FRANCIS BAKER.

Improvement in Apparatus for Preparing Salt for Culinary Use.

No. 122,101. Patented Dec. 26, 1871.

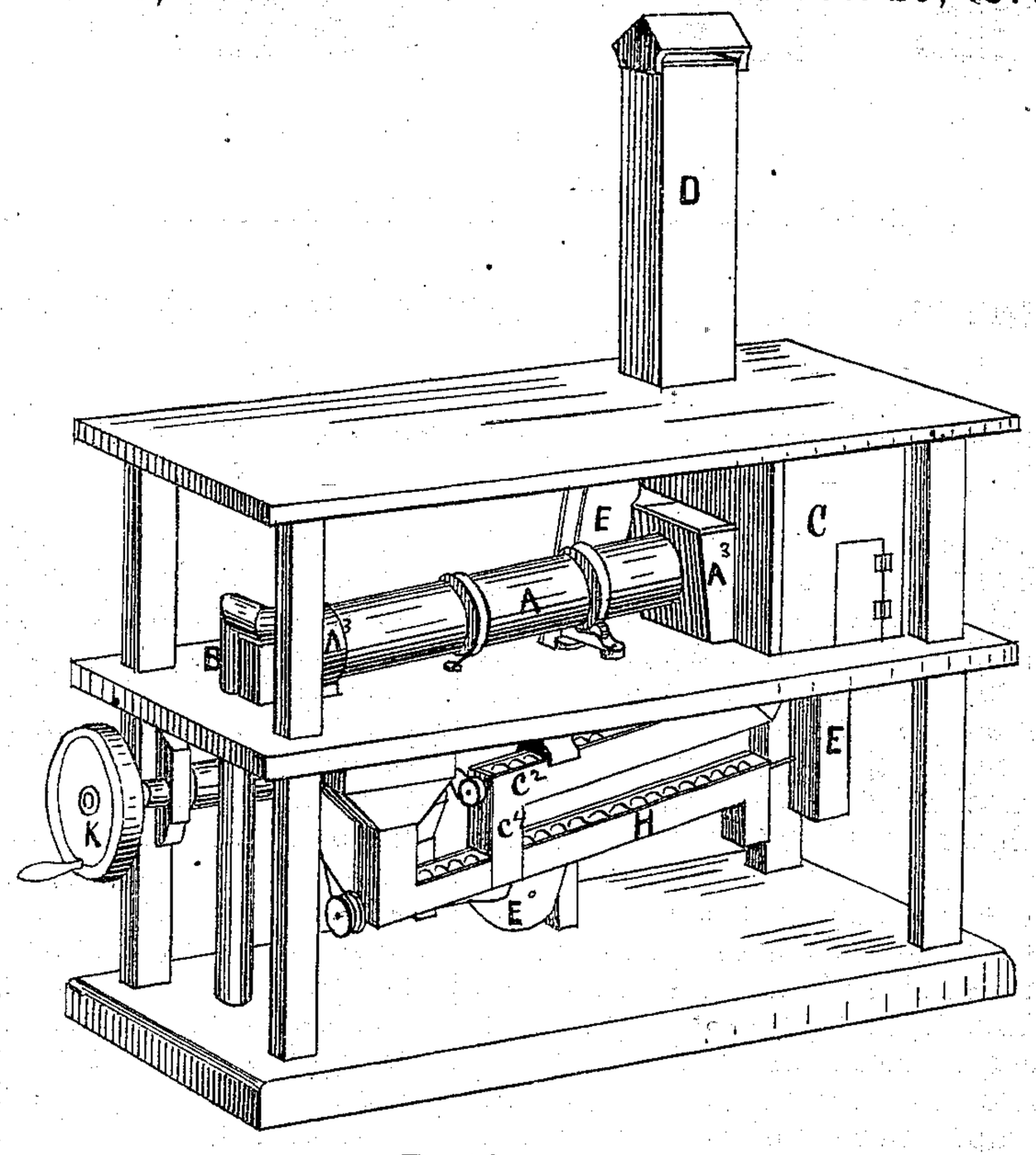

Fig. 1

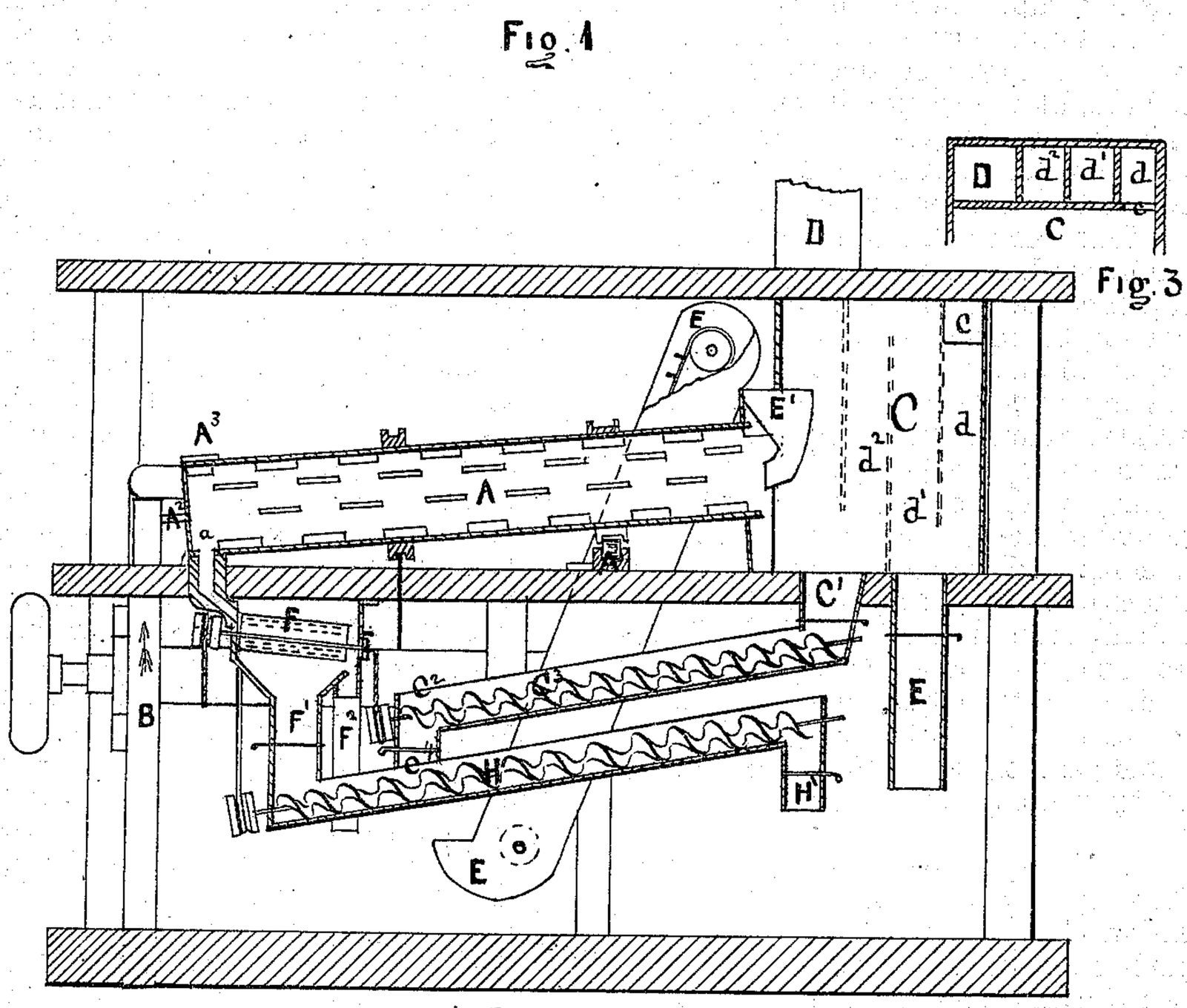

Fig. 3

Fig. 2

WITNESSES

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UNITED STATES PATENT OFFICE.

FRANCIS BAKER, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN APPARATUS FOR PREPARING SALT FOR CULINARY USE.

Specification forming part of Letters Patent No. 122,101, dated December 26, 1871; antedated December 23, 1871.

To all whom it may concern:

I, FRANCIS BAKER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Apparatus for Preparing Salt for Culinary Use, of which the following is a specification:

The nature of my invention consists in combining a series of mechanical devices by the means of which I can effectually dry, separate, and purify salt.

