

W. R. WARREN.
 APPARATUS FOR MOVING MATERIAL FROM GRANULATORS.
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916,233.

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Fig. 1.

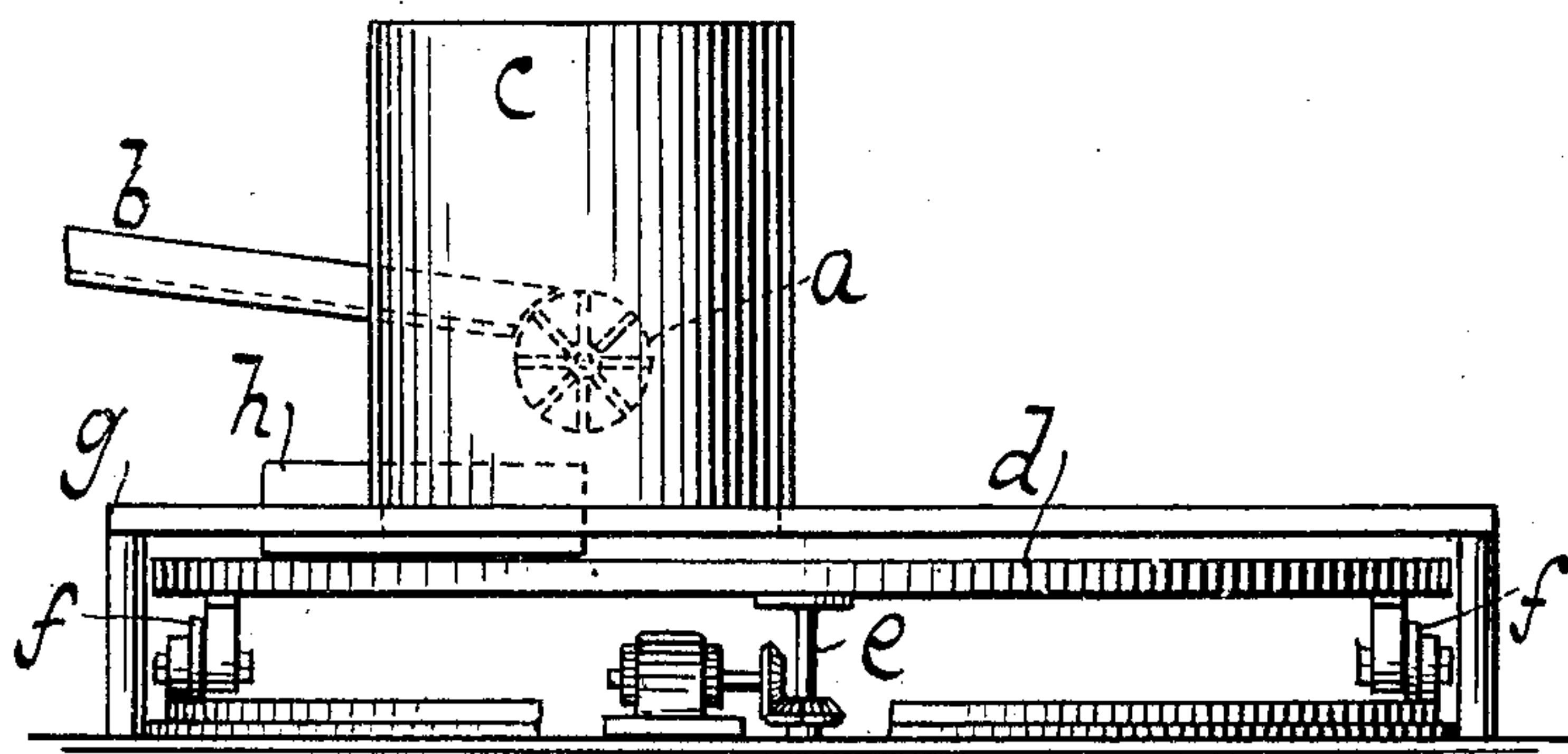
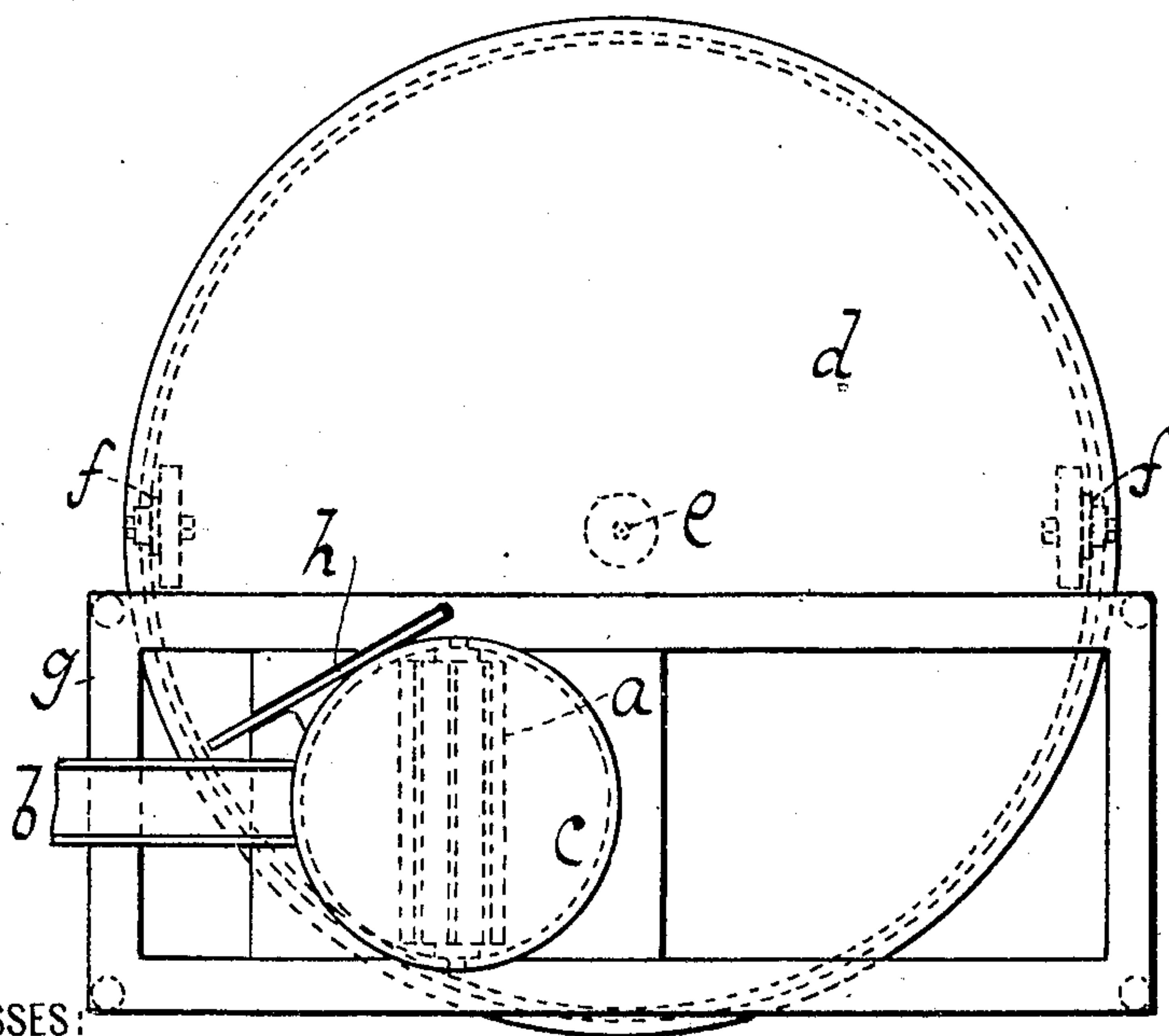


