the perishable articles, my invention consists in first desiccating the air which is to surround the articles by subjecting it to a temperature below 32°, or low enough to freeze out the moisture, and then raising the temperature above the freezing-point and passing this cold desiccated air into the preserving-room, the object in raising the temperature being to prevent the freezing of the articles to be preserved, and the consequent bursting of their structural cells.

For carrying out my invention several different methods may be practiced; but the one which I prefer is illustrated in the accompanying drawing, in which—

A is the preserving-room, B the desiccating-room, and C an intermediate chamber for cooling the compressed air in the pipe D.

Compressed air is taken from any suitable air-compressor through the pipe D, which compressed air in said pipe is reduced in temperature before being expanded by the current of cold air flowing through openings *a* and *b* from

the desiccating-chamber above to the preserving-chamber below. The compressed air being thus chilled, it then escapes at the top of the pipe D through a pressure-regulator, E, into the desiccating-chamber B, where its expansion produces an intense degree of cold, which precipitates as snow all of the moisture contained in the air. This air then passes down through the opening *a* and around the baffle-plates F, and through the perforated wire screens *c*, so as to traverse the exterior of all of the coils of pipe D, and finally passes through the opening *b* into the preserving-room. These openings *a* and *b* are preferably provided with dampers, and the exit for waste air from the preserving-room is also provided with a damper or valve, by which means the degree of cold in the preserving-room is regulated. The temperature of this preserving-room must be maintained slightly above the freezing-point—preferably about 33°—so that the cells of the articles to be kept will not be ruptured by freezing.

G is a woven-wire screen or perforated plate to distribute the air and prevent currents.

As a modification of my invention, instead of lowering the temperature by the expansion of a compressed body of air, I may use freezing mixtures or other methods of bringing the temperature of the air below the freezing-point.

Now I am aware of the fact that meats, &c., have been preserved by being subjected to a temperature below the freezing-point; but in this case the materials were frozen and the structural cells broken, so that, although the articles kept as long as they were frozen, they had to be cooked immediately after being taken out, for the reason that the bursting of the cells caused decomposition to take place all the more rapidly after the goods were thawed.

I am aware, also, that it is not new to place articles to be preserved in refrigerators in an atmosphere exposed to melting ice; but this involved a greater degree of humidity in the atmosphere than the normal and is the very condition which I seek to avoid.

By my invention it will be seen that the same operation serves both to desiccate the air and to cool it, and while the meats or other articles are effectually preserved the structural cells

are not broken, and the meat can be kept for a considerable time after it is removed, no change having taken place in the meats except a slight drying effect.

5 Having thus described my invention, what I claim as new is—

1. The process of preserving meats, fruits, vegetables, &c., which consists in desiccating the air by freezing out the moisture and then
10 passing this dried and cold air into the chamber containing the articles and maintaining its temperature above the freezing-point, as described.

2. The process of preserving meats, fruits, vegetables, &c., which consists in expanding
15 cooled and compressed air to reduce the temperature below the freezing-point and desiccate the air by freezing out the moisture, then raising the temperature above the freezing-
20 point and maintaining such temperature about the articles to be preserved, as described.

3. The process of preserving food which consists in desiccating the air by freezing out the moisture, then raising the temperature of this air by causing it to impart a part of its cold to
25 the compressed air not yet expanded, and then admitting this air to the preserving-room and maintaining the temperature of the same slightly above the freezing-point, as described.

4. The combination of the expansion and
30 desiccating chamber A, the preserving-room B, and the coil of compressed-air pipes D, located in the path of the air from the expansion-chamber to the preserving-room and opening into the expansion-chamber through a pressure-
35 regulator, as described.

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Witnesses:

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