To specify more particularly, I combine with a suitable drying device—for instance, one like the Jasper driers, as described in Letters Patent No. 90,549, dated May, 25, 1869—a receiving and depositing chamber, by means of which, in connection with suitable ventilating devices, I am enabled to force a rapid current of hot air through the salt; thus each particle of salt is subjected to the action of a greater amount of heat than could be brought to act upon it were there no depositing-chamber. This may be explained as follows: as the air can contain a certain amount only of specific heat it has but a certain amount per cubic foot that it can yield for the purpose of drying the salt or of decomposing the chloride of magnesium; hence the useful effect of the hot air depends both upon the quantity that can be brought to bear upon the salt as well as upon its temperature. By my device I can subject the salt to a much greater quantity of hot air than in any of the other methods, and as I can heat it to as high degree as is possible by any device I gain the advantage due to quantity—that is, I can heat the salt to a much higher degree than can be practically accomplished by other methods. The obobject of subjecting the salt to a very high temperature is to decompose and dissipate the chloride of magnesium, leaving a small quantity of free magnesia.

The other parts of my invention can best be understood by reference to the drawing and specification.

Figure 1 is a perspective view, showing the principal parts of my invention. Fig. 2 is a vertical section of the same. Fig. 3 is a plan, showing a part of the ventilating device.

A is a revolving drum or drier supplied with a current of hot air by the pipe B, the whole being arranged to operate substantially as described in Letters Patent issued to G. A. Jasper May 25, 1869, No. 90,549, and reissued November 23, 1869. The upper end of the drum A enters the chamber C, so that the hot air as it leaves the drum flows into the chamber. The chamber C has an opening, *c*, Figs. 2 and 3, in its upper part connecting with the flue *d*, Figs. 2 and 3. The flue *d* connects with the flue d^1 at its lower end, while d^1 connects at its upper end with d^2, which, in turn, connects at its lower end with the outlet-flue D. The lower ends of these flues are provided with doors so that they may be freed from the accumulation of fine salt from time to time. E is an elevator, consisting of a belt and a series of buckets, and is made in the usual manner. This elevator serves to take the salt from the grinding-mills and carry it to the hopper E′, Fig. 2, through which it falls into the drying-drum A.

The passage *a*, Fig. 2, takes the dried salt as it passes from the end of the drum and conveys it into the bolter F. F^1 takes the screened salt to the conveyer H, from which it is delivered to the outlet H′, at which point it is packed for the trade. F^2, Fig. 2, serves to convey the "tailings" from the bolter F to the waste-box. The ground salt as it enters the hopper E′ consists of a granulated portion and a dust or flour. If it is only subjected to a gentle current of hot air nearly the whole will pass down through the drum. In this case the salt will not be thoroughly dried, as the small quantity of hot air furnished by the gentle current will not contain sufficient caloric to effect the drying process, much less to effect the decomposition of the bittern or chloride of magnesium. By adding the depositing-chamber C I am enabled to force a rapid current of hot air through the drum A. This current furnishes so much hot air that the temperature of the particles of salt may be raised to upward of 400° Fahrenheit, thus decomposing and driving off the bittern. While this is going on the fine parts or flour of salt is separated from the granulated portion and driven into the depositing-chamber C; here the current becomes gentle, as the chamber is large, and most of the flour is deposited, though a small quantity will escape into the flues *d* d^1 d^2 D, from which it can be removed, as required. To facilitate the removal of the flour of salt from the flues *d*, d^1, d^2, and D, small doors are made opening into them near the floor, not shown in the drawing. The flour of salt, which is separated from the granulated as described, collects in the chamber C, from which it may be drawn off through the pipe E di-

rectly to the packing-bench; or, if desirable, it may be passed through the conveyer C^1 C^2 C^4 and mixed with the granulated salt as it passes through the conveyer H. The bolter F is connected by the passage *a* directly to the drying-drum, so that the salt is bolted while hot and very dry, in which state it is readily freed from the particles of foreign matter, such as bits of wood, wool, cotton, &c. The temperature of the air may be known by inserting thermometers into the hot-air pipe B, and also, if desirable, in the chamber C.

I claim as my invention—

1. The combination of the drier A with the ventilating-chamber C, arranged to operate substantially as described, and for the purpose set forth.

2. The combination of the drier A, the passage *a*, and the bolter F, arranged substantially as described and for the purpose set forth.

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Witnesses:
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