Fig. 2.



WITNESSES:

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APPARATUS FOR MOVING MATERIAL FROM GRANULATORS.

No. 916,233.

Specification of Letters Patent.

Patented March 23, 1909.

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To all whom it may concern:

Be it known that I, WILLIAM R. WARREN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Apparatus for Moving Material from Granulators, of which the following is a specification.

This invention relates to an apparatus for cooling and collecting a finely distributed material, such as slag, and is intended more particularly for use in the manufacture of a cement clinker under a process invented by Dr. Heinrich Colloseus, of Berlin, fully described in U. S. Patents Nos. 817,158 of April 10, 1906 and 821,609 of May 29, 1906 and Reissue 12,801 of June 2, 1908. Under this process molten slag is poured upon a rapidly revolving corrugated cylinder and is divided immediately into small particles and sprayed with a solution of salts.

A part of the process consists in cooling the particles as such, and in order that the particles shall not be collected while still hot I have invented the herein described apparatus.

I am aware that apparatus is elsewhere described for collecting granulated particles of such material but they are not adapted for use in this process, for the reason that they merely collect the material without providing for the cooling while the particles are still separated. In the Colloseus process if the particles are collected when hot, and kept for some time in considerable masses, the chemical re-action which takes place when the particles of slag and the solution of salts come in contact, is retarded and to a large extent prevented.

This invention is set forth in the following specification and claims and illustrated in the annexed drawing in which:

Figure 1 shows a side elevation of a device embodying this invention. Fig. 2 shows a plan view of Fig. 1.

In this drawing is shown drum *a* a chute for delivery *b* leads to the drum, mounted in the granulator housing *c*. Under the drum and the housing is a turn-table or rotary platform *d*, rotating about pivot *e*. Anti friction wheels *f* or other means of support may be used to facilitate easy rotation and to keep the table in place.

The frame or support is shown at *g*. This frame *g* can be frame like or of open work.

The material, liquid or molten, is delivered upon rotary drum of granulator *a* through trough *b* and the particles are thrown both upon the rotary table *d* and upon the walls of the housing *c*. Particles which strike the walls of the housing fall upon the table and the whole is thus removed from the housing. A part of the diameter of the table is under the housing and the material falling upon it is carried out in the revolution of the table, and then scraped off into a conveyer, or otherwise. The granulator housing is supported at *g* the drum and turn table are moved by motor or other suitable means. The object of the invention is to keep the material finely distributed for the purpose of cooling, hydration or aeration.

The scraper *h* is shown at the point where the material on the turn table is about to re-enter the housing *c*. The scraper is removed as far as practicable from the point at which the material leaves the housing on the rotating table. The top of the table is unbroken and the scraper is so placed that the material falling upon the table goes from the granulator casing all the way around to the back of the casing on the other side.

The object of the invention is to distribute the material in small particles over the surface of the table and to carry it far enough before it is collected by a scraper to enable the material to be so far cooled that the chemical re-action which takes place in the contact between the particles of material and the solution of salts shall not be interfered with. The size of the table is considerably greater than the diameter of the casing. I prefer a diameter three times as great. The material thus passes for a considerable time and distance before it is scraped altogether.

What I claim is:—

1. An apparatus adapted for moving material from a granulator, comprising a granulating device, a housing for the granulating device, a rotating table having an unbroken or continued surface, and extended entirely under and beyond the housing, for the purpose of catching and transporting while finely divided, the material coming from the housing and a scraper located as far as practicable beyond the point at which the material leaves the housing and before it would again enter the housing in the course of rotation of the table, the material being thus car-

ried by the table through as great an extent of time and surface as is practicable without reëntering the space covered by the housing.

2. An apparatus adapted for moving material from a granulator comprising a granulating device, a housing for the granulating device, a rotating table having an unbroken or continuous surface and extended entirely under and beyond the limits of the housing to catch and transport all the material coming from the housing, and a scraper at the part of the housing at which the material on the table is about to reënter under the housing, so that the material is carried about by the table through the greater extent of its rotation before being scraped off or removed.

3. An apparatus adapted for moving material from a granulator comprising a granulating device, a housing for the granulating device, a rotating table having an unbroken or continuous surface and extended entirely under and beyond the limits of the housing to catch and transport all the material coming from the housing, and a scraper at the part of the housing at which the material on the table is about to reënter under the housing, so that the material is carried about by the table through the greater extent of its rota-

tion before being scraped off or removed, thus allowing the granules to cool or come to condition in which they will not adhere nor lump before being scraped off or removed from the table.

4. An apparatus for granulating and removing material comprising the combination with a granulating device and a housing for said device, of a table independent of and pivoted underneath said housing and having a continuous unbroken surface, a scraper at the housing where the material on the table is about to reënter under the same, said housing being so placed as to cover a portion of the continuous unbroken surface of the table, the table being of such size that molten or semi-molten material distributed over it shall become cool before it reaches the scraper which collects the material and removes it from the table.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM R. WARREN.

Witnesses:

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