

H. A. HOGEL & A. EDWARDS.

Improvement in Treating Animal-Matter for Fertilizers.

No. 132,723.

Patented Nov. 5, 1872.

fig. 1

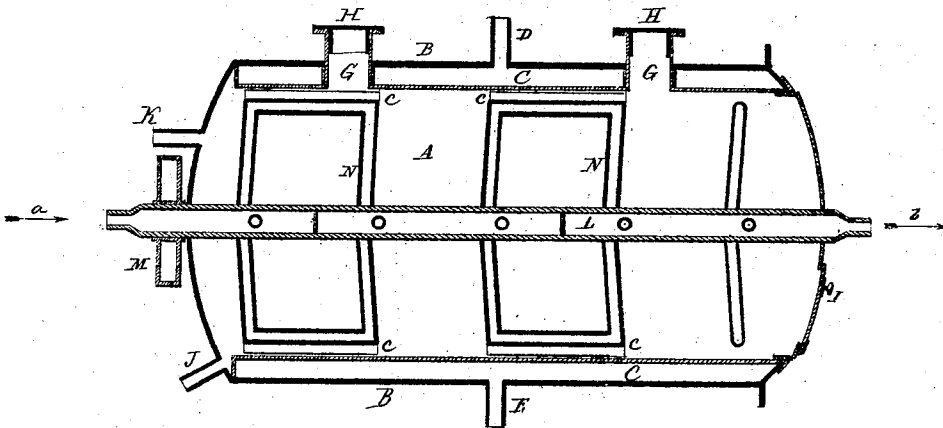
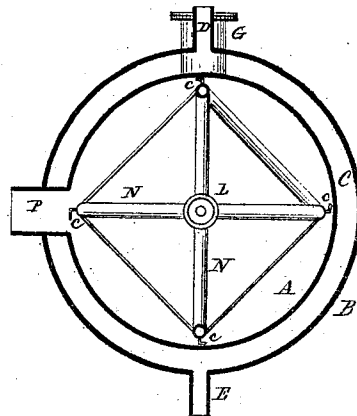


fig. 2



Witnesses.

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# UNITED STATES PATENT OFFICE.

HASCAL A. HOGEL, NEW YORK, N. Y., AND ALFRED EDWARDS, OF NEW HAVEN, CONNECTICUT, ASSIGNORS TO THE HOGEL FERTILIZING-MACHINE COMPANY, OF NEW HAVEN, CONNECTICUT.

## IMPROVEMENT IN TREATING ANIMAL MATTERS FOR FERTILIZERS.

Specification forming part of Letters Patent No. 132,723, dated November 5, 1872.

*To all whom it may concern:*

Be it known that we, HASCAL A. HOGEL, of the city, county, and State of New York, and ALFRED EDWARDS, of the city and county of New Haven and State of Connecticut, have invented a new Improvement in Apparatus for Treating Animal Matters for Fertilizers; and we do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents in—

Figure 1 a vertical longitudinal section of our apparatus, and in Fig. 2 a transverse section taken on line *x x* of Fig. 1.

The apparatus herein to be described is calculated to facilitate the processes described in the patents granted to Hascal A. Hogel, and dated, respectively, March 8 and March 22, 1870. It consists in the combination of a steam-jacketed cylinder and hollow revolving agitator having a circulation of steam therethrough, and provided with scrapers which prevent adhesion of the mass to the interior of the cylinder or reservoir.

Referring to the drawing, A represents a cylindrical vessel or reservoir, which may be arranged in any convenient position, but preferably horizontal, as represented. This vessel is incased in an outer jacket, B, forming a steam-chamber, C, around it, into which steam is admitted through the tube D and the product of condensation is allowed to escape through the tube E at its lower side. The vessel A is also provided with openings G for the introduction of the raw material, which are secured by tight stoppers or caps H, and man-holes I for the removal of the material after treatment; and it is also provided with an outlet, J, through which the watery portion separated from the blood or animal matter during the process may be drawn off. An air-tube, K, is also inserted in the upper portion of said vessel to give vent to the water in case of partial vacuum. Within this vessel A is a hollow shaft, L, supported in suitable bearings in the ends of said vessel so as to be capable of rotating by means of any power applied to the drum M or other suitable mechanical agency. This shaft L is prefera-

bly provided with a series of hollow radial arms, N, so connected at their extremities that a current of steam or hot air entering said shaft in the direction of the arrow *a* will circulate through their entire length and discharge in the direction of the arrow *b* at the opposite end of the said shaft. While we prefer the radial arms described to produce the desired agitation it will be evident that any irregularities in connection with the shaft L, so that steam or hot air may enter therein to produce the desired heat, will accomplish substantially the same result—that is to say, to constitute a revolving agitator having a circulation of steam or hot air therethrough. The revolving tubular or hollow agitator is also provided with scrapers *c*, attached to the extreme of the arms N in alternate positions, so as to prevent the adhesion of the material to the sides of the vessel A.

In the operation of this apparatus the blood or fleshy matter, as the case may be, is placed in the vessel A and the openings G securely closed. The agitator is then put in motion, steam or hot air being at the same time admitted and caused to circulate through it and around within the jacket B until all moisture is expelled, which, accumulating in the bottom of the vessel A, is to be drawn off from time to time through the pipe or outlet J. This action is continued until the mass is reduced to dryness, and by the agitation becomes thoroughly pulverized, which is ordinarily accomplished in about one hour.

Hot air may also be introduced through the opening P into the body of the chamber A, if desirable, to assist in drying the mass within it; and, after coagulation has taken place, the aperture G may be opened to allow the free escape of vapor.

We claim as our invention—

1. The vessel A provided with a jacket, in combination with a tubular or hollow agitator for the circulation of steam or heated air, substantially as and for the purpose specified.
2. The scraper *c*, in combination with the agitator, substantially as set forth.

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Witnesses:

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